

THE YOUTH'S INSTRUCTOR

REMEMBER NOW! THY CREATOR IN THE DAYS OF THY YOUTH!

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PLANT LIFE IN WINTER



IN the last article we spoke of the cells of plants and their protoplasmic contents. We have learned that all plant activity and growth are due to the multiplication and action of protoplasm. There is, further, a remarkable action of the protoplasm in the interior of the cell itself. Just as the blood in your body is forever flowing through the heart, the arteries, and

the veins, back into the heart again, thus making round after round, so in these cells there is, under a favorable temperature, a constant streaming of the protoplasm.

Often protoplasm is studded with minute, dark granules called microsomata. These granules are seen "driven backward and forward with the stream, like particles of mud in turbid water," and their motion reveals the motion of the protoplasm in which they lie. There is often more than one current in the same cell. "Granular currents flow hither and thither, now uniting, now again dividing. They often run in opposite directions, even when only a trifling distance apart." In the drawing (see following page) the direction of these currents is indicated by arrows.

I have mentioned this streaming of protoplasm in plants, in order that we may study what happens when a plant freezes, and see how hard it tries to keep from freezing. Professor Kerner, of Germany, has given us some observations made with the *Nitella Syncarpa*, a plant

growing in the clear water of lakes and pools in Central Europe. When this plant is exposed to a temperature where water freezes, its vital activity is not disturbed. The streaming of the protoplasm in the cells is still very active; and even if, by further cooling of the surrounding water two degrees centigrade, needles of ice are formed, the streaming of the protoplasm may still be recognized. The cells are somewhat crowded and compressed by the ice-needles, but even at three degrees below zero centigrade, the protoplasm is never killed.

The water in ponds or lakes, if it remains fluid, never gets colder than this, and near the bottom it may even be warmer; so we see that this little plant is safe from freezing if it does not get too near the surface, where the water turns to ice. But if this plant is exposed to a temperature of -4° , its cells first begin to shrivel up, give up a portion of their water, shrink away from the cell-wall, and make a folded contracted sac in the center of the cell; while the water around it—

out into a space between itself and the cell-wall, so that we have, looking from the outside of the cell, a sphere, or ball, of fairly hard material called the "cell-wall;" inside of this lies a second shell, so to speak, of water; and in the center of this is the little



"THEIR WINTER ROBES OF PUREST WHITE."

between it and the cell-wall—stiffens into ice. The protoplasm is dead. When exposed to a warmer temperature, the ice melts, and the protoplasm expands, and lies close to the cell-wall; but it is incapable of again producing the streaming movement; it has ceased to live.

What I wish you especially to notice is the fact that the protoplasm never freezes without first squeezing out some of the water in itself. This water flows

sac of protoplasm.

If the temperature does not become so cold that the water from the protoplasm is frozen solid, the protoplasm will come to life, if slowly brought back to a warmer temperature. Why is this water squeezed out of the protoplasm when the cell gets cold?—Because the water is what turns to ice; and should the water, while still in the protoplasm, be turned to ice, the protoplasm would at once be killed. In order to adapt itself to a cooler temperature, and still not die, the protoplasm squeezes out this water; then the water may have many crystals of ice all through it, and still do no special harm to the protoplasm. But if the weather grows colder, the water freezes solid, and the protoplasm dies of cold.

You know that salt placed on ice in winter will often cause it to melt when clear water is quickly frozen solid. In the same way, brine, or salt water, will not freeze until the temperature has passed far below the freezing-point; if at last it does freeze, the water separates from the salt before it becomes solid. So with the protoplasm. Like salt water, it will not freeze when ordinary water is turned to solid ice; but when the weather gets colder and colder, the water separates from the protoplasm; and when this water freezes, the plant dies.

You know that some plants can stand much more cold than others. For instance, water freezes at the freezing-point; with a little salt added, it freezes at a somewhat lower temperature. The more salt in the water, the lower its freezing-point. The water of the Green-



"LOW THE TREES BEND THEIR HOAR HEADS."

land Ocean freezes at a temperature three and one-half degrees below that necessary to congeal clear water. "When concentrated till its specific gravity reaches 1.1045, sea-water requires for its congelation a temperature eighteen degrees lower than the ordinary freezing-point."—*Tyndall*. In a similar manner all protoplasm does not freeze with the same amount of cold. House plants will not live where apple and cherry trees are uninjured. Peaches will freeze where evergreen trees flourish luxuriantly.

The stone pine and the shore pine can not bear the frost of winter, while the arolla pine and the Bhotan pine flourish in regions where the trunks and ocular leaves of all the trees are cooled down for weeks to four degrees below zero Fahrenheit, or thirty-six degrees below the freezing-point of water.

On the summit of a fairly high sand-hill, over which the icy north and northeast wind swept almost uninterruptedly, a plant of scurvy-grass was observed by travelers on the northern coast of Siberia. "This plant had begun to bloom in the summer of 1878, and had also partly developed fruit." When the winter began, however, it still possessed ripe fruits, flowers, and flower-buds, as well as succulent green foliage leaves. It was to be expected that during the long winter, under the influence of continuous cold, the delicate succulent tissue would be completely destroyed. In the summer of 1879 the plant, whose tissue had without doubt been cooled down for a long time to twenty-two degrees below zero Fahrenheit, or eighty-six degrees below the freezing point of water, began once more to grow, and continued the growth from where it had been interrupted at the beginning of winter. The leaves resumed their functions as in the previous summer, the flower-buds opened, and new inflorescence sprang from the axils of the leaves, proving that the protoplasm of this plant had not been killed, even by a temperature of fifty-one degrees below zero, or one hundred and thirteen degrees below the freezing-point of water!

Myrtle and orange trees freeze dead in a temperature from four to seven degrees below the freezing-point; cypresses and fig trees at from twelve to sixteen degrees; vines at thirty-eight degrees; oaks and beeches at forty-five degrees; apple and pear trees at fifty-nine degrees; and plum and cherry trees at fifty-six degrees.



Streaming Protoplasm in Cell.

L. A. REED.

GOD IN NATURE

So SOBERLY and softly
The seasons tread their round;
So surely seeds of autumn
In springtime clothe the ground.
Amid their measured music
What watchful ear can hear
God's voice amid the garden?
Yet, hush! for he is here!

No mere machine is nature,
Wound up and left to play;
No wind-harp swept at random
By airs that idly stray:
A spirit sways the music,
A hand is on the chords;
Oh, bow thy head and listen,—
That hand, it is the Lord's!

—Selected.

