

Business and Personal.

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Notes & Queries

(1) J. V. asks: 1. How to color brass or rolled plate chains, etc. red or copper colored, without a battery? A. Steep in warm dilute oil of vitriol for a short time. 2. In making chloride of gold, is it best to heat to dryness? A. It should be carried as nearly to dryness as possible, but a very moderate heat only should be applied, so as not to cause the decomposition of the salt.

1. Would you advise sulphurizing a fertilizer before or after drying, to fix free ammonia? A. The fixation should be before drying, or otherwise the ammonia will be lost. 2. Would not sulphur fumes do? A. No.

(2) Mrs. J. M. D. asks for some simple method of preserving autumn leaves so they will retain their color? A. Dry the leaves perfectly, immerse them for a short time in a solution of clear gum arabic in 30 parts of water, and dry. The colors cannot be so fixed that long exposure to light will not alter them. If protected as above and kept in the dark, the colors will suffer little alteration.

(3) W. H. H. asks for a recipe for making yeast or baking powders? A. Baking powders are usually composed of bicarbonate of soda, mixed with cream of tartar, tartaric or citric acids, or a mixture of these. Dry at a moderate temperature, grind separately to finest powder, and then mix thoroughly 20 parts bicarbonate of soda and 50 parts cream of tartar; or 20 parts bicarbonate of soda, 30 parts of cream of tartar, and 10 parts of tartaric acid. As the cream of tartar of commerce is often of variable character, it may be necessary to use it slightly in excess of the above proportions.

(4) K. X. says: I have a half lb. of phosphorus in a bottle which by exposure to heat has melted and formed a solid cake. How can I reduce it again to sticks, or to any shape convenient to use in small quantities? A. Unstopper the bottle and immerse it carefully in a large vessel of water; heat the water over a water bath until the phosphorus is liquified; then draw it into tapering glass tubes (previously moistened and warmed) of suitable size, close the upper end of the tube, quickly invert it under water and transfer to a vessel of cold water. When cold the phosphorus may easily be shaken or forced out of the tube (under water).

(5) A. J. G. asks: 1. Is a heavy driving wheel, say of 150 lbs., an advantage on a common lathe not back geared, or would a lighter one, 75 or 80 lbs., be better for all purposes? A. For common light work a wheel of 80 lbs. is sufficiently heavy. For heavy work one of 150 lbs. might be at times preferable. One disadvantage of the heavy wheel is in starting and stopping. 2. Should the wheel be counterbalanced, so as not to stop on dead centers, or would the lathe run steadier without? A. It is well to counterbalance the wheel for convenience in starting, but the lathe will not run any steadier for so doing.

(6) Mrs. M. A. C. asks: What compound would be the most durable as a paint for gravestones, that would stand all kinds of weather? A. Use a turpentine solution of pure asphaltum mixed with a sufficient quantity of willow charcoal ground to impalpable powder.

(7) C. J. H. asks: 1. How can I best stiffen the ends of sewing silk or thread, so as to readily pass through a fine capillary tube without bending? I want the ends about as stiff as shoemaker's bristles and impervious to water. I have tried dipping in shellac and solution of rubber. A. Try the following: Fuse together equal parts of gta percha and resin. This may be dissolved in carbon disulphide.

1. Is the "plume miraculeuse" made of aniline color? If so, how can I best copy writing done with it without a press? A. Yes. Slightly dampen the tissue in the usual manner, place in contact with the writing between sheets of unglazed paper and pass, with moderate pressure, a suitable rubber-covered roller over the whole. 2. What is the best fluid gold for illuminating on parchment and paper? A. Rub up fine gold leaf with a little honey, dissolve out the honey with warm water, and mix the fine gold dust remaining with sufficient gum water and a few drops of oil of cloves.

(8) K. M. R. asks for the preparation that is used at the laundries to give goods a glossy appearance? A. Starch, 1 oz.; paraffin, about 3 drachms; white sugar, tablespoonful; table salt, tablespoonful; water, q. s. Rub up the starch with soft water into a thick smooth paste. Add nearly or quite a pint of boiling water, with the salt and sugar dissolved in it, and, having dropped in the paraffin, boil for at least half an hour, stirring to prevent burning. Strain the starch and use while hot. Sufficient bluing may be added to the water, previous to the boiling, to overcome the yellowish cast of the starch, if necessary. Spermaceti may be used in place of paraffin. Starched linen can only be properly finished by hard pressure applied to the iron.

