For the Scientific American.

More about Cameos.

The ancients formed cameos by engraving figures, in low relief, on different kinds of silicious stones, generally selecting for their purpose those which had layers of different colors; so that the figures, or the different parts of the same figures, were of divers colors. Such cameos were made in southern Europe, and also in France, where this art has lately attempted to be revived; but the hardness of the materials requires so much labor to be employed that the fabrication is too expensive to come into general use. Many attempts have been made to introduce substitutes for the ancient cameos, such as different kinds of porcelain and glass. Their great inferiority, however, caused them to be neglected, and the best and now most usual substitutes are the shells of molluscuous animals; several kinds of which afford the necessary varieties of color, and are at the same time sufficiently soft to be worked on with ease, and hard enough to resist wear and to last for a long period of time. It was formerly the custom, especially in Holland, to use for this purpose the pearly nautilus, and several kinds of turbines or wreath shells, which have an opaque white external coat over an internal pearly one. These have now almost entirely gone out of fashion, and are rarely to be met with, except in the cabinets of the curious.—The shells now used are those of the Flesh-eating Univalve which are peculiar, all being formed of three layers of calcarous matter, each layer being composed of three perpendicular laminæ, placed side by side; the laminæ composing the central layer being placed at right angles with one of the inner and outer ones; the inner and outer being placed longitudinally with regard to the axis of the line of the shells, while the inner laminæ are placed across the axis, and concentrically with the edge of the mouth of the shell. This structure furnishes the cameo cutter with the means of giving a particular surface to his work; for a good workman always carefully puts his work on the shell in such a manner that the direction of the laminæ of the central coat is longitudinal to the axis of the figure, In cameos the central layer forms the body of the bas relief, the inner laminaæ being the ground, and the outer one the third or superficial color, which is sometimes used to give a varied appearance to the surface of the figures. The cameo cutter selects for his purpose, first, the shells of this kind which have the three coats or layers composed of different colors, as these afford him the means of relieving his work; and, secondly, those which have the three layers strongly adherent together; for if they separate his labor would be lost. The kinds now employed, and which experience has taught them are best for their purpose, are—the bull's mouth, which has a red inner coat, or what is called a sardonyx ground; the black helmet, which has a black inner ground, or what is called an onyx ground. The red color of the bull's mouth extends only a slight distance in the mouth of the shell, becoming paler as it proceeds backwards, as may be observed by the pale side which is generally to be observed in each red grounded cameo. The dark color extends further in the black and yellow kind; hence the bull's mouth affords only a single cameo large enough to make brooches, and several small pieces for short studs; and the black helmet yields on an average about five brooches and several pieces for studs.

The manufacture of shell cameos has been carried on in Rome for upwards of forty years; it was confined to Italy until the last twenty years, at which period an Italian commenced the making of them in Paris. Little progress was, however, made until the last ten or twelve years; but, at the present time, a much greater number are made in Paris than in Italy. About three hundred persons are now employed in Paris in this branch of trade earning wages which vary from three to twenty five francs a day, according to their talent and skill. Thirty years ago, a very few cameos were made from any but black helmet, and the number of shells then used amounted to about three hundred annually, nearly the whole of which were sent from England, being all that were then imported. To show the rapid increase of this trade, the number used in France last year was 100,500 shells of all kinds. Of the bull's mouth half are received from the island of Bourbon, to which place they are brought from Madagascar; and the other half are the produce of the island of Ceylon, part of which are received from the English dealers, and some via Calcutta, are imported direc to Havre; hence, though originally from Ceylon, they are called by the French cameo cutters, "Calcutta shells;" no shell of the kind, is, however, found in the fresh water rivers of that city. The black helmets are supplied entirely from England, being the produce of Jamaica, and New Providence. They are not found in Madagascar, though naturalists have for a long period called them the Madagascar helmet, by which name they are known to the cutters. The average value of the larger cameos made in Paris will be about five francs each.

For the Scientific American.

Yellow Color.

This is a color which our country people frequently dye their flannels. It is a color that washes very well and is the easiest dyed in the whole scale. It is one of the primary colors—there being only three of them, viz. red, blue and yellow. Sir Isaac Newton's theory placed seven colors in the primary scale, but this is now known to be incorrect.

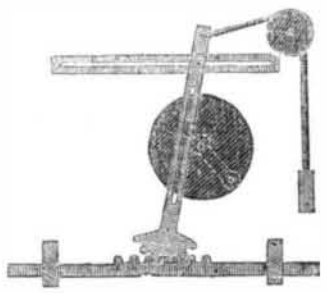
To dye flannel yellow, a quantity of quercitron bark, which will be found at any druggist's, is scalded in a clean vessel. The clear liquor is then put into the dye kettle, when a teacup full of the sulpha muriate of tin is added and the flannel entered loosely while the liquor is boiling. About three pounds of the quercitron bark will make a very dark yellow for ten pounds of flannel, or coarse woolen yarn. It is best to give the stuff or bark liquor, at three different times, taking the goods out after 20 minutes boiling and airing them well, when they are again to be entered with a little fresh liquor, and when dark enough washed and dried. This bark will not impart its color without boiling, but the same process will dye cotton. Silk never should be boiled for dyeing any color. This bark was discovered as a dye drug by Bancroft, and was a source of great profit to America at one period, but the bichromate of potass has superseded it for many purposes, and in many colors not for the better, we think. Bancroft recommended the use of quercitron in the dyeing of scarlet wool, and he advocated the uselessness of tartar where the bark was used. In this respect, that great chemist was incorrect.

SALMON.

