

LIGHTNING:

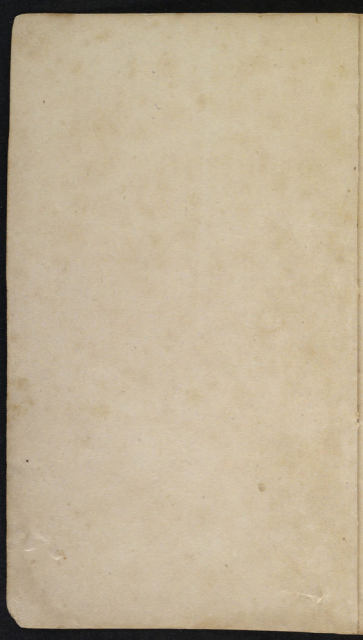
ITS

CAUSES AND EFFECTS FAMILIARLY
EXPLAINED.

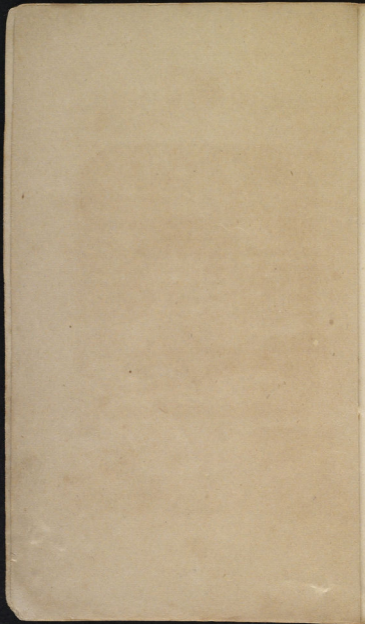
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WRITTEN FOR THE AMERICAN SUNDAY-SCHOOL UNION,
AND REVISED BY THE COMMITTEE OF PUBLICATION.
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American Sunday-school Union.

PHILADELPHIA,
No. 146 CHESTNUT STREET.



Mary E. Dayton
Presented by her teacher
P. Truesburg



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See page 14.

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ENTERED according to Act of Congress, in the year 1842,
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L. JOHNSON, STEREOTYPER.
PHILADELPHIA.

LIGHTNING.

ON the last day of February, after a cold winter, Mrs. Lane called her little daughter Lucy, and said to her,

“My dear, to-morrow is the first day of spring. The month of March begins then, and though there will probably be no sudden change in the weather, are you not glad that we shall soon have warm and pleasant days? The snow will be gone—the streets will be dry—the shrubbery will be in leaf—the

woods will be green—the flowers will spring up, and the singing of the joyous birds will make sweet music for us. O, how happy you and Isabel will be!—Are you not glad?”

“No, mother, no; I am not glad, and I do not expect to be happy. I am very sorry, and it almost makes me feel sick to think about summer coming.”

“Why Lucy, what can you mean? You who love birds and flowers, and take such delight in working in your garden, and in rambling in the woods. Why, I think this long winter has made you forget the pleasures of summer.”

“No, dear mother,” said Lucy,

“I have not forgotten any of these things; but much as I love them all, I think I would rather live in the frigid zone where my Geography says there is winter almost all the time, than to live here where we have such long summers and so much warm weather; for you know, mother, in summer we have thunder-storms.”

“O, my dear little girl, I hoped you had, by this time, conquered your dread of thunder-storms,” said Mrs. Lane.

“No, indeed, mother, I have not; whenever I think about thunder and lightning, I feel sick and faint; and a few days ago, when Jane was

sweeping the piazza, and pushed the settee over the floor, so that it made a rumbling noise, my head seemed to sink, and my limbs felt so weak I could scarcely stand."

Poor little Lucy—it was not to be wondered at that she had some fear on this subject; for the summer previous she had received such a fright during a thunder-storm, that the thought of the approaching season when such storms might be expected to occur, was one which filled her with no pleasing anticipations.

Lucy and her sister Bell had been playing in a shady part of the garden, in the afternoon of a very sultry day in July, when gradually the

sky became overcast, and a heavy cloud rising from the south-west indicated a severe thunder-storm. As yet there had been neither thunder nor rain, and the nurse had been waiting for the sound of the distant rumbling which usually announces the near approach of the storm, as the signal for calling the children into the house. But no such warning was heard, and the clouds had risen and extended till the sky overhead was dark and threatening—not a breath of wind was stirring, and the atmosphere was oppressive and heavy,—vehicles of every description were driven rapidly through the streets, as though man and beast

were hastening to some shelter—the birds flew about in a disturbed and anxious manner—the lowing cattle bent their way to an accustomed shelter, and a dim, yellow light imparted to all objects a gloomy and unnatural aspect.