(9) J. H. P. asks how to take the bitter taste from crabapple vinegar? A. Warm a sample of the vinegar and agitate it with a little egg albumen. If this does not improve it, distillation must be resorted to.

(10) A. G. asks how the hair can be permanently removed from a person's forehead, on which it grows very low, without injury to the person? A. Preparations called depilatories are used for this purpose. Delcroix's Poudre Subtile consists of orpiment (sulphide of arsenic) 1 part; finely powdered starch and quicklime each, 11 parts. These are mixed together, made into a paste with warm water, and applied to the part closely shaven. As soon as it becomes dry it is washed off with water. Ryder's depilatory consists of lime, 1 oz.; carbonate of potassa, 2 ozs.; charcoal powder, 1 drachm; used as above. All of these preparations are more or less pernicious, and those containing arsenic, when improperly applied, are dangerous. They speedily destroy the vitality of the capillary bulbs, but, if allowed to remain too long in contact with the flesh, are apt to disorganize it.

(11) D. E. H. says: Please give me information as to method and cost of preparing farina from potatoes for market, cost of machinery, etc.? A. Potato flour is simply fine potato starch ground to powder between millstones. Suitable mills may be had for from \$200 to \$1,000. For a concise description of the process and machinery for extracting starch from potatoes, you should consult Wagner's "Chemical Technology."

(12) P. B. C. asks for a recipe to make mock silver, to resemble that metal in color and ring? A. Copper, 71 ozs.; zinc, 7 ozs.; nickel, 16 1/4 ozs.; iron, 1 1/4 ozs.; cobalt (oxide), 1 1/4 ozs.; tin, 2 1/4 ozs. First fuse the zinc with 12 parts of the copper; then fuse the nickel with its own weight of the zinc alloy in a good blacklead crucible, and add the iron, the remainder of the copper, and the oxide of cobalt mixed with charcoal. Cover the mass with charcoal, lute, and expose to a high heat. When properly fused, allow the heat to subside and add the remainder of the copper-zinc alloy when the temperature is just sufficient to fuse it. Remove the crucible from the fire and stir its contents well with a hazel stick. Wrap the tin in several thicknesses of dry paper, drop it into the alloy, stir for a moment, and run into the moulds. When cold, it is ready to be wrought like silver, which it resembles in every respect. The zinc is nearly all volatilized during the process of fusion.

(13) J. E. asks (1.) how hydrargyrum bisulphide (bisulphide of mercury) is manufactured? A. It is made by treating mercury, or its oxide, with sulphuric acid. 2. Also, which is the best solution for carbon batteries used for electric bells? I have used bichromate solution, but it will only work a few hours. A. The Leclanché or Pr dhomme battery is best for this purpose. Use one twentieth of sulphuric acid with your bichromate solution, but the bichromate battery will require cleaning more than once a year.

(14) S. H. M. asks: 1. Can the Grenet battery be used for silverplating? A. Yes; but it is not good for this purpose as it is accumulative; it is better to use a sulphate of copper, or Smee's battery. 2. If so, how many cells of No. 1 will it require? A. That depends on the amount of surface; one cell will answer to plate an article, such as a teaspoon. 3. How shall I connect the wires of the battery with the silver and the article to be plated? A. Connect the zinc of the battery with the article to be plated; and the copper to the silveranode. 4. Also how to give the articles plated a fine polish? A. Polish with pulverized chalk.

(15) R. K. T. and C. E. F. ask: 1. Of what gauge and length should the fine silk-covered wire be as used in the Bell telephone? A. The wire used is No. 40 silk covered. 2. Should the poles of the magnet be the same on each instrument, or should one be north and one south? A. The poles are the same in each instrument. 3. Of what strength should the magnet be? A. Magnetized to saturation. 4. Of what thickness should the iron disk be? A. About one hundredth of an inch.

