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Notes & Queries

E. B. H. asks how to galvanize sheet iron.

E. M. D. asks how old zinc can be made pure for use in a battery.

A. F. V. wants to know the best and quickest mode of kiln drying lumber.

E. J. C. asks: What is the preparation and process of burnishing gilding on china.

D. P. asks: How can I toughen horse hair so that it will not be brittle?

G. G. F. asks how to remove slight scratches off the face of a looking glass.

T. Y. S. asks how to bleach China grass. It can be made as white as snow.

R. R. asks: At what speed should a band saw run to cut saw logs best?

S. H. H. asks how to remove the rough back off the shell of the pearl oyster.

A. S. asks if it is possible to draw wire from a gold dollar to reach the length of a mile? If not, what length can it be drawn to?

W. W. C. asks: Is there anything that will make leather stick to iron and form a water tight joint for hydraulic rams?

C. H. R. asks for a recipe for an elastic polish or varnish that will give a patent leather finish, or one that will resemble it. It should bear bending and not break.

A. F. S. asks for the precise method by which gold fish are made to spawn. "I have a pond in which I have kept the same gold fish for over three years, and up to the present time they have not multiplied."

W. S. asks: 1. What will remove black ink from writing paper without injury? 2. What is the easiest way to make a hole in a watch spring, without taking the temper out?

J. R. C. asks: What is the best kind of material for a float for petroleum? "I want something that will float freely on the oil and that will not become affected by it."

C. M. D. asks for a rule for measuring painter's works on iron bridges; for instance, a bridge 800 feet long x 100 feet high x 20 feet wide on top. Are the sides, length, and hight measured as lattice work or once through?

R. R. asks: 1. What is the best time of the year as regards health to go to the Isthmus of Panama, and what sanitary course should be pursued?

C. J. F. says: I have a flat roof covered ten years ago with pitch and gravel. It now begins to leak a little. I have been thinking of scraping off the loose gravel and then applying a coat of Rosendale cement, say half cement and half sand. What do you think of it? Will it crack?

R. R. asks: If somebody buys a tract of land with a watercourse through it, and pays tax on the whole tract, water and all, has he a right to close up the creek with a dam, or must he let other people from below float their saw logs through his land? The logs could not float if the man had not dammed the creek some.

A. F. O. asks: What is bichromatized gelatin? How is it prepared, and what are its properties and uses? 2. How can I make a quickly drying cement that will resist the action of boiling alcohol, or with what varnish can I cover ordinary cements to accomplish the same object? 3. Is there any work in which are minutely described the manipulations of thermometer making, especially blowing the tubes and graduating the scales?

G. H. H. asks: Why is it that, in putting the finger on either the in or outside of the closed eye, a dark spot will appear on the opposite side of the ball in daylight, and a bright, luminous spot about the size of a gold dollar in the dark? It is an experiment which all can try; perhaps thousands have noticed it before; but what is it that appears so bright where all else is dark, because of a little manipulation of the closed eye and lid by the finger?

D. S. says: On page 52 of your current volume in answer to P. S. K. Maiers, you direct him to break stones into small pieces and then to mix sand (sharp grit), etc. I have no stones on or near my place, and I wish to know whether river gravel which I have in abundance (from the size of a goose egg to fine sand) would answer instead. Also, will it make a sufficiently strong cellar wall, and if so, would cement mixed with lime be better for a cellar wall than cement without the lime?

J. G. K. asks: 1. Where can I obtain the exact standard measure of the American foot or yard? Is there any place or office in the city of New York where such a standard or model measure is kept open for the public? 2. Could some correspondent give me some practical details concerning the system of irrigation as practiced by the Mormons in Utah, and also about irrigation generally for agricultural and gardening purposes? 2. Is there not a kind of oak with edible acorns which may be used as food, or are acorns actually used as food? If so, where and how? I wish to know the botanical or other name and some characteristic description of such oaks and where they grow.

