

Correspondence.

The Editors are not responsible for the opinions expressed by their correspondents.

Our Dwellings.

MESSRS. EDITORS:—Your correspondent, "F. G. W.," may be about right in the statement made in No. 4, present volume, that "two thirds of our dwelling houses are not put up" in a very workmanlike manner; but his field of observation must be quite limited, or he would not say that the "greatest deficiency is in the foundation supports."

As a rule, builders do not slight their work in those points where the mass of persons inexperienced in such matters could readily detect the fault. Many a poorly-built house is pronounced "built of the best materials, and in the best manner" by the purchaser and others, because the outside looks well when new.

No builder, no matter how cheap a house he was erecting, could afford to allow the flooring to settle "three inches carrying down all the partitions with them, to save the very trifling expense of a few cheap supports. Such instances of "penny wise and pound foolish" economy must be rare.

Some of the real faults of our system of building are these: The lumber is not seasoned. There is perhaps not a single instance in this country of a lumber yard where they "stick up" the timber from which the house frames are made. It is sawed "green," and kept in a solid pile. If any air gets to it, it is accidental, and not intentional. To make the best kind of a house, every piece of lumber in it except the laths should be perfectly dry. In what we call good houses those parts exposed to view are generally of good stock and properly seasoned; but a dry frame is of more consequence than dry floors. The latter can be readily repaired or replaced, the former cannot. The timber used is too narrow. Every wooden house of medium size should have 2x6 outside studs, instead of 2x4. Instead of 2x6 and 2x8 flooring joists, they should be 2x10 and 2x12.

In those sections of our country where the dwellings are clapboarded, and the floors laid double, the covering boards and under floor should be every inch sound, free from knot holes, shakes, and waney edges. When laid they should be jointed to make tight work. As a rule, anything that will hold a nail, the "refuse" and all "odds and ends" are worked in; and those parts, which, above all others, should be well done, are the poorest in the building. Our practice says: "No matter, it is out of sight." Why don't we have houses made from seasoned lumber? Simply because we can't wait for it to dry, and don't want to pay the cost of drying.

When the occupants of a new house find the doors and windows "binding" and "sticking," and the wood-work in various places showing large cracks, they generally denounce the carpenter. He could not help it—the lumber was not seasoned.

These are but three of the many defects in our American system of house-building; the temptation to mention others is great, but the fact that I have already trespassed too much upon your space restrains me. In most parts of our land we have the best building materials in the world, and plenty of skilled workmen, but we are in too great a hurry to build good houses. BETA.

Steamboat Speed.

MESSRS. EDITORS:—The ocean, the North River, and the Sound, and the West's great arteries of commerce, the Mississippi and its tributaries, since the advent of the first competing lines of steamboats, have ever been the scenes of the most exciting and enthusiastic competition in the matter of speed.

The desire to outstrip competitors has repeatedly attracted the attention of legislators, and penal enactments have put an end to the dangers of constantly recurring races between rival lines, until, become a dead letter from age, their wholesome provisions are forgotten, their penalties disregarded, and the whole programme of transgression and threatened punishment is again performed for the benefit of the community.

The Mississippi and its tributaries, affording, as they do, fitting opportunities for this species of emulation or opposition, have grown to be proverbial throughout the world as steamboat race courses. To speak to an European at home of a Mississippi boat race brings to his mind at once a vivid picture in high colors, depicting horrible death or intense agony, the result of an act, which, to river men in America, appears far less dangerous or reprehensible than the railway passenger system of the Continent, where escape from the car, in case of danger, is impossible, save through the key in the hands of the guard.

The question of the relative speed of rival boats has again broken out on the Western waters, in the late trial of speed between the *R. E. Lee*, built at Louisville, and the *Natchez*, built at Cincinnati, from New Orleans to Cairo. There was no advertised race, no hand-bills, or "dodgers," but the fact was patent to every steamboat man from Pittsburgh to Cairo, and from St. Paul to the Gulf of Mexico, that a race was on the carpet, and as the day approached, the excitement became intense, and thousands of dollars were deposited as guarantees of their faith by friends to the parties in the race.