"As we must ask of God whatever we need, so must we labor for all that we ask."



THAT EVENING STAR

PROBABLY none of the INSTRUCTOR family have failed to notice the bright star that hangs in the western sky during the early part of the evening. This glowing gem has been our evening star since the middle of September, and will continue to claim our admiration for some months. It will be well to watch this planet, and fix its position in mind; for by the last of June it will set too early for satisfactory study, and after July 8 it will set before the sun, to appear as a morning star the remainder of the year.

This planet—Venus—makes an annual journey around the sun, the same as does our own Earth, except that, as it does not have so far to travel, it accomplishes its circuit in about seven and one-half months; or, to be exact, two hundred and twenty-four days. Its path, or orbit, lies inside our own; that is, the path it makes in its yearly journey around the sun is between the sun and the path that our planet makes in its yearly round. For this reason we always see Venus in the west as an evening star, and in the east as a morning star, never varying from these positions. Because its path lies inside that of Earth, we never see the full illuminated face of the planet only as it swings to the farther side of the sun, which places it at the farthest possible distance from Earth.

To the unaided eye, Venus appears as a bright golden star; but when viewed through a telescope of even moderate power, we see it as an immense globe, or world, swinging in space, upheld by the mighty power of God. As we look at this world when it is on the opposite side of the sun, the view is similar to that of the full round moon; but as the planet approaches more nearly to our own position in the heavens, it presents the different crescent phases similar to our moon in passing from the full to the third and last quarter.

Venus has her north and south poles, as has Earth; and these being inclined to the plane of her ecliptic, that world enjoys the seasons of spring, summer, autumn, and winter, the same as do we, only these changes take place more rapidly than on Earth, the whole year being less than eight months long. The days and nights on Venus are similar to our own, except that there is no moon. Why Venus was given no moon we can not tell; some of our sister planets have as many as six and even eight moons, while it is now claimed that Saturn has nine of these shining orbs to rule her night.

Although Venus has a much shorter year than Earth, her days and nights are about twenty-three hours long. The atmosphere being less dense than that of Earth, fewer electric rays coming from the sun are converted into heat and light; therefore we need have no fear about the inhabitants suffering more from heat and light than do we, though they are much nearer the sun. The mean distance of Venus from the sun is about thirty-seven million one hundred and ninety thousand miles, a trifle over two thirds the distance of Earth from our common source of heat, light, and electricity. As far as size is concerned, that world is nearly as large as is the one on which we live. The diameter of Venus, or the distance in miles through the planet, is seven thousand four hundred and eighty, while the diameter of Earth is

seven thousand nine hundred and twenty-six miles.

If the readers of the INSTRUCTOR have never made a study of the starry heavens and the wonderful works of our Heavenly Father, would it not be well to begin now? We shall soon go home to our Father's house, and follow the Lamb "whithersoever he goeth;" and as our Saviour will visit the different worlds that make up his loyal kingdom, how blessed the assurance that we may accompany him!

Let us follow these worlds in their courses around our sun, during the coming year, and become familiar with their movements. "When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained; what is man, that thou art mindful of him? and the son of man, that thou visitest him?" Ps. 8:3, 4. Venus will be brightest about July 8; then it will rapidly fade away, setting earlier each evening until it is lost to sight altogether. Then it will soon appear as a morning star, rising earlier and earlier each morning, becoming brightest about August 14, after which time it will fade away until it finally returns to us again as an evening star.

The coming year will be especially favorable for studying this branch of the handiwork of God, as this summer and fall we shall be favored with several beautiful evening stars, whose names and habits we will study later on. We invite you all to join us in these interviews with our sister worlds.

O. C. GODSMARK, M. D.

OUR CONTRIBUTORS

ONE KIND OF BRAVERY

Boys, shall I frighten you away from this article if I tell you it is to be a sermon,—a little bit of preaching to all manly boys? I am very fond of boys, because I believe in them, and am sure that nearly every one of them is to be trusted. Within the last twelve years, I have had occasion to send strange boys (boys called in from the street) on many errands; and in all that time only one has played me false, filling a can with water instead of getting the oil I sent him for, and keeping my money.

The sort of bravery I wish to write about is the kind that is gentle to animals. You like them, do you not? Perhaps not all have equally your affection; that is why I ask you to keep wide-awake while I preach. One of the noblest virtues is bravery; and the very highest sort of bravery is that which enables a person to fight against the foes within his own nature,—the enemies that would lead him to do a cowardly thing, plan a cowardly act, or think a cowardly thought.

Be brave, boys. Resist all temptations to cruelty, for cruelty is cowardice: no brave man is ever anything but tender. Do not mistake the bully for the hero. What use to boast of bravery, while treading on a worm or throwing a stone after a dog?

Be consistent; let the noble quality we are considering permeate your whole character, not only one phase of it.

When a little girl, I was very fond of young chicks and goslings, and often caught them up to pet them. One day a woman reproved me for "taking hold of the poor soft, tender things." I quickly put down the little fuzzies, much ashamed of an action I had always thought harmless; but what was my surprise to notice my critic smilingly watching a poor

fly, into whose body she had stuck a pin, crawling along, dragging the instrument of torture after it! It may seem great fun sometimes to tease a helpless animal or insect, but remember that the "fun" is all on one side,—the side of the coward.

When the impulse to torment a helpless creature prompts you to plague cats, capture birds, worry dogs, mice, rats,—in fact, anything in your power,—will you not try to imagine how you would feel, if some one as much more powerful than yourself as you are more powerful than the creature you are tormenting, was treating you as you propose to treat it? Sometime your character, your very inner nature, will surely have to pay a heavy debt for every pang you make one of the brute creation suffer. Are you less to be trusted with the lives and happiness of innocent, unoffending creatures than you would be with money left in your care by a stranger?

Boys, dare to be brave.

MIRIAM ZIEBER.

THE CEIBA, OR COTTON TREE

ONE of the most noticeable trees of the West Indies is the ceiba, or, as it is commonly called, the cotton tree. It is usually quite symmetrical, and presents a stately appearance. One peculiarity that distinguishes this tree from its companions is that it usually has no branches low down; often the first branches are as high as fifty feet from the ground. Some of these are as large and long as an ordinary tree. Another peculiarity is a barrel-like bulging a short distance from the ground, making the circumference of the trunk larger there than at the base. This is more noticeable, however, in those trees that have no spur roots running out from the trunk partly above ground. These spur roots are an almost universal characteristic of the tree. Another thing that distinguishes the cotton tree from most other tropical trees is that it is deciduous. Most trees in the tropics shed their leaves gradually, at the same time putting out new ones, so that they are always green. But the cotton tree sheds all its leaves, and then almost immediately puts on its new green coat. As a rule this change takes place in March or April.