M. E. P. says: Can there be any such thing as a steam boiler that is absolutely safe? I do not claim to be an engineer myself; but suppose a boiler should be made in the usual manner except that the safety valve should be set on the top of another larger safety valve. For instance, the whole top of the steam dome might form a valve, fitted and made steam tight and arranged with a sufficiently long lever and heavy weights to stand an internal pressure of say one hundred pounds to the square inch, while the small safety valve was set to blow off at eighty. Would that be practicable? Or would several smaller ones attached to one boiler be of any use?

E. A. S. says: Nearly two years ago I tore up an old coal chute, that had been built for eighteen years, and found the sleepers and cross trees as sound as when first laid. The timber was laid in our common sand, and some of it was round, just as cut in the woods, with the bark on, and this was as sound as the rest. There were pine, hemlock, spruce and oak. The slack coal had worked through the cracks, and water had leaked through and formed a crust about six inches through. We had to use a pick to break through the crust. The earth was saturated for about two feet down and looked like iron ore. Could slack coal and sand be used to lay Nicholson pavement, and be cheaper and better than the old process? And would it last till it wore out, without regard to the kind of timber used? I claim that this can be done, and, if so, the discovery of the same.

Answers to Correspondents

Owing to the illness of one of our editors, the replies to several of our correspondents relating to chemical subjects have been delayed, but will shortly be given.

F. A. S. will find particulars of cupro-ammonium on p. 177, vol. 28.—P. H. H. and J. C. C. will find directions for hardening taps and dies on p. 91, vol. 28.—G. T. S. can repair his leaky tin roof by following the directions on p. 139, vol. 28.—W. V. C. and M. C. M. will find the directions for polishing wood, given on p. 72, vol. 26, sufficient for the purpose.—W. H. G. will find the subject of preserving eggs practically discussed on p. 107, vol. 28.—C. R. asks how to brown gun barrels. Answer: Read the articles on pp. 154 & 266, vol. 26.—W. M. will find the process for bluing steel described on p. 10, vol. 25.—W. P. B. and J. P. C. will find ample directions for repairing rubber boots on p. 155, vol. 26.—J. A. E. asks how to join heavy gum belting. Answer: Read the two articles on p. 27, vol. 28.—G. R. and others will find the Gramme magneto-electrical apparatus described and illustrated on p. 410, vol. 26.—F. F. will find practical directions for making an Æolian harp on p. 330, vol. 26.—M. B. will find a recipe for a pickle for tempering mill picks on p. 106, vol. 25.—E. K., F. T. J., and W. H. W. will find the subject of whitewashing fully discussed on p. 122, vol. 24.—A. K. will find a recipe for transparent cement on p. 41, vol. 27.—M. C. M. will be able to mount chromos, etc., by following the directions on p. 154, vol. 27.—T. E. C. will find directions for porcelaining iron ware on p. 149, vol. 28.—M. T. B. will find the power of steam boilers fully discussed in the last few numbers of the SCIENTIFIC AMERICAN.—H. J. W. should read J. J. B.'s reply to W. D. O. on this page.—A. W. P. will find a recipe for marine glue on p. 202, vol. 28.—O. J. P. will find full directions for making and applying liquid bronze on p. 90, vol. 26.—R. S. W. asks for a covering for a flat roof. Answer: Consult our advertising columns.

E. C. M. is informed that the information on the regeneration of bone black is derived from the accounts published, by the inventors of the process, in Europe. It is not an extract from another publication.

J. L. L. asks what we mean by a saw of 16 gage. Answer: The blade of the saw is the thickness of No. 16 wire, according to the wire gage in ordinary use.

P. P. H. asks if any metal expands and contracts with various degrees of heat, as do mercury and alcohol. Answer: Yes; read S.'s letter on page 242 of our current volume.

P. P. H. asks if mercury can be kept in an iron vessel without affecting the latter. Answer: Yes: mercury is generally sold in cast iron flasks.

