

HEAT FROM THE SUN.

HOW LITTLE OF IT WE GET IS ALMOST BEYOND BELIEF.

Scarcely One Sunbeam In Two Thousand Millions Alights Upon This Earth—A Pen Picture of the Actual Condition of the Fiery Orb.

The sun is for the most part simply wasting his heat—flinging away the golden rays that are the life of the world with a recklessness beside which all human waste is mere parsimony. It is almost beyond belief. Scarcely one sunbeam in 2,000,000,000 alights upon the earth, and allowing for the whole solar system not more than one in 100,000,000 ever hits anything, so far as we can ascertain.

Sir Robert Ball's comment on this waste of the sun's heat is: Suppose a man with an income of \$1,000,000 a year. He spends for useful purposes 1 cent and throws the rest away. His wastefulness is no greater than that which this old prodigal the sun has practiced for untold ages.

The untold amount of heat which thus leaks away through the cracks in the sky cannot be expressed by figures. It is only by considering what it might do that we can get any conception of it. This is probably the most striking illustration, and is given by an eminent astronomer:

Suppose a solid shaft of ice two miles square to be extended like a bridge across the gulf which separates the earth from the sun. If a track were laid on its surface an express train running at full speed would require more than 150 years to traverse it. Yet, if the whole heat of the sun were turned upon it for a single second it would be melted, and in a few seconds more all, even to the railroad iron, would drift away as vapor.

But what is the source of this heat that flows into space as the gulf stream pours into the Atlantic, warming the earth and other planets like little islands in its course? What keeps up the supply?

If the sun were merely a white hot ball, gradually cooling, our grandchildren would indeed get a chill; or, rather, neither they nor we would ever have seen the sun. The final frost would have fallen long ago.

Nor can the heat be maintained by fire, as we understand the word—such fire as warms and now and then consumes our houses. If it were a globe of flaming coal it could have lasted but a few thousand years; it would have been burned to ashes long before we were born. All the coal on the earth would hardly keep the sun going for one-tenth of a second.

A falling meteor gives out great heat, just as a bullet is heated when it strikes the target. Some have conjectured that a vast stream of these little hailstones raining upon the sun supplies its fuel. But if the whole mass of the moon were put into a stone crusher, broken up and thrown against the sun, it would barely furnish heat for a single year. And no such weight could possibly approach the sun without our knowledge.

Yet, in its own chosen way, the sun really has its fires. With proper instruments we may see the red flames spouting from its edge, sometimes to a height of 400,000 miles—higher than the moon floats above the earth. To some of them our world would be no more than a water drop falling from a fountain.

To gain any idea of the almost inexhaustible reservoir from which the sun draws its heat we must first picture its actual condition. Matter there is in a state unlike anything ever seen upon earth. It is neither solid nor liquid nor in any familiar sense gaseous. The sun is a boiling, seething, flaming mixture of the gases or vapors of all the elements condensed by the tremendous squeeze of solar gravity until it is thicker than pitch, and so hot that its vaporized iron might be used for steam power if there were any boiler fit to hold it. It has no definite surface, but shades away from this incandescent paste, through leaping flames of blood red hydrogen to the faint streamers of the corona, as filmy as a comet's tail.

This writhing mass, heavier on the average than water and yet as unstable as air, does not even rotate like other orbs, but swirls around its axis. In the terrific tension of these gases is stored up the energy of the sun. As this escapes in gushes of heat they do not cool, but slowly contract. It is quite possible that they even grow hotter as they thus settle downward and compress themselves into a denser fluid.

A total shrinkage of 220 feet a year will account for the whole expenditure, and so small a change in the size of the disk could not be detected until it had been watched for thousands of years. This will go on until the substance of the sun ceases to be essentially gaseous. Then will come the beginning of the end, for from that time forth the actual temperature of the sun will decline.

This, however, will be in some far distant day, for careful scientists assure us that our race will enjoy undiminished sunshine for at least 5,000 years, and perhaps for twice 5,000.