The ceiba bears a boll, somewhat similar to that of the cotton plant, which bursts in May and June, and scatters far and wide its long, silky down, full of small, light, flat, brown seeds not unlike those of the milkweed. As far as I can learn, scarcely any use is made of this cotton.

The leaves of the ceiba are small, narrow, and pointed, perhaps four inches long to one wide, and arranged in star-like clusters. The bark is smooth, and has a purplish-gray tint, which is very attractive. The wood is white, and comparatively soft, somewhat like that of the cottonwood of the United States. It is mainly used for canoes. This is done by felling a tree, and hollowing out the trunk. Some of these canoes are over forty feet long, and are supplied with small masts and sails.

Not long ago we took the measurements of a large cotton tree near Santa Cruz, Jamaica. We had no means of accurately determining its height; but its girth, nine feet from the ground, was forty-four feet. The first limb was

fifteen feet in circumference, and we counted sixteen limbs between two and five feet in diameter. The longest of these was one hundred and twelve feet in length. The longest spur root, and there were several, showed above ground for thirty-eight feet from the tree trunk. You can know that the shade of such a tree covers a considerable extent. A tree nearly as large stood not far away.

As the shade was so dense, we could not get a good picture of this stately old monarch, but found one in an open space, which we took for you, and which gives you a good idea of the form and general appearance of these trees.

As one passes along the roads, he can see these trees in every direction; often their limbs are covered with common orchids, and the trunks draped with rootlets growing down from parasites lodged among the branches. Sometimes these roots wrap themselves around the tree, and grow so large and strong as to choke it to death. Then the tree rots away, leaving the parasite to fill out the top, cover up the trunk with its roots, and finally be the tree itself. Thus it literally crushes away the life, and usurps the place of a once sturdy tree,—a good illustration of how a bad habit, if not promptly checked, will eventually ruin and



AN OLD COTTON TREE.

transform into worthlessness what might have been a strong, symmetrical, useful character.

ANNA AGEE HALL.

QUERIES AND QUESTIONS

If the reader will use a dictionary in the effort to answer, more may be seen in the following queries than appears on the surface:—

Is a *pale* person *achromatic*?

Can you *know* a thing and yet not *recognize* it?

Why are hogs and horses classed as *pachyderms*?

Why is a proud woman called an icicle?

Can you jam your finger without being jammed?

What is the difference between *dabbing* and *daubing*? Is one who does either a skilled mechanic?

What is the difference between a *fact* and a *factor*?

What is the difference between a *jabberer*, a *gabbler*, and a *prattler*?

What is the difference between *gaining* and *increasing*?

What is the difference between *idealism* and *truth*?

W. S. CHAPMAN.

THERE are between three and four hundred acres of coal-beds in the United States alone.



FITTING UP A DARK ROOM

THE title "dark room" is a misnomer. One of the best dark rooms I ever had the pleasure of working in was so light that I could read a newspaper in it.

If a beam of sunlight is passed through a prism, it will be separated, and the spectrum will show a gorgeous array of colors. Each of these colors has a different photographic value; that is, light of some colors decomposes the salts of silver more rapidly than does that of others. The red rays, though they have the greatest effect upon the eye, make no impression upon the sensitive plate; yellow rays also have little photographic value. If we can get a pure red light, it will make no difference how much of it we have in the dark room. But it is practically impossible to get a *pure* red light.

When we look through a colored glass, everything seems to have the same color as the glass. The reason for this is that the glass permits light of its own color to pass freely through, while it stops most of the rays of other colors. If glass could be made to stop all the undesirable light, it would be safe to build a dark room entirely of red glass. But some of the violet rays will filter through the best of ruby glass; so the problem is to find how much light can be admitted before the violet rays will have a perceptible effect on the sensitive plate, in the time usually occupied in developing.

Many of my readers will no doubt be able to utilize some dark closet for their dark room. Others may be compelled to build one in a corner of the cellar or garret, or in some outbuilding. The room need not be very large.

Three by four feet will do, though twice that size would be better. All white light must be shut out of the room. If convenient to admit the light through a window, it may be made ten or twelve inches square, and covered with ruby glass or ruby fabric. But daylight is not the most satisfactory light for a beginner to develop by, as it is so much stronger at some hours of the day, and during some conditions of the atmosphere, than at others. An artificial light is preferable because it is much more uniform.

Perhaps some of the INSTRUCTOR family will be unable to provide themselves with a dark room. Such need not despair. After night-fall the kitchen, the bath-room, or even a bedroom may be turned into a dark room by simply closing the shutters and drawing down the blinds.

You can buy a fairly efficient dark-room lantern for about two dollars; but you can make a really good one for almost nothing, if you already have a small hand-lamp. If possible, procure at a drug store a box with a sliding cover, large enough, when standing on end, to accommodate your lamp, and leave three or four inches to spare at the top. In the middle of the end from which the cover slides (we will call it the top), bore or cut a hole about an inch in diameter. Now take a strip of tin three inches wide by four inches long, and

fasten one end on the inside of the box with three or four tacks, so that it will cover the hole. Bend the tin away from the wood about half an inch, and then bend back the other end, and tack it also. This strip of tin will shut in the light and protect the top of the box from burning, at the same time providing a place of egress for the heated air. On one side of the box, near the bottom, make another hole to admit the air. This also must be protected by a strip of tin to shut in the light. It will not be difficult to do this, as light moves only in a straight line, while air does not object to going around a corner. Now cut a window in the side (formerly the bottom) of the box. Never fear about getting the window too large. If the box is strongly made, the entire side may be removed. This window may be covered with ruby fabric, or with two thicknesses of orange or yellow paper. The ruby fabric is preferable, as it gives a better light, and is not so liable to injury.

A dark-room lantern made in this way, and supplied with a good lamp, is equal in every respect to the best that can be bought. If you are unable to get a box with a sliding cover, you can either make one or use something else.

The plan here suggested is not the only one for making a lantern; but if you choose to follow an idea of your own, you should remember to do three things: (1) Provide a way readily to remove and replace the lamp; (2) have plenty of ventilation; and (3) be sure that no white light can escape from the lantern.

If you have a dark room, it should be provided with a table on which to work, and several shelves, where miscellaneous articles may be stored. Above all things, it should be kept clean. If any chemical solutions are spilled on the floor or table, they should be wiped up with a damp cloth before they dry. If this is neglected, you may have trouble with the chemical dust that remains after the water evaporates. Once this dust gets into the air, it seems determined to settle where it is not wanted.