Both boats were "light and loose;" and preparations had been made for taking fuel without loss of time, from barges. The most combustible material in reach was procured, and everything done to insure victory by both parties. The telegraph wires worked day and night to post the friends of the contestants, and a general election could hardly have produced more excitement along the line of the Mississippi and Ohio rivers.

Here is the result: The *R. E. Lee* made the run from New Orleans to St. Louis in three days, eighteen hours, and four-

teen minutes, beating the *Natchez*, in the race of 1,200 miles, only three hours and forty-four minutes.

For reference, let us look at the following comparative table of the speed of several fast boats of past years.

FROM NEW ORLEANS TO NATCHEZ—DISTANCE, 295 MILES.		
	Hours.	Min.
August, 1844—Old Sultana made the run in	19	45
1851—Magnolia " " "	19	50
May, 1853—A. L. Shotwell " " "	19	49
1853—Southern Belle " " "	20	8
" 1853—Princess No. 4 " " "	20	26
" 1853—Eclipse " " "	19	47
August, 1855—New Princess " " "	18	53
" 1855— " " " "	17	30
June, 1870—Natchez " " "	17	50
July, 1870—R. E. Lee " " "	17	11
" 1870—Natchez " " "	17	14

Here is food for the thoughts of inventors and river men. In the past twenty-six years, while almost every other branch of mechanical appliance has made giant strides toward perfection, the steamboat, either through ignorance or want of inducement, or something, has scarcely advanced at a snail's pace. The steam engine—the motive power—has kept pace with other advancement; but the boat still lags, and why? Is it not because the model, which is nearly the same to-day that it was a quarter of a century since, is faulty? In the fastest time of to-day there is, with all the modern improvements in machinery, a gain over the fastest time of 1844, of only two and a half hours in a run of two hundred and ninety-five miles. Where does the trouble lie, and who will apply the remedy? C. C. HASKINS.

Sinking Valley.

MESSRS. EDITORS:—Sinking Valley, of Blair county, Pa., is situated between the Bush and Canoe Mountains, and is a continuation of Nittany Valley, Center County, Pa. It is about eight miles long, and from four to five miles wide in its widest parts. Sinking Valley took its name from the fact that the water rises and sinks in the valley. We first find in it two sinks, which have been sounded to the depth of 130 feet without finding bottom. These sinks are about 30 feet apart, and it is supposed that they are connected at the bottom. The water in these sinks is fresh limestone spring water. The water rises above ground at a distance of a quarter of a mile, and flows about two or three rods, when it enters a cave, whose mouth is 30 feet wide and 10 feet high. This cave has been explored for about half a mile, at which point the rocks come close to the water, and here may be heard a sound like the falling of water.

One mile below the cave the water rises at the Arch Spring, which is about 60 feet in diameter, and flows through an arch of limestone rocks. The arch is 35 or 40 feet long, 10 or 12 feet wide, and from 5 to 6 feet above the water. This spring drives a saw mill, and a grist mill which has four run of stones.

Five rods below the mill the water sinks again, this time very gradually. It runs into a pool and never seems to gain any ground, but as fast as it comes it sinks to unknown regions. When the water is clear, the bottom can be seen covered with round sand stones. The water is only 3 to 4 feet deep where it sinks, and when very low it is only 10 or 12 inches deep. This water rises again on the other side of the Canoe Mountain, passes down a ravine, and empties into the Juniata river, at Water Street, Huntingdon county, Penn. The proof that this is the same water is that when the saw mill at Arch Spring saws, sawdust rises on the stream on the other side of Canoe Mountain.

The rocks of Sinking Valley are the No. 2 formation, of Roger's first report, and Auroral of his final report, being the same formation which is known in New York as the Trenton and Black River limestone. An anticlinal axis runs through the valley, to the west of which the limestone dips under the Bush Mountain, and to the east under Canoe Mountain. The strata, next the auroral limestone, are schist or slate and Red River sandstone.

The auroral limestone in the valley varies from $\frac{1}{2}$ to $\frac{3}{4}$ mile in thickness, and a considerable amount of zinc and lead is found in it. These ores were discovered by the French, in 1750, or rather disclosed to them by the Indians, as they could always procure an abundance of lead almost pure. But the Indians, true to their craft, kept the precise location of the lead mines a secret.

