

How They Protect the Orange Groves in Sunny Florida.

By D. Allen Willey, of Baltimore.

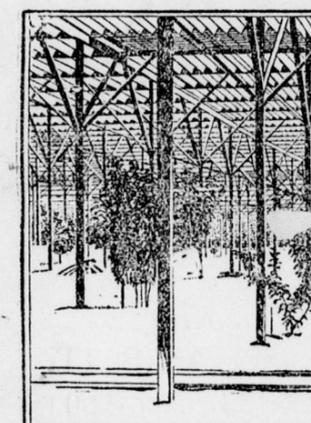
For the last five years parts of Central and Southern Florida have been visited by freezing weather for the first time in the history of that beautiful State. This section of the United States is one of the centres for the production of oranges and bananas, and large quantities of vegetables are also raised during the winter to be sold in the Northern cities. The first visitation of frost found most of the orange growers altogether unprepared for it, and the result was that in a single night plantations covering fully fifty square miles were utterly and hopelessly ruined. The action of the frost turned the leaves from green to black, and the stems of the oranges shrivelled so that the fruit fell to the ground frozen and worthless. In some cases where the earth deeply covered the roots of the trees a little life was left,



SQUARE TENT WITH WOODEN FRAMEWORK, SHOWING CLOTH COVERING ROLLED UP.

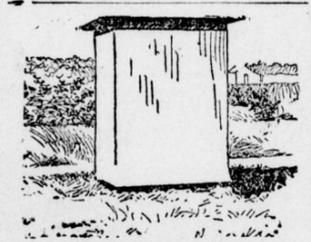
and the growers were able to start them again by cutting the trunk of the tree down to a few inches from the ground. The destruction was terrible. Entire groves, ranging from fifty to 100 acres in extent, were taken up by the roots, burned and the ashes used to fertilize slips from which new orchards were to be raised.

Various plans have since been arranged to protect the groves from cold weather, and as a result, the visitor to Florida in January can ride a hundred miles through orange groves which are inclosed in vast, covered-in houses, and single trees which are



INTERIOR OF A SHED COVERING AN ORANGE GROVE OF THIRTY-SEVEN ACRES.

carefully covered by tents. Not only are they protected by cloth and wood, but heat in various forms is also provided to keep the air warm enough, so that the growing fruit, as well as the smaller branches, will remain unharmed. The houses, or sheds, cover from an acre to forty acres of ground. The accompanying large picture is a



SAME TENT AS IT LOOKS WHEN THE COLD WEATHER CALLS UPON IT TO PROTECT ITS DELICATE OCCUPANT.

section of a thirty-seven-acre shed, as it is termed, built near Deland, Fla. In constructing a shed rows of pine posts, each six inches square, are erected from ten feet to fifteen feet apart. These are connected by stringers nailed to the tops of the posts, and are also supported by wooden braces projecting diagonally. The framework is covered at the sides with pine boards, the ends of which overlap like the clapboards of a dwelling. The sides are put together in sections, so that they can be moved on rollers—forming huge sliding doors. The roof is formed of thin boards a foot in width, fastened into sockets in the stringers, like the slats of a window-shutter or blind. Sections of the slats are connected with wiring or small ropes, so that by pulling the wire the row of slats can be closed or opened at any angle desired. The shed is about twenty feet in height. As a full-grown orange tree seldom ranges over twelve feet in Florida ample space is afforded for air to circulate above the top branches.

All the sheds or houses are constructed of pine, but, instead of the slat roof, some have the top covered with thin boards, sliding in grooves,

so that any portion of the roof can be removed in a few minutes if desired. The sides of some of the sheds are also made upon the slat principle, so that



A ROUND TENT OPEN ON A FINE, SUNNY DAY.

they may be opened or closed like the roof of the shed first described.