If you have no dark room, and are compelled to do your developing in a room used at other times for other purposes, you should obtain a good-sized dry-goods box, and supply it with shelves and a hinged door. If there is danger of children's getting into it, a lock and key should be added; for some photographic chemicals are poisonous. This box should be large enough to hold all your photographic apparatus. The top may be used as a developing table; but if there are any cracks in it, it should be covered with oilcloth, to prevent any chemicals that may be spilled from reaching the inside of the box.

Even though they may live in a small house, there are few boys who will be unable to find a place in some room for such a box. Then they can do their developing at night, when they will be in nobody's way.

J. EDGAR ROSS.

A POOR workingman told his wife, on awakening one morning, of a curious dream that he had had during the night. He dreamed that he saw coming toward him, in order, four rats. The first one was very fat, and was followed by two lean rats, the rear rat being blind. The dreamer was greatly perplexed, and appealed to his wife concerning the matter; but she, poor woman, could not help him. The son, who heard his father tell the story, volunteered to be the interpreter. "The fat rat," he said, "is the man who keeps the saloon you go to so often; the two lean rats are mother and I; and the blind rat, father, is yourself." — *Exchange*.



FORM OF OBJECTS

BEFORE proceeding to shade a drawing, always see if the outline is correct; for it is useless to begin shading before the outline is completed or true, or to think any amount of shading will make a correct drawing from a poor outline.

It is natural for the untrained eye to notice details separately, and not the whole form, of which the details are a part. It is easy to see the eyes, nose, mouth,—any particular feature of the human head,—but difficult to see these parts together as a unit, as a single form; and yet this power should be acquired, as one possessing it can draw with ease and accuracy.

An aid in seeing objects as a unit is to view them through half-closed eyes, making the object look blurred, so that the details are eliminated, and the mass is plainly seen.

We often allow our knowledge to deceive our eyes. For example, when drawing a tree, our knowledge tells us that the foliage is composed of individual leaves, and using that knowledge in drawing, we try to represent the individual leaves, and of course fail. Unless we are very near the tree, we can not see the leaves separately, but only the mass of leaves taken together. The whole is of more importance than a part; therefore it should be the aim to represent the tree as a whole,—to draw the general shape, and then add some of the details.

It is a good plan, in drawing trees, to take first a single branch of the oak, ash, or whatever tree you wish to represent, and, sitting near enough to see the details, draw it just as accurately as you can, again and again, until you are familiar with its leaves, bark, and method of growth. Then, moving to a position some distance away, take as your subject a larger portion of the tree; study the masses of foliage, the color, the light and shade; and when these have all received careful attention, move still farther away, and consider the tree as a whole. In the illustration you will see how I have made a study of different parts of an oak. Accompanying the last lesson was a drawing of the entire tree.

Remember that in drawing any large form there is danger of sitting too near it. Distance obliterates details, and broadens the masses; therefore it is best to be well removed from your subject, so that you may think of its form as a whole rather than of its details. After such study as this, it would be well to take an entirely different tree, and pursue the same course, afterward comparing your sketches, and making such corrections as an increasing knowledge shall suggest.

When walking along, notice the shape of the side of a building or any inclosed space; notice the shape of a leaf, plant, flower, shrub, or tree. Notice the form of a distant mountain, hill, or plain; of a wood, a field of grain, a meadow, or a clump of trees. Learn to group

the form inclosed by lines. Cultivate the habit of observation; and in a short time the power of seeing any number of objects as a unit will be acquired. Drawing will then receive a new light, and be far more interesting and simple than would be otherwise possible. As soon as we recognize figures that we are acquainted with, their complicated form ceases to a large extent to appear complicated. All forms, however complicated, are composed of other simple forms, or figures, which, if recognized, will make the drawing of them easy. You can not study too carefully the simple forms of any object you wish to draw.

In your drawing use whatever medium best suits your work; and if unsuccessful for a long time with one, try another. Many find a rather soft pencil satisfactory; others can express themselves best in charcoal; while still others prefer pen and ink. Remember that whatever you work with is, after all, only the medium through which you express yourself; and that it is far more important to have something to express, founded on close observation and careful study, than to make beautiful lines, or shades that are without an intelligent meaning.

PEDRO LEMOS.



SOME QUEER CRADLES

WHAT queer cradles some little folks have! The Indian baby is strapped to a board and hung up in a tree, or carried on its mother's back. He has no toys; and if the sun shines in his face or the storm beats on his head, it does not matter.

In Lapland the cradle looks something like a big slipper. The baby is laid in it, covered up with a sheet. There are holes in each side of the cradle, and through these a stout cord is laced across to keep the baby from tumbling out. When the Lapland baby's mother attends church, she leaves him outside to keep warm in a hole made in the snow. Sometimes several cradles are left in a cluster, and then the children set up such a chatter that they disturb the meeting.

When the Laps are traveling from place to place, these cradles are slung on the mothers' shoulders.— *Selected*.

THE KEY

I SMILE, and then the sun comes out;
He hides away when'er I pout;
He seems a very funny sun,
To do whatever he sees done.
And when it rains, he disappears;
Like me, he can't see through the tears.

— *Selected*.

"THERE are pits for the proud, but honors for the humble."



THE FIRST LESSON IN ANATOMY

My body has so many bones it's hard to tell the names of all.

They call the bones the skeleton; some bones are large, and some are small.

My forehead has the frontal bone, and two parietals the crown,

While that called the occipital is found a little lower down.

Two bones, the temporal, contain the organs of our hearing; two,

The nasal bones, project the nose. The upper jaw also has two.

These such a great long name are called—"superior maxillary"—oh!

How could one think such little folks these dreadful names could ever know?

And then we have the lower jaw—"inferior maxillary." My! Such horribly long-drawn-out words,—enough to make us heave a sigh.

The malar, or cheek bones, repose within the face; while just below The curved occipital we find the vertebrae begin to grow.

These are the bones that form the spine; they number twenty-four alone.

The shoulder of two bones is formed—the scapula and collar bone.

One large bone forms the upper arm, and this is called the humerus.

Two form the lower arm; these are the ulna and the radius.

Each finger has three little bones, the carpus eight, the thumb but two,

The metacarpus five—in all, how many in your hand have you?

The sternum the breast-bone is called; the slender ribs are twenty-four;

Ossa innominata, two. Oh, how such names I do deplore!

