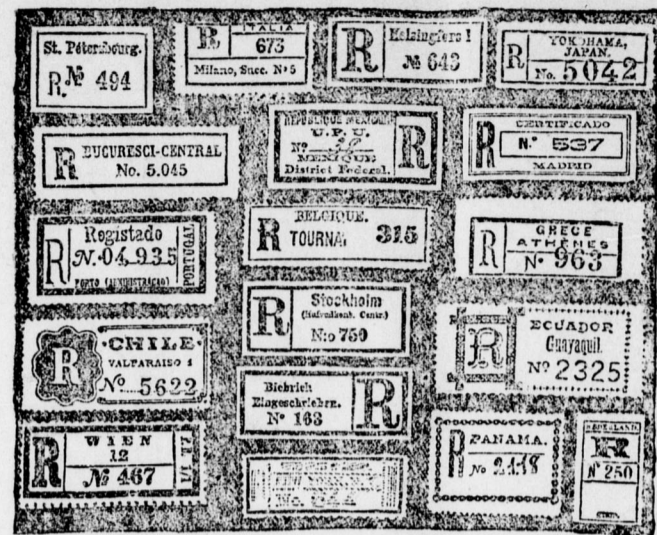


**REPUBLIC**  
**POSTAL STAMPS OF DIFFERENT COUNTRIES.**

How International Franking is Done.



In civilized countries to-day government documents are sent free through the mails and bear stamps showing that such a privilege has been accorded to them. On each of these stamps appears the name of the country or city where it is issued, the number of the document and the letter R, which is the initial of the French word "Recommande" and which indicates that the document is franked, or, in other words, is exempt from the usual postal charges. The stamps are issued in the following countries: Russia, Italy, Finland, Japan, Roumania, Mexico, Spain, Portugal, Belgium, Greece, Chile, Sweden, Ecuador, Germany, Austria, United States of America, Colombia, Holland, Hungary, Persia, Great Britain, Switzerland, Montenegro, Costa Rica, France and Uruguay. As graphologists maintain that the character of every human being is revealed in his or her handwriting, so it is claimed that national character is in each case revealed in these stamps, and especially in the manner in which the capital R is formed. That the formation of this letter is not the same on all the stamps can be seen at a glance. On some it is strictly regular, while on others it is more or less artistic, as the graceful curve of its tall shows.—New York Herald.

**History of a Thunder Storm**

With a Diagram Which Simplifies the Explanation.

In a pamphlet by Alfred F. Sims, prepared for and circulated by the General Electric Company, there is given some interesting data about the history of a thunderstorm, from which the following is taken:

The attendant phenomena of a thunderstorm vary considerably, but are usually as follows: First, cirrus haze appears in the morning. Then dark clouds are seen lying low in the western sky, usually in the afternoon; the air is warm and sultry. Later on the clouds mount to near the zenith, and the air near the ground "a solemn stillness holds." The cloud, on the front of the thunderstorm, is grayish white or reddish and hang over and in front of the main rain cloud. Above these dense dark gray and violet cumulo-stratus clouds are seen, also the towering cumulus clouds which are separated from the cumulo-stratus. Often these are interspersed with one or more thick cumulo-stratus cloud layers and above all is the widely distributed cirro-stratus.

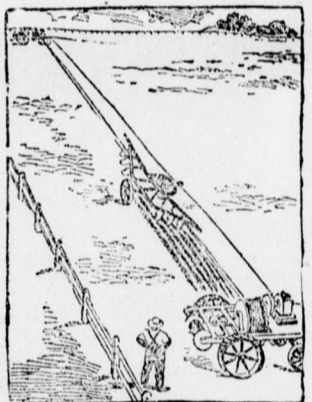
The herald of the storm is heard before the cloud reaches the zenith, and the first rain commences after it. The interval between the first thunder and the beginning of the rain varies from a few minutes to half an hour or more. About five minutes before the rain begins there comes from the west or northwest a brisk wind which suddenly increases in violence and becomes a squall.

The time of heaviest rainfall varies; sometimes it occurs at the beginning and sometimes in the latter part of the time the rain cloud draws over a locality. The lightning strokes and loudest thunder occur some minutes after the rain begins. Gradually the western horizon loses its dark aspect, lightens up a little, and finally opening clouds appear. The storm clouds pass by overhead and the rain ceases shortly before their western edge reaches the zenith. The last thunder is usually heard after the rear edge of the cloud has passed to the zenith. The usual direction of translation of thunderstorms in this latitude is easterly, and they revolve around a horizontal axis, whereas tornadoes revolve around a vertical axis.

