SCIENTIFIC MUSEUM.

Interesting Discovery in Electro Gilding.

It has long been known that fine gold or gold coin can be dissolved, if fastened to the negative pole of a galvanic battery and immersed in a strong solution of cyanide of potassium, but I believe that, previous to my discovering the fact, it has not been known that gold can be dissolved in cyanide of potassium without the use of any acids or of the battery, simply by procuring a lot of refuse gold from the bookbinder's or sign painter's (at 80 cents per dwt.) and immersing it in a solution of cyanide of potassium, and in a short time it will disappear, having been dissolved in that menstrum. In like manner the gold contained in the rags used by the gilder, for removing superfluous gold leaf, may be reclaimed simply by soaking the rags in the solution for a short time, taking them out and pressing the liquid. The gold is taken up in the liquid without injuring the rag in the least. The result is a saving of time, trouble, and expense. To the truth of the two first, the electro plater will readily affirm, for he may by using the battery lately discovered (a strip of zinc pointed with copper and immersed in the cyanide gold solution), dispense entirely with nitro muriatic and sulphuric acids, either in their use of dissolving or depositing the gold. The gold-beater here does for us, by mechanical means, what we were heretotore under the necessity of doing with powerful chemical solvents, namely, distending the surface of the gold almost infinitely, thereby diminishing its attraction of cohesion so much that it is readily dissolved in this feeble solvent. Refuse gold leaf can be bought for 80 cents per dwt., whereas coin of equal fineness is worth one dollar—leaving a saving of 20 per cent. Cyanide of potassium is also an excellent means of removing misplaced gilding from books, signs, or picture frames. For this purpose, by means of a sponge, the gilding is kept moist for a short time with the liquid, when the gold will be found to be dissolved without injuring those articles in the least.

J. F. Mascher.

Fire-Proof Bronze.

1-16th of an ounce of verdigris, and the same quantity of finely pounded muriate of ammonia, are to be dissolved in ¾ths of a pint of rain-water, the solution left standing covered for 3 to 4 hours, and then 1½ pint more water poured into it. The copper vessel, which must be perfectly clean, is now to to be held over a charcoal fire until it is equally heated throughout and becomes uniformly tarnished. The copper is now to be rubbed over with the mixture, and then carefully dried.

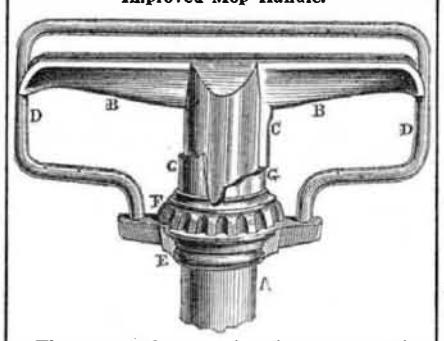
After five or six repetitions of this treatment, the copper receives a brass color; after from six to ten repetitions, it acquires a fine yellow. If the copper is now to be changed from yellow to brown, it must no more be wetted whilst hot; if, however, it be desired to have it very pale brown, the process must be repeated twenty or twenty-five times.—When the desired color is attained, the copper is to be laid in clean water, taking care, however, to clean it or dry it rapidly after taking it out. This must be done carefully. The copper is then held over a weak charcoal fire, when the bronze becomes permanent and fire-proof.

To give a fire-proof, brown bronze color to brass, the following is the process:—

3-32 of an ounce of crystallized verdigris and the same qnantity of sal-ammoniac are mixed with ¾ths of a pint of rain water, and left to stand for 2 to 3 hours. The brass is then to be rubbed over with it for 2 to 3 minutes, when it becomes green. 1½ pints of rain water is now to be added to the solution. The metal is now held over a charcoal fire, which must not be too strong, until it acquires a copper color. It is then again wetted, and left to dry by evaporation. When it has been treated in this manner four or five times, it becomes olive-colored. The heat may now be somewhat increased, but it is necessary to be very careful that the metal does not become too hot. When it has been treated nine or ten times in this manner, it becomes brown. As long as any greenish places are to be seen, however, this treatment must be continued, in many cases 20 to 25 times before the required color is obtained.