The earliest account of any permanent settlers in the Valley is in 1760, and in 1763 quite a number took up their residence there, but without purchasing the lands. The attention of the Council was called to the existence of lead in Sinking Valley, in a letter from Major General John Armstrong to President Wharton, dated Yorktown, Feb. 23, 1778, in which he stated that Mr. Harman Husbans, a member of the Assembly for Penn., had some knowledge of a lead mine in Sinking Valley, and suggested that it should be seized and held by the State. The Council soon took the suggestion of General Armstrong, and resolved that General Daniel Roberdeau, then a member of Congress, should go to Carlisle, and make the necessary arrangements. From this place he wrote on the 17th of April, 1778, stating the great importance of going ahead, and asking for forces and \$1,200,00, and some provisions. On April 23d, he wrote from Standing Stone, now Huntingdon, and, after hard fighting, he arrived in Sinking Valley, April 27th, of the same year. Fort Roberdeau was erected, and was supplied with some muskets and a pair of cannon.

It is uncertain how long the mines were carried on by the Government, but probably not longer than the fall of 1779. What the total yield of lead was during that time we cannot ascertain. There must have been some kind of a bargain existing between the Government and Roberdeau for taking out lead, as his letter of Nov. 10, 1779, to President Reed,

demanding payment for ten hundred pounds of lead, at six dollars per pound (Continental money). This epistle fixes nearly the time when General Roberdeau abandoned the mines. The miners attempted to carry on operations for themselves, but soon gave it up on account of the immense expense of mining and smelting the ore.

In the early part of the present century, the lower mines, near the little Juniata River, known now as the Pine Hill, were opened under the superintendence of Mr. Sinclair, but were owned by Messrs. Musser and Wells. Three deep shafts were sunk on the side of Pine Hill, and a drift in the side of the hill, some 300 feet long, 6 feet high, and 6 feet wide, was excavated. These works were very expensive, and not profitable.

In 1821, the mines were visited by some parties from Montgomery county, Pa., with the intention of working them, but they concluded not to make the attempt, as they could not manufacture the lead so as to compete with Galena mines.

In 1852, some enterprising New Yorkers prospected the upper mines, and found what they supposed sufficient encouragement to go ahead and work them. They sunk several shafts, and found some ore, and a stock company was formed under the name of Sinking Valley Lead Mining Company. The stock figured among the bulls and bears of Wall street, New York, and considerable blowing was done about building extensive furnaces for smelting; but suddenly, one fine day, the ore was played out.

In 1862, a stock company, under the name of Keystone Zinc Company, opened the mine on Pine Hill, and was successful in finding sufficient zinc and lead ore to justify them in building an oxide furnace at Birmingham, on the Blair county side of the river. The works were built in 1866, under the superintendence of Mr. Nathan Bartlett. They consisted of eight oxide furnaces.

In 1868, four desulphurizing furnaces were put up under the superintendence of Mr. Ayer Bartlett, son of Mr. Nathan Bartlett. The following is a description of the working of the furnaces, and an analysis of the ore: The ore is put into a kiln, which somewhat resembles a lime kiln, where it is roasted, and the sulphuret of hydrogen is driven off, after which it is crushed or ground. It is then taken to the desulphurizing furnaces which are three in number, each 18 inches in height, 15 feet long, and 6 feet wide. The ore is first spread evenly over the floor of the upper oven, where it remains several hours. It is then drawn down to the middle oven, and fresh ore is put on the upper one. From the middle oven it is drawn into the lower one, and the ore that is in the upper furnace is drawn into the middle one, while fresh ore is put into the upper oven. The work of these ovens is to drive off the sulphur.

The ore is taken out of the lower oven, and mixed with 60 per cent of nut coal, and charged, through doors in the side, into the oxide furnaces, which are 16 feet long and 8 feet wide. These oxide furnaces have perforated bottoms, to allow cold air to enter. The air is forced in by a blower. The ore is heated to a white heat, and the zinc goes off in vapor, and carries the lead with it.