Then, while the sun slowly reddens and darkens, our earth will die. After that comes the night of ages.—Charles Kelsey Gaines in New York World.

To Catch Him.

Fuddy—I want to get acquainted with Moskins, but I hardly know how to go about it, he's such a queer fish.

Duddy—A queer fish, eh? Why don't you drop him a line?—Boston Transcript.

The Persians in 516 B. C. invented a transparent glass varnish, which they laid over sculptured rocks to preserve them from bad weather. This coating has lasted to our day, while the rocks beneath are honeycombed.

THE EAST WIND.

You're coming, coming, like the light And spreading o'er the sea. I know there's death for some tonight, But life and joy to me. For you're the east wind, East wind that I love, The east wind of the sea.

I nurtured on our sea girt coast, Round roof and rock and tree, Drank in the food I loved the most, The east wind of the sea.

And midst the spray on ocean's breast, While you whistled wild and free, I've kissed your cheek and sunk to rest, O east wind of the sea!

So, though I pray for those you harm And wish it might not be, Sweep in and bring the old, old charm— Oh, bring it back to me!

For you're the east wind, East wind that I love, The east wind of the sea.

ADVERTISING.

It Has Revolutionized Business and Benefited Humanity.

Advertising is indeed one of the great developments of the age. It has revolutionized business and made it possible to accomplish in a few years what otherwise would have taken generations to compass. Today the advertiser, through the medium of the public press, can introduce his article to the entire public almost literally at a bound. Such a servant at the seller's elbow has naturally made business vastly different from what it was several hundred years ago.

It is no longer necessary, as it was in previous generations, to confine one's commercial transactions to a limited area. In fact, the manufacturer of today regards the world as his field, and there are quite a number of proprietary articles, widely and favorably known in every quarter of the civilized world, which have been introduced during the lifetime of their present proprietors, who are men only in the prime of life.

Without advertising, by which it is possible to reach and influence hundreds of thousands of persons simultaneously, such a result could not be accomplished in several generations, if indeed it could be accomplished at all. Nor has this advertising benefited the seller only. It has brought to the knowledge of the buyer the hundreds of improvements and articles by which life can be made more pleasant, by which the health can be preserved, the palate gratified, the intellect fed and satisfied.

It is no exaggeration to say that no force has conducted more to knit the world closely together nor made our mutual interdependence more apparent. "It is but the simple truth to assert," says a recent writer, "that the loss of the information which the advertisements furnish would be one of the greatest imaginable misfortunes to civilization."—Self Culture.

A Good Shot.

A local sportsman, who has the reputation of being a very bad shot, recently invited some of his friends to dine with him. Before dinner he showed them a target painted on the barn door, with a bullet in the bullseye. This he claimed to have shot at 1,000 yards' distance. As nobody believed him, he offered to bet the price of an oyster supper on it.

On one of his guests accepting the wager, he produced two witnesses, whose veracity could not be questioned, to prove his assertion. As they both said that he had done what he claimed he won the bet. At dinner the loser of the wager asked how his host had managed to fire such an excellent shot. The host answered, "I shot the bullet at the door at a distance of 1,000 yards and then I painted the target around it."—Cincinnati Enquirer.

Ground Floor Bedrooms.

There is danger in the porous character of plaster ceilings, which are often very thin indeed. The ordinary ceiling is "only a porous diaphragm permeable by gases with considerable freedom." The vitiated air of sitting rooms therefore frequently finds its way through into bedrooms. The British Medical Journal asks any skeptic to "compare his bodily and mental sensations after sleeping in such a room and in one situated over a similar room well ventilated and not occupied or illuminated by gas during the evening." The remedy, it says, is to have bedrooms on the ground floor and living, working and cooking rooms up stairs. But how about noise?—London Chronicle.

Caught the General.