“We are going to have a heavy thunder-storm,” said Mrs. Lane, who was confined to her room by indisposition. “Where are the children? You may bring them here,” said she, addressing the nurse.

Just after Jane left the room, a vivid, blinding flash of lightning, accompanied by a tremendous crash of thunder, announced that the cloud which hung directly overhead

had burst upon them with terrific violence. But above the roar of the thunder, the quick ear of the mother distinguished a piercing shriek of terror and agony. She knew it was Lucy's voice, and exclaiming "My child! my child!" she forgot her own feeble state of health, and rushed from her room to ascertain what had happened. As she reached the head of the stairs, she saw Jane approaching with Lucy extended on her arms, her head drooping as if she was entirely unconscious.

"Do not be alarmed, Mrs. Lane," said the nurse, "she will soon be better, I hope. She is only in a swoon."

“O,” said her mother, wringing her hands with anguish, “is she dead? O tell me, has she been struck? Let me take her, Jane! Give her to me!”

“O no, ma’am,” said Jane; “she is not dead, but I think she has got a touch of the lightning.”

She opened her eyes, as she was laid on her mother’s bed, and said, languidly, “Mother!” and, with a deep sigh, closed them again.

“O my Lucy, my dear child, speak to me once more; rub her limbs, Jane. Will no one go for the doctor? Send for her father. O, she is quite gone!”

But little Lucy was not so much

injured as her mother feared, for presently she gave another deep sigh—the colour played uncertainly upon her pale cheek, and again she said faintly, “Mother, O dear mother! my arms, my feet.”

The raging storm was unheeded while they watched over Lucy in deep anxiety; but, as Jane said, she had fainted, and before the thunder had ceased, or the clouds dispersed, the little girl was walking about her mother’s room.

On inquiring of Jane about the circumstance, she said that she got to the back door just as the lightning and thunder were seen and heard; when Lucy, who had been standing

under a tree opposite the door, rushed towards her, with her hands extended, and fell senseless into her arms.

When Mr. Lane came home in the evening, Lucy had quite recovered, and did not speak of the occurrence in as strong terms as might have been expected from a child of her age. While the family were in Mrs. Lane's room, conversing about the storm, Jane came to say that Robert wished to speak to Mr. Lane. He accordingly went into the hall, where Robert was standing, who said, in a confused manner, "Have you been into the stable to-day, sir?"

"No, Robert; what is the matter there—what has happened?"

“Why, sir, the horse—I can scarcely tell, sir—but it is very strange—I cannot make him get up, though he does not seem to be dead. May be, sir, you will walk out and take a look at him.”

He went to the stable, and he found his beautiful saddle-horse lying in his stall entirely dead.

“Well,” said Mr. Lane, “the horse is dead, that is certain; but what has caused his death it is very difficult to say.”

“Can it have been the lightning, sir?” asked Robert.

Several men coming into the stable at this moment, the horse was turned over, when a large opening

was found in his breast. It now seemed evident that he had been killed by lightning. On farther examination, the course taken by the lightning could be clearly traced, by the marks upon some linen which was spread upon the grass, on which were stains very much as if it had been scorched. The stable window, by the horse's head, was open, and a tree, standing a little below the stable, was split to the root.

When Mr. Lane came into the house, and told the family that his horse was dead, and that he had undoubtedly been killed by the lightning, Lucy looked very serious; and

little Isabel said, "O, father, how sorry I am that the horse is dead."

"My daughter," he replied, "how thankful I am that your dear sister's life has been preserved. The loss of the horse is a small matter. I feel nothing but gratitude to our heavenly Father, whose protecting arm shielded her head from harm."

"O, father," said Lucy, "was my life in danger? I did not think of that—O how awful! I might have been struck dead as suddenly as poor Ranger."

She seemed much affected by the thought, and from that time had always been distressed during a thunder-storm.

On one occasion, when a cloud was rising, Lucy stood watching it with a pale, anxious face. She asked often, "Will it be a hard storm, mother? As hard as it was last summer? Do you think we shall be struck? O, mother, what a bright flash! Are you not afraid?"