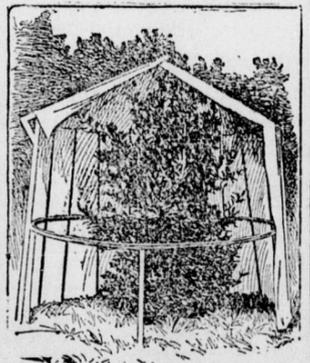
The tents are only made to protect single trees, and an orchard thus covered looks from a distance like a military encampment. One form of tent is part wood and part cloth. Four posts of pine are fastened in the ground, upholding a framework on which boards are nailed. Below the stationary framework is another which slides up and down the outside of the posts, which are placed outside the tree to be protected. Between the movable and the stationary framework are tacked strips of cloth, sewed together and covered with a mixture of paraffin or other solution to protect it from the action of the weather. When the tent is opened the cloth is neatly tucked in place between the framework at the top, resembling an accordion when shut up. By pulling a small cord the movable framework is released and drops to the ground, completely covering the tree. At a distance of 100 feet it looks like an ordinary wooden shed. The round tent commonly used is supported on a framework like the ribs of an umbrella; but instead of the centre stick being straight it is composed of two pieces, and near the top of the tree itself an arm projects inwardly at an angle. The main stick is composed of a post about three inches square, planted to a depth of several feet in the ground. The end of the "tent" is fastened to it by large tacks, and the ribs which hold the cloth in place when the tent is spread are made of light wooden strips fastened to the material in the same way, at intervals of from one foot to two feet, according to its size. Around the tree is placed a hoop of hardwood firmly braced, which answers to the ribs



extending from the centre stick of the "umbrella" to its ribs. When it is desired to close the tent the cord fastening the cloth to the main post is unhooked and merely drawn around the hoop. It completely hides the tree from view, and is kept from falling open by tying the ends together as in an ordinary tent.

Most of the tent cloth is of light-weight sheeting or thin cotton duck, covered on the outside with some compound which will keep it from being affected by mildew or from rotting. It is sewed with heavy linen thread, and fastened to the framework as securely as possible to prevent the material from being torn by the high winds which frequently accompany changes of weather in Florida.

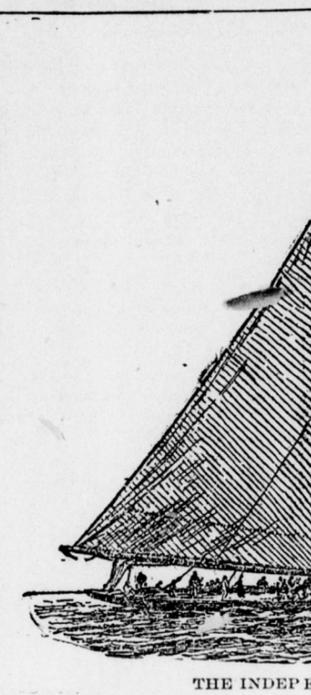
Some of the grove-owners remove the sheds and tents in the spring and replace them at the beginning of winter in order to give the trees the benefit of the light and air. In ordinary weather the roofs and sides of the sheds are left open, as otherwise the fruit would not mature rapidly enough and would be of a poor quality. At



TENT OPEN ON THE SUNNY AND CLOSED ON THE NORTH, OR COLD, SIDE.

all of the towns in the orange-growing centre are telegraph offices connected with the United States Signal Service Bureau at Washington. If a

"cold wave" is predicted the fruit-growers order all of their employes into the groves to close the sheds and draw the tents. These coverings will keep the air from fifteen degrees to twenty degrees warmer than without the protection; but it may be necessary to use artificial heat. In the large sheds fires of pine wood are sometimes made, but as there is danger of igniting the framework from the sparks "salamanders" are preferred. These are merely large rings of cast iron which overlap each other and in which coke or wood can be burned. They distribute the heat much more than an ordinary stove and confine the sparks. Stoves are also used in various forms according to the size of the shed, and the heat is conveyed by means of long stretches of sheet-iron pipe through the rows of trees. In the tents hand-lamps are placed. A lamp containing a pint of oil will burn eighteen hours and furnish enough heat properly to warm the air around a ten-foot orange tree.—The World Wide Magazine.



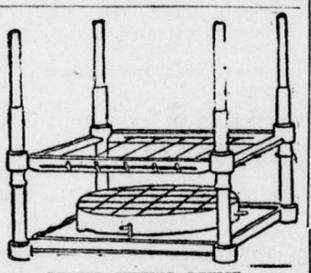
THE INDEPENDENCE.

BUTTER IN BRICKS.

Rapid Production of Attractive One or Two Pound Blocks.

Grocers and other retailers of butter buy a good deal of that commodity by the tub, and sell it in small quantities. In order to save time when several customers are waiting, it will be an advantage to have the stuff cut up in advance into one or two pound bricks. Anticipating a rush, many grocers put sugar and tea up in ready-made parcels. But each lot is carefully weighed out by itself. An ingenious Western inventor has thought of a way to cut a tub of butter up into blocks on the wholesale plan.