The fumes pass now into a cooling chamber, 10 feet long, 8 feet wide, and 30 feet high. From this they are drawn by an exhausting blower through a sheet iron pipe, 4 feet in diameter, and 50 feet in length, which opens into a room 30 feet long, 15 feet wide, and 25 feet high; thence into the bag room, which has three rows of muslin bags. The horizontal bags are 80 feet long, and every six feet there are perpendicular bags which are 30 feet long. At the bottom are barrels to catch the oxide as it is precipitated. The oxide is now packed in barrels, and sent to Philadelphia to be ground into paint.

The oxide is of a beautiful snow-white color. The capacity of these works is 14 tons of ore per day. The ore is the sulphuret of zinc and lead, with sulphur, limestone, sand, and some "Black Jack." It yields 43 per cent of oxide, which contains 20 per cent of lead.

The works cover an acre of ground. In connection with the works there are five large lime kilns, which ship daily 600 bushels of lime to the Natrona Soda Works, Natrona, Pa.

FRANK B. ISETT, B. S. A.

Hollidaysburg, Pa.

Speed of Large Circular Saws.

MESSRS. EDITORS:—Noticing a communication in your paper from C. H. Crane, of Greenville, Ala., on the speed of large circular saws, and fearing it might have a bad effect where they are not much used, I have thought it would be well to state some facts that I have learned from long experience in setting up and running circular saw mills.

The highest speed they should ever run is 9,000 feet per minute, for the periphery of saws, unless hammered expressly for a higher velocity. I find that there are ten mills speeded too high for the power, where there is one speeded too low. This is especially the case with water mills run without governors. The speed of all water wheels is given at their working velocity, or about three fourths of the speed they will attain when running free without load. Some saws will bear more speed than others, but, as they are generally hammered, 9,000 feet per minute, when not in the cut, give speed enough for the saws of water mills. Running at that rate, a 50-inch saw, before it had got through a log of fair size, would be found to make not far from 500 revolutions per minute.

I find most of the water mills in the country, where there is a limited supply of water, lack for power and are speeded too high, and are, consequently, running on light feed and doing a small amount of business. In such cases it would be better to reduce the speed and carry more feed, doing a greater business with less wear of saw.

A 50 inch saw, with 26 teeth, if kept in good order, will bear to run on two-inch feed in spruce or hemlock, and will cut nearly as smooth as if run on only one-inch feed, and will take but a little more power. The timber here is spruce and hemlock, and generally quite small. I think we can saw more logs than Mr. Crane, if not as many feet, and run our saw at a very much lower speed.

A circular board mill, invented and patented by me (Lane, Pitkin & Brock, manufacturers), running near here, recently cut 307 spruce logs, 12 feet long, making 20,000 feet of 1½-inch plank, between the hours of 4½ o'clock in the morning, and 7½ o'clock in the evening. The mill used a 50-inch saw, ran 500 turns per minute, and was driven by an engine, 13×24 cylinder, 93 revolutions per minute. The mill was operated by three men only—a Sawyer, who runs the mill and sets the log, one man to take away boards and slabs, and one to assist in rolling on, turning, and dogging the logs.

Montpelier, Vt.

DENNIS LANE.

Snake Stones.

The power of the imagination to excite as well as to cure diseases of the human system has been experienced from the remotest generations, and a knowledge of this power is sometimes employed to advantage by intelligent physicians. From it have also sprung some of the most absurd as well as remarkable delusions. Among these is the belief that certain charms or mysterious influences reside in various objects, animate and inanimate. The Indian finds "a great medicine" in peculiar stones and other grotesque things, which he uses to heal all manner of distempers. These delusions are not confined to savage life, but exist among all civilized races, flourishing best in communities where the exact sciences have made the least progress.

The so-called snake or mad stone belongs to the above medicine class. Some of its believers imagine that it is endowed with supernatural qualities, by which it works wonders and distinguishes itself above all other pieces of rock in the universe. The most extravagant stories concerning these stones are annually published in the papers, many of them vouched for by the most respectable people.

