

GLUE FOR POLISHED STEEL.

The Turks glue diamonds and other jewels to their metal settings with a mixture made as follows: Dissolve five or six bits of gum mastic, each the size of a large pea, in as much spirits of wine as will suffice to render it liquid. In another vessel dissolve in brandy as much isinglass, previously softened in water, as will make a two ounce phial of strong glue, adding two small bits of gum ammoniac, which must be rubbed until dissolved. Then mix the whole with heat. Keep in a phial closely stopped. When it is to be used set the phial in boiling water. This cement perfectly resists moisture, and it is said to be able to unite effectively two surfaces of polished steel.

BLUING IRON AND STEEL BY BOILING.—If iron or steel articles be boiled in the following mixture they will take a fine blue tint: Dissolve 4 ozs. hyposulphite of soda in $1\frac{1}{2}$ pints of water, and then add a solution of 1 oz. acetate or lead in 1 oz. of water.

THE IMPORTANCE OF TRAINING THE SENSES.—The importance of training or educating the senses becomes evident when we reflect that it is from impressions received through the eye and the ear that men are enabled to bear witness to what passes in the external world; and teachers of drawing and of music only fully know what false witness, without any *mal prepense*, these senses are before they have been properly trained. Let it not be forgotten either that it is upon the testimony of these two senses that character and life are frequently at stake. The desire to obey the commandment, "Thou shalt not bear false witness," may be strengthened, but evidence, nevertheless, cannot be guaranteed by a man being put upon his oath. For if a witness be an imperfect observer by eye and by ear, as he commonly is, in default of his not having received that sense-training upon which we are insisting, he may quite conscientiously swear to the absolute truth of his false impressions, of his imperfect perceptions. There is an art-teacher who frequently points this moral in his class,—"If," he says, "you misapprehend the truth with respect to the model immediately before you, and biding your own time to be deliberately inspected, how can you expect to accurately observe and recollect the moving scenes and occurrences of every-day life?" It is, however, not only in the witness-box that trained senses are required, but for the recognition and appreciation of beauty in nature to preside watchfully over all kinds of work, and to endow the arts and the manufactures of a nation with those excellent qualities which would ensure their appreciation throughout the civilised world. We are now, of course, referring more immediately to the sense of sight. You will find that painters and sculptors can more readily turn their hands to any kind of work than any other men,—and why? Not solely because their professions require the greatest nicety of touch, but because their sense of vision having been better trained they see more correctly. . . . Drawing, modelling, and instrumental music contribute respectively to the perfecting of sight and of touch, and of hearing and of touch,—to the perfections of those three most important senses by which all work is compassed. They are to those senses what gymnastics are to the general physique."

WASHING FLANNELS.—A lady correspondent says: "I will give a little of my experience in washing flannels. I was taught to wash flannel in hot water, but it is a great mistake. In Italy my flannels were a wonder to me; they always came home from the wash so soft and white. I learned that the Italian women washed them in cold water. Many a time I have watched them kneeling in a box, which had one end taken out to keep them out of the mud, by the bank of a stream, washing in the running water, and drying on the bank or gravel, without boiling; and I never had washing done better, and flannels never held so well. I have tried it since, and find the secret of nice soft flannels to be the washing of them in cold or luke-warm water, and plenty of stretching before hanging out. Many recipes say, don't rub soap on flannels; but you can rub soap on to the advantage of the flannels, if you will rinse it out afterward and use no hot water about them, not forgetting to stretch the threads in both directions before drying. Flannels so cared for will never become stiff, shrunken or yellow."

SHAVING SOAP.—To obtain a good soap for shaving, says the *Druggists' Circular*, is by no means always easy. The great desideratum is to have a soap that makes readily a rich lather which is slow to dry and that does not require the ceremony of calling for hot water. The most convenient for use are in the shape of paste, so that a little may be taken on the finger

and rubbed over the beard, then the brush finished the process of preparation for the razor. If we take the following ingredients and compound them an excellent soap is produced that leaves nothing further in this respect to be desired: Take white soap, four ounces; spermaceti, one-half ounce; olive oil, one-half ounce. Melt them together and stir until nearly cold. Scent with such oils as may be most agreeable. Another soap may be made by taking white wax, spermaceti and almond oil, of each, one-quarter ounce. Melt and, before cooling, rub in two cakes of Windsor soap, which have previously been reduced to a paste, with a small quantity of rose water. This last, probably, is not unlike a superior shaving soap that has long been in use, and is known as "Rypophagon" soap, a first-rate thing with a very wonderful name.

