

The Bee's Home Magazine Page

Lightning Flashes

Often Exhibit Colors of the Spectrum

By GARRETT P. SERVISS.

"When lightning is discharged from cloud to earth there is a vivid streak of light. What causes the incandescence, and what is it that burns to give light? I have often wondered what it is, and also what causes the different colors, white, blue-white, pink, violet, etc.—A. R. Brooklyn, N. Y."

As the season of lightning is approaching, many readers will soon witness the wonderful phenomena which puzzle the writer of this question. Nature has no spectacle in her repertory more grandly beautiful than a thunder-storm, but when the lightning begins to play, terror usually so dominates the mind of all beholders that they neglect to notice the marvelous details of the great atmospheric parent. It is to the credit of "A. R." steadiness of nerve that he has observed so closely the many delicate hues that vivid lightning often presents. Most persons, I think, are unaware that lightning ever is colored, although it always impresses some as being fiery red, probably an effect of the excited imagination.

The incandescence of lightning is due to the intense heating of the gases of the atmosphere through which the great electric spark (for lightning is merely such a "spark") passes.

The molecules of the air are set into vibrations sufficiently rapid to produce light waves in the surrounding ether. Any solid particles of dust or haze floating in the air in the track of the discharge are also heated to the incandescence point. The atmosphere up to a considerable height always contains vast numbers of such particles.

The prevailing hue of lightning is a dazzling white, because the heat is so great that the entire gamut of vibrations that produces the effect of light is set a-quiver at once, and the primary color waves of which that gamut is made up are all blended together, as they are in sunlight. But often, as "A. R." has noticed, lightning exhibits decided color tints, which are sometimes very striking and beautiful. These are due to differences in the composition of the air, and of its floating contents, along the path of the lightning, as well as to variations in the discharge itself.

It has been observed that the colors exhibited by lightning are much less varied and vivid in temperate climates than they are in tropical and equatorial regions. Arago thought that the yellow, red, blue, violet and purple tints often exhibited by lightning depended upon the quantity of electricity traversing the air, upon the density of the air, upon the amount of moisture contained in it, and upon the nature of the floating vapors and dust through which the lightning passed. This it must be said, is a sort of scotch-net explanation, and yet, perhaps, it would not be practicable to give a more detailed one that would have a general application. If one knew the precise condition and contents of the body of air through which a lightning flash passed it might be possible to point out the exact origin of the colors shown, but a great lightning flash sometimes several miles in length, and evidently no very accurate idea of the state of the air throughout so large a space could readily be obtained.

The same flash might exhibit varying colors at different points along its course. The explanation which Arago suggested for violet colored lightning was that it probably occurred at a great height above the earth, where the relatively low density of the air would produce conditions somewhat resembling those in a partially exhausted, or Geissler, tube, through which electric discharges are passed. As is well known, such discharges exhibit violet tints. In connection with this it may be mentioned that thunder-clouds have been known to occur at a measured height of five miles above the ground.

Dr. Richard Anderson, who made a special study of lightning in England, says: "The color of lightning unquestionably depends upon the character of the material substance that is suspended in the air track, and that is transported in a fine vaporous state by the discharge. The color is of quite the same nature as that which is imparted to artificial fireworks by metallic impregnations. The vapor of iron communicates one kind of hue and the vapor of sulphur, or fine particles of carbon in a quasi-vaporized state, another."

However, it is my impression that heaven's fireworks are not so often colored by the effects of variations in the intensity of the electric discharges. The color of any incandescent substance depends upon the degree of heat to which it is subjected, as we may see among the stars, where different individuals exhibit the whole gamut of spectral colors in accordance with their temperature, the hottest stars being blue or violet, the next hottest white, the cooling ones yellow, and those shivering toward extinction dull red.

Home is the place where you do the things you don't do anywhere else. When you are at home you tell folks what you think about them, but strangers you speak to politely and agreeably. When you are at home you wear your old worn-out clothes, and your hair in curl papers, and you take off your collar, and look like the old scrub, but when you go away from home, you put on your new dress and all your false hair, and people say how pretty you are, and how young you look for your age.

Also when you are at home you fuse and quarrel, and tell your husband that you don't know what made you fool enough to marry him, but when you are away from home butter wouldn't melt in your mouth, and you brag to other ladies about what a perfectly grand husband you have got, and how crazy in love he is with you.