Here is a communication sent to us by a lady from Washington, Ga.:

MESSESS. EDITORS:—Most people have probably seen now and then in the newspapers accounts of certain magical pebbles or stones which are said to act as antidotes to animal virus, and nine out of ten readers, no doubt regard all such stories as mere inventions of some Bohemian Munchausen desirous of gaining notoriety for his paper, or as the ingenious advertising dodge of some enterprising quack bent upon fooling old women and swindling ignorant people out of their money. For my own part I confess I was, for a long time, inclined to look upon the existence of such talismans as little less apocryphal than ancient traditions concerning the philosopher's stone; and my incredulity, after arriving at years of discretion, was rather strengthened by the recollection of having heard from the negroes, during my childhood, marvelous tales of the healing wonders wrought by certain rare stones which they averred were occasionally found in the bellies of very old stags. As the marvels related of these mad stones or snake stones, as they are called, were always associated in my mind with stories of talking rabbits and tar babies and other wonders of negro mythology, and like them rested, if I mistake not, mainly upon the authority of a little black urchin named Isaac, who used to enjoy bodily encounters with the devil, and see visions of red lions under the kitchen steps, it is not to be wondered at that my mature judgment was very chary of accepting newspaper accounts of a substance that seemed to belong altogether to Fableland.

Of late years, however, my attention has been more seriously attracted toward the subject of these wonderful talismans by hearing of one in the possession of a Mr. Albert Gibson, of Columbia county, Georgia, a gentleman of wealth and respectability, who has never used his singular heirloom as a means for getting money, and therefore has had no reason for advertising or giving notoriety to its existence. As he is very generous, however, in allowing his neighbors to benefit gratuitously by its healing powers, in case of snake bites or mad dogs, its light has not been altogether hidden under a bushel. Being the first "snake stone" I ever heard of which could boast "a local habitation and a name," it inspired some respect as well as curiosity, both of which increased as I continued to hear such authenticated accounts of undoubted cures performed by it upon persons infected with animal poisons. Finally my interest became so much excited that I determined to write to a gentleman of high standing in the county, a neighbor of Mr. Gibson's, for a full description of the wonder. As his account is very circumstantial and interesting, I give it entire, merely omitting such parts of the letter as relate to private or personal matters, and are therefore of no interest to the public. The writer is a gentleman of the highest integrity, as well as of a liberal education and extensive culture, and his word may therefore be received without hesitation or reserve. Here is the letter:

"APPLING, GA., June 25, 1870.

"DEAR MISS —:—Yours of the 27th ult. was received by due course of mail, and should have been answered at once but for my inability to get an immediate sight of the celebrated snake stone.

"Mr. Gibson, the owner, never permits it to be carried from home, unless he goes with it. He brought it over once when I was absent, and it was not convenient for him to come again until to-day. * * *

"The name given to this celebrated talisman is, in my judgment, a solecism. It is, I think, a compound of unknown substances and quantities. In form it is a parallelogram,

about 1 inch long, ¼ of an inch in width, and ⅛ of an inch thick, weighs 54 grains, and is very porous. The outward surface is of a whitish gray color, except the side applied to wounds, which is a black irregular surface. When broken (as this has been) the inner parts present a deep blue color, like indigo, which it resembles when pulverized. It has been in the family of the present possessor for more than a century, and is said to have been brought from the East Indies. Some years ago, I saw in "Niles' Register" an account of a similar stone, and these two are the only ones I have ever heard of.

"If human testimony is to be believed, the effect upon animal virus is wonderful indeed. The mode of application, if the bite be recent, is to apply the stone directly to the wound. If any considerable time has elapsed, and the wound healed, to scarify, and then apply the stone. In all cases it is immersed in tepid water. If there be any virus in the person, the stone adheres to the wound until the poison is extracted, or it becomes fully charged. It then drops off, and by again immersing in warm water, it is cleansed, and the virus may be seen exuding from the pores.

"The applications are repeated until the stone refuses to adhere. It has never failed in a single instance to effect a perfect cure. It is alike efficacious in snake bites and wounds from rabid animals, and has been applied in hundreds of cases. Some years since a negro man was sent to Mr. Gibson from the neighborhood of Columbus, who had been bitten by a snake eleven weeks before. He came here with one of his limbs greatly enlarged, and was unable to walk, but in three days after the stone was applied, he was able to go into the field and work as usual, and in a week was sent home perfectly well.