DIVISION OF LABOR IN SCIENCE.—St. George Mivart remarks on this subject: "The principle of the division of labor renders necessary the application of one man's almost entire energy to a more and more restricted field of scientific labor. Only intellectual giants can now hope for eminence in widely remote areas of study and research. To take an example from one science, men have not only almost ceased to be general zoologists, and become ornithologists, entomologists, etc., as the case may be, but we hear of lives being devoted to the study of small sections of natural orders, and that this naturalist is a *Carabidist* (that is, devoted to that family of beetles termed *Carabide*), and that a *Cureulionist* (devoted to the long-snouted beetles termed *Cureulionidae*), while a German naturalist has even published a quarto volume, with large plates and numerous tables, the whole being devoted to the anatomy of the lower part of the hindmost bone of the skull of the carp."

TO MAKE A BRIGHT CRIMSON WRITING FLUID.—Powdered cochineal, 1 oz.; hot water, $\frac{1}{2}$ pint. Digest, and when quite cold add ammonia 1 oz., diluted with 3 or 4 ozs. of water. Macerate for a few days and decant when clear.

TO MAKE GOOD YELLOW SOAP.—Tallow and sal soda of each 1½ lbs.; resin, 56 lbs.; stone lime, 28 lbs.; palm oil, 8 ozs.; soft water, 28 gallons. Put soda lime and water into a kettle and boil, stirring well; then let it settle and pour off the lye. In another kettle melt the tallow, resin, and palm oil, having it hot, the lye being also boiling hot. Mix altogether, stirring well, and the work is done.

STARCH TO GIVE A SMOOTH GLOSSY APPEARANCE TO STARCHED GOODS.—One tablespoonful of strong gum arabic solution to each pint of starch.

HOW TO CLEAN IRON RUST OFF WINDOW GLASS.—Mix muriatic acid with an equal quantity of water, and apply this with a small cloth cushion to the spot.

HOW TO MAKE AND APPLY A BLACK JAPAN TO SMALL IRON CASTINGS THAT WILL DRY SOON AND BECOME VERY HARD AND DURABLE AT A SMALL COST.—Apply a ground of asphaltum, 3 ozs. Mix by heat and when cooling thin with turpentine. Lay on three coats, and between each dry the article in an oven heated from 250° to 300°. Lay on several coats of varnish, drying in an oven between each, then polish with powdered pumice and rub with oil.

GOOD SIZING FOR LINEN.—Crystallized carbonate of soda, 1 part; white wax, 4 to 6 parts; stearine, 4 to 6 parts; pure white soap, 4 to 6 parts; Paris white, 20 parts; potato starch, 40 parts; wheat starch, 160 parts. Boil with sufficient water to form 1,600 parts altogether, adding if desired some ultramarine to counteract the yellow tint of the linen.

What kind of a preparation do watch repairers use to give that fine polished appearance to the brass movements of a watch? For brass, Spanish whiting is mixed with clear rain water, in the proportion of two lbs. to the gallon. Stir and let stand for a few minutes to allow the gritty portion to settle; decant off the water into another vessel and again allow it to stand. The settings in the second vessel are mixed with jeweller's rouge and used for polishing. What kind to the steel portions? Take a flat burnishing file, warm it and coat it lightly with beeswax. When cold wipe off as much of the wax as can be readily removed, and with the file polish the metal. This is said to be equal to the finest buff polish.

AN EXCHANGE SAYS:—"Under Secretary Schurz, the Patent Office is becoming more profitable still to the government. Its copyists now earn about \$108 each to the government monthly, while their pay is but \$75, and the bureau has a balance of \$1,000,000 to its credit in the Treasury."