Before the thunderstorm the meteorological conditions undergo the following changes: The air pressure and the relative humidity decrease, and the temperature rises; the wind is light. At the moment of bursting of the storm the air pressure and relative humidity increase very rapidly and the temperature falls; the wind suddenly subsides almost immediately afterward, while at times it increases until near the close of the thunderstorm. Toward the end of the thunderstorm the air pressure and the relative hu-

**For Western Farmers.**

The up-to-date farmer with a large acreage finds it slow work to plow his fields with the old single plows of the past, and so he utilizes the electric current and multiplies the number of plow shares to suit himself. In the West this is practically a necessity, on account of the large size of the fields and the cost of labor and teams. Our illustration shows a convenient form of motor plow which has been designed by Conrad Meissner, of Friedrichsburg, Germany. It consists of two electric motors operating winding drums on separate carriages, which may be placed at any required distance apart, only one motor being connected with the main feed wire. To supply power to the second motor a feed cable lying parallel with the traction cable is readjusted at every trip of the plow to follow the latter down the field. The mech-

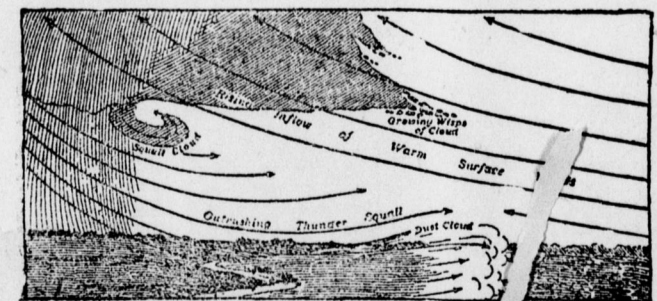


ELECTRICALLY-OPERATED PLOW.

anism is so adjusted that when once set in motion the apparatus practically operates itself, moving the carriages forward at the beginning of each trip to bring the plow-shares in position for the next row of furrows. The plows are attached to a two-wheeled truck, which is pulled back and forth across the field, moving forward at the end of each set of furrows as long as the power is turned on.

**England's Scottish Gardeners.**

To a Scotsman a Scotsman succeeds as head gardener to the king at Sandringham. Mr. Archibald McKellar, who has held the position for many years, has been promoted to Windsor Castle, and his place at His Majesty's Norfolk establishment has been filled by a fellow countryman, Mr. T. H. Cooke. Mr. McKellar belongs to Lichfield, in Argyllshire, and before coming to Sandringham he had charge of the beautiful gardens of Floors Castle, the seat of the Duke of Roxburgh. The gardens at Sandringham are not very extensive, but they are charmingly laid out. The garden at Windsor is historically more interest-



DIAGRAMMATIC SECTION OF A THUNDERSTORM.

midly reach their maximum and the temperature its minimum. The Forth Bridge is constantly being repainted. So vast is the structure that it takes fifty tons of paint to give it one coat, and the area dealt with is something like 120 acres.

ing, for it was there in a "gardyn faire" that James I. of Scotland, although a prisoner, wooed and won his bride, Lady Jane Beaufort.—London Chronicle.

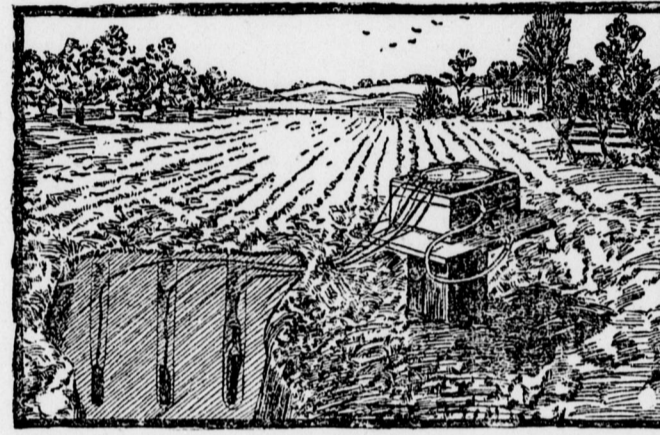
The unsuccessful man realizes that there is plenty of room at the bottom

**INTERESTING NEW SOIL EXPERIMENTS.**

United States Government Using Ingenious Instruments.