"Come to me, my dear Lucy," said her mother, "and let me calm your fears. You have been once wonderfully preserved by a merciful Providence, who is as able to protect you now as then. Call upon him when you are in trouble, and say in your little heart—'My flesh trembleth for fear of Thee, but thou art my shield and my hid-

ing-place.' If you thus rely upon your heavenly Father's care, you may hope for his protection." Mrs. Lane then took the Bible, and read from the 91st Psalm as follows:

"He that dwelleth in the secret place of the Most High, shall abide under the shadow of the Almighty. I will say of the Lord, He is my refuge and my fortress: my God; in him will I trust.—He shall cover thee with his feathers, and under his wings shalt thou trust: his truth shall be thy shield and buckler. Thou shalt not be afraid of the terror by night, nor for the arrow that flieth by day; nor for the pestilence that walketh in darkness; nor for

the destruction that wasteth at noon-day.—There shall no evil befall thee, neither shall any plague come nigh thy dwelling. For he shall give his angels charge over thee, to keep thee in all thy ways.”

Then Mrs. Lane laid aside her Bible and talked to Lucy a long time, so that she became quite composed. Then she asked her mother if she was not sometimes afraid.

“I always feel solemn during a severe storm of this kind,” said her mother, “for the lightning is one of God’s terrible agents. But it can do nothing without his bidding. It is his lightning which enlighteneth the world. In the 18th Psalm a

thunder-storm is described with great sublimity. "The Lord also thundered in the heavens, and the Highest gave his voice; hail-stones and coals of fire. Yea, he sent out his arrows, and scattered them; and he shot out lightnings, and discomfited them."—(13, 14.) He says to the thunderbolt 'go, and it goeth;' and there is no more possibility of you being struck by lightning without the direct permission of God, than there is of your dying in a fit, or being killed in any of the other ways, usually called 'accidents.' Diseases, tempests, thunderbolts, are all his messengers—subject to his control—obedient to his

will. He holdeth them in his almighty hand. When and where he commands, they go—they can cause no more destruction than He wills. To them, as to every thing else, He has set bounds, that they cannot pass, for his decree to them is, ‘Hitherto shalt thou come, and no farther.’”

“But, mother,” said Lucy, “God may send his lightning to strike me dead, as he did the man I read about in the paper. O, mother, that is what I shudder to think of.”

“My dear,” said Mrs. Lane, “you are like some persons described in the Bible, who, through fear of death, are all their lifetime subject to bondage. You live in continual

fear. Now, my child," she continued, "if you will accept that sweet invitation of the Saviour addressed to little children,—if you will love him and trust him, and commit yourself to him, you need not fear death, let it come in what form it will. I will read you a passage:—'Forasmuch then as the children are partakers of flesh and blood, he also himself likewise took part of the same; that *through death* he might destroy him who had the power of death, that is, the devil; and deliver them, who, through fear of death, were all their lifetime subject to bondage.' (Heb. ii. 14, 15.) In another passage,

Jesus is declared to have 'abolished death' and brought life and immortality to light, through the gospel. (1 Tim. i. 10.) So completely has he provided for the salvation and eternal happiness of those who trust in him, that the sting of death is destroyed, the fear of its dreadful consequences being removed, as regards the believer in Him."

"Yes, mother," said Lucy, "I understand you; and I know if I was sure of going to heaven, I should not be so much afraid of dying suddenly."

"My dear," said Mrs. Lane, "you must die in some way, and it is very improbable that it will be by light-

ning. Remember now, then, your Creator in the days of your youth, that whether you are called to leave this world in early youth, or maturer age, by a sudden stroke, or by wasting decay, you may be alike prepared through grace to enter that bright world

‘ Where not a storm of trouble rolls,
But the bright rainbow round the throne
Seals endless life to all our souls.’ ”

Though conversations of this kind tended very much to quiet the anxieties of Lucy, yet her dread was far from being removed ;—and one day she said, “ I wish there were no thunder and lightning, do you not, mother ? ”

“No, my dear,” replied her mother, “for if I did I should set my will in opposition to the will of God. I should desire that some things in the direction of the affairs of the universe should be different from what the all-wise God has seen fit to ordain they should be; for he has made a decree for the rain, and a way for the lightning and thunder. (Job xxxviii. 26.) Now if you will sit down by me and give me your attention, I will tell you something that you do not know. I have long intended to do this, but have been waiting till you should be able to understand what I have to say to you on this subject.”

Lucy having promised to attend to what her mother was going to say, she commenced as follows:—
“That which we call lightning is also known by the name of electricity, which is indeed its proper scientific name. It is found to exist in the air, in animals, in plants, and even in the human body.”

“But, mother,” said Lucy, “how was all this found out?”