If, however, the metal be strong, the materials are to be dissolved in hot rain water, and the metal rubbed with it immediately until it acquires a fine dark green color; it is then to be held over a strong charcoal fire, by which means it acquires a fine brown color after 10 to 12 repetitions of the treatment.—It is necessary to be careful that the metal is equally heated throughout. If spots appear, they must be bitten out during the work and polished with brick dust.

Improved Mop Handle.



The annexed engraving is a perspective view of an improved mop handle, invented by Timothy Randletts, of Shakers Village, North Enfield, N. H., who has taken measures to secure a patent for it.

A is the wooden shank; on this shank is fitted the metal socket of jaws, B B. There is a groove in the edge of these jaws. D D is a sliding cross clasp fitted into the sleeve, E, which surrounds shank A; this clasp fits into the groove in the jaws, B B, and retains the mop firmly, when the sliding nut, G, is in its proper place for that purpose. This is not a screw nut; the notches, F, are merely for the purpose of enabling it to be turned round easily with the thumb and finger. There is a slit or groove shown in the nut, G, and a number of indentations on its outer edge. The slit is for the purpose of allowing said nut to be slid up on the projection, G, on the socket of B B, so as to push up the clasp, D, and allow the mop to be taken out. When it is put in again between the clasp and B B, the nut, G, is turned so as to bring the slit, as shown, past the projecting edge, C, and thus prevent the mop from coming out whilst being used. The indents on the edge of G G, enables the clasp to retain mops of various degrees of thickness between the jaws of B B and the said clasp. This is the most handy and convenient mop handle that has ever been presented to our notice and it deserves to come into universal use.

More information may be obtained by letter addressed to Jason Kidders, North Enfield, N. H.

Musk.

This substance is an unctuous secretion of a glanular pouch or sac, situated in the skin of the abdomen of the musk-deer, an inhabitant of the great mountain range which belts the north of India and branches out into Siberia, Thibet and China. It is also found in the Altaic range near Lake Baikal, and in some other mountain ranges, but always on the borders of the line of perpetual snow. It is from the male only the musk is produced, and the secretion when dry is of a dark brown or black color, and somewhat granular. Its taste is bitter, and its peculiar and penetrating odor is well known. It was formerly held in high repute as a medicine, and it is still so among eastern nations. The musk-deer is eagerly hunted for the sake of its costly perfume, which, however, is always adulterated. Tavernier says that the odor of musk, when recent, is so powerful as to cause the blood to gush from the nose, and in this way he would account for the supposed adulteration of the article with dried blood.—Chardin also says, "It is commonly supposed that when the musk sac is cut from the animal, so powerful is the odor it exhales, that the hunter is obliged to have his mouth and nose stopped with folds of linen, and that often in spite of this precaution the pungency of the odor is such as to end in death. I have heard the same thing talked of by some Armenians who had been to Boutan, and I think it is true. The odor is so strong in the East Indies that I could never support it; and when I trafficked for musk, I always kept in the open air, with a handkerchief over my face, and at a distance from those who handled the sacs, referring them to my broker: and hence I knew by experience that this musk was very apt to give head-aches, and is altogether insupportable when quite recent. I may add that no drug is so easily adulterated or more apt to be so." Tavernier states that at Patana he once bought 1,673 musk bags weighing 2,557½ ounces, containing 452 ounces of pure musk. The musk from Boutan, Tonquin, and Thibet, is most esteemed; but it is supposed its strength and the quantity produced by a single animal varies with the season of the year and the age of the animal. A single musk-bag usually contains from 2 to 3 drachms. Musk is imported into England from China in caddies of 60 to 100 ozs. each; that from Bengal is inferior, and from Russia of a still lower quality. The best is that contained in the natural follicle or pod. When adulterated with the animal's blood it forms into lumps or clots. It is sometimes mixed with a dark, highly colored, friable earth; the musk is then of a more friable texture, harder and denser than genuine musk.