The division of soils of the United States Department of Agriculture has just described a new instrument now in use for investigating the properties of soils. This is a great time and labor saving apparatus, giving accurate and reliable results, which otherwise would require months to obtain. The physical properties of soils are recognized by plant physiologists to be of the greatest importance in plant economy. Even in the consideration of climatic conditions it is now generally considered that for most plants the conditions of the soil hold equal rank with atmospheric conditions. A high temperature in the soil under favorable conditions promotes extensive root development; a high atmospheric temperature under equally favorable conditions favors a heavy growth of foliage. A deficiency in water of either air or soil is attended with distress.

The new apparatus as devised by the division of soil is an electric affair. It registers a half dozen or more various soil properties. This method depends upon the principle that the resistance offered to the passage of an electric current from one carbon plate



to another buried in the soil depends upon the amount of moisture present between the carbon plates or electrodes. This resistance is measured.

The illustration shows the instrument as used in the field, with the carbon electrodes and temperature cells in place. The carbon electrodes and temperature cells may be buried in the soil at the beginning of the season and remain undisturbed throughout the year. The moisture record obtained consequently deals with the variation in moisture contents in the same portion of soil. This is one of the advantages of the method, since it has been shown that the moisture content of a seemingly uniform soil may vary as much as four per cent. within an area of one square rod. Consequently, in order to obtain a consistent record of the change in water it is necessary to deal with the same sample of soil, which can only be done by this electrical method.

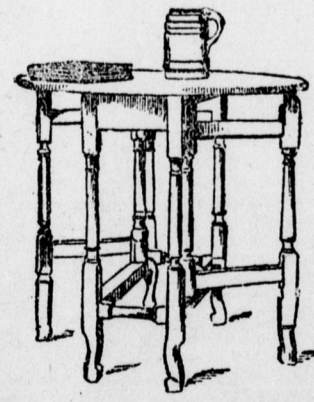
The scale of the instrument is arranged on a decimal plan, so that the various soil properties can be determined directly from the scale of the instrument.

It was observed by Professor W. that soil areas of the Connecticut Valley were practically identical as regards texture and water content with certain areas in Florida upon which the finest of cigar wrappers are being raised from Sumatra seed. Experiments were accordingly made on one of the Connecticut areas, using the same seed and methods of cultivation and curing employed in Florida, with the most satisfactory results.

Should the more extensive experiments now in progress support the earlier work, as there is every reason to expect, the result will be to increase greatly the area adapted to the growth of the finest quality of cigar wrappers known, and there will be raised in this country tobacco now imported to the amount of \$6,000,000 annually.—New York Herald.

**The Gate-Leg Table.**

The gate-leg table is an old-fashioned institution just returning to favor. It has manifold uses. It does



service at a tea or a card party and is convenient to hold a bottle or glass of lemonade, besides a reading chair. When not in use it folds up out of the way and takes a place against the wall.

The interest on the national debt for last year cost each person forty-four cents.

A white disc a foot across can be seen with the naked eye at a distance of 17,250 feet.

**THE ROUND TABLE OF KING ARTHUR.**

The famous Round Table of King Arthur is still preserved in the great hall that was attached to the ancient castle built by William the Conqueror at Winchester in 1235, and it is one of the most interesting relics in all England. The castle of Winchester was destroyed by fire several years ago, but the hall in which Parliament sat for 400 years is still preserved in its original condition, and a secret "trough," as they call it, which was bored through the wall and enabled the king to hear what was going on in Parliament as he sat in his chamber, is still pointed out to visitors. The castle was the residence of all the early Norman kings. Richard Coeur de Lion was received there by his nobles when he returned from captivity. All the Edwards resided there, there Henry VIII. entertained the great emperor, Charles V. of Spain; there Queen Mary entertained Phillip II. of Spain until they were married in the ancient cathedral near by, and there Sir Walter Raleigh was tried and condemned to death after his return from his fruitless explorations in South America.

Winchester is one of the most ancient cities of England, and was set-

led in the year 900 B. C. Julius Caesar lived there while he was in England, and the Roman emperor Vespasian made it his capital. Five hundred years after the birth of Christ the city was captured by Cerdic, who made it the capital of the Saxon dynasty, and in 827, in the cathedral, Egbert was crowned as the first king of all England.

