Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

Notes & Queries

HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from $1 to $5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) C. & B. ask for a formula for coppering malleable iron; also let us know what to use for cleansing iron before coppering. We would like a nice bright color, such as curtain fixtures. A. See SUPPLEMENT, No. 310, where full instructions are published under the head of "Electro-metallurgy."

(2) A. C. asks what to use with paraffine to make it the consistency of a gum. I have tried several experiments, but as yet can get nothing that will mix with it. A. We recommend that the paraffine be dissolved in some menstruum until the desired consistency is obtained. Use some agent like benzol. Paraffine is also soluble in some of the lighter petroleum oils.

(3) H. P. writes: Two ordinary suction pumps, each 3 inches in diameter, are placed side by side; the rod of one is one-half inch, the other 2 inches in diameter. With the same amount of time and labor, which pump will throw the greatest amount of water? A. There will be no difference.

(4) C. G. R. asks: 1. Do the nickel anodes commonly used for plating contain any iron? If so, about what per cent? A. The nickel anodes are generally very pure. They contain, probably, not 1 per cent of iron. 2. In electroplating, if the anode contains iron, will the iron be transferred with the nickel, or remain in the anode as waste? A. In electroplating, the iron is separated out. 3 Can iron be deposited by the electroplating process? A. Iron can be deposited by the electrolysis. See SCIENTIFIC AMERICAN SUPPLEMENT for June 19, 1880; also for October 21, 1882. 4. Does a good nickel plate contain any iron? If so, is it enough to cause rust? A. A good nickel plate does not contain any iron.

(5) H. B. asks: 1. Will the dynamo-electric machine described in SUPPLEMENT, No. 161, generate sufficient electricity to keep one light burning? A. It will run two 3-candle lamps. 2. What is the cost of an Edison, or any other make, lamp? A. We believe they are sold only with a complete illuminating plant. 3. Will a power which is sufficient to run a sewing machine with ease be powerful enough to rotate the dynamo mentioned above? A. No.

(6) T. B. C. writes: Will you oblige by giving simple recipe for painting or washing brick walls red? I want a wash that will not wash off. A. Use oil paints, or add to the usual mixture some glue and bichromate of potassium.

(7) F. J. M. asks: Will you inform me of the best composition substitute for ivory? A. Use celluloid. See SCIENTIFIC AMERICAN, July 23, 1881.

(8) J. S. asks how to tell if buckwheat flour is adulterated with plaster of Paris or anything else. I bought some for the best Pennsylvania buckwheat flour, but it has a peculiar smell and taste. Would like to know how to test its purity. A. Mix about a thimbleful of it in a pint of water in a glass, stir it thoroughly, and when in suspension for a few seconds pour off most of the suspended matter, and the mineral impurities will be found on the bottom of the glass, feeling gritty when rubbed with a spoon or other implement. If the sediment is considerable, the flour may be considered to have been adulterated.

(9) J. V. S. asks: What is the best protection for a wire rope—something to preserve the rope, a protection against wet, to keep it from rusting, and that will also render it pliable and that will add to its durability? I have been using pine tar, but it does not render satisfaction as it pulls off on the drums and rollers. The rope I am using is an endless rope, one and a half miles in length, used for hauling coal. A. To preserve wire rope apply raw linseed oil with a piece of sheepskin, wool inside; or mix the oil with equal parts of Spanish brown and lamp black. To preserve wire rope underwater or under ground, take mineral or vegetable tar, add one bushel of fresh slaked lime to one barrel of tar, which will neutralize the acid; boil it well, then saturate the rope with boiling tar.

(10) J. R. M. writes: I have a cistern lined with brick laid in cement, and then plastered with cement. The water tastes too much of lime to use. Is there any way to take the lime out except to soak and then pump out water, and let it refill? A. The best plan is to bear it. The cistern can be emptied, and the sides coated with either asphalt or soluble glass. In this instance it is probable that for a while a tarry odor and taste would pervade the water; and if soluble glass was used, unless of proper degree of neutrality, the tendency would be that the water would dissolve out some of the alkali, which would impart a disagreeable taste to the water.