(16) A. B. writes: I have five jars of a Lockwood battery. I wish to make a permanent magnet magnet; will you please give me directions? A. Wind a spool of 800 feet of No. 19 copper wire, "magnet insulation," on a half inch round rod of hard wood, covered with two layers of note paper; have the spool about eight inches long, and give the outside a coat of glue, to keep it from unwinding. When dry slip it off the rod. This is called the helix or spool; any piece of hardened steel is now placed inside the helix, and the poles of the battery are connected with the terminals of the helix; on breaking the battery connection and removing the steel, it will be found permanently magnetic.

(17) C. C. McC. says that he uses brass moulds to cast arms for chandelier work, but the molds do not fill. The castings are imperfect. A. Use zinc for the castings. Warm the moulds preparatory to using them. Pay attention to the ventilation. Confined air may cause the imperfect castings. Pour the metal slowly so as to allow the heated air to escape as the metal enters and fills the moulds.

(18) J. T. asks for a good steel pen ink? A. Digest in an open vessel 10 ozs. coarsely powdered nutgalls, 4 ozs. gum senegal, 4 ozs. sulphate of iron (free from copper), 3/4 drachm of ammonia, 6 ozs. alcohol, 4 1/2 quarts distilled or rain water. Continue the digestion until the fluid has attained a deep black color.

(19) D. T. S. asks: How is the filling made that is used in filling the pores of black walnut wood? A. Whiting, 6 ozs.; japan, 1/2 pint; boiled linseed oil, 1/2 pint; turpentine, 1/2 pint; corn starch, 1 oz.; a small quantity of burnt umber. Mix well together.

(20) A. S. asks for a recipe for making whitewash for woodwork that will not peel off? A. Alum is one of the best additions to make whitewash of lime which will not rub off. When whitening is used, thin glue water is good, but it will not do for outside work, exposed to rain.

(21) W. C. asks for a grease for boots that will turn water, and also make them soft? A. Bee-wax, 2 ozs.; beef suet, 4 ozs.; resin, 1 oz.; neat's foot oil, 2 ozs.; lampblack 1 oz. Melt and mix well together.

(22) J. W. asks how to produce a regular shade on mixed cotton and woolen rags? A. For drabs, work for half an hour in a solution of 8 ozs. coppers and 4 ozs. tartar; lift and drain; then work for half an hour in 4 ozs. logwood and 1 oz. bichromate of potash; wash out and dry. By varying the quantity of logwood, and by introducing a little fustic in combination with the logwood, a great variety of drabs, slates or fawns can be produced.

(23) W. W. asks how to color woolen goods black? A. For an amount of goods equal to a lady's dress, if of a dark color or brown, take 3/4 oz. of bichromate of potash in 3 gallons of water. Boil the goods in this 40 minutes; then wash in cold water. Then take 3 gallons water, add 9 ozs. logwood, 3 ozs. fustic, and 2 or 3 drops of oil of vitriol; boil the goods 40 minutes and wash in cold water. All colored goods with cotton warps

should be previously steeped one hour in sumach liquor; and then soaked for 30 minutes in 3 gallons of clean water, with a small teaspoonful of nitrate of iron; it must be then thoroughly washed and then dyed as for woolen goods.

(24) A correspondent says: I have a fire alarm, the wires of which come in at the top of a third story window, go to the floor, thence along behind a bed, and down through the floor and to the indicator in the second story room. Is there any danger from lightning to an occupant of the second story room, or an occupant of the bed in the third story? A. There is a slight danger, but it may be obviated by the use of a lightning arrester. The parties who furnished the indicator can supply it.

(25) W. B. asks how to destroy bedbugs? A. Take five cents worth of quicksilver, and the white of one egg. Beat the egg to a froth and add the quicksilver. Brush upon the places where the insects frequent. Make the amount of the ingredients according to the surface to be brushed over.

(26) D. A. says: I am very much troubled by the tarnish and rust on brass and steel jewelry. How can I remove the tarnish and rust, or prevent it? A. The only method to remove the tarnish and rust is to re-polish or re-finish the articles, as when first made. Care in handling is the best preventative.

