

# THE YOUTH'S INSTRUCTOR

REMEMBER NOW! THY CREATOR IN THE DAYS OF THY YOUTH

Vol. LI

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No. 17



## Our Favorite Steamship, the "Oceanic"

DURING the last one or two days, and specially during the last few hours, before the sailing of a great transatlantic steamship, hundreds of relatives and friends of the persons who are to sail, improve the opportunity offered by the courtesy of the shipping companies to visit the ship, and make a tour of inspection. To those who have enjoyed this privilege, a few facts concerning a first-class Atlantic steamer may be interesting.

During the year 1902 the majority of our missionaries traveled from New York to London by the "Oceanic," of the White Star Line. For several years this has been one of our favorite steamers; for she is one of the largest, finest ships that sail the seas, and her second-class accommodations can hardly be excelled. Our missionaries have traveled between New York and Liverpool so frequently by this line that they have become well known to the managers; and every reasonable effort has been made to supply our workers with pleasant accommodations and a good vegetarian diet.

### Figures and Facts

The accompanying picture represents the "Oceanic" at sea. If you wish to get a good idea of her size, take a measuring stick, and measure off the distances which I will give you, in your dooryard, if you find the yard is large enough.

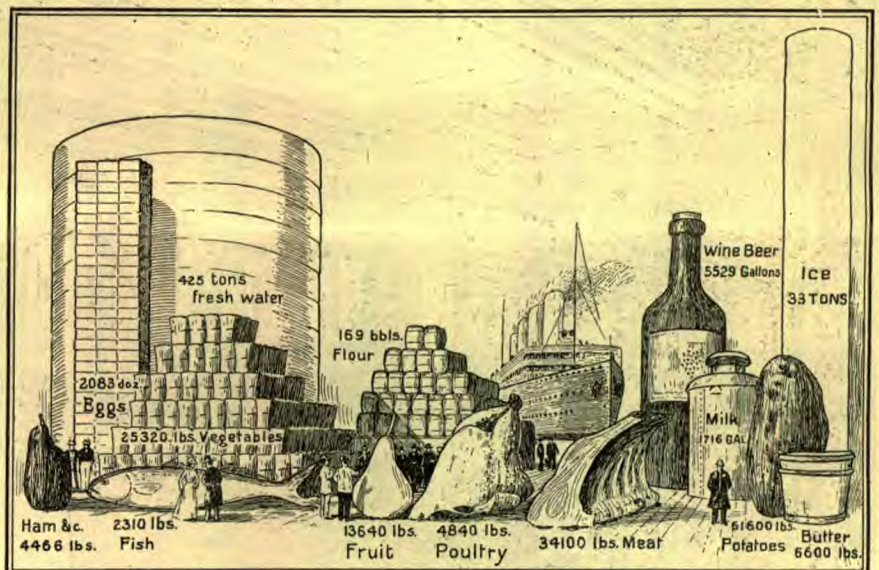
She is seven hundred and four feet long, and sixty-eight feet wide, and weighs 17,240 tons. Sometimes this weight is called so many tons' displacement; for the weight of the ship is the same as the weight of the water which is displaced by the ship. Her speed is from twenty to twenty-two miles an hour, and she requires between six and seven days to make the trip between New York and Liverpool. She carries about one thousand seven hundred passengers, and from seven hundred to nine hundred employees. There are six officers, twenty-six engineers, over four hundred stewards, and one hundred and twenty stokers. Besides these, there are sailors, painters, cooks, a doctor, two or three barbers, and many other helpers.

You will wonder that so many stokers are required to feed the fires on one steamship; but this is explained when I tell you that there are ninety-

six furnaces, which consume about five hundred tons of coal each day. It is very hot in the furnace rooms, and the stokers work only eight hours a day. The one hundred and twenty men work in three "shifts" of forty each. Each "shift" works four hours, and then has eight hours' rest.

### Second-Class Accommodations

There are three main decks which are occupied by the passengers. The second-class passengers occupy a space about two hundred and fifty feet in length in the stern of the vessel. As our missionaries nearly all travel second class, I will describe that class only. On the lower deck is the spacious dining-room, which will seat comfortably at the tables about two hundred passengers. The accompanying picture is a photograph of the dining saloon; and the large table in the front is the one which was occupied by the delegates and missionaries who sailed from New York on April 30, 1902. Back of the dining-room are a large number of cabins. The second deck is occupied almost wholly by cabins, and the third, or upper, deck has in the center a smoking-room on one side of the central gangway, and a large, well-furnished library on the other side. With the exception of the small space occupied by these two rooms, the upper deck



A GRAPHICAL COMPARISON OF THE PROVISIONS OF A TRANSATLANTIC LINER  
Courtesy of The Scientific American (New York)

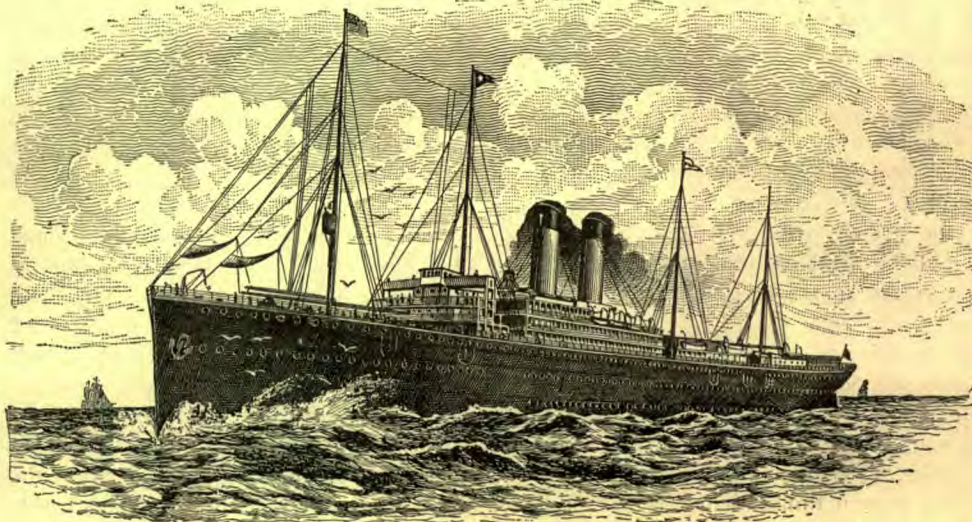
is clear, and is greatly enjoyed by the passengers for promenading, for games, and for lounging about in reclining deck-chairs.

### The Cabins

The cabins differ in size. They are usually arranged for two, four, or six passengers. The four-berth cabin is the most common. It is about seven feet high, six feet long, and six feet wide, with four beds, each about eighteen inches wide. There are two on each side, one above the other. While this space is very small, and exceedingly crowded when occupied by four passengers with all their luggage, yet in the "Oceanic" these cabins are so conveniently furnished that they seem quite comfortable after the first adjustment of things has been made. The ventilation is so perfect that four persons can sleep in a room without waking in the morning with the impression that they have been "shut up all night in a clothes-press or in a cupboard." In fact, if it were not for the difficulty of seasickness, from which nearly all travelers suffer, one might be as comfortable on board a steamship crossing the Atlantic as in a first-class hotel.

### A Grand Invention

A journey across the Atlantic is not now accompanied with such danger and with such painful experiences as described by Dickens and others years ago. As one beholds a fine steamer, proudly riding the waves, and battling with



THE "OCEANIC"



the storms, he is impressed with the fact that the modern vessel is a grand invention. From year to year these ships have been improved in strength, comfort, and speed until they seem almost to have triumphed over wind and wave. It is stoutly affirmed that one of the safest places in the world to-day is in the saloon or stateroom of a first-class Atlantic steamer. Statistics go far toward showing that this is true. It is a remarkable fact that the steamers of the Cunard Line have never lost a passenger nor a mail-bag.

