Chemistry applied to the Arts.

In dyeing certain colors, it is necessary that a large proportion of oxygen should be united with the cloth to be dyed, before applying the coloring matter; and many complicated processes have been invented by different dyers, with a view of condensing the greatest proportion possible.

The old process of bleaching consisted in exposing the yarn or cloth to air and light, and sprinkling the cloth occasionally with water. In this process the light promotes the union of the oxygen of the air with the coloring matter of the cloth, or rather with the elements of the coloring matter—carbon and hydrogen forming with them carbonic acid and water. A long time would be occupied in converting the whole of the coloring matter of the cloth into carbonic acid and water; to shorten the process, the cloth is sprinkled with water from time to time, which carries off the partly decomposed coloring matter, and leave a fresh surface to be acted upon by theair. This process is, however, much too slow for the manufacturer of the present day, who always uses chlorine in bleaching cloth, calico, &c.

Oxygen has a great tendency to unite with most metals to form oxides, or rust; it is, therefore, of great importance that we should be able to prevent this union totally, or in part; the object to be attained is to prevent the contact of oxygen and the metal—this is accomplished in various msnners under different circumstances. By coating the metal with paint, we prevent its rusting—the color in the paint is not acted upon, that being already united, where metallic paints are employed, with as much oxygen as it will take up; still, as the oil and turpentine in the paint, both become decomposed in time by uniting with oxygen, the paint requires to be renewed occasionally. Paint cannot, however, be employed to protect metal that is exposed to heat. Blacklead (carbonate of iron) is better adanted to protect metals exposed to a heat, not too intense, such as stoves, engine boilers, &c. All metals, however, do not require to be painted in order to preserve them from the destructive effects of oxygen, for this reason:—the first coat of oxide formed on the surface of the metal being insoluble under ordinary circumstances, and impervious to air, serves to protect it completely from all further corrosion.

Most explosive compounds owe their rapid combustion to the fact that they contain a substance, readily decomposed, yielding oxygen sufficient for the combustion of the other ingredients forming the compound, which are all capable of uniting with oxygen, and forming gaseous compounds,—for the force of the explosion depends upon this sudden conversion of solid matters into gases. There are certain explosive compounds which contain no oxygen; the explosion in this case depending entirely on the facility with which solid or liquid substance is resolved into its simple elements, which, in most instances, are gases.

Ice.

Ice, when converted into water, absorbs and combines with 149 degrees of caloric. Water, then, after being cooled down to 33 degrees, cannot freeze until it has parted with 150 degrees of caloric: and ice, after being heated to 32 deg., which is the exact freezing point, cannot melt till it has absorbed 140 degrees more of caloric. This is the cause of the extreme slowness of the operation. There can be no doubt, then, that water owes its fluidity to its latent caloric, and that its caloric of fluidity, is 140 degrees. However long we may boil water in an open vessel, we cannot make it the smallest degree hotter than its boiling point, or 212 degrees. When arrived at this point, the vapor absorbs the heat and carries it off as fast as it is generated. Hence in cooking, we attain the general heat at the boiling point, though by increasing the fire, we increase the evaporation. Owing to the quantity of caloric that liquids require to convert them into vapor, all evaporation produces cold. An animal might be frozen to death in the midst of summer, by repeatedly sprinkliug ether upon, him. The evaporation would shortly carry off the whole of his vital heat.

Ancient Metals.

Of the use of these, the Scriptures make very early mention. In the days of Moses, gold is spoken of as put, and sometimes kept in a liquid state, while it is beyond our power to reduce it to a powder. The corners of the stones of the pyramids are so sharp as to break the skin of the hand when passed over them, and so hard as to resist the sharpest steel. The French found great difficulty in carving two lines upon the obelisk now in La Place Concorde; yet the ancients had covered all the facades with figures. According to history, they had an art, now lost, of making copper, (one of the softest of all metals) harder than steel, and it was of this they made their tools. The famous Delhi Blades, as it is well known, are unrivalled. They would cut off the heads of a row of bob nails placed one after another without dulling their edge; and were yet so pliable that the point could be made to touch the handle. Then the warrior, too impatient to wait for his sword to be cooled in the usual way, snatched it red hot, and waving it in the air, thus gave it its temper. They tried in Paris lately, thus to temper steel, but without success. Scott gives a description of the swords of Richard, which cut down steel with the same facility. The cannons of the British in India, it is well known, soon became honeycombed by the dampness of the dew, and to be totally useless in war. The lines of Byron, on the rust upon the steel of the warriors, are according to truth, though that warrior had lain but one night beneath the open sky. Necessity has been to the East Indian, the mother of invention. He will take the cast off hoop of an English cask, and make of it a sword equal to the best Parisian blade. The pliability of the steel of the ancients was wonderful, but that of their bronze was more so.

The Nitre Lakes in Egypt.