A. says: The following account of a boiler disaster appears in a Sacramento (Cal.) daily journal of March 25, 1873: "Last evening the residents were startled by a loud explosion, which was immediately followed by an alarm of fire. It became evident that some remarkable freak of steam had taken place, for an immense boiler, rent and torn by an explosion, lay across Second street, while an enormous hole in the third story of a brick house immediately opposite told of the terrific force with which it had been hurled. Investigation disclosed the fact that the boiler belonged to the Sacramento foundery of Wm. Guttenberger, 105 and 107 Front street, which had exploded with such force as to send it entirely through the end of the shop in which it was situated, across the alley, through a large yard, demolishing the fence on its road; then rising through the air, it passed entirely through three rooms and both front and back walls of a brick house before it had reached its lodging place in the middle of Second street. At first sight it seemed impossible that such an occurrence should have taken place without loss of life, and search was at once commenced amid the ruins for the injured, but none were found. It seems that the workmen had all left the foundery some time before, banking the fires and leaving everything apparently safe, and that all the occupants of the injured house were down stairs at the time. It is supposed that the explosion was of such a nature as to give a circular motion to the boiler in its flight, which, combined with the immense velocity, caused it to cut its way clean through all obstructions. The partition walls, furniture and brick walls were as completely and cleanly cut through as could have been done by the tools of a mechanic, while the boiler shop is a complete wreck of broken timbers. The most plausible theory of the cause of the explosion is that the fire got under way after the workmen had left, and thus generated steam sufficient to cause the accident. It was, however, impossible to arrive at any conclusions last night, and it will require removal and examination of the *debris* to-day to get at any accurate idea of how it occurred. A casual examination of the boiler shows that in some places it was very much worn and thin, some of the pieces left in its track being but little thicker than sheet iron." On going to the spot, immediately on reading the above, I found the boiler, as it lays on the street, to be about 10 feet long by 42 inches in diameter, 30 flues about 2 inches diameter. The front end is blown off and gone; one side of the boiler, from one end of the flues to the other, has been forced in by some cause, as if some great pressure had been applied to the outside. The flues are all forced close together at the center, while the ends of most of them remain in their proper places. Now what I wish to know is: How is it possible for the front end of a boiler to blow off and the balance of the boiler to follow with such force in the same direction? In this instance, the boiler was set facing the east; the front part is gone and the bottom we find about 300 feet east of where it was set, having struck the ground with the back end of the boiler first, showing that it must have made at least one half of a revolution endwise. I would as soon expect to see a cannon, when fired, go in the same direction as the ball, as to see a boiler follow up the end that is blown off. But perhaps you can give a satisfactory explanation of this mystery. Answer: We are quite as much at loss to account for this remarkable circumstance as is our correspondent, and hope that he will continue his investigation until he can give us more complete data upon which to base an opinion. Is there no mistake in the description given of the relative position of the boiler before and after the explosion, or some peculiarity of setting?

E. R. D. says: I have a ½ horse power oscillating engine; how large a boiler shall I want and what thickness should the iron be? The boiler is to be heated by a stove; will a barrel setting over the boiler, with a pipe running down into it, do for a feeder? Answer: We should make a tubular boiler having about a square foot of grate surface and 20 feet of heating surface. It would probably be 20 inches in diameter of shell, and should be made of iron about an eighth of an inch thick to carry 100 pounds steam. A properly constructed plunger feed pump should be attached to the engine. We should not approve of the barrel arrangement.

J. H. C. asks what per cent of the water supplied to a hydraulic ram can be returned to the point from which it fell? Does a ram give as good results under a given head of water as a turbine wheel? Answer: See article on page 257 of this issue.

L. & D. W. C. ask: How can we ascertain the quantity of power transmitted by belts of different widths, and pulleys of various diameters and speed? Answer: See the editorial columns of this issue.