#### Provisions for a Voyage

We should not close this sketch without giving some idea of the quantity of food necessary to provision an ocean liner for a single voyage. The accompanying illustration, as well as the following paragraph, is taken from the *Scientific American*:—

"Not the least striking evidence of the size of these modern monsters of the deep is afforded by the vast quantities of food which must be taken aboard for a single trip across the Atlantic. For the fifteen hundred passengers, and the several hundred men constituting the crew, car-loads of food and whole tanks of liquids are necessary. To enumerate in cold type the exact quantities of bread, meat, and vegetables consumed in a weekly trip would give but an inadequate idea of the storing capacity of a modern liner. We have, therefore, prepared a picture which graphically shows by comparison with the average man the equivalent of the meat, poultry,

#### Experiences of a Medical Missionary

It is five o'clock in the morning. In our mission houses everybody is sleeping quietly. Not so in the near-by villages. The negroes, seldom counted as very diligent, are, however, up with the sun. Now some one is knocking at the door of my bedroom. Thinking I am called to attend to a very sick person, I jump out of my bed, dress myself in haste, and step out on the veranda. There I find Amega, a negro whom I know very well. He smiles, and shakes hands with me. I ask what he wishes so early in the morning, and he innocently tells me that he has come to thank me for the box of matches which I gave him yesterday. Now, really, I did not care much for Amega's thanks, at least not so early, but could I scold this kind and thankful native?—No, I also smile, shake hands, and have a little conversation with him.

After he leaves, I hope to have a quiet hour by myself; but far from it! Half an hour later I hear a repeated knocking at my door. From inside I call "*lalaviade!*" (wait a little). Scarcely five minutes have gone by, and the same knocking is heard. And now I am reminded every five minutes that some one is waiting. At half-past six o'clock I unlock the door, and stepping out, I see about twenty persons gathered together, men and women, young and old. Everybody wants something of the missionary. Two or three have come to thank him for a small gift or service; others are sick, and will have medical

is not so much work to do. To this a gray-haired man replies: "Yes, but then I would like to have such a nice silver fork or knife to eat with every day." While we are still at breakfast, a native comes with a trap, and shows us a large rat which he has caught, remarking that he is going to prepare himself a splendid meal. After the breakfast I try to satisfy those who have waited for me, and the other missionaries do the same. At nine o'clock my teacher comes to teach me the Eohe language. This language is very difficult to learn, so much depends upon the pronunciation. Many words which are spelled alike have quite a different meaning when pronounced differently; for instance, *ahá*, palm-wine; or *ahà*, pig.

The Lord's prayer in Eohe will give an idea of the language: "Hia To si ele dziwowo; Wo nko nuti nako! Wo fiaduwe nava! Woawo wo lolonu le anyigba dzi, sigbe alesi wowona le dziwo ene! Na miawe nuvuvu si asu mia nu egbe mi! Eye natso miawe vo dadawo ake mi, sigbe alesi miawo ha mietsona kea amesiwo da vo ve mia nuti ene! Eye megakplo mi yi de tetekpo me wo; ke de mi tso vo di to la si me! Ela ena towoe nye fiadwoe kple nuse kple nuti-kokoe yi de mavomavo me. Amen!"

When, an hour later, I step to the porch, I have to do some business with ten load-carriers. From the coast they have brought provisions, oil, turpentine, medicine, and other things, carrying these in boxes on their heads. Now they are tired, and want their wages, which I give them after the goods are examined. How happy these carriers look, and how contented they are when they have a dollar's worth of money in their fingers; for with this sum they can live from six to eight weeks. Some of the load-carriers hurry home, while the rest, four or five men, stay a little longer, and look around the room. I seize the opportunity to tell these heathen of God, who so loved the world that he gave his only begotten Son that whosoever believes on him shall not perish, but have everlasting life.

Meanwhile noontime has come. A servant brings the message: "Nuvuvu le kplo dsi," dinner is ready. After our meal we retire to our rooms for a quiet hour of rest, or to read. The hours from two to five, every day except Sunday, are spent in the little hospital, dressing wounds, performing operations, extracting teeth, or giving advice. I talk to them as well as I can, and try to tell them of the best Physician, who can heal body and soul. From thirty to forty sick persons come daily from near-by villages and towns, and others whose homes are fifty or one hundred miles distant,

stay in the hospital for some time.

After supper I take a walk with another missionary. We visit the heathen and Christians in a near-by village, have a lively and often interesting conversation or debate with them, and at the same time we learn more of the melodious Eohe language. When returning we must pass the schoolhouse. The schoolboys, younger or little ones, as well as some who are proud of a mustache, sit in the yard, joking and playing, and at times laughing as loud and heartily as only these Africans can. We bid them "good night;" for the night already draws near, and return to our home. The bright shining moon sheds a mellow light upon the earth, and in this light how beautiful the cocoa- and wine-palms, the eucalyptus, and the mango trees appear. From the heathen villages the dull beating of drums greets our ears. A day's work is done. \* \* \*



THE SECOND-CLASS DINING SALOON OF THE "OCEANIC"

and breadstuffs, as well as the liquors used. Each kind of food has been concentrated into a giant unit, compared with which the figure of the average man seems puny. . . . It must not be forgotten that in provisioning a liner an allowance is made for accidents, which may prolong a voyage many days. For that reason not all, but only the major portion, of the food taken aboard is consumed."

E. R. PALMER.

"Do you think it is an easy thing to tell the exact truth? If you do, try it for a week. During that time, see that you do not either overstate or understate in any of your representations. For every failure fine yourself a nickel, and devote the amount to missions. But don't stop after a week's trial, though you may remit the fines."

treatment; some will buy medicine; a mother brings a child that is dangerously ill; several schoolboys want slates, chalk, books, and so on. In about an hour everybody is satisfied. Just when I am leaving the little hospital, a girl twelve years of age comes with a heavy load on her back. It is the mother of the child, who is stung by a scorpion. The pain must be intense, for she beats the ground with her hands and feet. To her, also, medical assistance is given, and now I can return to the mission house to eat my breakfast.

While we missionaries sit at the table,—doors and windows are open on account of the heat,—the natives still gather. They have to wait now, but while they wait, a lively conversation arises among them, held sufficiently loud for us to hear. One of the women thinks that it is more comfortable to eat with the fingers; for there





### Secrets

WHAT is the secret the pine-trees know  
That keeps them whispering, soft and low?  
All day long in the breezes swaying,  
What can it be they are always saying?  
The nodding daisies deep in the grass  
Seem to beckon me as I pass.  
What have they that is worth the showing,  
Out in the meadow where they're growing?  
If I listen close where the brook flows strong,  
I can hear it singing a low, sweet song.  
Is it just because of the watch it's keeping,  
There where the baby ferns are sleeping?  
The sweet, white clovers out in the sun  
Have told the bumblebees, every one,  
And high in the maple-tree swinging, swinging,  
Loud and clear is a robin singing.  
Is the flower's secret for bird and bee,  
And not for a little girl like me?

—Jennie G. Clarke.

### The Working of God's Power in Common Things

"SCIENCE needs no God," declared a handsome, proud young university student the other day. "We account for all natural phenomena nowadays without bringing him into the question at all."

By way of answer, the minister with whom he was chatting set a microscope on the study table, together with a glass of water, some little bottles of salt, alum, and other chemicals, and some slips of glass.

In a few drops of the water he dissolved a pinch of salt. In a few drops more he put some alum; and so on till he had a number of different solutions. Then he took a tiny drop of the salty water on a toothpick, and therewith moistened the center of a slip of glass in the microscope.