When a man comes home at night he slams the door behind him, and kicks the cat, and says ah-s-s-s-h to the children, and he knocks the dinner, and says he'd like to know what his wife means by setting him down to that sort of delicatessen poison, and when the wife tries to talk to him he says, "huh," and he sits up all evening reading the paper, but when he is away from home he compliments everything he eats, and he tells funny stories, and everybody says he is the life of the party.

Home is the only place where folks speak the truth, which is good for the soul, but most unpleasant. When my mother buys a hat the lady in the store says that she looks perfectly lovely in it, and all her friends say that it is terrible stylish, but when she brings it home all the folks tell her that she looks like a scarecrow in it, and that it is about seventeen years too young for her.

And when my papa talks away from home people listen to him most respectfully when he tells how he could fight Mexico with one hand tied behind him, and lick 'em all inside of a week, but when he talks that way at home my mother says, "Oh, piffle, you would run from a Chile con carne, for you hid under the bed that time we thought there was a burglar in the house."

If we did not have homes we should never know how many faults we have, for it is only when I am home that anybody tells me to quit sniffling, and eat with my fork, and not to stand placidly, and for goodness sake not to talk so much.

When we have company my mother always sings a song that says "there's no place like home," and most of us are glad there ain't.

We should all be very thankful for the blessing of having a home where we are taught what poor, miserable worms of the dust we are. It is because so many unfortunate people have not had the blessings of a home that they go around full of conceit and pride, and vain glory, and good things.

Oh, how we should all love our homes! And the farther we get away from them the more we love them.

Two Chips Off the Same Block

By Nell Brinkley

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Down here on the yellow sands of the Southwest Land, where I am lucky enough to be, I have a little playmate—a little slim, brown girl with sunburnt yellow hair and a nose that turns up sassily to the sky, and a pair of sober, beautiful gray eyes. Well, she comes and plays with me. And she's very wise—lets me in on some mighty secrets, all unknowingly, secrets of why humanity does what it does, and what it thinks about. Yesterday, running barefoot and soundless in the sand, she pounced on me, laughing and clutching with her grubby little fists. And then—settling back on her shell-out little heels, she clasped both fives of fingers on her flat little chest, and talked. And this was what it was about: "My mother and I were over in the village y-ist now. My mother bought a hat—it cost a lot of money! And oh—there was—Miss Bink—there was a little hat with ribbons hangin' down—it was the darlinest hat you ever saw! But my mother said what did I need with a spring hat when it was snowing in New York. But it was v-e-dearest hat you ever heard of!"

And while I groaned with sympathy at the fashion in which "my mother" had put one "over on the little one, I could almost see the little woman-heart puls-

ing under her blue apron. Just the phrase of the eternal, lovely hat-loving woman—"it was the darlinest hat you ever heard of!" And it made me remember Eve—who was beautiful (she has to be—we know she was) bending over her jungle-mirror framed in green—without velvet or ribbon or straw—fitting with vain, sweet fingers a wreath around her swinging hair—her only hat! But her bare head ached for a chapeau to perch thereon! And now these spring days if you loiter before a little shining Mlle. Babette window, where the tender, choice little chapeaux balance on their slender one-leg like flower stalks, you'll find maybe a grand, fine lady curled and perfumed and groomed like a racing thoroughbred, with her wolfish, yet kind, police-dog hugging her skirts, alongside an atom of femininity with gouges taken out of her stockings, wiled hair ribbons and rusty shoes, glistering eyes and apple cheeks, both lost in contemplation. Intent, gone-a-dreaming, over two bonnets—one little and the other suffocatingly grown-up and smartish!

Two chips off the old block—two daughters of Eve—with her blood in their hearts that answers up to the call of the bonnet-shop! NELL BRINKLEY.

Little Mary's Essays

(Home)

By DOROTHY DIX.

Home is the place where you do the things you don't do anywhere else. When you are at home you tell folks what you think about them, but strangers you speak to politely and agreeably. When you are at home you wear your old worn-out clothes, and your hair in curl papers, and you take off your collar, and look like the old scrub, but when you go away from home, you put on your new dress and all your false hair, and people say how pretty you are, and how young you look for your age.



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Motion Picture Illusions

By EDGAR LUCIEN LARKIN.