W. H. C. asks: Would a pressure of steam hold up a column of cold water under the following circumstances: Suppose I have a tank of cold water 3 feet high connected by a ¾ pipe to my boiler above the water line (the tank also sitting above the water line), what pressure of steam, if any, would hold the water back; or would the cold water condense the steam and the difference in temperatures create a current and allow the water to run in the boiler under any pressure, the steam taking its place? Would the same result take place (the tank being closed and able to sustain the pressure of the steam in the boiler) if the tank were full as if half full? Or would the same result take place if the water in the tank was at a temperature of 30° as at 200°? Answer: A pressure of one and a half pounds would equilibrate that of the column of water. In the case supposed, the water, if cold, and if the pipe conducting it to the boiler were large enough, might condense the steam. If that were to occur, the water in the tank would then flow into the boiler with the same rapidity that it would issue from the pipe were the pipe led into the open air and a hole made in the top of the tank. The steam could only take the place of the water when the pipe was made of sufficient size to allow the steam to bubble directly up into the tank. With heated feed water, condensation of the steam would not be likely to

happen, and the arrangement has, in that shape, been used as an automatic feed, with some success.

D. G. says: We have a new kind of a pump lately introduced into this (mining) district; this pump was originally intended for a 14 inch pump, plunger and bucket combined, the object of which is to discharge one half the water on the down stroke and the other half on the up stroke, thus making what is claimed to be a balance pump, with a great saving in power in working in deep mines. The parties who use this pump discarded the bucket and changed the plunger to a 12 inch one, which makes the pump now a 12 inch plunger pump. The builder of this pump has discovered an advantage in discharging the water through the jack head over pump barrel, and a saving of ten feet travel of water, over the old fashioned plunger pump. This pump we call B and the former, A. We place the two pumps in a shaft, 200 feet deep; the foot valves are on a level with one another. Now the best talent in the county claims that the water in B will travel 10 feet further than it does in A, in other words that B raises a column of water 200 feet in hight, while A only raises a column 190 feet, and spills water 10 feet in advance of B. I claim that the water in B does not travel any further than it does in A, that they both pump against a column of water of the same hight, and that A does not discharge water 10 feet in advance of B. Will you give us your highly valued opinion? Answer: We are inclined to agree with our correspondent on this point. We think, with him, that if, by any contrivance, water is raised from one level and discharged into a reservoir at a level 200 feet above, no modification of the machine will be able to make the lift anything less than 200 feet. We differ from the said "best talent" holding opposite views, and should prefer to accept the opinion of some of the intelligent apprentice boys who read the SCIENTIFIC AMERICAN, rather than subscribe to the views of said "best talent." Any two pumps, pumping against equal heads, will require the same power to do their work, provided frictional resistances are equal.

J. K. says: We have a steam mill for sawing logs, planing matching, etc.; our feed water is hard and causes a great deal of scale on the boiler. Now we have contracted for a new boiler of 30 horse power and wish to know what arrangement we can make to condense the exhaust steam to use for feed water. Answer: We presume that the most satisfactory arrangement will be found to be the usual condenser and air pump, which can be attached by any competent constructing engineer. There are one or two forms of "siphon condenser" in the market which are less expensive, however, and are said to perform well.