One of the regular army officers tells a story of how the old stringent army regulations once went against General Scott. One wet afternoon that soldier was caught in the rain in Washington. He was in full uniform and was well known, so, no cab being near, he borrowed an umbrella. Arriving at his hotel, an under officer approached him and calmly remarked:

"General, you will consider yourself under arrest for eight days for carrying an umbrella while in full uniform."

A Scheme That Pays.

A Cincinnati milkman invites his customers to have the milk which he serves analyzed twice a year at his expense. The tests may be made at any time, without warning to the dairyman, his object, of course, being to prove that his milk is of standard purity all the year round. He does a large business and finds himself well repaid for his outlay for the analysis.

Water charged with carbonic acid gas, in other words, soda water, is now prescribed as a palliative for hunger, especially for the abnormal sense of hunger due to disease.

The strength of a man's virtue must not be measured by its extraordinary efforts, but by his ordinary life.

A DANGEROUS TRADE.

PERILS THAT BESET THE MAKING OF NITROGLYCERIN.

Methods Used in the Manufacture of This Dangerous Explosive—The Care That Has to Be Exercised in the Factories.

Nitroglycerin and its peculiarities are little known, even in localities where it is made. People generally give it a wide berth, and even a less number know how it is manufactured. Probably in no place in the United States is there such a great amount of the explosive used as in the Indiana oilfields. Indiana has four nitroglycerin factories, and they are seldom visited by curious people.

The explosive is made from a composition of acids and glycerin. It is generally pale yellow in color, and quite colorless when pure. It is odorless, and has a sweet, pungent, aromatic flavor. If touched by one's tongue, or even brought into contact with the skin, it will produce a severe headache. A large tank, called an agitator, is where the fluid is mixed, and the mixture is composed of equal parts of nitric and sulphuric acids. Inside the tank are several paddles, like those of a churn, and it is here that the real danger in the manufacture exists. The paddles are put in operation and a steady stream of sweet glycerin is turned into a vat until 250 pounds are thoroughly mixed with the 1,500 pounds of acid. The chemicals coming in contact produce an intense heat, and in order to obviate the danger cold water is run through pipes encircling and running through the vat. At 85 degrees F. a red vapor, almost like fire, arises. If cutting off the supply of glycerin in the agitator does not lower the temperature, it is time to say farewell. Before 90 degrees are reached nothing but atoms of the structure and its contents are left.

In its manufacture water is used to flood the workroom, since a drop falling on the floor might lead to an explosion. Not a nail is to be found in the floor of the factory, and the visitor is cautioned not to drag his feet. Those who make the dangerous fluid say that a jar will not cause an explosion; that friction and fire are the only agencies by which it can be discharged. One may pour a barrel of nitroglycerin from a high building to a cement walk below and it will not explode, but a small quantity of it dropped from the same height in a can will blow the building down. A sharp concussion instantly touches it off. Factories become useless after a few years' operation and have to be destroyed. The timber becomes saturated with nitroglycerin and an explosion is imminent at any time.

The average production of nitroglycerin from 1,500 pounds of acid and 250 pounds of glycerin is about 150 quarts. About 100 quarts constitute an average shot for an Indiana oil well. While magazine explosions are not rare, the real cause of the blowing up never becomes known. Those who are close enough to see the cause always go up with the building. The average time for a shooter or nitroglycerin maker to remain in the business does not exceed five years. Death is instant, and no one has ever recovered from a nitroglycerin accident. Bodies are torn to atoms no larger than bits of sausage. The wages of employees of the factories range from \$125 to \$150 a month.

Colonel William A. Myers of Bollivar, N. Y., was the man who made and exploded the first pound of nitroglycerin in an oil well. He built the first factory in the United States near Titusville, Pa., in 1868. Up to that time powder had been used to torpedo oil wells. It was then that an explosive that could be discharged under water was found in nitroglycerin. Colonel Myers' father was a Philadelphia chemist and taught his son how to make it.