Musk is very remarkable for the diffusiveness and subtlety of its scent; everything in its vicinity soon becomes affected by it, and long retains it; a very minute portion, such as a grain or two will scent a room for years, and is sufficient for imparting to articles of dress, &c., a powerful perfume. One part of musk will communicate its odor to 3,000 parts of inodorous powder. Boiling water dissolves 90 parts of genuine Tonquin musk; alcohol only 50 parts. Musk is soluble in ether, acetic acid, and yolk of egg. Moisture seems to favor the odor of musk, for when dry it yields but little scent, and this becomes powerful when moistened. An artificial musk is prepared with nitric acid and oil of amber.

About Snakes.

A paper was lately read before the Boston Society of Natural History, from Dr. W. J. Burnett, on the character of the rattlesnake. The doctor had been experimenting on two or three specimens of this animal, and announces the discovery of numerous embryo poison fangs in the jaws of the snake, immediately behind the outward fangs. The use of these hidden weapons of destruction appears to be to supply the place of the biting fangs of the serpent when they get broken off or worn out in service. It also appears that the long fangs (two in number) which are used in inflicting the bite of the rattlesnake, are naturally shed every few years, when they are not injured by accident or wear, and the reserve fangs are sufficiently numerous to meet the worst emergencies. From minute microscopal examination of the structure of these teeth, Dr. B. concludes that there are two canals in each fang, only one of which conveys the poison to the wound. Respecting the character of the poison itself, the doctor remarks as follows:—

"There is good reason for the belief that its action is the same upon all living things, vegetables as well as animals. It is even just as fatal to the snake itself, as to other animals, for Dr. Dearing informed me that one of his specimens, after being irritated and annoyed in its cage, in moving suddenly, accidentally struck one of its fangs into his own body, it soon rolled over and died, as any other animal would have done. Here then, we have the remarkable, and perhaps unique philosophical fact, of a liquid secreted directly from the blood, which proves deadly when introduced into the very source (the blood) from which it was derived!"

In order to scrutinize by the aid of the microscope the operation of this deadly agent on the blood, Dr. Burnett stupified one of the fiercest of his snakes by dropping chloroform upon his head.

"Twenty-five or thirty drops being allowed to fall on his head, one slowly after the other, the sound of his rattle gradually died away, and in a few minutes he was wholly under this agent. He was then adroitly seized behind the jaws with the thumb and fore-finger, and dragged from the cage and allowed to partially resuscitate; in this state a second person held his tail to prevent his coiling around the arm of the first, while a third opened his mouth, and with a pair of forceps, pressed the fang upward, causing a flow of poison which was received on the end of the scalpel. The snake was then returned into the cage.

Blood was then extracted from a finger, for close microscopal examination. The smallest quantity of the poison being presented to the blood between the glasses, a change was immediately perceived—the corpuscles ceased to run and pile together, and remained stagnant without any special alteration of structure.—The whole appearance was as though the vitality of the blood had been suddenly destroyed, exactly as in death from lightning. This agrees also with another experiment performed on a fowl, where the whole mass of the blood appeared quite liquid, and having little coagulable power."

Dr. Burnett is of the opinion that the physiological action of the poison of the rattlesnake in animals is that of a most powerful sedative, acting through the blood on the nervous centres. He supports this position by the remarkable fact that its full and complete antidotes are the most active stimulants; and of these alcohol (commonly in the form of rum or whiskey) is the first. This remedy is well known at the South, and there are some twenty-five authentic cases on record proving that a person suffering from the bite of a rattlesnake may drink from one to two quarts of clear brandy without feeling the slightest tendency to intoxication, and eventually recover.

Poisons.

It was Liebig's theory that arsenic proves poisonous not by virtue, so to speak, of its own venom, but by arresting those processes of decomposition and destruction which are always going on among the solids and fluids of the body, as an essential agency of life. Dr. Cockle, of England, in his late pamphlet "On the Poison of the Gobra di Capello," thinks the poison of that serpent acts by promoting unduly those processes. Granting that both are right, the poison of the cobra and arsenic may be quoted as types of two different classes of poison, the septic and anti-septic.

Remedy for the Sting of Bees.

The stung place is to be rubbed with the freshly-pressed juice of the honeysuckle. The expressed juice may be kept in closely-stoppered bottles for this purpose.