J. M. says: I have charge of a nest of three 42 inch boilers, 22 feet long, with 2 fourteen inch flues in each; the shells are made of ¼ inch iron and the flues are made of iron of the same gage. They have been in use for 12 years, and I inspected them this week; the scale that is deposited on them is no thicker than a sheet of writing paper and is black and glossy; there are no leaks and they appear to be in as good condition as though they were only two years in use. I am expected to press them to 65 lbs. per square inch. I have had charge of boilers for the last sixteen years and I have read the SCIENTIFIC all that time; but as this is the first time that I have had to deal with boilers with large flues, I wish you to give me information in regard to what you believe would be the highest safe strain that I could carry, and whether the shell or the flues will stand the most pressure before giving way. Will you tell me how to compute the strains on flues in plain arithmetic, as I have no knowledge of algebra? Answer: The shell of the boilers described, if perfectly sound and of good iron, is safe at the pressure of 65 lbs., and the steamboat law has generally allowed 110 lbs. on boilers of that size and of ¼ inch metal. The flues, if in equally good condition should collapse at about $806{,}000 \times \frac{1}{4} \times \frac{1}{4} \div 22 \times 14 = 163{\cdot}5$ pounds. One quarter of this pressure, or 40 pounds, is generally named by engineers as the limit of pressure to be carried, and we, ourselves, should object to carrying more than one sixth, 28 pounds. The flues will, therefore, give way first, under the conditions assumed, and should not be subjected to more than 40 or 45 pounds, although they may stand four times that pressure. The weak spot in large numbers of boilers is the flues, and, as our correspondent probably knows quite as well as we do, many accidents occur from collapsing flues. To determine the strength of any flue, made of good iron, well put together, and perfectly cylindrical: Divide 806,000 times the square of the thickness in inches by the product of the diameter in inches and the length in feet.

D. says: Suppose a party owes me. I sue and get judgment entered up against him, and the sheriff reports "no property, except letters patent in the defendant's name for a valuable invention" (cannot say if it is his own or purchased). Can I have said letters patent attached and sold at sheriff's sale? Answer; A patent cannot be taken and sold under an execution in an ordinary action for debt in which judgment has been recovered.

P. L. asks: Would sleeping always with your head to the north tend to magnetize the metallic constituents of the fluids and solids of the human body? If so, would it increase nervousness? Answer: Persons having the "iron constitution" might be so affected.

P. L. asks: How can you construct a pump that will draw water from a well that is 45 or 50 feet deep? Answer: Use a common lift and force pump, the latter placed in the well, say, 25 feet above the water.

L. W. C. asks: Can you give me an explanation of how Chas. G. Page (or his heirs) could take out letters patent in 1868 on electrical instruments which, according to history, were discovered by Professors Henry, Wheatstone and Morse, as early as between 1836 and 1842? Also, could that patent be enforced and thereby close opposition telegraph companies? Answer: The Page patents were granted by special act of Congress. Their validity has not yet been determined by the Courts.

N. B. D. says: I wish you could tell me what is the matter with my magnet. The cores are made of soft iron, about ⅞ inches at one end and ⅝ inches at the other, and are 6 inches long; they are joined at the smaller end by being screwed into a small piece of iron and are wound with about 600 feet of fine covered wire. When I attach the wires of a local battery to them, they have scarcely any attractive power. My magnets are considerably larger than those on my sounder, but do not possess any attractive power. Can you tell me where the trouble lies? Answer: Your mistake may be in the connection of the terminal wires of the two spools forming the electro-magnet. If the two spools are wound in one direction and slipped on the cores, at the end furthest from the armature, connect either the two outside, or the two inside, terminal wires with each other. If we had your magnet here, we would correct your mistake, if not too great, without cost.

W. M. E. sends a mineral and asks what it is. Answer: The mineral sent is iron pyrites, or fool's gold. Of no value.

A. M. R. says: 1. What proportion of the weight of a car and load is the measure of adhesion of a 33 inch chilled cast iron wheel and an iron rail? 2. Of brakes with shoes of cast iron 4 x 12 inches, what proportion of car and load must be applied to the brakes to make the adhesion of wheel to brake equal to wheel on rail? 3. All things being equal, what is the measure of difference of adhesion between a rolling wheel and a sliding wheel on an iron rail? Answer: From fifteen to twenty per cent when dry, about ten per cent when greasy, and about five per cent for very light loads on a very greasy rail. 2. The friction is about the same as the preceding, and the same proportion of weight should be applied, rather less if it is desired that the wheels should not slide without turning. 3. Rolling friction of trains on a level being about one third of one per cent, the ratio of rolling to sliding will be 45 or 60 to 1 for dry, 30 to 1 for greasy, and 15 to 1 for very light weights and a very greasy rail. The *sliding* friction of a rolling and a sliding wheel are about the same.