The round table is in an excellent state of preservation and is fastened against the wall at one end of the great room where John Harding, the chronicler, who lived from 1378 to

1465, described it. Henry VIII. repaired it, and placed an iron band around the outside like the tire of a wheel, to keep it together. It was a great curiosity in his day, when it must have been at least 600 years old. The upper part of the table is a network of braces; the upper part is laid off into twenty-four sections, each bearing the name of the knight who occupied it, and you can see the name of Galahad, Launcelot and others mentioned in Tennyson's poem. The chroniclers say that the table has been hanging in its present place since the year 1283, but has been taken down on several occasions. The last time was when the castle burned. The citizens of Winchester were determined to save it, and a hundred men were engaged in removing it from the wall, but when they got it to the floor they found that it was too large to be taken out through the doors and the fire was extinguished before they could take it to pieces.

A Juvenile Banko Man. Tommy had been quiet for fully five minutes. He seemed to be engaged with some deep problem. "Papa," he said. "Well?" "Do unto others as you would have others do unto you—that's the golden rule, isn't it, papa?" "Yes, my son." "And it's puffed right to follow the golden rule, isn't it, papa?" "Yes, indeed."

Tommy rose, went to the cupboard and returned with a knife and a large apple pie. The latter he placed before his astonished sire with great solemnity. "Eat it, papa," he said.—San Francisco Bulletin.

**DR. TALMAGE'S SERMON**

SUNDAY'S DISCOURSE BY THE NOTED

Subject: **The Sin of Borrowing Trouble—A Bad Habit That Unfits Many to Properly Discharge the Duties of Life—God Will Meet Our Exigencies as They Arise** (Copyright 1901.)

WASHINGTON, D. C.—In this discourse Dr. Talmage shows the folly of allowing forebodings to influence us and how expectation of evil weakens and destroys; text, Matthew vi, 34, "Sufficient unto the day is the evil thereof."

The life of every man, woman and child is as closely under the divine care as though such person were the only man, woman or child. There are no accidents. As there is a law of storms in the natural world, so there is a law of trouble, a law of disaster, a law of misfortune, but the majority of the troubles of life are imaginary, and the most of those anticipated never come. At any rate, there is no cause of complaint against God. See how much He has done to make you happy—His sunshine filling the earth with glory, making rainbow for the storm and halo for the mountain, greenness for the moss, saffron for the cloud and crystal for the billow and procession of bannered flame through the opening gates of the morning, chaffinches to sing, rivers to glitter, seas to chant and springs to blossom and overpowering all other sounds with its song and over-reaching all other splendor with its triumph, covering up all other beauty with its garlands and outflashing all other thrones with its dominion—deliverance for a lost world through the Great Redeemer.

I discourse of the sin of borrowing trouble. First, such a habit of mind and heart is wrong because it puts one into a dependency that it fits him for duty. I planted two rose bushes in my garden. The one thrived beautifully; the other perished. I found the dead one on the shady side of the house. Our dispositions, like our plants, need sunshine. Expectancy of repulse is the cause of many secular and religious failures. Fear of bankruptcy has upturn many a fine business and sent the man dodging among the note shavers. Fear of slander and abuse has often invited the long-headed vultures of scorn and backbiting. Many of the misfortunes of life, like hyenas, flee if you courageously meet them.

How poorly prepared for religious duty is a man who sits down under the gloom of expected misfortune! If he says, "I do not think I shall be answered." If he gives, he says, "I expect they will steal the money." Helen Chalmers told me that her father, Thomas Chalmers, in the darkest hour of the Free Church of Scotland and when the woe of the land seemed to weigh upon his heart, said to his children, "Come, let us go out and play ball or fly kite," and the only difficulty in the play was that the children could not keep up with their father. The McChesnes and the Summerfields of the church who did the most good toiled in the sunlight. Away with the horrors! They distill poison. They dig graves, and if they could climb so high they would drown the rejoicings of heaven with sobs and wailing.

You will have nothing but misfortune in the future if you sedulously watch for it. How shall a man catch the right kind of fish if he arranges line and hook and bait to catch lizards and water serpents? Hunt for bats and hawks, and bats and hawks you will find. Hunt for robin red-breasts, and you will find robin red-breasts. One night an eagle and an owl got into fierce battle. The eagle, unused to the night, was no match for the owl, which is most at home in the darkness, and the king of the air fell helpless, but the morning rose, and with it rose the eagle, and the owl, and the night hawk, and the bats came a second time to the combat. Now, the eagle in the sunlight, with a stroke of his talons and a great cry cleared the air, and his enemies, with torn feathers and splashed with blood, tumbled into the thickets. Ye are the children of light. In the night of dependency you will have no chance against your enemies that flock up from beneath, but trusting in God and standing in the sunshine of the promises you shall "renew your youth like the eagle."