For this work a machine is used, a part of which is shown in the drawing. The frame holding the cross wire can be slipped up and down and entirely removed from the uprights. This is done at the beginning of the operations. A tub of butter is turned out on the criss-cross wooden block, pains being taken to keep it square and even. Then on one of the corner posts is temporarily hinged three horizontal wires tightly stretched one above the other. By swinging this frame sideways slowly and steadily the wires will cut the mass of butter into four layers. The uppermost is very thin and doesn't count. The others are of uniform thickness. The first cut is now detached from the machine



BUTTER CUTTING DEVICE.

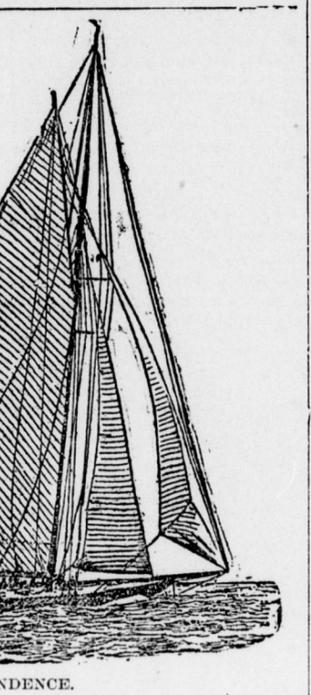
and the other frame fitted on over the four posts. This is forced downward steadily until the wires have cut to the bottom, and then raised again. By turning the wooden block a quarter way round, and repeating the cutting operation, the butter will be reduced to blocks of the desired shape. It is claimed that the wires can be adjusted so as to vary the weight from half a pound to two pounds. A gauge shows how to set them. The imperfect bricks may be packed in a mold furnished with the machines, which, when full, is overturned on the board and two cuts are made with the frame to produce sixteen more bricks. How far the well-known difference in the density of butter would offset the weight of the bricks is a nice question.—New York Tribune.

What Are We Coming To?
The fond mother had just killed ten of her twelve children.
She was a happy wife and her husband came home early every night.
"Now," she said with a contented sigh, "John can close with the agent for that house."
This was twenty years from now, when no landlord would accept a tenant with more than two children.—New York Sun.

The Independence in Racing Trim.

The Independence, the Lawson boat which is to try her metal against the Constitution, has been put in racing trim. A coat of silver gray paint was applied to the steel topsides and as the color is a trifle lighter than the cement paint which was on before she looks much neater. A stripe, beginning with a scroll at the bow and ending in one at the stern, was put on in gold leaf. On deck, the canvas covering has been painted a light green shade, while the steel waterways were given a coat of yellow.

An important change will be the shifting forward of the steel mast. It was found that it had a little too much rake aft and to remedy this the wedges on the forward side of the mast will



THE INDEPENDENCE.

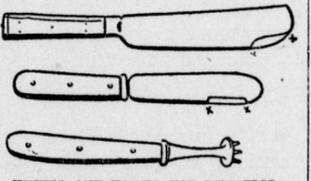
be thinned down an inch, while those at the rear are replaced by thicker ones.

Blocks are to be substituted for the bell-mouthed jibsheet leads immediately. The latter are immovable and Captain Haff has come to the conclusion that it would be safer in a stiff blow to have blocks and thus overcome the danger of the brass edge of the present leads sawing through the manila.

In speaking of the difference in the construction of the Constitution's mast and that of the Independence, Captain Haff said:
"The mast in our boat should be stronger, not only because the steel is thicker, but because there is a diaphragm plate every six feet. This feature is lacking in that of the Constitution on account of the telescopic topmast scheme. We cannot be too careful in having our own shrouds looked after carefully and I guess we won't take another trip until we are sure that the same thing don't happen to us."

Diamonds in Meteorites.
The largest iron meteorites come from the Canon Diablo, in Arizona, and were discovered about ten years ago. Of this famous "fall," Professor Ward, the natural history collector, has seven large specimens and twenty or more smaller ones. The surface of the larger ones is covered with indentations or pits scooped out by the air through which they fell, as if by a chisel. Sometimes holes were thus bored entirely through these openings, that the specimens may be suspended for more effective display. The Canon Diablo meteorites are remarkable in being one of the two known kinds that contain diamonds. The diamonds are black and microscopic, and have no commercial value.—New York Post.