But then their office is so great, that this, of course, somewhat atones:

The lower limbs to trunk are joined by these important "unnamed" bones.

The femur, or thigh bone, we find is very long and large and round.

The tibia and fibula—two bones below the knee are found.

The knee-cap, or patella, forms a cover for the bending knee.

They say the foot has twenty-six small bones; and that's what puzzles me.

Two hundred and eight bones in all, they say, within the body grow.

I don't see where they all are hid; but then I s'pose it must be so.

I can't name any more; you see they are so many, I so small.

Just wait a while till I get big, and see if I can't name them all.

MRS. A. N. LOPER.

ACCORDING to the *Well-Spring*, a process has been discovered by which sails of vessels of all kinds can be made out of paper pulp, and it is claimed that they serve quite as well as canvas, and are very much cheaper. They swell and flap in the wind like the genuine, old-fashioned article, and are supposed to be untearable.

WHO SENT HASSAN?

HASSAN was a young Turk who lived in Egypt. He loved money, and was anxious to earn a great deal of it by acting as interpreter between his own people and the English and Americans who came to see the wonderful sights in his wonderful land. He wished to learn more, so he could make more money, and begged a lady to give him "something English to read." She gave him a little book that had been given to her by a dying friend. Its title was "Heavenly Light on Earthly Pathways." It was a collection of Scripture verses; and besides these, there had been pasted in the book holy poems and hymns, and little gems of thought.

Hassan took the book, and was very glad to get it. He read it; he found Jesus in it, accepted his name and faith, and went to work



"THEY ARE MANY, I SO SMALL."

for him. Hassan's father disowned him, but that mattered not. He started schools and missions in places where no missionaries had then come; and not only did he work himself, but he also drew his brother into the same work. He set wheels in motion that will influence the world for time and for eternity.

Who sent him?—Certainly not the lady who gave him the book; she was only acting for another,—the dying girl from whose hands she had received it. The poor girl had desired to be a missionary herself. She had prepared for missionary work, and was on the eve of leaving home to go to her Heavenly Father's far-off, foreign vineyard, when her health suddenly failed, and she slowly faded away, leaving the little book as a last legacy to her friend. It thus became her missionary, and did the work that she was not permitted to do.

It is a Sabbath-school story, beautifully told: I give only the outline. Save the beautiful thoughts, the holy hymns; but while you are doing this, give yourselves to God. You know not what may be wrought out through you and

the tender keepsakes that you put into other hands.

Work, little ones, and be sure that you work for Jesus.
AUNTIE WINCE.

WHAT BERNICE LEARNED ABOUT THE TWELVE APOSTLES

V

"I CAN tell you something else I learned this week, grandma," said Bernice. "I found out that Bartholomew had another name,—Nathanael,—or at least it is supposed that this is so; but does the Bible say so, grandpa?"

"I think not, my child," said grandpa; "but I am sure you are right; for although I can not find that the Bible says, directly, that Bartholomew and Nathanael refer to the same person, it is evident that they do. But what did you learn about Bartholomew, Bernice?"

"The history says that after Christ's ascension, he went to India, and after a while he left this place, and moved to Phrygia."

"I have noticed that Philip and Bartholomew are always mentioned together; very likely they were dear friends. But can you tell us, Bernice, what kind of people lived in Phrygia when these apostles went there to labor?" asked Aunt Emma.

"They were heathen. They did not worship the true God at all, and the rulers did not like to have the people converted: they wanted to have the authority over them, so they declared that Bartholomew must be killed. It is dreadful to think that those good men could not tell the people about Christ without making the wicked rulers angry. At last they fastened Bartholomew in some way to a cross, but the history does not tell just how."

"Perhaps they nailed him—that was the custom," said grandpa.

"But I don't think they did, grandpa, because by and by they took him down, and he lived and preached a long time

afterward. I think they must have tied him on—you know that was the way the wicked people did with St. Andrew. The history of the Bible only says that they 'fastened' Bartholomew to a cross."

"I dare say you are right, Bernice," said Aunt Emma; "but you do not tell us why the people took the apostle from the cross."

"Why, Auntie, their act was so very dreadful and wicked that they became ashamed and sorry before they had killed the good man, and so they hurried and took him down,—I was so glad when I read it."

"Do you not think," asked grandpa, "that the Lord troubled them by his Holy Spirit, and made their hearts tender, so that the life of his servant might be spared until he had fully accomplished the work that the Master had for him to do?"

"I think so," said Aunt Emma; "the Lord has work for us each to do, and he will keep us until it is accomplished, if we trust in him. But what finally became of St. Bartholomew, Bernice?"

"Well, he thought it would not do any good to stay at this place any longer, so he went to Lycaonia. He was much more successful here than in Phrygia, and many persons were converted. But at last he went to a very wicked city called Albania, and there he was put to death by the cruel people, whom he had tried so hard to help. They were not contented until they had tortured him to death. It seems to me that they might have been satisfied," continued Bernice, "by just putting him in prison; that would have been bad enough."

Then Bernice crept up on grandma's lap, and laid her head on the kind shoulder, while grandma said: "You have done very well, indeed, my child, and I am sure these studies will be profitable for us all, and particularly for you; because whatever you learn now, while you are young, you will be likely to remember. How necessary and commendable it is for you to store your mind with gems of truth from the word of God before the time comes when, in his providence, we may be brought before kings and rulers of this world, as were the apostles of old, to answer for the hope that is in us."

MRS. L. D. AVERY-STUTTLE.



BEREAN LIBRARY STUDY

Dan. 11: 14-19; "Thoughts on Daniel," pages 230-239

The regular Outline of these studies is published in the *Review and Herald* and also in the *Missionary Magazine*. What is here given is only supplementary, and should be studied in connection with the Outline.

NOTES ON LESSON 16

(March 18-24)

1. *Egypt—the "Gift of the Nile."*—Under the name "king of the south," Egypt is introduced in the prophecy of Daniel 11. The River Nile flowing northward to the Mediterranean Sea, enriched the valley by the overflow of its swollen waters, thus annually depositing a layer of the most fertile soil. Notwithstanding her rainless climate, Egypt, nourished, watered, and cooled by the bounties of her solitary river, rivaled the Tigris-Euphrates basin as a center of early civilization.