Again, the habit of borrowing trouble is wrong, because it has a tendency to make us overlook present blessing. To slake man's thirst the rock is cleft, and cool water leap into his brimming cup. To feed his hunger the fields bow down with bending wheat, and the cattle come down from the clover pasture with milk, and the orchards yellow and ripen, casting their juicy fruits into his lap. Alas, that amid such exuberance of blessing man should grow as though he were a soldier on half rations or a sailor on short allowance; that a man should stand neck deep in harvests looking forward to famine; that one should feel the strong pulses of health marching with regular tread all the avenues of life and yet tremble at the expected assault of sickness; that a man should sit in his pleasant home, fearful that ruthless want will rattle the broken window sash with tempest and sweep the coals from the hearth and pour hunger into the bread tray; that a man fed by Him who owns all the harvests should expect to starve; that one whom God loves and surrounds with benediction and attends with angelic motherly fondness should be looking for a heritage of tears! Has God been hard with thee that thou shouldst be foreboding? Has He stinted thy board? Has He covered thee with rags? Has He spread traps for thy feet and galled thy cup and rained thy soul and wrecked thee with storm and thundered upon thee with a life full of calamity?

If your father or brother come into your bank, where gold and silver are lying about, you do not watch them, for you know they are honest, but if an entire stranger come by the safe you keep your eye on him, for you do not know his designs. So some men treat God not as a father, but a stranger, and act suspiciously toward Him. It is high time you began to thank God for present blessing, for thank Him for your children, happy buoyant and bounding; praise Him for your home, with its fountain of song and laughter; adore Him for morning light and evening shadow; praise Him for fresh, cool water babbling from the rock, leaping into the cascade, soaring in the mist, falling in the shower, dashing against the rocks and clapping its hands in the tempest; love Him for the grass that cushions the earth and the clouds that curtain the sky and the foliage that waves in the forest; thank Him for a Bible to read and a Saviour to deliver.

Many Christians think it a bad sign to be jubilant, and their work of self-examination is a heaving down of their brighter experiences. Like a boy with a new jack-knife hacking everything he comes across, their self-examination is religious cutting to pieces of the greatest things they can lay their hands on. They imagine they are doing God's service when they are going about borrowing trouble, and borrowing it at thirty per cent., which is always a sure precursor of bankruptcy.

Again, the habit of borrowing trouble is wrong because the present is sufficiently taxed with trial. God sees that we all need a certain amount of trouble, and so He apportions it for all the days and years of our life. Alas for the policy of gathering it all up for one day or year! Cradling to put upon the back of one camel all the cargo intended for the entire caravan. I never look at my memorandum

book to see what engagements and duties are far ahead. Let every week bear its own burdens. The shadows of to-day are thick enough. Why implore the presence of other shadows? The cup is already distasteful. Why inlure to disasters far distant to come and wring out more gall in the bitterness? Are we such champions that, having won the belt in former encounters, we can go forth to challenge all the future?

Here are business men just able to manage affairs as they now are, but how if a panic should come and my investments should fall? Or to-morrow and write on your daybook, or on your ledger or on your money safe, "Sufficient unto the day is the evil thereof." Do not worry about notes that are far from due. Do not pile up on your counting desk the financial anxieties of the next twenty years. The God who has taken care of your worldly occupation, guarding your store from the torch of the incendiary and the key of the burglar, will be as faithful in 1910 as in 1901. God's hand is mightier than the machinations of stock gamblers, or the plots of political demagogues or the red right arm of revolution, and the darkness will fly and the storm fall dead at his feet.

So there are persons in feeble health, and they are worried about the future. They make out very well now, but they are bothering themselves about future pleurisy and rheumatism and neuralgia and fevers. Their eyesight is feeble, and they are worried lest they entirely lose it. Their hearing is indistinct, and they are alarmed lest they become entirely deaf. They fret and fidget today and are expecting an attack of typhoid. They have been troubled for weeks with some perplexing malady and dread becoming life-long invalids. Take care of your health now and trust God for the future. Be not guilty of the blasphemy of asking Him to take care of you when you sleep with your windows tight down or eat chicken salad at 11 o'clock at night or sit down on a cake of ice to cool off. Be prudent and then be confident. Some of the sickest people have been the most useful. It was so with the noble and saintly, daily, and Robert Hall, who used to stop in the midst of his sermon and lie down on the pulpit sofa to rest and then go on again. Theodore Frelinghuysen had a great horror of dying till the time came, and then went peacefully. The care of the present and the future look not for itself. "Sufficient unto the day is the evil thereof."