“By the careful study and patient examination of the subject by many learned men. But I cannot enter into the particulars of all their investigations. These you must read for yourself, when you are older, in the works they have published.

But I will tell you something of the results of their experiments. It was discovered that electricity can be communicated to some other substances, such as metals, water, animals, vegetables, steam, &c. These are called *conductors*, because they possess the property of conducting electricity;—and there are other substances, such as glass, sealing-wax, bees-wax, sulphur, silk, wool, hair, feathers, &c. which are called *non-conductors*, because they do not possess the power of transmitting, or conveying electricity.”

“But, mother,” said Lucy, “you said it existed in the human body—how could that be found out?”

“One way in which it was discovered,” replied Mrs. Lane, “was by a gentleman observing, on drawing off his silk stockings, that they emitted a crackling noise, and even gave sparks of fire in the dark. There you see a proof of silk being a non-conductor; it did not allow the electricity to pass off. This gentleman supposed that this effect was caused by electricity, and accordingly he commenced a course of experiments, the results of which proved his views to be correct.

“During clear, frosty nights there is often much electricity in the air. I have at such times noticed,” continued Mrs. Lane, “that silk gar-

ments will give out sparks, and I have also observed the effect produced by electricity on the hair, which, when the cold is extreme, will spread off in every direction, instead of hanging smooth together. There is one very curious experiment which you might try, when you have an opportunity, that of rubbing the fur of a black cat in the dark. When this is done, you can not only hear a snapping noise, but see the sparks. There are many ways in which electricity is useful; it aids the growth of plants, and purifies the air from unwholesome vapours. There are machines called electrifying machines, by which

electricity can be collected and shocks given to persons, and in this way electricity is used for the cure of many diseases, such as gout, palsy, and some others."

"O, mother," said Lucy, "much as I dread lightning, I will never again say I wish there was no such thing, now that I know it is so necessary and useful."

"It was some time," continued Mrs. Lane, "after it was known that electricity existed in the things I have mentioned, before it was ascertained that electricity and lightning were the same. This discovery was made by our distinguished countryman, the great Dr. Frank-

lin. He was born in Boston, but spent much of his time in Philadelphia, where he made the following experiment:—He had found out that electricity and lightning resembled each other in many respects—that both strike pointed objects in preference to others; both take the best conductor; both melt metals; both strike persons blind and destroy life. These points of resemblance seemed to Dr. Franklin so striking, that he resolved to try, by experiment, whether his views of the subject were correct. In order to do this, he made the frame of a kite, over which he stretched a silk handkerchief, and unknown to

any person but his son, he elevated it during the first thunder-storm, which happened in the month of June, 1752. After a short time he collected the electric fire in great abundance, and after many trials he found out that electricity and lightning are one and the same.

“The great benefit derived from this discovery was the protection of buildings from the destructive effects of lightning, by the use of lightning-rods. It had been found out that iron, among other metals, was a powerful conductor of electricity. Now that lightning was proved to be the same with electricity, a very important use was

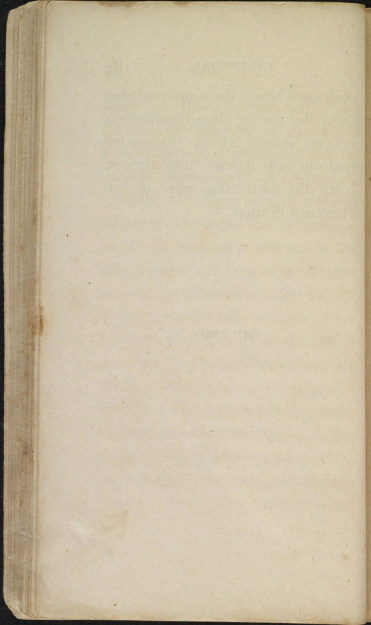
made of this discovery, to conduct off the lightning by means of a metallic rod. This is often done silently, without any explosion.

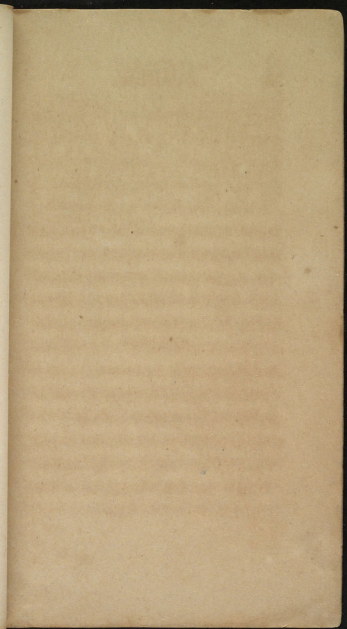
“This discovery tended greatly to extend the fame of Dr. Franklin, and every conductor, as a writer on this subject has said, may be regarded as a monument to the genius of the American philosopher.

