

(2263) E. W. B. asks how to make a good shoe dressing for ladies' and children's shoes. A. See answer to query 1704, SCIENTIFIC AMERICAN, January 11, 1890.

(2264) A. J. H. asks: Is there any chemical used to make cider vinegar sour? Is it injurious? A. Unfortunately, other acids are used by unscrupulous manufacturers or dealers. We consider any such treatment an adulteration.

(2265) W. F. C. asks: 1. What salts are there which when mixed with gelatin will make it insoluble, and when acted upon by light will make it soluble? A. The reverse action, if any, takes place with most known salts. 2. Cement or glue to fasten hard rubber together, also to fasten hard rubber to wood. A. Use 20 parts shellac and 1 part gutta percha melted together. 3. Best glue for fastening cloth to brass. A. Try gum tragacanth. 4. How can I cover a detective camera with canvas such as that used on telescopic hand satchel? Would fish glue be good for cementing the canvas to the varnished wood? A. Yes.

(2266) F. A. M. asks: 1. How is vulcanite or hard rubber polished by experienced rubber workers? I have a great deal of vulcanite work to do, and would like to know the best possible way to cut and polish it. A. The method of polishing hard rubber depends on the form of the article and also upon the way in which it is moulded and vulcanized. It may be vulcanized in such a way as to require very little finish. If it is to be shaped in any way by means of a lathe, or cutters or files, it will of course require smoothing and polishing. Irregular pieces are shaped by rotary cutters and by filing, smoothed by means of sand paper or emery cloth, semi-polished by means of felt wheels and rather harsh brushes charged with ground pumice stone and water, and finally finished by the use of soft polishing brushes charged with whiting and water. Pieces turned in a lathe are smoothed with fine emery cloth with a little oil, and finished with whiting and water applied with a woolen cloth. 2. How is hard rubber manufactured? A. Hard rubber is made by intimately incorporating sulphur and coloring matter with the pure gum, pressing it into the mould, and then vulcanizing it by placing it in a suitable chamber filled with steam under pressure. For the details of the process we refer you to the literature of the subject.

(2267) M. J. F. asks if white, the same as paper, is a color. A. Subjectively speaking, white is not a color. Theoretically, it is due to a mixture of all light waves of all lengths, and, therefore, may, in that sense, be defined as a mixture of an immense number of colors.

(2268) C. S. asks how the seltzer water bottles are opened, or at least how they are filled. A. They are closed by a self-acting valve, which opens inward. The water is forced in through this valve, which retains it once it is in.

(2269) C. W. D. asks for a receipt for making liquid glue that is adhesive and tasteless to the tongue. I want to use it on labels, so after they are glued, they can be moistened with the tongue without leaving a bad taste. A. The following is said to be used on postage stamps:

- Dextrine..... 2 parts.
Acetic acid..... 1 "
Water..... 5 "
Alcohol..... 1 "

(2270) R. E. W. writes: What material will become electrified by friction? What material could be used to coat an iron or other metal surface so as to electrify it by friction? Friction to be by bristle brush. A. Give it several coats of shellac varnish, made by dissolving shellac in alcohol.

(2271) A. E. P. writes: Will you please advise me if there is any ink or combination of chemicals which will make a stain or color on paper that will disappear on being heated? I want to find if possible something which works directly opposite to the salts of cobalt, which are invisible at ordinary times, but which appear when heated. A. A dilute solution of iodine and starch will lose color on heating. Also paper colored with a solution of cupric sulphate (blue vitriol) will tend to whiten on the application of heat.

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