Cutlery For Lunatics.
Cutlery for lunatics was recently advertised for by the British Admiralty office, and it brought to light some unusual cutlery that while made regularly in Sheffield for the past twenty years or more is but little known. The illustrations represent two types of knives and one type of fork. The knives have perfectly dull,



KNIVES AND FORKS FOR LUNATICS.

round blades, with a small cutting area about an inch long, situated in such a way that it cannot be used except for the purpose intended. The fork terminates in a small round ball, on which there are three prongs about half an inch long. The idea in this unique cutlery, of course, was to devise knives and forks that could not be used as instruments of attack upon attendants, nor for self-mutilation.

It is something new for a prince to come to America because of a marriage already contracted, but the change is hardly for the worse.

DR. TALMAGE'S SERMON

SUNDAY'S DISCOURSE BY THE NOTED DIVINE.

Subject: The Nature of God — The Least Understood Being in the Universe — Evidence of Divine Power — God's Infinite Love—His Nature Never Changes (Copyright 1901.)

WASHINGTON, D. C.—In this discourse Dr. Talmage raises high expectations of the day when that which is now only dimly seen will be fully revealed; text, Job xxvi, 14: "Lo, how little a portion is heard of Him? But the thunder of His power who can understand?"

The least understood being in the universe is God. Blasphemous would be any attempt by painting or sculpture to represent Him. Egyptian hieroglyphs tried to suggest Him by putting the figure of an eye upon a sword, implying that God's rules, but how imperfect the suggestion! When we speak of Him it is most always in a language figurative. He is "Light" or "Dayspring From on High," or He is a "High Tower" or the "Fountain of Living Waters." His splendor is so great that no man can see Him and live. When the group of great theologians assembled in Westminster Abbey for the purpose of making a system of religious belief, they first of all wanted an answer to the question, "Who is God?" No one desired to undertake the answering of that overmastering question. They finally concluded to give the task to the youngest man in the assembly, who happened to be Rev. George Gillespie. He consented to undertake it on the condition that they would first unite with him in prayer for divine direction. He began his prayer by saying, "O God, Thou art a spirit, infinite, eternal and unchangeable in Thy being, wisdom, power, holiness, justice, goodness and truth." That first sentence of Gillespie's prayer was unanimously adopted by the assembly as the best definition of God. But, after all, it was only a partial success, and after everything that language can do when put to the utmost strain and all we can see of God in the natural world and realize of God in the providential world we are forced to cry out with Job in my text: "Lo, these are parts of His ways. But how little a portion of Him is heard? But the thunder of His power who can understand?"

Archbishop Tillotson and Dr. Dick and Timothy Dwight and Jonathan Edwards of the past and the mightiest theologians of this young century have discoursed upon the power of God, His omnipotence. And we have all seen demonstration of God's almightiness. It might have been far out at sea when in an equinoctial gale God showed what He could do with the waters. It might have been in an August thunderstorm in the mountains when God showed what He could do with the lightnings. It might have been in South America when God showed what He could do with the earthquakes. It might have been among the Alps when God showed what He could do with the avalanches. Our cheek was blanched, our breath stopped, our pulses fluttered, our whole being was terrorized, but we had seen only an instance of divine strength. What was the power of the storm compared with the power which holds all the oceans? What was the power that shook the hills compared with the power that swings the earth through all the centuries and for 6000 years, and in a formative and incomplete path for hundreds of thousands of years? What is that power that sustains our world compared with the power which rolls through immensity the entire solar system and all the constellations and galaxies and the universe? The mightiest intellect of man would give away if for a moment there came upon it the full appreciation of what omnipotence is. What you and I see and hear of divine strength are only "parts of His ways. But how little a portion is heard of Him! But the thunder of His power who can understand?"