W. H. C. asks: 1. How can zinc lining in bath tubs be kept bright, or brightened when tarnished? 2. Is there a durable paint or varnish for stoves, to be used in place of black lead? Answers: 1. Use elbow grease and whiting. 2. There is nothing equal to first quality finest ground black lead for stoves.

N. N. says: 1. I have a fire box boiler 18 feet by 4 2 inches, containing 5 seven inch flues, 3 near the center and 2 nearer the bottom. At about 2½ or 3 inches from the outside shell, a crack has occurred in one of the bottom flues, near the lower side where the flue joins the boiler head, on the under side of the flue and next to the adjoining flue. How can I instruct a blacksmith to repair the break? 2. The flues, from burning light wood, are incrusted with a thick coating on the fire surface of each, apparently deposited from the smoke; how can I remove it? It materially interferes with making steam, being a non conductor of heat. 3. What will precipitate cellulose from its cupro-ammonium solution? 4. What is celluloid? Answers: 1. Take a piece of boiler plate large enough to cover the crack completely, with width enough to allow room for flange through which to bolt. Fit very carefully, working it hot and finally bolt it in place with ⅝ inch head and nut bolts, making the joint tight with a cement of red and white lead and oil. 2. Make a scraping tool for the purpose and remove it with that, if it cannot be detached by a stream of water, or by a brush. 3. Precipitate by neutralizing with excess of hydrochloric acid. 4. From the Latin *cellula*, little cells, and *loid*, like.

W. A. P. says, in answer to S. P. S. who asked what are the diameters of English locomotive drivers: Their express locomotives have a single driving wheel on each side, the diameter of which differs on different railroads. I enquired concerning them while in London last summer, and was told that the largest on the London and Southeastern Railway were about 9 feet in diameter; those on the Midland railway from 8 to 8½ feet; and on the London and Northwestern railway and others, they varied from 6½ to 8½ feet. Those on the L. & N. W. railway are chiefly from 7 to 7¼ feet in diameter. Their freight locomotives have driving wheels of less diameter; but from what I saw, I should say that they were generally larger than those used on freight locomotives in this country.

J. J. B. says that W. D. O.'s question as to the commencement of the day is a perfectly legitimate one, and the answer is very simple: By the common consent of nations, the 180th degree of longitude from Greenwich is the starting point (or line) for each separate day in turn, and consequently this is the line sought for by W. D. O. When a ship going west crosses this line at noon on Friday, she crosses over to noon on Saturday, and *vice versa*; when a ship going east crosses this line at noon on Saturday, she finds, after she is across the line, that it is only Friday noon. This arrangement is, of course, purely artificial, but I believe is universally adhered to.

G. L. B. says, in answer to E. M. B.'s question on calculating speeds and diameters of pulleys: Multiply the diameter of the pulley (in inches) by the speed that it runs and divide by the diameter of the driven pulley. The answer will be the speed of the driven pulley. He says that machines come to him marked to run at so many revolutions per minute. Let him multiply the diameter of the pulley by the speed that it is marked to run and divide by the speed that his line of shafting runs, and the answer will be the diameter of the pulley required in inches.

J. C. H. says, in answer to T. G. who asks for directions to make a solid emery wheel: Take coarse emery, 2 lbs., Stourbridge loam, 1 lb.; mix to a thick paste and press into a metallic mold, then dry and bake or burn in a muffle to a white heat.

S. T. W. replies to S. L. D. who asked for a method of transferring pictures to glass: My method of transferring pictures is to use balsam of fir and alcohol; varnish the glass, place the picture face down upon it and then, instead of letting it dry for 24 hours, immediately commence rubbing off the back with water and forefinger; of course it requires a little more care, and it should be rubbed very lightly the closer you get to the picture. When allowed to dry for 24 hours, the paper absorbs a portion of the varnish, which prevents its being rubbed down thin, while the other way, with care, will secure a much finer and quicker job.