(27) F. M. E. asks for the number of vibrations representing the tones of the two middle octaves of the standard scale—natural? A. C has 264 vibrations, D 296, E 333, F 382, G 395, A 444, B 498, middle C 528, D 594, E 660, F 704, G 792, A 880, B 990.

(28) H. H. E. asks how to cut stencils on copper by the use of acids, and the method of doing so? A. Cover the copper with a thin coat of wax; with sharp cutting tools remove the wax on the portions of the metal where the cutting is to be done. If necessary surround the plate with a ledge of wax. Pour aquafortis over the plate and it will soon eat through the metal where unprotected by the coating of wax.

(29) J. S. asks how to melt or work over pure rubber, so as to make it into articles of use? A. Pure gum rubber is softened by immersion in boiling water so that it may be kneaded or forced into moulds—on cooling it contracts and hardens. It is completely dissolved by a mixture of carbon disulphide with 6 per cent of absolute alcohol, and on evaporation of the solvent regains its former properties. It is also soluble in chloroform or naphtha. It cannot be melted by heat without suffering partial decomposition.

Is the glycerin that is used for chapped hands, lips etc., the same as that used for making nitro-glycerin? A. Yes, but purer and stronger.

(30) A. R. L. and others ask: Is the Gramme magneto-electric machine made in this country? A. No. It is made by L. Breguet, No. 39 Quai de l'Horloge, Paris, France.

(31) L. D. D. asks: How could alcohol and water, used for making pickles, be made into good vinegar? A. Alcohol may be converted into vinegar by adding to it a little yeast and keeping in a moderately warm place until acetification is complete. In pickling, only strongest wine vinegar is used, mixed with the spices and sometimes a little olive oil.

(32) L. J. says: I have a brass hopper on my coffee mill which is badly fly-specked. How can I polish it? A. Remove from the mill and polish with fine emery applied with a woolen cloth moistened with oil.

Please give me a recipe for making a baking powder? A. Powder and thoroughly dry separately by gentle heat 1/2 lb. tartaric acid, 3/4 lb. of pure bicarbonate of soda, and 3/4 lb. of potato farina. Mix dry, pass through a sieve, and preserve as much as possible from air and moisture.

(33) W. B. N. asks how cavendish tobacco is prepared? If it is steeped in any liquor or any preparation? A. Tobacco, by the better class of manufacturers, is not steeped in any liquor, but after stripping, the leaves are sprinkled with licorice and white sugar, made into rolls and closely packed into oak boxes, and subjected to pressure, in which form it is sent to market.

(34) W. H. L. asks how to bleach or whiten ivory piano keys? A. Ivory is whitened or bleached by rubbing it with finely powdered pumice stone and water, and exposing it to the sun while still moist, under a glass shade to prevent desiccation and the occurrence of cracks. Repeat the process until the proper effect is produced. Ivory may also be bleached by immersion for a short time in water holding a little sulphurous acid, chloride of lime, or chlorine in solution; or by exposing to the fumes of burning sulphur, largely diluted with air. Where the ivory keys cannot be removed the polishing process may be the best.

(35) Star asks how to remove writing ink from paper? A. Apply muriatic acid diluted with five or six times the quantity of water, and after a minute or two wash with clean water. A solution of oxalic acid, citric acid, and tartaric acid may be applied where there is printing, as it will not attack the printed text.

(36) L. G. asks how to remove fruit stains from cotton and linen goods? A. Wash the stained portion clean and apply a weak solution of chlorine, chloride of lime, or oxalic acid. Lemon juice will frequently remove stains. Some stains may be taken out by dipping the cloth in sour buttermilk and drying in a hot sun. Thoroughly wash in warm water and dry.

(37) S. H. asks how to test a rough diamond and tell it from glass? A. Put the stone in a leaden cup with some powdered flunor spar and a little oil of vitriol. Warm the vessel over a fire where there is a copious draught to carry off the noxious vapors that will be evolved. When these vapors have ceased, stir the mixture with a glass rod to fish out the diamond. A genuine stone will remain intact, but a fictitious one will be corroded by the hydrofluoric acid that has been generated around it.

(38) C. H. D. asks how to Babbitt the boxes of an emery wheel shaft? A. Clean the boxes of