



Practical Receipts.

Prepared by a German Chemist for the Scientific American.

CLEANING BUSTS AND PLASTER CORNICES.

The following simple process for cleaning plaster busts, statues and cornices of stains and spots, is very effectual.

Boil a rather thick paste of starch and spread the same cold by means of a soft brush upon the soiled surface of the plaster and permit it to dry in a sufficient airy place. After getting perfectly dry the paste will voluntarily drop off in thin scales and with them the dirt. Thus treated a plaster bust of bas-relief will appear like new, and will not incur any danger of losing expression or beauty.

ARTIFICIAL GEMS.

A new process for the artificial production of precious stones has been brought to light in one of the late sessions of the Academie at Paris, by M. Edelman, vice-director of the royal porcelain fabric at Sevres. He uses boracic acid as a medium to unite intimately the mineral bases constituting and composing the stones, and although a high temperature is required to evaporate the acid afterwards, it is still needed far below the melting heat. M. Edelman produced in this way by evaporating and heating a solution of magnesia and alumina in boracic acid in a porcelain oven, several minerals belonging to the family of *rubi spinella*. By a heat not reaching the melting point of iron, transparent crystals can be obtained in this manner, with nearly the properties and qualities of the diamond.

TESTS FOR LINEN GOODS.

The adulteration of linen has reached such an extent that it must be quite a treasure to know the means of discovering without fail a spurious article from the genuine. An unerring process is founded upon the well established fact that sulphuric acid exerts a destructive power more readily and quicker upon the cotton fibre than on flax. After depriving the sample to be tested by repeated washing and boiling (without soap) of all starch and finish, lay the same for one or two minutes, (according to the thickness of the linen) in concentrated sulphuric acid. Remove the acid by repeated washing in water, and dry the piece by pressing it between blotting paper. If there has been any cotton in it, it will have disappeared, while the linen will be left.

TO MARK NAMES OR FIGURES ON PEARS AND APPLES

Cut a name, date, or figure on a piece of fine and thin paper, and wrap it around an apple or a pear on the side of the tree which is most exposed to the rays of the sun, about three weeks before the ripening time, and a very neat impression will be produced. On red apples it is necessary to cut out the letters on dark paper and paste every one singly.

Nitrate of Silver.

Nitrate of silver is prepared by saturating pure nitric acid of specific gravity 1.25 with pure silver, evaporating the solution and crystallizing the nitrate. When the drained crystals are fused in a platina capsule, and cast into slender cylinders in silver moulds, they constitute the lunar caustic of the surgeon.—This should be white, and unchangeable by light. It is deliquescent in moist air. The crystals are colorless, transparent 4 and 6 sided tables; they possess a bitter, acrid, and most disagreeable metallic taste; they dissolve in their own weight of cold, and in much less of hot water; are soluble in four parts of boiling alcohol, but not in nitric acid; they deflagrate on red-hot coals, like all the nitrates, and detonate with phosphorus when the two are struck together on an anvil. They consist of 68.2 of oxyde, and 31.8 of acid. Nitrate of silver, when swallowed, is a very energetic poison; but it may be readily counteracted, by the administration of a dose of sea-salt, which converts the corrosive nitrate into the inert chloride of silver. Animal matter, im-

mersed in a weak solution of neutral nitrate of silver, will keep unchanged for any length of time; and so will polished iron or steel. Nitrate of silver is such a delicate reagent of hydrochloric or muriatic acid, as to show by a sensible cloud, the presence of one 113 millionth part of it, or one 7 millionth part of sea-salt in distilled water. It is much used under the name of indelible ink, for writing upon linen with a pen; for which purpose one drachm of the fused salt should be dissolved in three-quarters of an ounce of water, adding to the solution as much water of ammonia as will re-dissolve the precipitated oxyde, with sap green to color it, and gum-water to make the volume amount to one ounce. Traces written with this liquid should be first heated before a fire to expel the excess of ammonia, and then exposed to the sunbeam to blacken. Another mode of using nitrate of silver as an indelible ink, is to imbue the linen first with a solution of carbonate of soda, to dry the spot, and write upon it with a solution of nitrate of silver thickened with gum, and tinted with sap-green. It is also used in Photography.

The Action of the Acetate of Morphia on Children.

Dr. Melion believes, from the results of his experience, that the acetate of morphia possesses more powerful anodyne, and anti-spasmodic properties in children, than opium. He divides its effects, when internally administered, into three degrees. First: All the secretions and excretions of the internal organs become diminished, but the cutaneous exhalations become increased; hence the skin becomes moist, and a copious perspiration covers the head and upper parts of the body, but before this effect takes place, it shows its influence on the nervous system, and pain and convulsions cease; its influence lasts from three to six hours, the children then pass a quantity of pale urine, and cutaneous transpiration becomes normal. Second: The nervous system is the first part affected. The child becomes dull, drowsy, and gradually falls into a state of stupor; it lies with the eyes shut or half open, one more so than the other; the ball of the eye may be either fixed or may roll; the pupil is contracted and inactive; the heat of the head is increased, and the scalp and face are covered with copious perspiration; the child murmurs or speaks during its sleep, and moves its upper lip and lower jaw, as in the act of sucking; if it awakens from sleep, it desires to drink, and again falls asleep. This state may last for eight or twelve hours. In the third degree, venous congestion shows itself over the whole body, the child lies listless, the skin is purple, the temperature diminished, the pupils contracted and inactive, the pulsations weak, and the regular courses suppressed. Convulsions are apt to ensue, and death the result.