"Now," he said, "look, and explain what you see."

The young fellow tried the solutions, one after another; and this is what he saw: the tiny drops of water soon dried away; and as they dried, the chemicals in it crystallized into most beautiful forms—some like little pansies, some in little cubes and hair-like lines, some like moss, some in spires, some like ferns, but no two alike. Another drop of salty water placed by the first, crystallized in exactly the same way it had before. It could not be mistaken for any of the other chemicals, any more than President Roosevelt's face would be mistaken for Abraham Lincoln's. There were the crystal pansies, the crystal ferns, the crystal lines, every one declaring the chemical that made it.

Chemists enjoy watching the process of crystallization, even though they have seen it a thousand

times; for it is one of the most marvelous things in the world. So with the young skeptic. He forgot to answer the minister's question for some time, but finally he said, "I see here the beautiful crystallization of salt, alum, potassium bichromate, lithic acid, salicine, and a number of others I can not name. It is very interesting to me."

"Yes," replied the other, "it is interesting. But tell me why the salt always forms in those short, chunky pieces, with just so many faces; why the lithic acid makes variegated plates; why the salicine gives little round discs,—can you?"

"Why, of course," said the young fellow, "that is easy enough. Each chemical element or combination has characteristic properties, governed by laws; and in crystallizing it simply obeys those laws, and comes into the shape they direct."

The minister smiled at the answer. "Now, my friend," he said, "just lay aside your 'characteristic properties' for a moment, and your 'governing laws,' and think of this little drop of salty water. Here are countless millions of little lumps of salt floating around, grinding together, mixing up—what happens? The water begins to dry. Those particles begin to arrange themselves like well-drilled soldiers. There is motion, there is just enough motion, there is intelligence to take each one of those little particles to just the place it belongs; and you look at it, and say: 'Yes; those are salt-crystals.' But tell me, if you can, what governing law there is to take each one to its right place in combination with millions of others. Each one shapes its action according to the action of all the others. Can it see them? Can it see what they are doing, and reason with itself that there is need for it in just such a place—a place it has never been before, and then move into that place? Does



SULPHATE OF CADMIUM

it know beforehand that it is to be part of a cube or a fern crystal or a pansy? Can science explain it?"

The young fellow thought a while, with a puzzled expression on his face, and finally said: "No, it can not. I have never before thought of it in just that way, but I see you have the argument, plainly enough. There is an Intelligence behind the crystals, and I suppose I might as well recognize that it is the wisdom of the God of order. What an incomprehensible thought it is, that the great Maker of worlds is working right here under our very eyes to-night!"

EDISON DRIVER.

### An Intelligent Dog

MANY years ago, says Capt. John Codman, in the *New York Times*, I was the second mate on the ship "Carolina" of Boston, commanded by Capt. Stephen Lemist. He had on board a fine black shaggy Newfoundland dog called Neptune. Nep was the pet of the men, as

well as of his master. He had the full liberty of the quarter-deck, and sometimes availed himself of it by carelessly walking about on the taff-rail. We were bound to New Orleans, and were being towed up the Mississippi in company with four other vessels. Nep was walking on the rail as was his occasional custom, when he unfortunately lost his balance, and fell overboard.

It was impossible to stop without disarranging the tow, which the captain of the tug would not



LITHIC ACID

consent to do. So Captain Lemist and the grief-stricken crew were constrained to leave the dog to his fate. For a while he swam after the fleet, but finding that he could not keep up with us, he struck out for the western shore. The only satisfaction that we had was that his life was in no danger; for we were sure that he would reach the land. As for ourselves, we mourned that we had forever parted company with our dear shipmate, and the captain, as I can see him now, laid his head upon the binnacle and sobbed like a child.

We were about fifty miles below New Orleans at the time of the accident, and in a few hours were berthed at the levee, where we remained for three days discharging our cargo. A freight of cotton and tobacco for London was engaged, and we were towed up to Lafayette, some three or four miles above, to take it in, and were berthed the third outside in a tier of vessels, the cargo being carried on planks over the decks of the others. One morning after we had been there two days, as we were busily engaged at our work, to our utter astonishment Nep walked on board!

It is almost needless to say that our joy equaled his own. Wagging his organ of recognition, as a dog's tail has been so aptly termed, and crying in a dog's language of delight, he jumped upon every one of his old friends, entirely ignoring the stevedores, whom he did not know, and then rushed down the companionway in search of the captain, who did not happen to be on board. Then he came on deck dejected and woe-begone, taking no further interest in any of us, beyond casting about his inquiring looks. I expect to be believed, for I am telling the truth, when I say that the big tears stood in his eyes. The captain had gone ashore to his consignee's office in the city, as the chief mate knew. "Come, Nep," said he, "come along."

Nep understood him readily enough, and followed him down to the office, where he was clasped in his fond master's arms.

There is not a particle of fiction in this pathetic story. How Neptune found his ship was beyond our ken; we merely guessed that he had traveled fifty miles up the river till he came to the ferry, crossed over to New Orleans, and then found his way up to Lafayette, walked over two tiers of ships, and reached his old home again.

LESSER things will drop out as the hand closes upon the larger duty or the greater blessing, just as the hand that reaches out to grasp the great, strong oak lets go its hold on the blade of grass it had gathered.—Phillips Brooks.



SALICINE CRYSTALS





### The Bible in the Missionary Meeting

THE greatest of all missionary books is the Bible. Without it there would be no missionary work. The most helpful of all missionary libraries is the "little library of sixty-six small books, usually bound together as one great Book, which has been the inspiration of every missionary and missionary worker since the world began."

Too little use is made of the Bible in the missionary meeting. Frequently where the most elaborate preparation is made for the remainder of the program, little or no thought is given to the Scripture lesson. It is true that reading the Bible at the opening of the missionary meeting is an almost universal custom, but too often it is done merely as a matter of form, and not with the definite purpose of accomplishing something. The idea seems to prevail that if the Bible is read, no matter how, a holy service has been performed, and a blessing is sure to follow. Yet to be effective the Scripture lesson must be carefully and prayerfully selected, impressively read, and its teachings forcibly applied. Otherwise it will make but little impression, and leave scarcely a memory behind.

The writer recalls a missionary meeting where the Scripture lesson, selected hastily at the last moment, was read in so perfunctory a manner that less than half an hour later, when a test was made, not a single person present was able to tell what had been read! It was one of the most striking missionary passages in the Bible, yet it had made no impression whatever.

On another well-remembered occasion a missionary worker of no little prominence was asked to read the Scripture lesson at a missionary conference. The passage selected was obscure, with seemingly no bearing whatever on the cause of missions. As he made no comment and drew no parallels, his hearers are still in ignorance of the lessons he intended to convey. Selecting inappropriate passages is, unfortunately, not an uncommon failing. The writer recently heard of a leader of a children's mission band who opened her meeting by reading an entire chapter from the book of Lamentations!

Instances such as the foregoing, which could probably be duplicated by any one in the habit of attending missionary meetings, show the careless and ineffectual way in which the Scriptures are used. The result is that there is a great loss of power.

#### The Bible in the Devotional Service

There are many profitable ways of using the Bible in the devotional service of the missionary meeting. The wise leader will sometimes use one, sometimes another.

To be effectual, the Scripture lesson need not be long. Sometimes a single text, followed by a few pointed remarks, will make a deeper impression than a whole chapter aimlessly read. For example: "Carest thou not that we perish?" Mark 4:38. These words of the disciples to the Master on the Sea of Galilee may well be taken as the cry of the forty million heathen who die every year in foreign lands. Forty million will die during the ensuing year. They are passing away at the rate of one hundred thousand a day. Every tick of the watch sounds the death-knell of a heathen soul. With every breath we draw, four souls pass away never having heard of Christ. Carest thou not that they perish?