(11) L. W. B. writes: 1. I am building a vapor stove on the same plan as Dr. Regnard's incandescent lamp, as will be seen in the SCIENTIFIC AMERICAN, vol. xlvi., p. 398. How shall I obtain a large circular blaze without smoke caused by non-consumed gases, thereby making an offensive smell? A. In order to properly answer your question, we would require full dimensions and size of your stove. However, you can (in a general way) follow the plan of the lamp and produce your large incandescent surface by multiplying burners, and not by making one large one. In this manner you will avoid smoke. 2. In ordering the fluid, shall I order as petroleum or benzine? A. Order either benzine or petroleum naphtha.

(12) J. T. S. asks how to make a cheap steam paste. I have been making a steam paste, and it will sour, and the water back up in the pail and come to the top of the paste. What I want is to make a paste which will not sour and back up the water. I want a paste for bill posting and book-binding work. A. Water is first heated to boiling, and the flour is then added, with constant stirring. To prevent the formation of lumps the flour may be passed through a sieve, so as to insure its more equable distribution; agitation is continued until the heat has rendered the mass of the desired consistency, and after a few minutes for the boiling, it is ready for use. To prevent it from souring add a slight quantity of carbolic acid. In order to make a harder paste, one-sixth to one-fourth of powdered resin to the weight of flour is added; or sometimes alum may be used for the same purpose.

(13) J. D. G. asks: What is the best and cheapest way to get smoke out of clothing? A. The best and cheapest way would be simply to expose the articles to the air, hanging them so that they would become thoroughly exposed. They could be exposed in a closed room to the vapor of ammonia, which, to a certain degree, would neutralize the influence of the smoke. The ammonia should be generated by mixing ammonium chloride (sal ammoniac) with calcium oxide (lime) and adding a little water.

(14) E. J. C. asks: What are shoe buttons made of? If a composition, can you give it? A. Shoe buttons are made of papier maché.

(15) W. M. writes: My Smee's battery has become irregular in its action, and I am informed that it is because its silver plate needs replatinizing. How can I do this? A. In SUPPLEMENT, No. 177, will be found the details of this process.

(16) J. B. asks how to make a liquid bluing. A. Dissolve one-half ounce of soluble blue in a pint of water, and add about ten drops of muriatic acid.

(17) G. L. D. asks: How can I change the color of bronze metal while molten to black or brown? A. For the former, stir in sufficient finely powdered magnetic oxide of iron; and for brown, fine peroxide of iron.

(18) J. R. H. asks: 1. How is sodium made, and what are its constituents? A. Lately sodium has become a by-product in the ammonia manufacture; has formerly been produced by heating its oxide with charcoal. It is an elementary body. 2. Will sodium burn in pure oxygen? A. Yes; under any condition. 3. Is it possible to liquefy sodium? A. It may be readily melted under benzole, at a very moderate heat, carefully applied by immersion in warm water. 4. Can hydrate of soda be produced by other bodies than sodium oxide? A. Yes; it may be formed from the compounds of the latter; for instance, from its oxalate by separating this latter by lime water, etc. 5. Is there any process by which oxygen can be produced from pure air economically and rapidly? A. A process which is described in full in SUPPLEMENT, No. 367, is an excellent one. 6. What proportions of air and hydrocarbon gas give the greatest heat, both being under pressure? A. Twelve of air to one of gas give the most heat, but form a dangerously explosive mixture; seven of air to one of gas is the most practicable. 7. Should the orifice for the air be larger, or the pressure greater? and to what temperature should it be heated to give the best result? A. The orifices or pressure should be arranged that seven parts of air to one of gas will be formed. The air may be heated indefinitely, remembering that the higher its heat the less weight of air (or oxygen) to a cubic foot, as it is expanded by heating. 8. A. This question covers many conditions, of which you do not give the detail. See Edwards' "Steam Engineer's Guide."

(19) J. M. M. writes for information respecting recent improvements in autographic printing processes. A. In SUPPLEMENTS, Nos. 143, 146, and 225, under the above head, will be found every detail of these processes.

(20) C. E. T. desires to be informed the method of manufacturing Spence metal. A. Black sulphide of antimony may be fused readily in a charcoal furnace. When melted, an equal weight of sulphur in fine powder is stirred in and the heat continued until all are in a perfect state of fusion, when it may be cast into any suitable form. Sulphide of iron may be used for an alloy, fusing at a higher temperature and accomplished in the same manner as the above, except that the sulphur should be mixed previously with the sulphide of iron, and the cover of the crucible carefully luted on to prevent the ignition of the sulphur.