The first well torpedoed was on Colonel Mills' lease, near Titusville, and the charge consisted of only two pounds. Oil was worth \$9 a barrel then, and a torpedo that would double the production of a well was worth almost what the maker chose to ask for it. Colonel Myers built 12 different factories in different parts of the oil regions from 1868 to 1885, when he retired from the business. Only one of the original factories stands intact today. Myers made several fortunes and spent his money like a prince, but, fortunately for him, he still has a snug sum laid by.

Well shooters spin great yarns of their experiences, and the stories are of the hair raising order. Well shooters generally are fatalists to a considerable degree in their belief, and it is probably one reason why they do not fear the fluid. They state that when one would think it was the most dangerous the explosive is the safest. The smallest drop can be placed on an anvil and struck by the heaviest sledge hammer, and the hammer will bounce back over the shoulder of the striker, no matter how much he may try to hold it. Some claim that it will tear the arm off, but this is exaggeration. Transporting the explosive from a magazine to a well is not as dangerous as timid people think, according to the shooters. It is transported in square cans such as are used for varnish. In preparing for shooting a well, a long tin shell is suspended in the tubing, and the shooter pours the fluid in as if it was water. It is not unusual for 200 quarts to be in a well shooter's wagon on one trip. A slight leak in a can may be touched off by friction and explode the entire load. If it should explode in the center of a town, every building would be reduced instantly to debris.—Indianapolis Journal.

The word Asia is derived from the Sanskrit Ushas, meaning the land of the morning dawn.

PACKING SARDINES.

How an Interesting and Important New England Industry Is Conducted.

The packing of small herrings, or, as they are often called, "American sardines," is an important industry in Maine. In that state there are 50 factories, which give employment to a large number of hands during four or five months of the year. The annual output is estimated to be of an average value of \$3,000,000, and about half of this amount finds its way into the pockets of the factory employes in the form of wages. The fish are caught in seines scattered all along the coast for a distance of about a hundred miles. After the fish are taken in sailboats to the factories they are thrown into strong brine, where they remain for some time. They are then laid on iron crates and conveyed to an immense oven, where the crates are laid on revolving shelves. After 20 minutes' cooking the fish are ready for packing. There are two methods of packing, one in oil, the other in mustard. The ground mustard is mixed with vinegar; for oil packing cotton seed oil is used. About a gill of oil is put into a can, and then the baked fish from the ovens are carefully packed into it and the cover snapped on. The pans then go to the sealer, who sits in front of a little furnace in which his soldering iron is plunged. Seizing the can, he runs the heated iron around the cover, holding the solder just in front of it, and seals the can so rapidly that the eye can hardly follow his movements. The sealed cans are thrown into a bath of boiling water, in which they remain for two hours. If any of them leak the tops will bulge out, and these go back to be resealed. After the cans are cleaned with sawdust they are packed into cases and put on the market as genuine American sardines in pure olive oil.

A FAITHFUL HORSE.

An Instance of Remarkable Devotion and Animal Courage.

Instances of the self-devotion of animals in the service of their masters are not uncommon, but they generally have to do with some sudden, instinctive deed of courage. Passive faithfulness unto death, among beasts as among men, is the rarest form of self-sacrifice. The story of the horse of a certain sergeant in the northwest illustrates the courage of animals in its noblest form.

Sergt. Parker, a member of the Canadian mounted police, waited a day or two after the departure of his men, in order to receive some government dispatches, of which he was to be the bearer. It was winter on the prairie, and every trail was hidden beneath the snow, but as soon as he secured the papers, he pushed on alone, hoping to rejoin his company by a forced march. By nightfall he had lost all sense of direction, and when he resumed his journey next day he felt that his search was hopeless.

Still the dispatches were important, and he had been trusted with them. For six days he wandered about, starving and frost bitten. Then snow-blindness came upon him, and he lay down to die.

His faithful horse did not desert him, but stood like a sentinel at his master's feet. For a day and a night it stood there, and on the morning of the second day of its watch a mail-carrier saw the motionless figure. He approached and discovered Sergeant Parker.