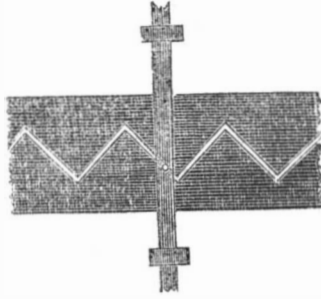
It may be used in chronic diarrhoea, dentition for worms, and whooping cough, successfully, but it should be used cautiously, and many mothers, we are sorry to say, use it with a frightful disregard of any thing, but to hush a child to sleep. Lunacy in nine cases out of ten, is the result of paregoric administered in childhood. There is a responsibility resting upon every mother which is weighty with the weal or woe of future generations.

Velocity of Electricity.

The immense velocity of electricity makes it impossible to calculate it by direct observation; it would require to be many thousands of leagues long before the result could be expressed in the fractions of a second. Yet, Professor Wheatstone, of London, has devised apparatus for this purpose, among which is a double metallic mirror, to which he has given a velocity of eight hundred revolutions in a second of time. The professor calculates, from his experiments with this apparatus, that the velocity of electricity through a copper wire one fifteenth of an inch thick, exceeds the velocity of light across the planetary spaces, and that it is at least 288,000 miles per second. The professor adds that the light of electricity, in a state of great intensity, does not last the millionth part of a second: but that the eye is capable of distinctly perceiving objects which present themselves for this short space of time.

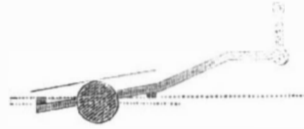
MECHANICAL MOVEMENTS.

Zigzag, or an Eccentric Motion.



This figure shows that the perpendicular rod will be alternately traversed in a perpendicular direction by the horizontal motion of the zigzag slot in which the pin is placed.—This movement can be most beautifully exhibited by having a hollow cylinder cut around with a slot, like that represented above, and fixed upon an axle that will revolve in suitable bearings. On this axle fix a cord and weight attached to it and insert the end of the rod or pendulum fixed with a cross piece in bearings parallel with the centre of the diamond slotted drum. Roll up the weight-cord on the axle and set the pendulum in motion when a regular and simple clock will be seen to have been set in operation—one which any person can construct who can cut a zigzag slot in a piece of tin and form it into a drum.

Dressing Warps.



This is an arrangement of a brush movement of a machine for dressing warps, in which the revolution of the crank on the right combined with the inclined plane, on which the small roller to the left is supported, produces the brushing on the warp, which is represented at the dotted horizontal line.

The dressing machines at present in use are very different from those used some years ago, and the brushes are not moved as represented above. Still as a mechanical movement, the idea of its action is well represented in the cut.

Mode of Preparing Tannate of Iron.

A very pure sulphate of iron is made by the action of dilute sulphuric acid on iron filings; from this sulphate, by means of carbonate of soda, a carbon of iron is precipitated, which is washed several times, and then dried on the stove. It is now pulverized and thrown by small portions at a time into a boiling solution of very pure tannic acid in a porcelain vessel—the proportions used being very nearly five parts of the carbonate to one of the acid, or 440 parts of the carbonate to ninety of the tannic acid. The fluid is to be stirred constantly till the effervescence ceases. It is afterwards exposed to a heat equal to the boiling point of water, till it acquires the consistence of thick soup. It is then withdrawn from the fire, and poured on porcelain plates, and dried with the assistance of heat. The tannate of iron thus obtained is of a crimson color, insipid, insoluble, uncrystallized, though before being dried, it appears in long needles. It may be administered either suspended in syrup, or still more conveniently in the form of pills. The dose is from eight to thirty grains a day. It acts more rapidly in persons of sanguine temperament.

Extract of Dandelion.

This is becoming a new article of domestic manufacture, but which might have been produced fifty years ago, just as conveniently as at the present time, since the stock has always been abundant throughout the northern States, even in the highways, and costs nothing but the labor of digging. A steady demand of the article, which meets the general approval of physicians, has induced persons to commence the manufacture, which is very easily managed, and it seems that it will eventually put an end to the importation of the extract from England. The dandelion possesses a medicinal value far above the estimate often placed upon it. Were it a scarce

plant, and the expense attending the preparation far beyond what it is, probably no medicine would have more ardent admirers.

Nutmeg Tree.

The nutmeg tree flourishes in Singapore near the Equator. It is raised from the nut in nurseries, where it remains until the fifth year, when it puts forth its blossoms, and shows its sex. It is then set out permanently. The trees are placed thirty feet apart, in diamond order—a male tree in the centre. They begin to bear in the eighth year, increasing for many years, and they pay a large profit. There is no nutmeg season. Every day in the year shows buds, blossoms, and fruit, in every stage of growth to maturity. The ripe fruit is singularly brilliant. The shell is glossy and black, and the mace it exposes when it bursts, is of bright scarlet, making the tree one of the most beautiful objects of the vegetable world.

More Mineral Paint.

A new bed of mineral paint has been discovered at Akron, Ohio, and said to be more valuable than the bed previously discovered and different in the chemical analysis. It is of a variety of beautiful shades from light grey to a purple. It makes a beautiful cement becoming very hard in a few days, and susceptible of a fine polish. It is incombustible, and water proof.

Adulteration of Olive Oil.

To so great an extent has olive oil been adulterated with lard oil, in England, that not long since, the Jewish Rabbis throughout the kingdom were requested to cause an examination to be made of the oil employed by their people for culinary purposes, lest they should be consuming the production of an unclean animal.

Economy in Cooking Cranberries.

To each quart of berries, very shortly after the cooking of them is commenced, add a teaspoonful of salaratus. This will so neutralize the acidiferous juice which they contain, as to make it necessary to use only one-fourth part as much sugar as would have been requisite had they been cooked without using salaratus.

Turpentine and alkanet root make a beautiful purple color for staining marble for fancy chimney pieces.



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