(21) M. C. S. asks: How are emery wheels manufactured? A. The emery, of suitable degree of fineness, is agglutinated with glue or mucilage, pressed into shape, and then dried or baked.

(22) C. L. T. asks: 1. What is "fix ore?" A. The ore dried and burnt—thus freed from water or sulphur. 2. Are they more valuable than other conditions of the ore? A. Yes; about $1.00 in iron ores. 3. Are hæmatite ores convertible into steel by the Bessemer process? A. Yes; if their percentage of iron is over 60.

(23) J. K. P. writes: I have an engine, 12 inches by 36 inches, running 65 revolutions per minute, with an 8 foot flywheel. I put on a band wheel, 6½ feet in diameter, bearing the 8 foot flywheel on the same shaft, and run the engine at 80 revolutions per minute. The boiler is 16 feet long and 6 feet diameter, with ninety-six 3 inch flues. A steady pressure of 80 pounds is kept up in the boiler. Do I gain any power? If so, how much (about)? A. If you carry the same pressure of steam, your gain of power is proportioned to the increased speed of the piston as 55 to 80.

(24) W. C. B. asks if five miles of one-quarter inch pipe were laid, and an air cylinder placed at one end, would there be any effect at the other end from one compression of piston, saying nothing as to size of cylinder or power to operate? A. We think not; the friction of the pipe would absorb all the increased pressure from one compression.

(25) Inquirer asks: 1. If superheated steam (decomposed water) be let into a holder (like a gasometer), will the heavier gas settle so one could draw off either of the gases, or will the atoms continue mixed with each other? A. Superheated steam is *not* decomposed water. The gases will not separate. 2 Please tell me, also, if a boat can be propelled by a propeller actuated by foot power like a velocipede, without much exertion? A. It can be propelled, but to obtain a given speed the same power must be applied as by any other mode.

(26) C. A. A. writes: 1. I have purchased a second-hand portable boiler and engine—10 horse power. The fire passes directly through the flues and up the smokestack, and directly under stack and at rear end of boiler and at the bottom is a hand hole for cleaning; it has not been removed for years. On the outside and around it is coated with a substance that cuts like rock with a cold chisel. Is it safe to let it remain in that condition and use it? A. It is not safe. You should take it out to examine its condition. 2. Is steam considered good for cleaning flues? A. Yes; if introduced from another boiler, and the scale subjected to the action of the steam a number of hours till the scale is soft.

(27) R. H. asks how to make gilding for watch plates, and how to apply it. A. The following gilding solution, to be used at a temperature of from 120° to 180° Fahr., has been recommended by M. E. Rod: Crystallized sodium phosphate, 60 parts, by weight; sodium bisulphide, 10 parts; potassium cyanide, 1 part; gold chloride, 25 parts; distilled or rain water, 1,000 parts. To prepare this bath properly the water should be divided into three portions—one of 700 parts, and two of 150 parts, by weight. The sodium phosphate is dissolved in the first portion, the gold chloride in the second, and the sodium bisulphide and the potassium cyanide in the third. The first two portions are gradually mixed together and the third is afterward added. With this solution M. Rod uses a platinum anode—a wire or strip—adding fresh portions of the gold salt as the solutions become exhausted. Spons' Encyclopedia treats this subject very fully, p. 878. A book by J. W. Urquhart on "Electroplating," London, 1880, is good authority; also Gee's "Practical Gold Worker."

(28) G. F. D. writes: I wish to make a cement to coat the inner side of a lead tank which leaks. Will a saturated solution of silicate of soda made into a paste with powdered glass answer? If not, please let me know what is the best cement for such purpose. A. Silicate compounds cannot be recommended for this purpose. If the tank can be tipped over so as to get at the leaky places with a soldering iron, soldering is the only proper and sure remedy. If the leaky places cannot be soldered, then the next best is two or three coats of metallic paint, thoroughly dried. Asphalt varnish or coal tar also makes a very good covering for lead lining.

(29) P. D. writes: What is dead oil? How is it produced, and for what purpose employed? A. It is one of the distillates of coal tar. Its use is principally for the preparation of naphthaline and carbolic acid, and also as an adulterant. Its commercial value is small.

(30) R. B. A. writes: Please describe how to use the method of silvering the backs of looking glasses. A. A sheet of tin foil, of the same size as the glass to be silvered, is laid perfectly level upon a table and rubbed over with metallic mercury, a thin layer of which is afterward poured upon it. The glass is then carefully slid on to the table, so that its edge may carry before it part of the superfluous mercury with the impurities upon its surface; heavy weights are laid upon the glass, so as to squeeze out the excess of mercury, and in a few days the combination of the tin and mercury will be found to have adhered firmly to the glass.