A. O. says, in reply to J. B. M., who asked what is the result produced by hardening cast steel in water strongly impregnated with salt, and what would be the difference if sal ammoniac were used in place of salt: All substances which increase the conductivity of heat of the water produce also a higher degree of hardness in the steel. This is the case with salt and sal ammoniac. The percentage of calcareous matter exerts no certain influence; so we can explain why the ancients considered certain rivulets and wells especially suitable for hardening steel. For this reason, according to Pliny, steel works were often erected in their vicinity, and at a distance from the mines. There are now used nitric acid, potash, nitre, prussiate of potash, crystals of tartar, etc. The English file cutters add 1 part of oil of vitriol to 30 or 40 parts of water. In some cases where no fresh cold water is at hand, such additions may be very useful, but they may in general be dispensed with.

A correspondent replies to T. E. B., who asked how to remove clinkers from the inside of a stove: Throw three or four oyster shells in the stove, while the fire is hot, and leave them there. They work like a charm.

A. H. M. says, in reply to J. C. C.'s query about cleansing feed water: If you will place your heater and filter above your pump a foot or two, so the hot water will flow to it, and then insert a small pipe in the suction close to the pump, of sufficient hight to extend above the head of hot water, leaving the upper end open for the steam to escape, I think you will be able to force your hot water without cooling it again, and thus you will not lose the advantage of heating and filtering.

MINERALS.—Specimens have been received from the following correspondents, and examined with the results stated:

S. H.—It is galena, the ore of lead.

J. W. T.—It is a siliceous rock, containing either carbonaceous matter or oxide of manganese: analysis would be necessary to determine.

A. H.—It is calcareous marl.

G. C. S.—They are pyrites and mica.

J. F. S.—The specimens contain neither cobalt nor nickel, but considerable iron.

J. A. C.—The metal is lead; but is J. A. C. sure that it came from the dark colored rock sent?

D. H. W.—It is not gold, but iron pyrites.

E.—It is yellow ocher, which is useful as a coarse paint and for polishing. If there is an abundance of it, it should not lie idle.

W. P. H.—The specimen is interesting as being a relic of the superstitious arts practised by the "medicine men" of Africa. We cannot think of any drug, certainly one with which the negroes are acquainted, which would produce the symptoms mentioned. If any other correspondents of the SCIENTIFIC AMERICAN know of the use of the "Hoodo," or anything similar, among the negroes in the Southern States, we wish they would communicate.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

On the Atlantic Disaster. By C. D. O.

On a Plan for an Underground Telegraph. By W. F.

On the Solarity of the Magnetic Needle. By H. S.

On a Railroad Accident near Memphis, Tenn. By A. C.

On a Hydraulic Ram. By J. P.

On Professor Haeckel's Opinion of the Embryo State of Man. By J. L.

On Trying Circles with a Square. By G. B. D.

On Moonites. By W. L. D.

On Double Action Friction Gear. By J. B. H.

On Clarifying the Water of Kansas City. By H. R.

Also enquiries from the following:

J. G.—G. W. S. & Co.—C. E. B.—J. J. E.—J. H. W.—W. J. S.—A. K.—R. D. B.—H. A.—G. G. S.—E. M.—J. D.—F. S. J.—E. F. O.—F. R.—W. G.—J. H. W.—J. S. M.—W. H. C.—T. C. J.—A. H.—J. B.—B. A. C.—A. C.—H. J. N.—R. W. S.—C. D. F.—G. M. E.—A. M.—J. S.

Correspondents who write to ask the address of certain manufacturers, or where specified articles are to be had, also those having goods for sale, or who want to find partners, should send with their communications an amount sufficient to cover the cost of publication under the head of "Business and Personal," which is specially devoted to such enquiries.

[OFFICIAL.]

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FOR WHICH

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March 25, 1873,

AND EACH BEARING THAT DATE.

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