Q.—"Will you kindly explain the illusion of wheels of vehicles revering in motion pictures?"

A.—The usual rate of taking photos on rapidly moving strips of film for moving picture shows is sixteen per second—that is, the minute shutter is closed and opened, each, sixteen times per second. Some spokes in a rolling wheel must be missed when the shutter is closed. Now the illusion of the wheel going backward when actually moving forward is due to this fact.

GRAVITATION AND TEMPERATURE. Q.—"Does gravitation depend on the temperature of the attracting body?"

A.—No. A mass, whether gaseous, liquid or solid, whether hot or cold, will not vary its attraction upon any outside mass. Quantity of the matter, not its molecular state, determines gravitation intensity.

Q.—Is there a negative law in the universe to the effect that one star or sun might repel another body?

A.—Two pitfalls are in laboratories, when charged by means of an electrical machine with the same kind of electricity, repel each other with great activity. But no two suns in space have ever been seen to repel.

The universal law of gravitation reigns in supreme majesty and dominion in all that part of the sidereal structure within reach of the largest telescopes.

The One Thing Worse. "What can be worse," he asked, "than taking a kiss without asking for it?" "I don't know," said the girl, "unless it is asking for a kiss without taking it."—Ladies' Home Journal.

High Road to Happiness

The Way to Be Happy is to Find Joy in Every Simple Thing in Life

By BEATRICE FAIRFAX.

Did you tackle the trouble that came your way with a resolute heart and cheerful smile? Or did you frown and fidget with a craven soul and fearful? Oh, a trouble's a ton, or a trouble's an ounce. Or a trouble's what you make it. And it isn't the fact that you're hurt that counts. But only—how did you take it?—Edmund Vance Cooke.

There is nothing in all the world so free for the taking as happiness! Happiness does not depend in any way on what you are or have—it depends on how you think. No one, no thing, not even a gift of the fairies, can make you happy unless your own mind sees happiness in your possession.

The happiest girl I ever knew was a poor cripple named Mary Mute. She sat primped in a chair set in a shabby home of poverty. With clawlike fingers she made little baskets of wire and beads and fashioned little knick-knacks to help support her tortured self. Inflammatory rheumatism, poverty, lameness, sad, drab homeliness, a humdrum life and no girl's dream of love are fairly good excuses for unhappiness.

Mary Mute was the happiest girl I have ever known. The "poor little rich girl" in the college town where she lived used to rush to see Mary when they "had the blues." "For the contrast of their good fortune with her evil days, you think? Not at all. Unhappiness couldn't live in the room where a broken cripple sat and radiated joy and happiness.

Mary Mute's mind transmuted the iron and steel of her gray life into the gold of sunshine.

To be happy you have only to will to be happy.

Simply don't let your mind focus on your troubles. Get busy. Work yourself into an actual glow of exertion—occupy your body if you can—and if you cannot, work your mind into a healthy glow. Never want anything that is impossible for you to have. Want everything that is possible to acquire with proportionate earnestness. Have plenty of attainable little goals in view as you climb your mountains in life.

Determine to get the fullest possible measure of happiness out of everything that happens to you. And when disappointment or checks or humiliations come, wipe them off the slate as fast as they occur.

If you have a black spot in your heart, keep it safely locked up in the dark. Don't bring it out in the sunshine and encourage it to live.

Bear your sorrows as well as you know how and don't let your mind dwell on them. Keep your mind sunny and healthy and full of little thoughts of joy. Think of all the pleasant little things that happen to you. As for sorrow and trouble, have energy ready to meet and fight these foes—but forget the fray when it is over.

Make yourself sunshine, as did the cripple who thought happiness into a life that had not one element of joy.

The way to be happy is to find joy in every simple thing in life. And the road to happiness is yours—if only you choose to take it.



Madame Isbell's Beauty Lesson

LESSON XI—ART IV.

Physical Culture—Veteran Actress. The veteran actress, Sarah Bernhardt, born in 1844, is a wonderful example of the effect of well-directed physical exercises on the body. Mme. Bernhardt's body is still young and lithe in its movement; it is not the physique of a young girl, but it is far from being the physique that we associate with a woman past 60. She has a perfect carriage. She has never allowed any accumulation of flesh on any part of her body and she can play young roles today simply because her body can still respond to youthful enthusiasm. She is the example of a woman who has never deviated one moment from the laws of physical health. She always has had a great believer in massage. She has fenced a great deal, an excellent exercise for keeping the limbs supple and the movements quick. She has treated her physique intelligently, understanding what it needed, building up when necessary and reducing excess flesh as soon as there was any hint of its appearance.