It was nearly a fortnight before the rescued sergeant regained consciousness. His first question was after his horse. The emaciated beast was brought into the tent where its master lay, and at once began to lick his face. Two days later the horse was dead.

PROPERTY IN HAWAII.

Sugar Planters Are on the Flood Tide of Fortune and Are Getting Rich.

Senator Clark, of Wyoming, who has been in the Hawaiian islands this summer, speaking of the conditions there, says:

The sugar planters are on the flood tide of fortune, for the profits on cane are heavy, and everybody in the business is getting rich. Coffee planting has not been so profitable, but I think that eventually it will be made to pay. The material development of Hawaii has been greatly accelerated by annexation. Coming under our flag has been of enormous benefit. It has given confidence to the people and the guarantee of stable government brightens the whole future. Even the most ardent royalists are forced to admit that American supremacy in the islands is the best thing that could have happened.

What form of government do the leading men of the country desire? They wish congress to bestow upon Hawaii a regular territorial system of government, such as that of Arizona or New Mexico. In my opinion that is the most desirable policy to pursue. At present the government is very awkward and cumbersome. There is no municipal or county government, and people residing at a distance from Honolulu are put to great inconvenience, for public records are kept at no other place. Honolulu itself is making rapid strides in the march of progress. Its harbor is crowded with shipping and its business men report unprecedented activity in trade.

Lyddite Not Widely Known.

The new explosive, lyddite, which is figuring in the South African war, is a chemical known only to a few engineers. The secret was purchased by the English government from the inventor of melinite, with which it is supposed to be nearly identical. It is exploded by percussion.

The Secret of a Girl's Beauty. Hon. J. H. FLETCHER, formerly Governor of South Dakota, but now a resident of Salem, Ore., says: "For over two years my daughter had been declining from a strong, healthy, rosy-cheeked girl to a pale, weak and helpless invalid. She was afflicted with terrible headaches, and gradually grew weaker, and more languid, apparently without cause. I tried several doctors, but all without avail. Finally, to please a friend, I bought a box of Dr. Williams' Pink Pills for Pale People, and to our surprise, before it was used up her headaches ceased, the color began to return to her cheeks and lips and her strength began to assert itself. I bought five boxes more, and by the time she had finished them she was completely restored, and to-day she is a robust rosy, healthy girl instead of a pale, tired and sickly one."—From the Oregon Independent, Salem, Ore.

ALEXANDER BROTHERS & CO. DEALERS IN Cigars, Tobacco, Candies, Fruits and Nuts. Sole Agents for Henry Maillard's Fine Candies. Fresh Every Week. PENNY GOODS A SPECIALTY. Sole Agents for F. F. Adams & Co's Fine Cut Chewing Tobacco. Sole agents for the following brands of Cigars: Henry Clay, Londres, Normal, Indian Princess, Samson, Silver Ash. Bloomsburg Pa.

IF YOU ARE IN NEED OF CARPET, MATTING, or OIL CLOTH, YOU WILL FIND A NICE LINE AT W. H. BROWER'S. 2 Door above Court House. A large lot of Window Curtains in stock.