Uniting two texts somewhat similar in thought

sometimes impresses a stronger lesson than using either alone. For example:—

"I must be about my Father's business." Luke 2:49.

"The king's business required haste." 1 Sam. 21:8.

"Whatsoever he saith unto you, do it." John 2:5.

"See that ye refuse not him that speaketh." Heb. 12:25.

Following the Scripture lesson with a few terse questions is an excellent way of concentrating thought upon it and bringing out its teachings. The following questions on 1 Cor. 16:2 have been suggested:—

1. How often are we to give? (Upon the first day of the week.)

2. Who are to be givers? (Every one of you.)

3. What method should be used in giving? (Let every one of you lay by him in store; that is, set apart a certain portion.)

4. What is to be the measure of Christian liberality? (As God hath prospered.)

It is sometimes a good plan to call upon the society to give the Scripture lesson. Either with or without previous notice, let the leader ask those present to name some of the things given to God by prominent Bible characters. (Isaiah gave himself, Hannah gave Samuel, the widow gave her mite, the little lad his "five loaves and two small fishes," Dorcas her needle, etc.) This is a most helpful lesson. For another meeting those present may be asked to repeat some of the promises to which Judson referred when he said: "The prospect is as bright as the promises of God."

A very effective lesson, contrasting the idols of the heathen with the Jehovah God of the Christian, may be given as follows: Read Isa. 40:9-31, describing the majesty and power of God, and give special emphasis to the words, "Behold your God!" Verse 9. Then, holding up an idol, say, "Behold the heathen's god!" and read Ps. 115:4-8.

#### Studying the Bible as a Missionary Book

In addition to reading the Scriptures during the devotional service, it would be well for every missionary society to devote some time to the systematic study of the Bible as a missionary book. Because so few have done this, the average Christian has no clear conception of the place of missions in the plan of God.

Half an hour, or even a quarter of an hour, devoted to a systematic study of the Bible in the missionary meeting would be a blessing. The result would be a band of strong and reliable workers, able to give a reason for the hope that is in them, and standing strong in the faith that the day will come when the kingdoms of earth shall have become the kingdoms of our Lord and of his Christ.—*Belle M. Brain, in Missionary Review of the World.*

### The Otis Church School

THERE is nothing more a blessing to me than the church school. In studying the geography lessons I must say that the Bible and the YOUTH'S INSTRUCTOR go hand in hand. These lessons are especially interesting because they tell us just where the love of God needs to be preached.

This church school is doing missionary work for the Lord every Friday. The Lord is blessing the work, and every one is glad to work in the cause. Last Friday we distributed 774 pages of tracts. We have sold a number of copies of *The Life Boat*, which was a great blessing to us.

We are now nearing the end of our school, and my desire is that the glory of God may rest upon us, and that many young people in the State may be prepared for the work of God. The Lord is calling for the youth. Why not follow him, and have a treasure in heaven?

ISAAC SCHMIDT.

## THE WEEKLY STUDY

### May Study of the Field

(May 3-9)

#### Suggestive Program

##### 1. OPENING EXERCISES:—

Singing.

Prayer.

Scripture Reading.

##### 2. Field Study:—

(a) Spain, the Land of the Inquisition.

(b) Dialects of China.

(c) Rhodesia.

(d) The Message in Japan.

(e) Two-minute reports from Barbados, East Caribbean Conference, Society Islands, England, Brazil, Colombia, Finland, Fiji, Iceland, Central India.

##### 3. Closing Exercises.

NOTE.—The material for the study this month will be found in the issues of the *Review* of March 31 and April 7 and 14. The two-minute reports can be made very interesting if five or ten different persons are asked to prepare beforehand on one or two different fields, so that the reports can be given in quick succession, the leader or some one pointing out each place on the map. Let the speaker tell in a brief sentence or two the fact from the field which impressed him the most. This exercise will also be a profitable drill for the young people. It is valuable to be able to state a fact in a brief, but concise and comprehensive manner.

The article, "The Bible in the Missionary Meeting," is very suggestive. The leader may glean some thoughts that could be presented in the meeting with profit, and which will lead all to see more and more the place of missions in the Bible, and of the Bible in missions. E. H.

### Oklahoma

Two Societies have reported. The one at West Cooper has a membership of sixty-five. At Oklahoma City there are fifteen members. At the latter place meetings are held each Sabbath afternoon, and the INSTRUCTOR lessons studied. The members are supplying reading racks with our denominational literature.

### Missions the Table Talk

LETTERS received every day in our Mission Board office show that God's people are taking a firmer hold on his work than ever before. It is becoming more and more a part of their lives.

A brother sending three dollars and a half to the Mission Board wrote that their table talk at breakfast that morning had been about our Nyasaland mission, and as a result, a friend visiting them became so interested that he added one dollar and a half to their family contribution of two dollars, all of which was inclosed.

What could be more beautiful or more pleasing to heavenly angels than such a scene—gathered around the family board, enjoying God's bounties, with thoughts all turned to the great work in the earth? This is the way genuine missionary characters will be developed.

Children will have no desire to spend their pennies foolishly, nor, as they grow older, to engage in worldly enterprises, if the needs and the abundant opportunities in the great fields beyond become so familiar and are made so interesting. In such a home there will be not only an increased interest in missions, but deeper spirituality and greater liberality, and even more—converted children, who will be ready to respond to the Macedonian call for help, "Here am I; send me." The progress of the third angel's message will become the topic of our conversation when it is the one aim of our lives.



# CHILDREN'S PAGE

## Johnny's Servants

TWENTY little servants  
Has Johnny, all his own,  
Not brownies, elves, nor fairies,  
But sturdy flesh and bone.  
They crave in winter, raiment;  
In summer they go bare,  
No further pay they covet  
Than work and play to share.

They're faithful little servants,  
They never disobey;  
They're never rude to Johnny,  
And never in his way.  
They do as Johnny bids them;  
They go where Johnny goes,—  
His ten little fingers,  
And his ten little toes.

ELIZABETH ROSSER.

## "Grip," the Talking Crow

"GRIP" was his name. He was so called in honor of the talking raven immortalized by Charles Dickens. Ever since I read of the original Grip, I longed to possess a raven. But there were no ravens in the country in which I lived, and the next best thing was his cousin, the crow. I had heard and read of crows becoming interesting pets; in some instances, of their learning to articulate a few words after having had their tongues split,—a cruel operation, which I did not believe gave them the power of speech. It seemed as unreasonable as it was cruel, and I want to say that my pet was never subjected to such torture. He learned to talk by using his tongue as nature fashioned it.

Grip came into my possession in this wise: One day in April I chanced to meet two boys who had been robbing and destroying crows' nests, thinking they were doing a kindness to the farmers by exterminating the robbers of their corn-fields. I had long believed that the crow was not so black as he was painted, and that for every kernel of corn he stole, he destroyed many grubs and insects, which would have injured the crops far more than the bird could have done in all his depredations.

A sorrier object I never saw than this poor kidnapped baby crow, crouching in the folds of a ragged and tattered old hat. He was very ugly in his half-fledged feathers, with large head and long beak, but he looked so pitiful that my heart went out to him at once.

As soon as I had reached home, I placed him in a good-sized chicken-crate under a large pine-tree in the front yard, where I fed him bread and milk, which he gulped down greedily. I kept him in the crate for several days, feeding him often. When he saw me approaching, he would spread his wings, open his mouth, and shrilly caw for something to eat. His appetite was voracious. He would eat anything given to him,—meat, bread, cake, fruit, eggs, all went greedily into his gullet. I wondered how the parent crows ever filled the maws of a hungry family.