(31) M. D. H. asks for a receipt for making a good and cheap liquid drier; also a dry drier, which when mixed with linseed oil, will make it dry quickly and very hard. Please give the amount used to each gallon of oil. A. For the liquid drier, boil one gallon of linseed oil for an hour with a pound of finely powdered binoxide of manganese. For a solid drier, use borate of manganese in powder or mixed in oil.

(32) W. C. asks: Can you give a simple formula for bleaching fat, discolored by the vegetable matter from the entrails of the animals from which it is taken? A. About five per cent of ordinary sulphurous acid mixed with the fat, and when the latter is melted by stirring, will answer your purpose. Continue you beat until the fat no longer smells of the gas. If necessary, a greater or less quantity may be used, it being perfectly harmless for after uses of the fat.

(33) G. P. F. writes: I find in No. 8 of the last volume of the SCIENTIFIC AMERICAN a recipe for ebonizing; the meaning I do not quite understand. You say, "then oil, and fill in with powdered drop black mixed in the filler." Will you answer what kind of oil is meant, and whether you put oil in drop black or have them separate? A. Use boiled linseed oil, and mix it with the drop black.

(34) J. F. asks: 1. Will the inside wheels of a car or locomotive slip on a track when running around a curve. A friend of mine says he don't see how they can. He says when a locomotive is running around a curve, the flanges on the outside wheels press against the side of the outside track; he says this brings the large part of the taper or bevel of the outside wheels and brings small part of the bevel of the inside wheel, bringing the wheels in this position; he says he don't see how the inside wheel slips on the track, for, he says, the outside wheel has a larger circumference on the track than the inside wheel, therefore the inside wheel would not have to travel as fast as the outside wheel. A. Your friend's explanation would be correct if all the curves were of the same radius and the coning of the wheels fitted for that radius; but as this is not the case, there is always more or less slip in running a curve. 2. Will a locomotive tend to run to the low side of the track when the tracks are not level? A. No; if running on a straight stretch of road. 3. Will a locomotive push ahead when steam is let in the cylinders, before the driving wheels turn? A. No.

(35) J. C. D. asks: 1. Will you explain to me on which quarter of the stroke the piston of an engine moves the farthest, and the cause of its doing so? A. The difference of travel on the different quarters of the stroke is caused by the angularity of the connecting rod, and the amount of the difference is governed by the length of the connecting rod in proportion to the stroke of the piston. Lay down a diagram of the arrangement, and you will see at once the cause of the difference. When the piston is in the middle of its stroke, the crank is not at right angles to the center line, but at a slight angle *from* the right angle. 2. Also, in regard to steam pressure in boilers. I have been informed by a party that is supposed to be reliable and well posted in the properties of steam, that in addition to what a correct steam gauge would indicate, there was an actual additional pressure inside of a steam boiler of the amount of the atmospheric pressure, and that at, say, 60 pounds steam pressure, the actual pressure or strain on the inside of the boiler would be 75 pounds. A. Your friend is right. There is about 15 pounds more pressure per square inch in the boiler than shown by the gauge; but as this is balanced by the pressure of the atmosphere on the outside, it exerts no bursting pressure on the boiler.

(36) R. W. H. writes for directions for bronzing cast iron and to give it a greenish shade. A. In SUPPLEMENT, No. 235, full directions as to details in regard to this process may be found.

(37) H. G. M. writes: I am in the canning business, using steam retorts. Pressure on retort, five pounds during thirty minutes process; at starting, steam gauge on boiler indicates 15 pounds pressure; during time of process, steam rises in boiler to 40 pounds. My gauge on retort indicates 5 pounds steadily. Query: Do I get any greater heat in retort when the pressure of boiler is at 40 pounds than when at 15 pounds? If I should increase the pressure on the retort to 10 pounds, what variation in time would be required to give the process as at 5 pounds pressure for thirty minutes? Do I get superheated steam by carrying it in a pipe from the top of the dome of the boiler, back down into the same boiler, and then out through the dome to my retorts? Do steam gauges need oiling? If so, how applied? I notice the hand on one of my gauges catches at about 5 pounds pressure, and then with a jump will go up three or four pounds. A. The temperature of steam at 15 pounds pressure is 251° Fahr. You can only get the heat in the retort due to the pressure in the retort. Your gauge must be out of order, or it would indicate the increase of the pressure in the boiler, provided the pipe to the retort from the boiler is not throttled. The heat due to steam at 5 pounds pressure is 228°, at 10 pounds 241°, which would quicken the operation. You cannot superheat the steam by passing it through the steam chamber in a pipe as you propose. It must be passed through a hotter medium than the steam itself. A watchmaker ought to be able to put your gauge in order, if there is only a catch in the movement.