"A brother of the late Judge Thomas, who now resides in Augusta, was once bitten by a rabid dog, and this stone applied soon thereafter to the wound; he never experienced any symptoms of hydrophobia, while the cattle and dogs bitten at the same time on the same plantation, became in a few days rabid. I could mention numerous equally well-attested cases.

"No analysis has ever been made of this stone, as it is called. Mr. Gibson has a small piece that was broken off some years ago, and says he intends to have it analyzed.

"Very truly yours, etc., "C. H. S."

It is to be hoped the owner of the remarkable curiosity will carry out his intention of submitting the broken bit to a careful analysis. It is true that thus far the dissecting analysis of many precious stones, has led to no practical results of the nature anticipated by those deluded souls who spent their lives in searching after the philosopher's stone, and it is possible that an analysis of this "snake stone" might prove equally futile—still the experiment is worth trying. Nor should the tradition regarding the existence of such in the stomachs of deer be wholly disregarded, since it seems not altogether certain that this remarkable substance is literally a stone.

If the inhabitants of countries infested with venomous insects and reptiles could be supplied with bracelets or seal rings possessing such magic virtue as antidotes to animal poison, rattlesnakes, cobras, and tarantulas would cease to be things of terror to the pioneer, and the seed of the serpent need never again, in a literal sense at least, triumph over the seed of the woman.

Washington, Ga.

ELZBY HAY.

EFFECT OF THE MADSTONE.—A letter to the *Bloomington Pantagraph* says: "Returning home from Bloomington last Saturday evening, I met at Normal a gentleman from Henry county, on his way from Lincoln, where he had been with his daughter, aged eleven years, to have the so-called madstone applied to her foot for the bite of a mad dog, which was inflicted on her last Sunday week. The stone was applied at one o'clock last Thursday morning, and the father told me that during its application the wound, which, though severe, had not been previously painful, became severely so, and a stench almost unbearable filled the room. When taken off the wound the stone was placed in water, on which a green scum arose, like that seen on the surface of stagnant pools."

THE MAD STONE DELUSION.—DEATH FROM HYDROPHOBIA.—Mr. John Sayers, a laborer in the North Missouri Railroad car shop, died, yesterday morning, of hydrophobia. As the facts connected with the unfortunate event possess a peculiar interest at this season of the year, we give a brief narration of the circumstances connected with the case: Sayers was a married man thirty years of age, of a robust and powerful frame, and until recently in very good health. On the 24th of May a little poodle dog belonging to him was fighting with another dog, when he attempted to separate them. In doing so his own dog bit him on the inside fleshy part of the hand, near the thumb. Deceased felt some pain from the injury, and went to a man in St. Charles who had what is known as a "mad stone," and it was applied twice. The second time it is said to have adhered twenty minutes. About twelve days ago Sayers accidentally knocked the skin off the place on the hand where the cut had been, and soon after felt an acute pain which extended to the shoulder. The pain increased, and on Saturday he was obliged to quit. On Monday he went to Dr. Gallagher, and on Tuesday he said the pain had left his arm. His symptoms subsequently were not altogether such as usually accompany hydrophobia. He was not violent or wild, but exhibited a deadly aversion to water. He could not drink it, but was able to take some wine. On Wednesday evening a change took place in his condition, and he said he felt he was going to die. A medical gentleman saw him at 9 o'clock, but he thought there was no danger then. For about an hour before his death, Sayers talked in an excited and incoherent manner. He died yesterday morning at half-past 2, and was buried in the afternoon. He leaves a wife and one child. The case is a sad one, and illustrates the horrible danger of a dog-bite in the summer season, and the necessity of taking proper measures to prevent possible results when there is any reason to believe the dog mad. It further tends to show that the virtues of the "mad stone," in which so many believe, furnish but a poor guarantee of a cure, and if it helps to explode the humbug and lead people to resort to the only safe measures, cutting out the part and severe cauterization, it will not have been entirely barren of fruits.—*Missouri Republican*, July 22.

An Undeserved Credit.