Grip, as I called him, soon grew quite tame; so I left the door of his house open, and he went in and out at pleasure. He showed no disposition nor inclination to wander away, but spent the day hopping around the large yard, hunting worms and insects, pulling the long grass, and carrying about little sticks in his beak. He came to me readily to be fed from my hand. At night he would go into his house to bed, which was a perch, just as a chicken would go to roost.

Grip's babyhood did not last long. He grew so rapidly that in three weeks he was a full-fledged crow, with beautiful glossy black feathers, of which he was very proud.

He bathed regularly every morning in a pan of water I kept under the tree for him, and how he would dress and preen his feathers! He was, in truth, a handsome bird, and well he knew it. He could fly, and the chicken-crate no longer served him for a bedroom. He found one more to his liking in the pine-tree. The chicken-crate, alas! became his prison at times; for he had begun to grow very mischievous. On the family wash-days he had to be shut up, else all the clothes-pins would be plucked from the line. Small articles, also, such as collars, handkerchiefs, and the like, would be missing. We soon learned that Grip was a cunning thief. He would fly into the house, snatch up a spoon, or any other bright object he could carry off, and take it to some secret hiding-place.

A large bed of pansies near the house, which was my pride, was his especial delight. Every morning I would pluck the blossoms, which were so like little faces that smiled up to me. Grip was always on hand to assist me; but he would ruin every flower by snipping it off, and he did it so spitefully, I knew that he was jealous of the flowers I loved.

"Go 'way, Grip, go 'way," I would say to him, sometimes using a little switch to drive him off. The moment I was out of sight, however, down he would swoop again into the pansy-bed, and "snip, snip," would go their heads. There was scarcely an hour in the day when some one was not calling out, "Go 'way, Grip, go 'way;" for the whole family kept watch over those pansies.

At times Grip would be very loving. Alighting on my shoulder, he would cuddle down close to my face, uttering soft little croaking notes. Then he would slyly pull the pin from my collar, and begin snatching at the hairpins in my braids. At other times, when I called him, he would not come to me, but would alight near me, and look at me so impishly while I coaxed, "Come here, Grip; come, Grippy, come here."

One day I was coaxing him thus as he hopped along on the top board of the fence. He put his head down and seemed to be choking and swallowing. After several such spasms he uttered the words, "Go 'way, Grip, go 'way," very distinctly. I could hardly believe my ears. Grip, my crow, could say three words: "Go 'way, Grip." For a long time he had chattered and made guttural noises; but now he could talk! He soon learned to say, "Go 'way, Grip," without effort, and not long after that I heard him say, "Come here, Grip; come, Grippy, come here," in the same coaxing tone I used to him.

Rainy days were his delight. Then he held high carnival on the woodpile, where he would chatter and laugh, coax and scold, by turns: "Come here, Grip, come here," in a soft, coaxing tone; then harshly, "Go 'way, Grip, go 'way." It sounded as if two children were quarreling.

Later he learned to say, "All right," "Hurry up;" and almost any hour in the day he might be heard, if not seen, practising his new accomplishments.

He would scold the dog, "Go 'way, go 'way,"

in so human a voice that Towser would sneak off with slinking tail. Once I heard Grip scolding in a furious manner. He was perched on the garden gate. Towser was gnawing a bone. Grip continued his angry "Go 'way, go 'way," until the poor old dog actually left his bone, and walked off with an injured air. Mr. Grip then flew down and took possession of the bone, chattering, screaming, and laughing, "Ha, ha, ha!" over his victory.

The cat, Tom, a fine Maltese and a household pet, received his share of Grip's teasing. When he was lapping his supper of new milk, or dozing peacefully, Grip would slip up behind him, and give his tail a tweak. Puss would utter a distressed yowl, and spring up with swelling tail, and green eyes flashing with fury. It was well for her tormentor that his strong wings could take him out of reach.

The chickens, too, were often annoyed by this busy mischief-maker. I feared he might kill the little chicks, but he never harmed them. He was not cruel, and was only teasing out of pure mischief.

This he accomplished with the fowls by swooping down upon them like a hawk, brushing them with his wings as he flew by, causing a great cackling and flurry among them, which excitement he greatly enjoyed. Again, he would startle them by loud cackling such as theirs.

How can I relate all of Grip's pranks? He was so busy each day! A favorite occupation and diversion of his was to go into the cellar, where, on a swinging shelf, the old bottles were kept. He would spend hours pulling corks, and rolling the bottles about, chattering and talking to himself.

All bright trinkets attracted his attention. One day my little sister sat in the window, counting the pennies in her purse. Grip flew upon the window-sill, and watched the operation. She jingled the pennies and shook them at him, then dropped them one by one into the purse, closing it with a snap-catch. I cautioned her, but too late. Grip had been watching his chance. In a twinkling, and quicker than lightning, he had snatched the purse and flown away with it to some secret hiding-place. Long afterward we found the purse, together with a long-missing thimble, a spoon, several button-hooks, and other small articles which he had pilfered, hidden snugly away in the hollow of an apple-tree far out in the orchard.

When the pansy-bed was raked over in the spring, we found there an assortment of his treasures, consisting of bits of glass and china, nails, corks, and hairpins. All these he had secreted there. It seemed that the things he valued most, or that he feared we would take from him, he had cunningly hidden in the tree.

Grip was particularly busy when the fall harvest of fruits and vegetables was being garnered, going back and forth continually between field or orchard and cellar with the men. He always took a great interest in the barn-chores, following the men about as they cared for the dumb and faithful creatures. Now and then would be heard Grip's voice saying, "All right," "Hurry up." Perhaps he would be circling high overhead. It caused one to have a strange and uncanny feeling. He would perch on the orchard fence when the horses were turned out to graze awhile every evening, and call: "Cope, Coaly! cope, Coaly! cope, cope, cope!" as he had heard the men halloo to the horses.

During that fall I taught the district school, half a mile from home. It was a pleasant walk, in good weather. Grip was



SOLID COMFORT



on hand to see me safely on my way each morning. He would hop or fly along, or ride on my shoulder, until he came to the bridge which spanned the creek just half-way to the schoolhouse. Then he would fly up into a tall willow-tree bending over the water, and wait for me.

One morning, however, he alighted on the window of the schoolhouse, tapping loudly with his beak upon the glass to be let in. The children all knew Grip. He was famed throughout the neighborhood for his powers of speech and his cunning pranks. Immediately the hands went up to beg permission to let him in, with promises to be good and to study hard.

The unanimous request was granted, and Grip flew to my desk and began picking up pencils and pieces of chalk. Then he went from one desk to another, looking for more pencils. No doubt he thought he had struck a rich field. I must confess that lessons were forgotten, so intent were the children in watching this strange bird, which hopped from desk to desk and peered into their faces in such a curious way.

When it was time for recess, Grip had a merry play with the children, who knew how to entertain him. They fed him choice tidbits from their dinner-pails, drove little sticks into the ground for him to pull out, and gave him their handkerchiefs to pull by the corners. These he would tug at and pull until he "was black in the face," as one little girl remarked, and then he would hang tightly on, beak and claws, and be swung in the air.

When the bell rang, in he came again with the children, and perched upon my desk, as much as to say: "Well, what next?" When we sang, he cawed loudly with delight. At the end of the song, when all was quiet and lessons resumed, he began talking, saying, "Go 'way, Grip, go 'way."

It was useless to try to teach school with Grip there, so, like Mary's little lamb, he was turned out. He did not, however, like the lamb, linger patiently about, but winged his way home. On my return that night, there he was, my faithful sentinel, waiting as usual for me on the top bough of the willow-tree.