Again, the habit of borrowing misfortune is wrong because it unfits us for it when it actually does come. We cannot always have smooth sailing. The sea will sometimes tumble among declivities and mount a steep and be thorn pierced. Judas will kiss our cheek and then sell us for thirty pieces of silver. Human scorn will try to crush us between two thieves. We will hear the iron gate of the sepulcher creek and grind and shut in our kindred. But we cannot get ready for these things by forebodings. They who fight imaginary woes will come out of breath into conflict with the armed disasters of the future. Their ammunition will have been wasted and their hearts come under the guns of real misfortune. Boys in attempting to jump a wall sometimes go so far back in order to get impatient that when they come up they are exhausted, and these long races in order to get spring enough to vault trouble bring us up at last to the dreadful reality with our strength gone.

Finally, the habit of borrowing trouble is wrong because it is unbelieving. God has promised to take care of us. The Bible blooms with assurances. Your hunger will be long wasted and your thirst alleviated, your sorrows will be healed. God will sandal your feet and smooth your path, and along by frowning crag and opening grave sound the voices of victory and good cheer. The summer clouds that seem thunder-charged really carry in their bosom harvests of wheat and sheaves of corn and vineyards purpling for the wine press. The wrathful wave will kiss the feet of the great storm walker. Our great Joshua will command and above your still the sun of prosperity will stand still. Break and wave struck Palms shall have anacolytic vision, and you shall hear the cry of elders and the sweep of wings and trumpets of salvation and the voice of hallelujah unto God forever.

Your way may wind along dangerous head paths and amid wolf's howl and the scream of the vulture, but the way still winds upward till angels guard it and trees of life overarch it, and thrones line it, and crystalline fountains leap on it, and the pathway ends at gates that are pearl, and streets that are gold, and temples that are always open, and hills that quake with perpetual song and a joy mingling forever Sabbath and jubilee and triumph and coronation.

Let pleasure chant her siren song; 'Tis not the song for me.

To weeping wail a long, For this is heaven's decree.

But there's a song the ransomed sing To Jesus, their exalted King, With joyful heart and tongue, Oh, that's the song for me!

Courage, my brother! the father does not give to his son at school enough money to last him several years, but as the bills for tuition and board and clothing and books come in pays them. So God will not give you grace all at once for the future, but will meet all your exigencies as they come. Through earnest prayer trust Him. People ascribe the success of a certain line of steamers to business skill, and know not the fact that when that line of steamers started the wife of the proprietor passed the whole of each day when a steamer sailed in prayer to God for its safety and the success of the line. Put everything in God's hands and leave it there. Large interest money to pay will soon eat up a farm, a store, an estate and the interest on the money troubles will swamp anybody. "Sufficient unto the day is the evil thereof."

**The Mountain Creation.**

Moses was to build the tabernacle after the pattern he had received in the mount. God was the architect, Moses only the builder. That method saved much discussion and trouble with the workers about the tabernacle. There are some things the world cannot change; God's plan for a human life is never out of date; the mountain architecture is perfect. It is neither Grecian nor Roman; it does not follow any human school; it is after the heavenly design. See that you make your architecture after the holy pattern, perfected from foundation to capstone. Strange to say that while there is wide difference of opinion as to what is artistic and beautiful in human workmanship, men are of one mind when they stand before the mountain-creation. The sermon on the mount is the pattern of the mount, the architecture of a right life. When men cry: "Back to Christ," urging us to conform to the principles and rules of the Master; they are simply repeating to all men the command that was given to Moses: "See that thou make all things according to the pattern shewed thee in the mount." What perfect harmony there would be among the life-buildings in the world if we followed the heavenly designs!—Baptist Union.

**The Setting of a Hope.**

The setting of a great hope is like the setting of the sun. The brightness of our life is gone. Shadows of evening fall around us and the world seems but a dim reflection—itsself a broader shadow; we look forward into the coming lonely night. The sun withdraws into itself. Then stars arise and the night is hallowed. —H. W. Longfellow.