(38) A. P. writes: A few weeks ago a correspondent requested you to send him a receipt for a dip to color brass black, and you advised him to try a weak solution of permanganate of potassium and a very dilute solution of nitric acid. I have tried it, but without result, as it would not color one particle. I take pleasure in giving you a good receipt for a dip to color brass black that will not rub off: Dissolve two pounds blue vitriol in three gallons of hot water, and add one and a half gallons of potash, mix these two ingredients well together while hot, and let it stand till cold, and add to it one pint of aqua ammonia, and it is ready for use. It will color brass black in about from twenty to twenty-five minutes. The articles must be taken out of the dip as soon as they are sufficiently black, otherwise they will turn brown if left too long. This dip is good for brass, but does not answer for bronze. A. You did not employ it in the proper manner. Your receipt is excellent, however.

(39) J. J. S. asks for a receipt for thoroughly deodorizing lard. A. Fats which are rancid may be improved by treatment with hydrogen peroxide. Many other substances are recommended, but none are entirely satisfactory. Chlorine water is sometimes used, but the introduction of chemicals is not considered advisable.

(40) M. H. asks, 1, how to clean Roman gold that has become tarnished, ammonia not having the desired effect. A. Dissolve cyanide of potassium in about ten parts of cold water and wash the articles with it. N. B. As this salt is a powerful poison, care must be used in employing it, that it does not come in contact with your hands, etc. 2. What will remove freckles without injuring the skin? A. There is nothing that accomplishes this satisfactorily. The following preparation has been recommended: Subcarbolate of zinc, 2 parts; glycerine, 25 parts; rose water, 25 parts; and alcohol, 6 parts. It is to be applied twice a day, and allowed to remain on for about a half hour, when it is to be washed off.

(41) A. C. D. writes: 1. I am thinking of building a steam launch for trawl fishing on this coast; she will be 35x7x4 feet, engine compound, 3x3 and 6x6. I wish to have an inboard surface condenser. What size should it be, and is brass the best metal for its tubes? Would a cylinder 3 feet long, 6 inches diameter, with 50 ⅝ inch water tubes through it—which is best, to draw or force the water through it? I was thinking of putting a vertical centrifugal pump, mounted on main shaft. What size should it be? Would 2 inch injection and discharge be large enough? The air pump would be independent. I thought of putting in a No. 00 Knowle's, which would also exhaust into the condenser. Would a boiler of the return tubular type, say 4½ feet long, 3 feet diameter, firebox 16 inches by 2 feet, 12 3-inch flues 2 feet long, and 30 2-inch return tubes, be too much; boiler fuel soft coal, natural draught? I would like an easy steaming boiler. About what power would she develop. I make her 9 horse power at 80 pounds pressure, 400 revolutions, but by a rule in use here for finding the approximate I. H. P., viz., $H=\left(\frac{A\times L\times P}{35}\right)\frac{5}{8}=14$ nearly, where A=sum of squares of diameter of cylinder. L=length of stroke in feet. P=pressure per square inch. H=I. H. P.; 35 is a constant which I fancy gives too much. About how much coal should I burn, and what speed could I attain? A. You should have 40 to 50 square feet condensing surface. Brass tubes turned on both sides. We think your tubes should be not less than half an inch diameter. It makes little difference which way the water is sent through tubes. A centrifugal pump will answer well; 2 inches delivery would be large enough. We think your boiler would steam very well, but would recommend increasing it at least 10 or 15 per cent. We think your estimate of 9 horse power not quite high enough. Are you not mistaken in the formula? Is it not A= square inches area of the two pistons, instead of square of diameters? If so,=then 14×0·7854=10·99 H. P.