After that he was a frequent visitor at the schoolhouse. He came in time for the forenoon recess, and when school was called again, not being allowed to enter the building, he soared off home.

The children learned from him lessons not to be found in books — of how there is much to learn from even the lowest of God's creatures. In the Spring there was no robbing of birds' nests in that school yard; not a stone was thrown to frighten birds away. Grip's friendship inspired them with a love for all bird-kind, and a desire to study their ways and habits.

By and by the winter days were upon us. Grip seemed to enjoy the cold and the snow. Instead of water-baths he now took snow-baths. He would skim along over the snow, just brushing it with his wings, then take a plunge, wallowing in it as though he were in his accustomed water-bath under the pine-tree. Much of his time on stormy days was spent in the barn with the men. Often he would be seen sitting on Coaly's back, warming his feet. He liked to come into the house whenever the nuts which he had helped me gather were being cracked.

When the time came for him to go to roost, he would watch his chance to fly out at the door and hie away to his pine-tree. One stormy night I nailed a perch high up in one corner of the woodshed. I then called Grip to my shoulder, from which he readily flew to the perch. After that he came every night at dusk to be put to bed in the same way. He slept there through the cold winter nights, well sheltered from the storms.

March came, and Grip was often seen circling around overhead with a flock of crows that frequented the place. I wondered if he would not select a mate and set up housekeeping in his pine-tree, and rear a family of talking crows. He was

becoming more fluent in our language, every now and then adding a new word to his vocabulary, until it consisted of the following: "Go 'way, Grip, go 'way," "Come here, Grip; come, Grippy, come," "All right," "Hurry up," "Cope, Coaly, cope, Coaly, cope, cope," "Hurrah," and other words that were not quite plain enough to understand, but which, no doubt, he would have mastered in time.

But, alas! he came to an untimely death. One night he failed to meet me at the willow, upon my return from school. No one had seen him that afternoon.

I found him in a shed, crouched upon an old barrel, looking very sick and miserable, and with green stains upon his bill. The can of Paris green was found overturned in the barn, and that told the story. The poor fellow had been eating the poison. He refused food, uttering plaintive little croaks as I stroked him and said "Poor Grippy!" I left him for the night, hoping his crow constitution was strong enough to resist the deadly poison.

In the morning I found him sitting as I had left him, but no soft croak greeted me. He was cold and stiff. Do you wonder that my tears fell freely, and that I felt no shame in weeping for a dead crow? Free as the air, he had been my willing captive, preferring to live among human beings rather than among his own kind. He even tried to learn our language. He was a thief and marauder by birth, yet he had proved his possession of affection, intelligence, and cunning, far beyond my understanding of his wild nature. — *Eudora Black, in St. Nicholas.*

#### No Remainder

"SEVEN sheep were standing  
By the pasture wall;  
Tell me," said the teacher  
To her scholars small,  
"One poor sheep was frightened,  
Jumped, and ran away;  
One from seven — how many  
Woolly sheep would stay?"

Up went Kitty's fingers —  
A farmer's daughter she,  
Not so bright at figures  
As she ought to be.  
"Please, ma'am —" "Well, then, Kitty,  
Tell us if you know."  
"Please, if one jumped over,  
All the rest would go."  
— *John W. Nelson, in Little Chronicle.*

#### What We Can Learn from the Rain

EVERY rain-drop that splashes down teaches us of God's care; for it seems to say, "I have been sent by your Heavenly Father to make the grass grow and bring you bread to eat." When you feel impatient because the rain spoils your plans for play, remember every rain-drop brings strength to play and work.

The rain-drops teach us about God's mercy; for he "sendeth the rain on the just and the unjust." Suppose we got rain only when we had done not the slightest thing wrong. How many of us would starve! But God has pity on our weakness, and feeds us with the hand that we strike by our disobedience.

Sometimes when it is raining, and the sun is shining, you can see the beautiful bow spanning the heavens with its bright colors. Some silly people used to believe that if one walked to where the end of the rainbow rested on the earth, he would find a pot of gold.

There is something better than a pot of gold under the rainbow — God's promise is there that the world shall never be drowned again, and his faithfulness to his promises makes us feel safe.

Look closely into the rain-drop, and see if it does not tell you three lessons, — God's care for your body, God's mercy to the sinful, God's faithfulness in keeping his promises to you. — *Junior C. E. World.*

## MISSION NOTES

### Three Hausa Proverbs

"REPENT to God; leave off repenting like a wildcat. It repents with the fowl in its mouth; it puts it not down."

"He who fasts, but at the same time eats in secret, I have no doubt but that you may call him a heathen."

"Whoever chooses this world rejects the choice of the next; he seizes one cowrie, but loses two thousand cowries."

### An African's Description of the Railway

A NATIVE of Uganda, who accompanied the prime minister on his way to the coronation of King Edward, wrote to his friend about the Uganda railway, giving the following description of it: "My friend, I can tell you the Europeans have done a marvelous thing to make the railway and the trains. They fasten ten or fifteen houses together, and attach them to a fireplace, which is as big as an elephant, and the road it goes on is as smooth as the stem of a plantain. It goes as fast as a swallow flying, and everything you see outside flies past you like a spark from a fire. If it were to drop off one of the bridges, not one in it would be saved; for it goes dreadfully quick. The hills it passes are as high as those of Koki, and they have bridged over great valleys so deep that you can not see the bottom when you are going over them."

### Customs of Korean Boys

ONE sees a good deal of the boys in Korea, for they play on the street. The little girls are kept inside after they are eight or nine. If they do come out, they have to cover up their heads and faces with a big veil. This "veil" looks like a big kitchen apron thrown over the head, and held in front under the chin, just allowing room to peek out.

Well, these boys generally wear long red coats fastened to one side. Their clothes are tied on — sometimes buttoned, but that is a luxury. They do not know what pins are. Then the hair is always in a braid down their backs. When they marry, the hair is done up on the top of the head in a queer little knot. A very tight band is worn, coming over the forehead, and then — but never till then — they wear a hat. Before the hair is done up, they always go bareheaded.

Little Korean boys do not wear any clothes at all in summer-time. In winter they wear very wide, clumsy trousers, caught in at the ankle, and straw and wooden shoes. Their clothes are so heavy and clumsy that they can scarcely walk. From being tied to some one's back when a baby, almost every Korean is bow-legged. When boys come to our church, where do you think they like to sit? — Why, right up in front, as near to the preacher as possible, and they are quiet and listen very attentively.

You know we sit on the floor in church in Korea. These boys very seldom have any money for the collection, and they seem really sorry; but money is very scarce among the poorer classes, and probably they never had any of their own. One day I went with one of the missionaries into a courtyard, and we had a meeting just with boys. We had the little organ, and soon the boys came in from the street. Some of them did not know what a prayer was; but when they were told, they all shut their eyes through quite a long prayer in Korean. Then we gave each a card to take home, on which was a verse written in Korean.

The boys are never rude to us. Sometimes they call after me on the street, saying: "Lady, where are you going?" But that is Korean custom,



and quite polite. It is also Korean custom to answer: "Yes, where are you going?" When we say that, they think we have been quite polite and nice to them.—*Great Thoughts.*

### Redemption for Even New Guinea

IN 1871 a beginning was made by a few Polynesian missionaries—themselves recently rescued from lowest degradation. They landed at Port Moresby, from that time the headquarters of the mission. Eighty-two men and one hundred and twenty women and children died of malaria or of violence. It was six years before the first convert was secured. "Now," said Dr. Lawes, well known as one of the leaders of the mission, at a recent meeting, "on the first Sunday of every month three thousand men and women gathered together to the communion, reverently commemorating Christ's death. Many of these he had known as savages in the days of feathers and paint, and many of the native pastors and deacons had on their breasts the tattoo marks recording the lives their spears had destroyed. From the first, young men had been trained to be preachers and teachers, and now there were sixty-four whose ability, earnestness, and general capacity were most encouraging. A college opened twenty-seven years ago, has now twenty-four married students in residence, and these would form the nucleus of a force that might yet bring the tribes of the interior to Christ. The whole coast, from East Cape to Fly River, was dotted with churches and missionaries' houses at irregular intervals."