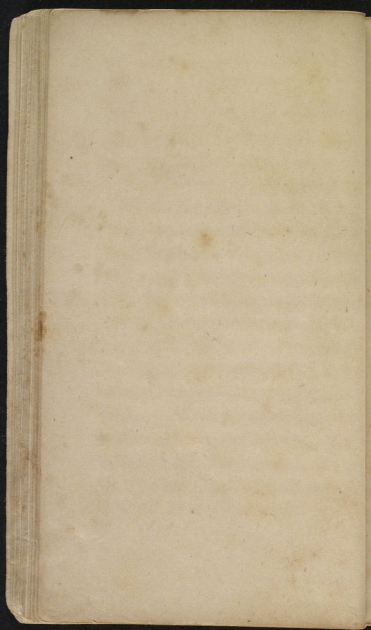
“You now see, my dear child,” said Mrs. Lane, “that Providence has made known to man the means of preserving himself and his property from the destructive effects of lightning. This should tend to remove your fears. But though the knowledge of these facts enables us to

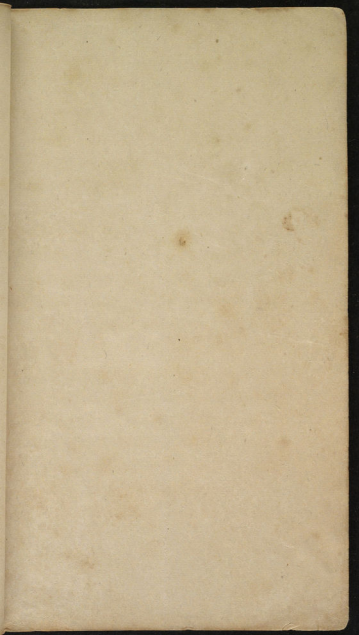
avail ourselves of the security arising from the use of these conductors, yet we should always remember that our only defence from danger, is in the protecting care of our Heavenly Father."

THE END.









PUBLICATIONS OF THE AMERICAN SUNDAY-SCHOOL UNION.

ONE of the greatest improvements, witnessed in the present age, has been in the publication of books adapted to the condition, character, and capacities of the young. And of the works designed to enlighten, develop, and form their minds, awaken and cherish a taste for useful reading, and instruct them in morals and religion, the publications of the *American Sunday-School Union*, hold a distinguished place. Almost every report from a Sabbath-school, furnished with a library of these works, bears unequivocal testimony to their worth.

In the completion of these works every thing sectarian is excluded, and the truths of our common christianity are held before the youthful mind in living examples, which are contemplated with delight, while they silently produce the most salutary impressions. Their great excellence,—and this is a most important one—is, that the style in which they are written, the topics discussed and the characters presented, are, generally, well adapted both to excite and gratify the inquisitiveness of youth, to develop their mental powers, and furnish them with practical knowledge on the most interesting subjects.

We can not, in these general remarks, give that notice of different works which their respective merits may deserve; but we subjoin a list of titles of several that have recently appeared which we would be pleased to introduce to our youthful readers.—**YOUTHFUL MEMOIRS** is what its title imports, and inculcates by example the best sentiments.—**FAMILY CONVERSATIONS ON THE EVIDENCES OF REVELATION**, is an excellent book; all should have evidence of the truth of what they believe.—**LIFE OF LEIGH RICHMOND**; every man and every child should read this book.—**AN ALARM TO UNCONVERTED SINNERS**, should be read by such as would enter the kingdom of heaven.—**THE LIFE OF COL. JAMES GARDINER**, is another picture of truth, or rather a joyful witness of its power, teaching by example.—**A MONUMENT OF PARENTAL AFFECTION**, and **A FATHER'S LETTERS TO HIS SON**, should be presented to children by their parents. To these we might add—**FIRESIDE CONVERSATIONS ON SOME OF THE PRINCIPAL DOCTRINES OF THE BIBLE**.—**A MEMOIR OF BARBARA EWING**.—**MEMOIRS OF ELIZA CUNNINGHAM**.—**FAMILIAR DIALOGUES**, and many of their earlier publications, which will amply reward the youthful reader for the money required to purchase them, and the time and attention he must give to know what they contain.—*Southern Religious Telegraph.*