We try to satisfy ourselves with saying: "It is natural law that controls things. Gravitation is at work; centripetal and centrifugal forces respond to each other. But what is natural law? It is only God's way of doing things. At every point in the universe it is God's direct and continuous power that controls and harmonizes and sustains. That power withdrawn would make the planetary system and all the worlds which astronomy reveals one universal wreck, bereft hemispheres, dismantled sunsets, dead constellations, debris of worlds. What power it must be that keeps the internal fires of our planet imprisoned, only here and there spouting from a Cotopaxi or a Stromboli or from a Vesuvius, putting Pompeii and Herculaneum into sepulcher, but for the most part the internal fires chained in their cages of rock and century after century unable to break the chain and burst open the door! What power to keep the component parts of the air in right proportion, so that all around the world the nations may breathe in health, the frosts and the heats hindered from working universal demolition? But what power, "to take up the isles as a very little thing"—Ceylon and Borneo and Hawaii as though they were pebbles; power to weigh the "mountains in scales" and the "hills in balances"—Tenerife and the Cordilleras. To move a rock we must have lever and screw and great machinery, but God moves the world with nothing but a word; power to create worlds and power to destroy them, as from the observatories again and again they have been seen red with flame, then pale with ashes and then scattered.

What is that power to us? asks some one. It is everything to us. With Him on our side, the reconciled God, the sympathetic God, the omnipotent God, we may defy all human and satanic antagonisms, and when we are shut in by obstacles we can say, as did one of Frobenius's men when the sailor was describing how their ship was surrounded by icebergs in the Arctic sea. "The ice was strong, but God was stronger than the ice was." And whatever opposition we may have, our God is mightier than the opposition. All right with God, we may have the courage of the general dying on the battlefield. He asked to be turned, and when they said, "Which way shall we turn you?" he said, "Turn my face toward the enemy." What a challenge that was uttered by the old missionary hero, "If God be for us, who can be against us?" Think of it! God is the only being in the universe who has power to do as He pleases. All human and angelic forces have environments. There are things they cannot do, heights they cannot scale, depths they cannot fathom.

We get some little idea of the divine power when we see how it buries the proudest cities and nations. Ancient Memphis it has ground up until many of its ruins are no larger than your thumb nail, and you can hardly find a souvenir large enough to remind you of your visit. The city of Tyre is under the sea which washes the shore on which are only a few crumbling pillars left. Sodom and Gomorrah are covered by waters so deathful that not a fish can live in them. Babylon and Nineveh are so blotted out of existence that not one unincurred shaft of their ancient splendor remains. Nothing but omnipotence could have put them down and put them under. The antediluvian world was able to send to the post-diluvian world only one ship, the Ark, with a small passenger list. Omnipotence first rolled the seas over the land and then told them to go back to their usual channels as rivers and lakes and oceans. At Omnipotent command the waters were sent upon their prey and at Omnipotent command sinking back into their appropriate places. By such rehearsal we try to arouse our appreciation of what omnipotence is, and our reverence is excited, and our adoration is intensified, but after all we find ourselves at the foot of a mountain we cannot climb, hovering over a depth we cannot fathom, at the rim of a circumference we cannot compass, and we feel like first going down on our knees and then like falling flat upon our faces as we exclaim: "Lo, these are parts of His ways. But how little a portion is heard of Him! But the thunder of His power who can understand?"

So all those who have put together systems of theology have discoursed also about the wisdom of God. Think of a wisdom which can know the end from the beginning, that knows the thirtieth century as well as the first century. We can guess what will happen, but it is only a guess. Think of a mind that can hold all the past and all the present and all the future. We can contrive and invent on a small scale, but think of a wisdom that could contrive a universe. Think of a wisdom that can learn nothing new, a wisdom that nothing can surprise, all the facts, scenes and occurrences of all time to come as plainly before it as though they had already happened. We can have built all the material universe into one world and swung it, a glorious mass, through immensity, but behold His wisdom in dividing up the grandeur into innumerable worlds, rolling spheres on all sides, diversity, multiplied by majesty, infinity. Worlds, worlds, moving in complete order, shining with complete radiance. Mightiest telescope on one hand and most powerful microscope on the other, discerning in the plan of God not one imperfection.

Witty writers sometimes depreciate the thunder and say it is the lightning that strikes, but I am sure God thinks well of the thunder, or He would not make so much of it, and all up and down the Bible He uses the thunder to give emphasis to it. It was the thunder that shook Sinai when the law was given. It was with thunder that the Lord discomfited the Philistines at Eben-ezer.

Job pictures the war horse as having a mane that whirled with thunder. St. John saw an apocalyptic vision again and again heard the thunder. The thunder, which is now quite well explained by the electricians, was the overpowering mystery of the ancients and, sounding among those mysticisms, Job exclaimed, "Behold the parts of His ways. But how little a portion is heard of Him? But the thunder of His power who can understand?"