## INTERMEDIATE LESSON

### VI—The Quails Sent; Miriam and Aaron Murmur against Moses

(May 9)

LESSON SCRIPTURE: Num. 11:4-35; 12.

MEMORY VERSE: Ps. 25:9.

The Lord brought Israel out of Egypt that they might worship him. He had given them the manna every day, and brought the fresh, sparkling streams from the rock, that they might drink. In so many ways he showed them his loving care for them. But just after they left Sinai, where the love of God for them had been so tenderly manifested in giving the law and in providing food for them, they again began to murmur. "They spake against God; they said, Can God furnish a table in the wilderness? Behold, he smote the rock, that the waters gushed out, and the streams overflowed; can he give bread also? can he provide flesh for his people?"

God had provided the very best food for them all these months, but they wanted something different. God gives us, even the children, the very best things for us; but sometimes when we are determined to have our own way, he permits us to have it, just as he gave the children of Israel their own way, to teach us a lesson.

They wanted flesh, although they knew that it was not good for them, and he gave it to them, not for a day, or two days, or a week, but for a whole month. They were so glad to get the flesh, that when the Lord sent the quails into the camp, they "stood up all that day, and all that night, and all the next day, and they gathered the quails." They preserved that which they could not use by drying it, so that they had enough to last a whole month. But while they were still eating the flesh, the Lord permitted a great plague to come upon them, and a large number died.

We can all learn a lesson from this; first, that God sometimes permits us to have our own way, because nothing else will satisfy us, but when we do this, we suffer the consequences. The best way is to do that which we know pleases him. Then again he has told us what is good food, but he does not compel us to eat it; but if we partake of those things which are harmful, we may expect to suffer the consequences.

This experience occurred while they were encamped at Kibroth-hattaavah. (Find this place on the map, and trace out the travels of Israel thus far.) The next place of encampment was at Hazeroth. It was at this place that Miriam became a leper. We all remember how Miriam guarded her baby brother when he was hid in the rushes of the Nile. That brother was Moses. Miriam had been especially chosen of the Lord to bear a part in delivering Israel; but she became proud and haughty, and jealous of Moses. Aaron shared in this also, so both he and Miriam were called to the tabernacle, and there the Lord came down in the pillar of cloud and spoke to them. He showed them how wicked their sin had been. His displeasure was so great that the cloud was withdrawn from the tabernacle, and Miriam became a leper.

They were both ashamed of their sins, and confessed them. Moses, who was the meekest man in all the earth, prayed for them, and in answer to his prayers, Miriam was healed. But she had to remain outside of the camp seven days. As soon as she was outside of the camp, the cloud came and rested over the tabernacle, showing that God's favor still rested upon the tabernacle. The children of Israel stayed at Hazeroth until Miriam came back into camp.

#### Questions

1. Where did the children of Israel camp next after leaving Sinai? What occurred there?
2. Of what did they complain? How had God provided for them?
3. How is the manna described in chapter 11:7-9?
4. What did Moses say to the Lord about the people?
5. What was he told to do?
6. What spirit was placed upon these seventy elders? How were they to help Moses?
7. How did the Lord answer the cry of the people for flesh to eat?
8. What did the people do when the quails began to fall in the camp?
9. What fearful result followed their determination to have their own way?
10. Where did they next encamp?
11. In what wicked practise did Miriam and Aaron engage?
12. How did the Lord look upon their sin?
13. How were they punished? Who prayed the Lord for them?
14. How did the Lord show his displeasure when they had sinned, and that he had not forsaken his people when Miriam was banished from the camp?
15. What lesson may we learn from this experience?



## VI—Walking with God

(May 9)

LESSON SCRIPTURE: 1 Thess. 4:1-12.

MEMORY VERSE: 1 Thess. 4:11.

Finally then, brethren, we beseech and exhort you in the Lord Jesus, that, as ye received of us how ye ought to walk and to please God, even as ye do walk, that ye abound more and more. For you know what charge we gave you through the Lord Jesus. For this is the will of God, even your sanctification, that ye abstain from for-

nication; that each one of you know how to possess himself of his own vessel in sanctification and honor, not in the passion of lust, even as the Gentiles who know not God; that no man transgress, and wrong his brother in the matter: because the Lord is an avenger in all these things, as also we forewarned you and testified. For God called us not for uncleanness, but in sanctification. Therefore he that rejecteth, rejecteth not man, but God, who giveth his Holy Spirit unto you. But concerning love of the brethren, ye have no need that one write unto you: for ye yourselves are taught of God to love one another; for indeed ye do it toward all the brethren that are in Macedonia. But we exhort you, brethren, that ye abound more and more; and that ye study to be quiet, and to do your own business, and to work with your hands, even as we charged you; that ye may walk becomingly toward them that are without, and may have need of nothing.—*American Standard Revised Version.*

#### Questions

1. How does the apostle exhort the church to walk? In whose name does he make this exhortation?
2. What evidence have we from this text that the Christian can not stand still? See also Phil. 3:13, 14.
3. Was this instruction new to the Thessalonians?
4. What is the will of God concerning his people?
5. How is this experience to be obtained? Chapter 5:23. How much does it embrace?
6. How does the life of the Christian differ from that of the one who knows not God? Verse 4; Rom. 6:19.
7. What class of people were they warned not to follow?
8. What warning is given in verse 6? Who will avenge God's people? See also Luke 18:7.
9. To what has God called us?
10. Then in turning from this calling, whom do we reject? Besides calling us to holiness, what has God given by which we may walk as he walked? Verse 8; Rom. 2:12.
11. How is the Christian taught the law of love? Verse 9; Rom. 5:5.
12. How had the Thessalonians given proof of their love? Was this sufficient?
13. What were they, and what are we, exhorted to do?
14. What will be the result of such a course?

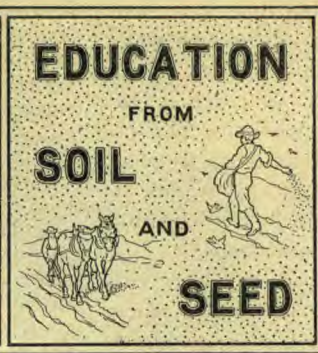
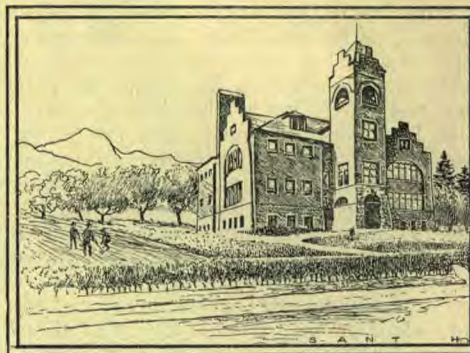
#### Notes

Do not neglect to commit the scripture.

One thought emphasized in this chapter is the fact that the Christian can not stand still. The Christian warfare is a progressive one. We must be nearer the Lord to-day than we were a week ago, else we are farther from him. "The path of the just is as the shining light, that shineth more and more unto the perfect day." The Christian graces are to be added. 2 Peter 1:5-8. Our faith and our love are to abound yet more and more.