2. *The Scene of Many Bible Incidents.*—To the Bible student Egypt is a country of special interest. Abraham at one time sojourned in Egypt because of the famine in other lands. Joseph was sold to merchantmen who took him to Egypt, where he finally became "governor over the land," and made Egypt the granary of the world during the seven years' famine. The family of Jacob was established in Lower Egypt and grew and multiplied. For a time the Hebrews were held in honor by the government, but later suffered oppression. They were set to work enlarging cities, digging the great canal between the Nile and the Arabian Gulf, toiling in the brickyards, and all the time beaten and oppressed by taskmasters, until they broke out in an insurrection. Finally the Lord brought them out of Egypt, and magnified his name in so doing. During the time of the kings of Israel and Judah, the Jews were

alternately in alliance and at war with Egypt for many years. The infant Jesus was taken in haste to Egypt, to avoid the decree of Herod. Later Joseph, Mary, and the Child returned to Nazareth, according to the instruction of the Lord, and in fulfillment of Hosea 11:1.

3. *The First Kind of Writing Paper.*—The oldest material commonly used for writing purposes appears to have been the papyrus, or paper-reed, which flourished so luxuriantly that it formed jungles along the banks of the Nile. This paper-reed had a large, three-sided, tapering stem, two or three inches broad at the base. The reed was prepared for use by peeling off the smooth bark, and cutting the inner mass of white pith lengthwise into thin slices, which were laid side by side, edges lapping. A second layer was then placed crosswise upon the first, and the whole sprinkled with the muddy Nile water. A heavy press united the layers and strips into one mass. After drying, it was cut into sheets of the required size. In a prophecy concerning Egypt, Isaiah says: "The paper reeds by the brooks, by the mouth of the brooks, . . . shall wither, be driven away, and be no more." Isa. 19:7.

4. *The Alexandrian Library.*—Mention is made in our lesson of the burning of that famous library. It was one of the seats of "the learning of the Egyptians," famous throughout the East. At one time the library is said to have comprised, in all its collections, seven hundred thousand volumes. Connected with it was the Museum, a botanical and zoological garden, an astronomical observatory, and a chemical laboratory. Teachers were provided at the public expense, and the scholars of the world resorted there. Probably no other institution ever exerted so wide an influence.

5. *The First of the Cæsars.*—Julius Cæsar was born July 12, B. C. 100. At the age of forty he was still only a soldier in the field. He had been a reckless spendthrift while at the capital, and was pale, slender, prematurely bald, and had no reputation except for personal bravery. Suddenly he became a changed man. In the rivalry of the leaders at Rome, he saw his opportunity. He sought and obtained a command which enabled him to train an army by whose help he became master of Rome. Then it was that the "lightnings of his genius began to flash." He fought at the head of his legions, swam rivers, climbed mountains, ate hard bread, shared the lot of his soldiers,—the hardest of the hardy and the bravest of the brave, all the time heaping up "the glowing embers of his ambition." It seemed that the forces of his mind could never be sufficiently occupied. When riding or resting, he was constantly planning, discussing, or writing, occasionally dictating to as many as seven secretaries at one time.

6. *His Ambition Triumphed.*—The tide of Cæsar's popularity increased, and the Roman Senate heaped titles and honors upon him. One decree made him the father of his country; another, consul for life; another, dictator for life. He was given full charge of the treasury, and a figure of his head was stamped upon the coin. The name of the month in which he was born was changed from *Quintilius* to Julius, and is still our July.

7. *"He Shall Stumble and Fall, and Not Be Found."*—Nothing is more fickle than the favor of the world. The professed friends of Julius Cæsar united with his enemies, in a plot

to take his life. On his way to the Capitol some one handed him a scroll containing the details of the plan, but he had no opportunity to read it. As soon as he had taken his seat in the Senate chamber, the conspirators crowded about him, but he did not surmise their intentions, as they were men who owed their lives and fortunes to his favor. Suddenly there was a gleam of swords and daggers. For a moment he defended himself, but catching sight of Brutus, one whom he had especially loved and trusted, he exclaimed, "*Et tu, Brute!*" (Thou, too, Brutus!), and wrapped his mantle about his face, as he fell pierced to the heart.

MARCH STUDY OF THE FIELD

Part III: "Historical and Political China"

(March 18-24)

1. *Opium.*—Opium is prepared from the juice of the opium poppy. It is said to have been introduced into China about 1280 A. D., probably by the Arabs. It appears to have been used as a medicine before the trade with India began. Most of the opium used in China is imported from India. The poppy is largely cultivated in China also, and the opium produced there competes successfully with that imported.

2. *Opium-Smoking.*—Opium-smoking is prevalent throughout China. The habit is soon formed, and it so weakens the moral nature and the will power that it is very difficult to break. After the habit is formed, if not indulged in at the usual period, there is a state of exhaustion. The smoker lies on a couch, with the smoking paraphernalia near him. With a needle-like implement he places over the bowl of the pipe a small piece of opium, holds it in the flame of the small lamp, and inhales the vapor. In a few seconds the smoke is exhaled. This is repeated again and again, until the Chinaman goes to sleep under the influence of the drug. The use of opium seems to be increasing.

3. *Shanghai.*—This is one of the chief ports. The "Foreign Quarter" was built by Europeans, and is governed by foreigners. The roads of the city are good, and the streets quiet and orderly, presenting a contrast to those in the Chinese quarter. Along the river bank is a broad and well-kept boulevard, called the Bund. On the water side of the Bund are trees and a grass plat. On the other side are mercantile buildings second to none of their kind in the world. At one end of the boulevard are well-kept gardens, with hothouses and conservatories. Here the band plays on summer evenings.

4. *The Island of Hong-Kong.*—This island is situated off the southeast coast of China. Hong-Kong means "The Place of Sweet Streams," being so called from the number of streams that flow through the island. This is one of the small cluster of islands that were called Ladrões, or Thieves, by the Portuguese, from the habits of the old inhabitants. The island is rocky and mountainous. The circumference is about twenty-five miles. Rice, sweet potatoes, and yams are cultivated along the coast, in small patches of land. One of the chief products is building stone, which the Chinese quarry. From May to October the heat is oppressive, and there is much rain and dampness. During part of the winter the weather is cool, dry, and bracing, and sometimes cold.

5. *The Capital of Hong-Kong.*—Victoria, the capital, is situated at the northwest ex-

tremity of the island, and is laid out in fine streets and terraces. In the European section the houses are large, and often beautiful, surrounded with gardens and trees. Some of the industries are sugar-refining, rum-distilling, and ice-making. The harbor is fine.