It's the little things that count. A woman can't make a man propose, but a tiny flea can usually bring him to the scratch. Educate Your Bowels With Cascarets. Candy Cathartic, cure constipation forever. 10c, 25c. If C. C. fail, druggists refund money. When a man wins a hat on a bet his head is usually too big to wear it. "A LUMP LIKE LEAD."—How often one hears the dyspeptic complain of this sensation in the stomach. Through neglect or overwork the digestive organs are weakened and this symptom is the common sensation after eating. The pineapple contains a large percentage of vegetable pepsin, and is a potent aid to digestion. This discovery has given to the world nature's delightful and positive cure, Dr. Von Stan's Pineapple Tablets. 18 in a box, 10 cents. Sold by C. A. Kleim. Some men are only successful in becoming failures. WHAT DO THE CHILDREN DRINK?—Don't give them tea or coffee. Have you tried the new food drink called GRAIN-O? It is delicious and nourishing and takes the place of coffee. The more Grain-O you give the children the more health you distribute through their systems. Grain-O is made of pure grains, and when properly prepared, tastes like the choice grades of coffee, but costs about 1/3 as much. All grocers sell it. 15c. and 25c. 11 9 4td. Some people are never happy unless they are worried about something. Beauty is Blood Deep. Clean blood means a clean skin. No beauty without it. Cascarets, Candy Cathartic clean your blood and keep it clean, by stirring up the lazy liver and driving all impurities from the body. Begin to-day to banish pimples, boils, blotches, blackheads, and that sickly bilious complexion by taking Cascarets—beauty for ten cents. All druggists, satisfaction guaranteed, 10c, 25c, 50c. It seems queer that the girl with a graceful carriage invariably walks. IT WILL SURPRISE YOU—TRY IT.—It is the medicine above all others for catarrh and is worth its weight in gold. Ely's Cream Balm does all that is claimed for it.—B. W. Sperry, Hartford, Conn. My son was afflicted with catarrh. He used Ely's Cream Balm and the disagreeable catarrh all left him.—J. C. Olmstead, Arcata, Ill. The Balm does not irritate or cause sneezing. Sold by druggists at 50c., or mailed by Ely Brothers, 56 Warren St., New York. Why shouldn't the politician have a bee in his bonnet, if his wife insists on having a bird in her's? CASTORIA. The Kind You Have Always Bought. Bears the Signature of Chas. H. Fletcher. CASTORIA. The Kind You Have Always Bought. Bears the Signature of Chas. H. Fletcher. Eczema Relieved in a Day.—Dr. Agnew's Ointment will cure this disgusting skin disease without fail. It will also cure barber's itch, tetter, salt rheum, and all skin eruptions. In from three to six nights it will cure blind, bleeding, and itching piles. One application brings comfort to the most irritating cases. 35c. Sold by C. A. Kleim. Sometimes it rains cats and dogs, but the dog has been reigning alone for several days. Don't Tobacco Spit and Smoke Your Life Away. To quit tobacco easily and forever, be magnetic, full of life, nerve and vigor, take No-To-Bac, the wonder-worker, that makes weak men strong. All druggists, 50c. or \$1. Cure guaranteed. Booklets and sample free. Address Sterling Remedy Co., Chicago or New York. When it comes to getting shaved every man carries his wig with him. MAN AND WIFE IN DISTRESS.—Rev. Dr. Bochner, of Buffalo, says: "My wife and I were both troubled with distressing catarrh, but we have enjoyed freedom from this aggravating malady since the day we first used Dr. Agnew's Catarrhal Powder. Its action was instantaneous, giving the most grateful relief within ten minutes after first application." Sold by C. A. Kleim. When a man has no enemies you can generally put him down as a dead one. CINNAMON-COATED PILLS.—Dr. Agnew's Liver Pills are coated like a cinnamon drop, very small and delightful to take. One pill a dose, 40 in a vial for 10 cents. Their popularity is a whirlwind, sweeping competitors before it like chaff. No pain, no griping, no inconvenience. Sold by C. A. Kleim. It is better to be a gas collector than a poet, although they both dabble in metres. IN HEART DISEASE IT WORKS LIKE MAGIC.—"For years my greatest enemy was organic heart disease. From unconsciousness and palpitation it developed into abnormal action, thumping, fluttering and choking sensations. Dr. Agnew's Cure For the Heart gave instant relief, and the bad symptoms have entirely disappeared. It is a wonder-worker, for my case was chronic."—Rev. L. S. Dana, Pittsburg, Pa. Sold by C. A. Kleim. "Marriage," says the confirmed bachelor, "bears the same relation to love that a cloud does to a drink."