On white woolen goods, such as flannels and such like fabrics, a good salmon color, or orange, may be dyed with equal quantities of cochineal and quercitron bark dyed as described in the foregoing, only a little cream of tartar should be added along with the spirits (muriate of tin.) The orange is just a salmon in excess of color, only inclining to the yellow shade, therefore a greater quantity of the same stuffs that can dye a salmon color, will produce an orange. For a salmon color, it is positively necessary to have a clear white ground. There are other ways of dyeing yellow, salmon and orange colors, but no stuffs like those in this receipt can equal the color which they make either in richness or permanency. We speak of the salmon and orange only for woolen goods. The cochineal will not by the process described impart any color to cotton. By following the above, having the goods perfectly clean, no person need be afraid of not dyeing the color, we warrant that. Cochineal is more than two dollars per pound, but an ounce ground up fine, will dye a good scarlet on one pound of wool, that is the best cochineal. Fine goods require less stuff than coarse; the reason of this would be unprofitable to many to explain, the practical is only set forth, and then the operator can reflect from experience—a snuff of cochineal will dye a salmon on a pound of wool.

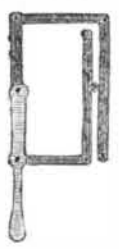
MECHANICAL MOVEMENTS.

Double Traverse Motion.



This cut represents a combination to produce two different amounts of traverse motion from the circular motion of the wheel. The larger traverse is produced at the bar above, and the less at the horizontal bar beneath. It will be observed that the bar or rocking shaft with a quadrant rack base, has a slot extending upwards for the purpose of a steadying pin to keep its motion regular during its vibrations. The crank knob on the wheel vibrates the upright shaft and when it is moved in one direction the weight is drawn over the pulley upwards, which weight acts like a spring and draws the shaft in the other direction. The horizontal bar beneath would have no traverse motion at all only for the quadrant rack which by gathering tooth after tooth, verse and reverse, gives a short traverse to the bar.

Crooked Levers.



This is just a series of levers to which connecting rods may be attached and whereby the spring of the lever is regulated in the same manner as the tip of a trip hammer — A friction roller is placed between the two levers for the purpose of giving as it were a double spring to the active one

Gems Altered by Art.

Lapidaries are accustomed to improve and change the colors of gems by exposing them to heat, and other chemical agents.

In India, yellow cornelians are put into an earthen pot, covered with dry goats' dung, and heated for twelve hours, by which they are changed into a fine red. Instead of goats dung, sand may be used.

Black rock crystal is rendered colorless by heat, if continued for some hours, otherwise it will be only yellow.

Bucquet made a chemical distinction between rock crystal and quartz; the latter cracking by heat, probably on account of containing water.

The amethyst by a moderate heat becomes colorless; but if the heat is violent, white and shotten like an opal; it is more liable to crack than rock crystal.

Beryl is changed by a moderate heat to a light blue, if the heat is greater, it becomes like mother of pearl.

The emerald acquires the same pearly lustre by heat.

The color of the chrysoberyl is not altered by heat.

Blue flour spar is changed to red, and if the heat is strong, is often rendered colorless.

Agates absorb oil, either by being immersed or boiled in it for a sufficient time, or even during the process of cutting them, and on boiling them in oil of vitriol, the parts which have absorbed the oil are rendered black, while the other parts retain their natural color, or even become whiter than they were before.

Agates and cornelians having carbonate of soda applied to them, and then applied to the heat of a furnace under a muffle, an opake white enamel is thus made to cover the stone which cannot easily be distinguished from a natural white flake. By this means are produced the cornelian beads brought from India, which are ornamented with a net work of a white color, penetrating to a small depth, and equally as hard as the stone itself.

For the Scientific American.

To Paint the Sliders of Magic Lanterns.

Provide a small muller and a piece of thick ground glass five or six inches square to grind the colors on, also a small pallet knife and a few bottles to put the colors in. For a red color get a little scarlet lake, and for blue a little Prussian blue. For green use purified verdigris ground with a quarter of its bulk of gamboge, and for brown use burnt umber, and for black, burnt sienna black. These are the only colors that are truly transparent and fit for painting sliders. Having all these colors ready, grind them in the balsam of fir mixed with half its bulk of turpentine; mastic varnish will do very well, but the balsam is the most beautiful. To paint the glass black round the painting, dissolve asphaltum in turpentine and mix with lampblack. When the colors are all ground they must be put in separate bottles and sealed, and when they are to be used, a little bit is taken out at once on a piece of glass, just as much as is needed at once, as it quickly dries. If the color is too thick it must be diluted with turpentine. To paint the sliders, the subject must be designed on paper and the paper put under the glass and the glass painted above it according to the design on the paper underneath.

Cure for Lockjaw.

A correspondent of the Baltimore Sun says that when any one runs a nail or any sharp iron in any part of their frame, take a common smoke pipe, fill it with tobacco, light it well, then take a thin cloth or silk handkerchief, place it over the bowl of the pipe and blow the smoke through the stem into the wound—hold the stem close, to carry the hot smoke into the wound. Two or three pipesfull will be sufficient to set the wound discharging. He has tried it on himself and five others, and found it to give immediate relief. If the wound has been some days standing it will open it again, if the tobacco is good.

Gold in the Violet.

Mr. R. Hunt, of the Royal Institution, London, states that a friend of his has succeeded in obtaining a minute though weighable portion of gold, from a quantity of the petals of the blue violet.—*Ex.*

Mr. Hunt's friend was undoubtedly mistaken, or else gold is not a simple substance.

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