6. *China and Foreign Trade.*—The first attempt that the English made to open commerce with China was about 1635. The result was not very encouraging. Another attempt was made in 1664. But the Chinese placed restrictions upon trade along the coast, putting an additional tax upon imported and exported goods, and appointing an officer who alone had the right to trade with the merchants. Thus trading was carried on at a disadvantage. Twice England sent over embassies. The first was received civilly by the emperor, but was unsuccessful in gaining that for which it was sent—the removal of the tax on foreign goods, and the opening up of certain ports to foreign trade. The next embassy was not treated so well. America and Europe subsequently sent embassies, but the Chinese were stubborn, and would not yield. The opium war resulted in opening up some ports to trade with other countries. The war with England and France opened further trade.

7. *Chinese Emigrants.*—The following is a description of the way in which eight hundred Chinamen entered a ship that left one of China's southern ports: When the cargo was all on the ship, the passengers were allowed to go aboard. They came on frantically, with a rush, all shouting, and in great excitement. The first thing many of them did after getting on the vessel was to throw down a mat and stand upon it, thus claiming for their use during the voyage the place that the mat occupied. They did not seem to mind at all the fact that others going to their places trampled upon the mat with their dirty feet, and almost destroyed it. In a short time they had spread over the parts of the ship allotted to them.

8. *Life on Board an Emigrant Ship.*—After the passengers had been inspected by the officials, to make certain that they were all proper persons to sail, and that there was no sickness among them, the voyage was begun. The men seemed contented, and behaved very well, considering the great number of them. Although they were so closely packed that they must have been a great inconvenience to one another, disagreements did not occur often. There were sixteen cooks. One cook would seat himself on the rail of the ship, near the immense pot of rice, and as each Chinaman came up with his basket, he would place in it the proper allowance of rice.

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A. S. PARKER, Ticket Agent,
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THE AGONY OF THE CROSS

(March 24, 1900)

Lesson Scriptures.—Matt. 27:44-56; Mark 15:33-41; Luke 23:39-49; John 19:25-30.

Memory Verses.—Rom. 5:6-8.

Time: A. D. 31. *Place:* Calvary. *Persons:* Thieves, centurion, acquaintances of Jesus, women of Galilee, multitude, Jesus.

QUESTIONS

1. As they hung upon the cross, what taunting words did one of the thieves utter? Luke 23:39. What did the other immediately say in reply? Vs. 40, 41. Then, looking to Jesus, what wonderful request did he make? V. 42. What comforting answer came from Jesus' lips. V. 43; note 1.

2. What persons who were especially dear to Jesus stood near the cross? John 19:25, 26. With what words did Jesus make provision for the care of his mother? Vs. 26 (last part), 27.

3. At noon (the sixth hour) what change took place in nature? How long did it continue? Mark 15:33; note 2. While darkness enveloped the cross, what cry escaped the Saviour's lips? V. 34. What did some understand him to say? V. 35. In his agony, what did Jesus now say? John 19:28.

4. Touched with pity, what did one of the bystanders do? Matt. 27:48. What did others, in derision, say? V. 49. With what words of victory did Jesus yield up his life? John 19:30; Luke 23:46; note 3.

5. When Jesus died, what significant event took place in the temple? Mark 15:38; note 4. At the same time, what other startling things occurred? Matt. 27:51-53; note 5.

6. Who took note of these things? What confession were they led to make? V. 54; note 6. What did others do? Luke 23:48. What friends of Jesus remained until the close of the crucifixion scenes? V. 49.

NOTES

1. Whenever or wherever the punctuation of scripture puts a meaning into the words that contradicts the plain teaching of other scripture, it is then the privilege, nay, more, the duty, of the Bible student to change the punctuation. The punctuation of scripture is the work of man; and while generally excellent and trustworthy, there are a few instances in which changes must be made. The words of Jesus to the dying thief furnish an example of one of those instances; for as punctuated in the King James translation, they are made to tell an untruth, because of the insertion of a comma in the wrong place. Written correctly, the text reads, "Verily I say unto thee to-day, Shalt thou [or, thou shalt] be with me in paradise." Read thus, it agrees with the words of Jesus in John 20:17, and at the same time is just as truly a complete answer to the request, "Remember me when thou comest into thy kingdom." When Jesus comes into his kingdom, the kingdom of glory, the dead will be raised, and the penitent thief will be remembered, and caught up to be with Christ in paradise.

2. "Third hour" (Mark 15:25), "sixth hour," "ninth hour" (V. 33). The first hour began at sunrise, the sixth ended at noon, and the twelfth ended at sunset. The third hour divided the period between sunrise and noon, and the ninth between noon and sunset. The first at its close corresponded nearly to seven o'clock A. M. of our time, and the twelfth hour

to six o'clock P. M.—"Bible Manners and Customs."

3. To the angels and the unfallen worlds the cry, "It is finished," had a deep significance. It was for them as well as for us that the great work of redemption had been accomplished. They with us share the fruits of Christ's victory.—"The Desire of Ages," page 758.

4. The services of the temple on earth were but types and shadows pointing forward to the work to be accomplished in and through Christ Jesus, "the Lamb of God, which taketh away the sin of the world." With the death of Christ, the great offering for sin, the temple sacrifices and all that pertained to them came to an end. "The holy of holies had ceased to be the peculiar presence-chamber of Jehovah among men. Nor was a sign wanting that it was so; for the great veil of purple and gold,—sixty feet long and thirty broad,—before the inner sanctuary of the temple, suddenly rent itself in two, from the top to the bottom, at the moment of Christ's death.

5. The resurrection that took place at this time is no doubt that to which Paul refers in his letter to the Ephesians. See Eph. 4:8, margin.

6. It seems strange, though it is true, that of all who assembled to witness the death of Christ, the Romans, who were pagan idolaters, were most tender and susceptible. It was a Roman soldier who, touched with pity at the suffering of Jesus when he said, "I thirst," gave to him the vinegar to moisten his parched lips. It was a Roman centurion who, beholding the death of Jesus, confessed him to be the Son of God. As it was then, even so it is now. The world is more tender toward Christ Jesus in the form of his truth than is the professed church of Christ. The scribes and the elders—the so-called ministers of the day—still stand and ridicule, while the humble hear, believe, and accept.

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No. 23, Accommodation	2.07 P. M.
No. 27, Local Freight	8.25 A. M.

EAST-BOUND.

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FOR EVERY DAY OF THE WEEK

SUNDAY:

"To be nameless in worthy deeds exceeds an infamous history."

MONDAY:

"The lamps I light along life's way
May throw their rays on meager space;
The flowers I scatter, day by day,
May brighten but a little place;
Yet if I light to higher goal
One who the upward path would gain,
Or cheer some sorrowing, starving soul,
I can not count my labor vain."