(42) H. A. C. asks: For bending, does the timber have to be seasoned before steaming? How long does the timber have to be kept in the steam box before it is ready to bend? A. No special machinery is required for bending plow handles, further than a wooden form to bend over and an eye to hold the end with a hook to catch the long end and hold it, all of which may be home made. The timber does *not* required to be seasoned. The handles, if green, require steaming long enough to heat them through, possibly one hour. If they are dry, they should be soaked in warm water at least one day before steaming, then two to three hours' steaming should be enough. Much depends upon what kind of timber the handles are made of. Those that make a business of bending and making plow handles, make them double to prevent splitting the ends by bending close to the end, and afterward cut them. Often a piece of band iron is placed on the convex side of the wood, and bent with it to prevent splintering.

(43) J. S. H., Jr., writes: 1. I would like a receipt for a wall paper paste. A. Four pounds of fine wheat and flour are mixed with a small quantity of cold water, thoroughly stirred; two ounces of powdered alum are then added, and when dissolved, a gallon of boiling water. When cool, it may be thinned as desired with cold water and used. 2. Also a receipt for putting an egg shell polish on fancy woods. A. Three parts of shellac, one part of gum mastic, and one part of sandarac gum are dissolved together in forty parts of alcohol and form a beautiful polish, which may be applied with a brush or cloth. 3. A receipt for painting or coloring borders on floors. A. Use fine umber mixed with oil and a little turpentine, this being the prevailing color. 4. How can I gild wood work? A. This is rather a difficult operation to do satisfactorily, but may be accomplished in the following manner. Dampen the wood with a little gum water, and with great care transfer the gold leaves from the book to the wood, lightly pressing them upon it with a fine brush.

(44) H. J. L. asks: 1. What materials, and in what proportions, are used for making the brown heads of parlor matches? A. Fine glue, 2 parts; water, 4 parts; phosphorus, 1½ to 2 parts; potassium chlorate, 4 to 5 parts; powdered glass, 3 to 4 parts; red lead mixed with litharge to suit in color. 2. How can the mixture be changed to make it ignite by very slight friction? Or of what materials can a similar composition be made which will do so? A. Increase the phosphorus and diminish the potassium chlorate.

(45) J. J. H. writes: I have seen a mention of a positive ferroprussiate, or reversed blue process paper, giving dark blue lines on a white paper background. Can you give the preparation for the paper (the composition of the solution and process)? A. The following is said to be good: Well sized paper is painted over with a brush with the following solution, freshly prepared: 30 volumes of gum arabic solution (1 to 5), 8 volumes solution of citrate of iron and ammonia (1 to 2), 5 volumes solution of perchloride of iron (1 to 2). The mixture appears limpid at first, but soon grows thicker. The paper is dried in the dark, then exposed for a few minutes under a negative or drawing, and developed with a solution of 1 part ferrocyanide of potassium in 5 parts of water, applied with a brush. It is fixed with dilute hydrochloric acid, 1 to 10, washed thoroughly, and dried.

(46) M. J. D. asks: 1. How can a good furniture polish for cleaning, polishing, and filling old furniture be made? A. Rub a coat of shellac varnish into it and smooth off with fine sand paper; then apply a coat of polish made by mixing a half pint of fine shellac varnish with a quart of boiled linseed oil. 2. How is starch polish made, as used for imparting a gloss to shirt bosoms, etc.? A. To ordinary starch, for each quart one ounce of silicate of soda solution is added and thoroughly mixed. 3. How can I make a solid and also liquid laundry blue? A. Soluble Prussian blue in powder for the former, and one ounce of the same blue to a pint of water, to which one ounce of hydrochloric acid has been added, for the latter. 4. How is stove polish paste for cleansing and polishing stoves made? A. Finely powdered black lead mixed to a paste with water in which a small amount of glue has been dissolved. 5. How is soap powder made, something similar to pearline, soapine, etc., used for cleansing cloths? A. Washing soda is the principal ingredient in these mixtures, and more or less powdered soap—say equal parts of each.

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

T. R. B.—*a* is quartz holding a small amount of copper pyrites, possibly containing gold. An assay would be advisable. *b* is similar to *a*, but richer. *c* is ordinary trap rock, holding iron pyrites of no value. *d* is similar to *c*.—H. K.—The mineral is graphite, containing pyrite. The latter may carry gold.—G. T. S.—The quality of the clay is excellent, and it would possess much value for brick or similar pottery ware.—E. S. M.—The mineral is decomposed feldspar.