As Mme. Bernhardt has always trained her body since youth she has had no bad habits to overcome. She is an example of a physical training that never "lets up." At the same time she is not a temperament or physique inclined to grow very stout. What she has to combat as years go on is stiffness—lack of grace or vigor. Women who do not accumulate flesh as they grow older are apt to think this fact sufficient to give them a youthful appearance. This is not always so; there is a stiff, angular middle age quite as unlovely as too much fat. At this period there is also a tendency toward rounding the back, drooping the figure into the waistline, becoming shorter and less erect—all the bad habits that can be avoided by proper, regular physical exercises.

To suggest physical culture to the housekeeper and mother may seem at first almost cruelty, the adding of another burden to an already too full day and to muscles already overtaxed. Yet this busy, hard-worked housewife does need a certain amount and kind of physical culture to bring vigor and elasticity to her movements, and to exercise unused muscles so they may aid and help out those which at present seem too much used.

She can at least devote a few minutes each day to restful physical culture. If she can do no more, night and morning let her go through the series of breathing exercises outlined in Lesson X. This will accomplish at least two things, invigorate the blood so that the bodily tissues are promptly renewed, and teach correct poise so that she gets profit and not weariness from her daily tasks. Housework is excellent physical culture if it is properly done.

Lesson XI to be continued.

Advice to the Lovelorn

By BEATRICE FAIRFAX.

Social Attentions. Dear Miss Fairfax: I am a young man of 30 years, and recently through my mother I met and became acquainted with a young lady and I have taken a decided liking to her. I have written her to the effect that I should like to cultivate her acquaintance, and the other day she called me up and told me that she appreciates my letter very much. Kindly advise as to the attentions I should pay this lady, as I would like to win her if I can.

LONELY AND WORRIED. First you must call on this young lady in her own home. And then take her to some of the many places of amusement the city offers in summer—the park, boat rides, the "movies," the roof gardens and the restaurants and street car rides, with luncheon or supper along the way, all appeal to girls. Why not invite her to spend a Sunday in the country, and then say, "Won't you suggest something interesting to do on Friday or any other evening you prefer?"

Fingerails and Character. Dear Miss Fairfax: To satisfy my curiosity, would you advise me as to whether the "nails," the roof gardens and the restaurants and street car rides, with luncheon or supper along the way, all appeal to girls. Why not invite her to spend a Sunday in the country, and then say, "Won't you suggest something interesting to do on Friday or any other evening you prefer?"

Large, clear half-moons indicate health. Surely your college education takes you beyond the point of superstition where you could imagine they hold more meaning than that.

How to Beautify a Summer Soiled Face

It's really a simple matter to renovate a face soiled by sun, winds or dirt. Ordinary mercurized wax, used like cold cream, will transform the worst old complexion into one of snowy whiteness and velvety softness. It literally peels off the outer veil of surface skin, not a gently, gradually there's no discomfort. The worn-out skin comes off, not in patches, but evenly, in tiny particles, leaving no evidence of the treatment. The younger, healthier under-skin forming the new complexion, is one of captivating loveliness. One ounce of mercurized wax, to be had at any drug store, is enough to remove any tanned, reddened, pimpled, freckled or blotchy skin. Apply before retiring, washing it off mornings. Many skins wrinkle easily with every wind that blows, with heat, woe, etc. An excellent wrinkle-remover, because it tightens the skin and strengthens relaxed muscles, is a wash lotion made as follows: Powdered saccharin, 1/2 oz., dissolved in witch hazel, 1 pt. This gives immediate results.—Advertisement.

Beautify the Complexion in TEN DAYS Nadinola CREAM The Unequaled Beautifier USED AND ENDORSED BY THOUSANDS Guaranteed to remove tan, freckles, pimples, liver spots, etc. Extreme cases about twenty days. Rids pores and tissues of impurities. Leaves the skin clear, soft, healthy. Two sizes, 50c. and \$1.00. By toilet counters or mail. NATIONAL TOILET COMPANY, New York