TUESDAY:

The weightiest words in our language are two of the briefest ones—yes and no. One stands for the surrender of the will, the other for denial; one for gratification, the other for character.—*Theodore T. Munger.*

WEDNESDAY:

"We can not all be heroes,
And thrill a hemisphere
With some great, daring venture,
Some deed that mocks at fear;
Yet we can fill a lifetime
With kindly acts and true:
There's always noble service
For noble souls to do."

THURSDAY:

Christianity wants nothing so much in the world as sunny people. The old are hungrier for love than for bread, and the oil of joy is very cheap; and if you can help the poor on with a garment of praise, it will be better for them than blankets.—*Henry Drummond.*

FRIDAY:

"Lean hard on the heart of the Master,
But give of his strength to all;
For the human touch has a virtue such
That, feeling, we may not fall."

SABBATH:

"Behold the fowls of the air: for they sow not, neither do they reap, nor gather into barns; yet your Heavenly Father feedeth them. Are ye not much better than they?"
Matt. 6:26.

"IT WAS MY FAULT"

How the heart unconsciously warms to the frank, open-hearted boy or girl, man or woman, who is willing to "own up" to a mistake! who does not endeavor to hide behind, "I didn't think," "I'm not supposed to look after that,"

"I forgot," "Somebody else did n't—or did," and the hundred and one excuses of the shiftless person, who tries to deceive his employers or teachers, parents or playmates, into believing that it "was n't really his fault." Sometimes he succeeds—for a little while; but in the long run the world usually estimates him at his true worth: the gold-plated nickel piece is finally held at its true value.

One of the most foolish and futile things a person can do is to try to make out that he is infallible: the very effort shows large self-esteem and lack of thought, and so defeats itself. Every one makes mistakes—but the wise person is careful not to make the same mistake twice; and when he is "overtaken in a fault," he does not double, and twist, and turn, and finally grudgingly admit that "maybe it was his fault, but—" No, indeed! He says, sincerely and at once: "It was my fault. No one else is to blame. I am sorry it happened, and I will try to see that it does not occur again." And when all is done that can be done to remedy the error, he does not waste time in worrying and fretting over that mistake, and so open the way for others, but goes diligently ahead with the day's duties, determined that they shall be done to the very best of his ability.

But, when all is said, it is only common honesty to admit one's failures, and try to correct them. It is the mark of a really fine character to be willing to bear the blame of other people's negligence and carelessness and stupidity, in order to save friction—and to bear it so sweetly and cheerfully as to cover, thereby, "a multitude of sins."

A few days ago I saw a young girl in a trying place. She is a clerk; and an angry customer had come into the store to demand an "explanation" about a package she had ordered and paid for two days before, and which had not been sent. The proprietor, who had taken the order, and who had evidently "forgotten," laid about him for excuses, and finally shifted the blame to his young clerk. There was only one small detail in which she could possibly have been held at fault, but it did not seem to occur to her to excuse herself. Courteously and sweetly she accepted the blame, mollified the irate customer and her somewhat unjust employer, and at the same time unconsciously showed forth the virtue of the "soft answer." In a moment every one was good-natured, and the customer went away declaring "that it really did n't matter much, after all." But think how differently it would have been had Elsie allowed the natural thought that she was not to blame, and that it was n't fair to be so accused, to gain the ascendancy in her heart, and find sharp expression! The customer would have left the store with the resolve never to enter it again, the proprietor would have been angry, and Elsie herself would have been unhappy; for it is a poor sort of satisfaction that comes as the result of setting one's self right at the expense of others.

What impressed me most in this particular case was the way the blame was taken—so quickly, naturally, and with such unconsciousness of doing anything unusual. It showed a heart not filled with vanity and self-love, ready to be wounded at every turn, but the character of the peacemaker, whose joy comes in making others contented, even when it costs something.

When you make mistakes, do not be ashamed to acknowledge them—rather be ashamed not to. Even our blunders, rightly met and frankly acknowledged, may become stepping-stones on which to rise to that perfection in our work

that will make us indeed "workmen approved." And if by chance we are placed where we receive the blame for another's errors, let us think twice before we expose his weakness to save ourselves. Perhaps by bearing the blame for him, we may help him as we never could by leaving him to bear the full weight of his offense alone.

"A GOOD THING TO LET ALONE"

We hear a good deal in these days from certain would-be reformers about "amending the Constitution," and so fixing it up that their ideas and convictions may be carried out. It is therefore refreshing to hear a voice raised in defense of the Constitution as it is,—that of one of the editorial contributors of the *Saturday Evening Post*. Under the heading given above, he says:—

"There are various schemes before Congress to amend the Constitution. Many good people would, if possible, ingraft forever their fads and ideas upon this venerable and imperishable instrument of free government. In order to make any amendment, there must be a two-thirds vote of Congress, and the vote must be ratified by three fourths of the State legislatures. An alternative allows the calling of conventions to do the work, but that is no longer feasible. It is well that our forefathers protected the Constitution so thoroughly; but it is like the other work they did in establishing this Republic. The Constitution was the product of four months of secret and heroic work by the best men of the new nation, presided over by Washington. Many a time results were despaired of, and even Franklin came near giving up hope; but, in the end, the matchless document was adopted. Then it had another trial before the States, and it was with the greatest difficulty that it was finally ratified.

"Two years afterward there were added ten amendments, largely the work of James Madison, and intended to guard the rights of the Constitution and prohibit dangerous exercises of authority. Seven years later, in 1798, the eleventh amendment, referring to suits against the government, was agreed upon. In 1804 came the twelfth amendment, referring to the work of the Presidential Electors. For over sixty years from that date the Constitution remained untouched. Then came the thirteenth amendment, in 1865, confirming the Proclamation of Emancipation. In 1868 followed the fourteenth amendment, making the negroes citizens of the United States; and in 1870 the fifteenth amendment gave these freedmen the right to vote.

"This, in brief, is the history of the grandest plan of government the world has ever known. . . . After we have investigated all the suggestions, and weighed all the propositions, there seems to be nothing to change the fact that, as the Constitution is to-day unequaled and supreme, it would not be wise to endanger it by 'improvements.' Let us hold it sacred!"

"Our strong point may be our weakness. Any one is likely to err in the direction of his greatest strength. Thus the person who is pre-eminently just is likely to be uncharitable and severe. The one who is charitable and gentle, is likely to go beyond the bounds of justice and duty. The brave man often becomes belligerent; the tactful man may easily drift into deceitfulness. We need to guard our life at the point of our greatest power as well as at the point of our greatest weakness."