So, also, all systems of theology try to tell us what is omnipotence. It is God's capacity to be everywhere at the same time. "Where is God?" said a heathen philosopher to a Christian man. The Christian answered, "Let me ask you where He is not?" The child had it right when, asked how many gods there are, and he answered, "One." "How do you know that?" he was asked again. He answered, "There is only room for one, for He fills earth and heaven." An author says that if a man were set in the highest heavens he would not be any nearer the essence of God than if he were in the centre of the earth. I believe it. If this divine essence does not reach all places, what use in our prayer, for prayers are being offered to God on the other side of the earth as well as here, and God must be there and here to take supplications which are offered thousands of miles apart. Ubiquity! No one has it but God. And what an alarm to wickedness, an everywhere present Lord, and what a reinforcement to the faith of the good on the throne and God with the kneeling child saying his evening prayer at his mother's lap. God above you, God beneath you, God on the right of you, God on the left of you, God within you. No man claims to be omnipotent, but God is all things are God, but Jehovah possesses all things, as our souls possess our bodies. God at the diameter and circumference of everything, as close to you as the food you put to your lips, as the coat you put around your back, as the sunlight that shines in your face. Appreciation of that, if through Jesus Christ, the atoning Saviour, we are right with God, ought to give us a serenity, a tranquillity, that nothing could upset. Would it make us gloomy? No, for God is the God of joy and will augment our happiness.

We have all been painfully reminded in our own experiences that we cannot be in two places at the same time, and yet here comes the thought that God can be in all places at the same time. Madler, the astronomer, went on with his explorations of the heavens until he concluded that the star Alcyone, one of the Pleiades, was the centre of the universe, and it was a fixed world, and all the other worlds revolved around that world, and some think that that world is heaven and God's throne is there and there reside the nations of the blessed. But He is no more there than He is here. Indeed Alcyone has been found to be in a motion and the world revolved around some great centre. But no place has yet been found where God is not present by sustaining power. Omnipresence! Who fully appreciates it? Not I; not you.

Sometimes we hear Him in a whisper; sometimes we hear Him in the voice of the storm that jars the Adirondacks. But we cannot swim across this ocean. The finite cannot measure the infinite. We feel as Job did after finding God in the gold mines and the silver mines of Asia, saying, "The things that are too wonderful for me, which I did not know, and a place for the gold where they fine it."

The nature of God never changes, and from all eternity that holy passion glowed in the Infinite, and I think He was throwing out worlds into space and inhabiting them and more worlds for the completion of that love. He may not have told the other worlds what He did for this world, as He has not told us what He did for them. I think the love of God was demonstrated in mightier ways before our little world was fitted up for human habitation. Will a man owning 50,000 acres of land put all the cultivation on a half acre? Will God make a million worlds and put His chief affection on one small planet? Are the other worlds the "golden worlds" standing vacant, uninhabited, while this little world is crowded with inhabitants? No, it takes a universe of worlds to express the love of God. And there are other ransoms and other rescues and other redemptions and other resurrection mornings and judgment days than those of our world. But in the space of six feet by five was comprised the mightiest evidence of God's love that any world ever saw take it up where Covazzi left it, two planks joined together as a cross, there was enough agony there concentrated, if distributed, to put whole nations into torture. That God allowed the assassination of His own Son for the rescue of all men is all the evidence needed that He loved the world. Go ahead, O church of God! Go ahead, O world, and tell as well as you can what the love of God is, but know beforehand that Paul was right when he said, "It passeth knowledge." Let other poets take up the story of God's love where William Cowper and Isaac Watts and Charles Wesley and Horatius Bonar left it, and let other painters improve upon the "Sistine Madonna" and the "Adoration of the Magi" and the "Crucifixion" as Raphael and Titian and Claude and Correggio presented them. Let the German pulpit orator take up the theme of God's love where Frederick Thonick left it, let Italian pulpit take it up where Covazzi left it, let French pulpit orator take up the theme where Bourdelone left it, let the Swiss pulpit orator take up the theme where Merie d'Aubigne left it, let the English pulpit take it up where George Whitefield left it, let the Scotch pulpit take it up where Dr. Candlish left it, let the Welsh pulpit take it up where Christmans Evans left it, and let the American pulpit take it up where Archibald Alexander and Dr. Channing and Dr. Simpson left it. But the world will never appreciate fully the love of God until they hear from His own lips the outburst of His infinite and everlasting affection.