MESSESS. EDITORS:—In accrediting the invention of a dry dock, described on page 384, last volume of the *SCIENTIFIC AMERICAN*, to an English source, you unintentionally, no doubt, did an American inventor injustice. I inclose you a copy of a patent obtained through your agency July 6, 1869, for me. The following extract from the specification will show that the "English inventor" referred to has been either pirating my invention or has, without knowing it, reinvented it: "My invention relates to a new and improved method of constructing coffer-dams for building piers and other submarine structures, and in making the same convertible into other forms for raising sunken vessels. It consists in forming the coffer-dam in two or more sections, the sides of which are partitioned off into water and air tight compartments, each section having a removable side, and all the sides being provided with suitable tubes and other appliances for filling the compartments with either air or water at all times, whereby the section may be submerged or floated as may be desired. It also consists in so constructing the coffer-dam that it may be made (with two of its sections) to inclose a sunken vessel, thereby affording means for raising the same."

By inserting this communication you will do an act of justice to an old client.

SAMUEL LEWIS.

Williamburg, N. Y.

Bartlett Lead and Ozone.

MESSESS. EDITORS:—Your correspondent R. H. desires to know "how ozone can be productive of any one of the peculiarities attributed to Bartlett lead in the article of July 16th, and how ozone exists in the compound."

The peculiarities there stated are that Bartlett lead, "when mixed with oil or spirits of turpentine, does not settle as other paints; that a building painted with it bleaches whiter instead of turning yellow; that when mixed and exposed to the air it thickens; and that it has a gloss unknown to any other pigment."

I suppose your correspondent knows what ozone is thought to be—that it is altered oxygen, in plain English. Oxygen may be altered by various causes; electricity is one of these. It has been pretty well settled that ozone is the bleaching principle of oxygen, or that oxygen altered to ozone will bleach; that in its prime state it will not. It is settled among most chemists that the oxygen contained in the metallic acids which form combinations with other metals and the alkalis is in the form of ozone. The article states Bartlett lead to be, in great measure, at least, a plumbate of zinc. This being so, no one but a person bitterly prejudiced would deny the presence of ozone.

H. E. C.

Destruction of Fish by Toads.

MESSESS. EDITORS:—On the 410th page, last volume, of your journal, is an article on the habits of the toad (*Bufo calanilla*) in which the reader is left to conjecture much that might have been made intelligible in a few words. The toad never attacks any animal, not even a fish, in the sense argued by the writer of the article alluded to above; and it is only the male toad that attaches himself to fishes in the manner described, and only in that season of the year when the female deposits her spawn, the vivification of which depends on that habit of the male, a perversion of which sometimes causes him to attach himself to any moving object that comes within his reach. This may be verified in any pool of water where toads congregate in summer, in this country as well as in Europe.

It is a subject of curious reflection to find a habit essential to the continuation of one race of beings incidentally concerned in the destruction of another race.

Mohawk, N. Y.

CHRISTOPHER JENKINS.

Lowest Line of Perpetual Snow.

MESSESS. EDITORS:—The lowest line of perpetual snow known is at the Gulf of Penas, on the west coast of Patagonia, latitude 47° south; that line is about 2,700 feet above the water.

The weather in this particular region is regarded as the most rugged and boisterous of the whole south portion of South America. It is seldom there is a bright and pleasant day during the year. Storms of wind, rain, or snow prevail, and the exception is their absence.

S. P. JOSEPH.

A Dangerous Practice.

It ought to be known that the practice employed by some of unsoldering the tops of fruit cans by means of heat, is attended with danger. The *Providence Press* says that the following singular accident recently took place in the kitchen of a gentleman of that city: While the cook was getting dinner she placed a can of tomato soup upon the range to warm, as she had been in the habit of doing, with live coals upon the little round cover in the top of the can for the purpose of melting the solder. Instead of the solder melting as usual, however, the can in a few moments exploded with a loud report, blowing a part of it across the room, scattering scalding soup in all directions, and over everything—ceiling, walls, and freshly-ironed clothes, and hurling live coals about the floor, and even as far off as upon a table on the opposite side of the kitchen. The cook, who, fortunately, was not near the range, and who was the only person in the room at the moment, was severely scalded in the face and upon the neck and arms, by the flying soup.

The proper way to open such cans is to cut out the top. Our inventors have provided very simple and handy implements for this purpose.