The most precious fact of all this is the blessed privilege of growing in him. We can not make ourselves grow or increase, but we can take the food that God provides, and grow thereby. We can read his Word,—not once a week, or occasionally, but regularly every day,—feeding upon it, just as we take food to nourish our physical bodies. This is the secret of life. By feeding upon God's Word and communion with him, we become partakers of his nature. 2 Peter 1:4. Sometimes we are tempted as young people to think that we can not enjoy being Christians as older people do. But every young Christian who will make the study of the Word and prayer the first work of every day, getting up an hour earlier, if necessary, so as to have a quiet time in which to commune with the Lord, will find the way growing brighter and more joyous. New beauties will spring up from the Word of God, and real blessing will be enjoyed in devoted service.





"Let the children and youth prepare the soil and sow the seed"

### VIII—Seed Germination and First Growth

"THE germ in the seed grows by the unfolding of the life principle, which God has implanted."<sup>1</sup> This *life principle*, and the first nourishment for it, were considered in our last study. The next step—how the plant gets its start in the world—furnishes many interesting lessons. Let us learn, first, the conditions necessary for the germination, or sprouting, of seeds:—

1. *Warmth*. Hardy plants, such as wheat, oats, rye, corn, lettuce, cabbage, and wild plants require a temperature of from forty-five to sixty-five degrees. Tender vegetables, like tomatoes and conservatory plants, start with from sixty to eighty degrees of warmth, while tropical plants require seventy-five to one hundred degrees. I have garden seeds in a hot-bed, which are starting nicely with a temperature of fifty to eighty de-

grate of water should be drained.

The temperature of the soil is also raised by warm spring rains. Each pound of rain at sixty degrees carries ten heat units into the ground, and each heat unit can raise the temperature of a pound of sand 5.24° (an inch of rainfall amounts to one hundred and thirteen tons an acre). If the land is well drained, so that the cold water of winter is carried away, the warm spring rains sink quickly into it to impart their warmth. "Thou visitest the earth, and waterest it, thou greatly enrichest it; the river of God is full of water: thou providest them corn, when thou hast so prepared the earth. Thou waterest her furrows abundantly; thou settlest the ridges thereof: thou makest it soft with showers; thou blessest the springing thereof." Ps. 65: 9, 10, R. V.

2. *Moisture* is the second condition required for germination. Seeds can neither sprout nor grow in absolutely dry soil.

3. *Air* is the third requirement. Seeds have been placed in a jar, the air pumped out, and though warm and moist, would not germinate.

Do you want to watch for yourself just how the plant gets its start in the world? If you will take a piece of blotting-paper, and fold it so that, when folded, it will be about four inches square, soak it full of warm water, and lay it on a dinner plate, you will be ready for the experiment. Put between the folds a few kernels of corn, wheat, or any other seeds you can get. Cover the plate with a pane of glass, or another plate, to keep the moisture from escaping. Set your plate of seeds under the kitchen stove or in a warm place.

Look at your experimental garden about every twelve hours. At the first look, notice that your seeds are swollen and feel soft. Next time you may not see much change; but if you have them in a real warm place, look carefully for some change on the embryo side of your corn. At the third or fourth look, you

are quite sure to be rewarded by seeing a little rootlet pushing itself out to make its acquaintance with the world. Watch it closely, and within twenty-four hours, you will see a little tuft of root-hairs surrounding the rootlet, making it look like Fig. 5, which is drawn from corn sprouting in a plate now before me. You will wish you had been looking when this bunch of hairs came out. Keep your blotting-paper moist (not wet), and watch how these hairs increase along the root as it lengthens. If you have several kinds of seeds, notice the different arrangement of the root-hairs. A growing turnip seed is shown in Fig. 7.

Root-hairs have an important office in giving the plant its start. Their specific work is to take in water, containing dissolved food elements, to nourish the plant. Like the open mouth of the bird receiving food from the mother's bill, the root-hairs are the open mouth of the plant. When the seed is in the ground, this bunch of hairs clings firmly to the soil, each hair seeming to grasp a particle of earth, and draw from it the needed food. If you lift from the ground, with a knife, a cabbage, tomato, or other plant just starting, you will find a little bunch of earth clinging close about the root. The earth is held by the root-hairs. A magnifying-glass will enable you to get a better idea of root-hairs.

As the plant extends and multiplies its roots, the hairs are no longer needed, and with the seed itself they die and disappear. In this dying of the seed, our Saviour brought out a beautiful lesson. "Except a corn of wheat fall into the ground and die," he said, "it abideth alone: but if it die, it bringeth forth much fruit." As the seed must give its life to multiply other lives like itself, "so in human life, to give is to live. The life that will be preserved, is the life that is freely given in the service of God and man. The life must be cast into the furrow of the world's need. Self-love, self-interest, must perish." Jesus himself set us the blessed example of this kind of sacrifice.

"The germination of the seed represents the beginning of spiritual life. The mystery of the germination and growth of the seed he [the sower] can not understand." Like the new birth, only its results can be seen and understood.

Seed-planting beautifully illustrates death, and its springing up, the resurrection. 1 Cor. 15: 35-45. "The seed dies to spring forth into new life, and in this we are taught the lesson of the resurrection." J. C. ROGERS.

"A MAN can no more take in a supply of grace for the future than he can eat enough to-day to last him for the next six months, or take sufficient air into his lungs at once to sustain life for a week to come. We must draw upon God's boundless stores of grace from day to day."

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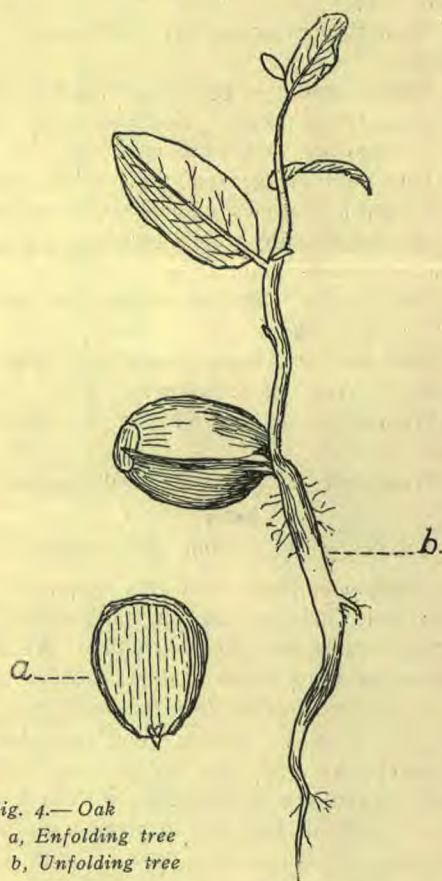


Fig. 4.—Oak  
a, Enfolding tree  
b, Unfolding tree

grees. While these figures give the range of temperature at which various seeds will sprout, each class of seeds has a preference for a certain degree of warmth in which it will do its best. Wheat, rye, oats, and flax germinate most rapidly at seventy-seven to eighty-seven degrees; and corn and pumpkins do best at ninety-two to one hundred and one degrees. If the soil where your corn is planted has a temperature of fifty-one degrees, eleven days are required for it to sprout. If it is warmed at sixty-five degrees, the sprouting is accomplished in only three days.

So it is important to know how to get your soil warmed as early in the spring as possible; for if the seeds remain long in the cold, wet ground, they are likely to decay. Warmth for your seeds is provided in two ways. The first is by the direct action of the sun. It is known that the sun

<sup>1</sup> Quotations are from the Bible, and from "Christ's Object Lessons," pages 62-89.



Fig. 6.—Corn getting its start



Fig. 5.—Germinating corn with root hairs, from life



Fig. 7.—Germinating turnip seed