What a singular scene! In the midst of this sandy waste, where uniformity is rarely interrupted by grass or shrubs, there are extensive districts where nitre springs rise from the earth like crystalized fruits. One thinks he sees a wild waste overgrown with moss, weeds and shrubs thickly covered with hoar frost. And to imagine this wintry scene, beneath the fervid heat of an Egyptian sun, will give some idea of the strangeness of its aspect. The existence of this nitre upon the sandy surface is caused by the evaporation of the lakes. According to the quantity of nitre left behind do these fantastic shapes assume either a dazzling white color, or are more or less tinted with the sombre hue of the sand. The nitre lakes themselves, six in number, situated in a spacious valley between two rows of low sand hills, present a pleasing contrast in their dark blue and red color, to the dull hues of the sand. The nitre, which forms a thick crystalized crust upon these shallow lakes, is broken off in large square plates, which are either of a dirty white, or of a flesh color, or a dark deep red. The Fellahs employed upon this labor stand quite naked in the water, furnished with iron rods. The part which is removed being speedily renewed, the riches of its produce are inexhaustible. It is hence that nearly the whole of Europe is exclusively supplied with nitre; and this has probably been the case for ages, for Sinard mentions, at the commencement of the last century, that then six hundred and thirty thousand weight of nitre was annually broken for the Grand Seignor, to whom it yielded thirty six purses.

War.

Men, who can do nothing but by union, who can be happy only by peace, madly arm themselves for their misery, and fight for the accomplishment of their ruin; and when the din of war is ended, they behold the earth lying in desolation, the arts buried, and their real power annihilated. Between England and France, those two kingdoms alone, in the course of seven hundred years, there have been 266 desolating wars, and the loss of millions of lives.

Amongst the things which the Germans have conquered by their Revolution, is "the right to smoke in the streets." Boston has taken pattern.

Receipts for the Cure of Hydrophobia.

Take of the red chick-weed (*herba anageiis ruber*) that has been dried, one handful pour two quarts of good beer on it, and boil it in a new earthen pot (the pot must be covered with a close lid until half the liquor boils away,) it must be boiled over a slow fire, the vessel in which it is boiled must be kept very clean, and used for no other purpose. When the herb is boiled enough, it must be strained through a clean cloth and well squeezed, so that the substance may be all taken out of it, than add to the decoction two drachms of the best Threriaca Venti, it must be well dissolved and mixed with the decoction. Of the above decoction give to a man or beast in the morning, fasting, the following proportions. A man of strong constitution must take a pint of it, and that at one time if possible, if not at once, take it at short intervals, but if taken at one draught it is best. If there should be symptoms of madness, the medicine must be taken two or three mornings in succession; but if actual symptoms of madness should exist, a larger portion of the herbs should be added to the said quantity of beer. A woman should take less of the beer than a man, say about 3 or 3 and a half gills—for children the medicine must be regulated according to their age and constitution. It must be likewise observed that children can bear more of it than grown persons in proportion to their age.

The mother or person that nurses the child should take an extra portion; if the child would receive one or two spoonsful of the medicine it would be sufficient. A horse should be given one pint; a cow 20 spoonsful, a heifer or dog, according to age, size and strength—the medicine to be taken warm and well shaken—it must be taken in the morning, and fast must not be broken for three or four hours after taking it. No cold or fresh water must be taken, otherwise serious consequences might arise. On the day of taking the medicine, the person must abstain from spoon victuals, particularly of milk or warm beer. A beast must not be watered on that day; and a person must, for two weeks abstain from the following eatables, viz: Meat and pork of all kinds, cabbage, peas, beans, fish or water fowls. If a person is bit through the skin, the wound must be scratched with a chip until it bleeds and washed with some of the decoction; this may be done for two or three days. If the wound requires dressing, make a plaster of the threriaca venti (venice treacle) twice a day until the wound is healed. Observe, that before dressing, the wound must be clean washed, with the decoction After having made use of the medicine, the person must put on clean linen and change all his clothes and bedding, which must not be worn except perfectly clean. All straw that a beast has lain on must be burnt and the stable cleansed.

Another receipt for its cure is, as soon as the wound is made, to cup the lacerated parts. In case no physician is at hand, or inability to procure a set of cups, an ordinary tumbler can be used as a substitute by exhausting the air in the glass with a piece of lighted paper. The cupping process cannot fail to draw the virus from the system.

Bathing with the chloride of lime is also good.

As Good as a Yankee Trick.

A New Yorker in Vermont, being "dead broke" and wishing to reach Hudson, gave a fellow his jacket, to start the report there that he was Mosher, the anti-renter, for whom a reward has been offered by Gov. Young. The trick took, a Vermont constable arrested the broken merchant, and took him nothing loath to Hudson. When he reached that place instead of pocketing the one thousand dollars he was surprised to find that he had got the wrong man, who gave not the least intimation that he intended to return to the constable, the cost of passage to Hudson.

Seidlitz Powders.

Each dose contains 25 grains of tartaric acid in the white paper, and 30 grains of supercarbonate of soda, mixed with two drachms of glauber salts in the blue.

Add a little sugar and a few drops of the essence of lemon to the above, and it will make good lemonade.

To Preserve Strawberries.

Strawberries for preserving should be large and ripe. They will keep best if gathered in dry weather, when there has been no rain for at least two days. Having picked them all, select the largest and firmest, and spread them out separately on flat dishes; having first weighed them, and allowed to each pound of strawberries a pound of powdered loaf sugar. Sift half the loaf sugar over them. Then take the inferior strawberries that were left, and those that are over ripe, mix them with an equal quantity of sugar, and mash them. Put them into a basin covered with a plate, and set them over a fire in a pan of boiling water, till they become a thick juice; then strain it through a bag and mix with it the other half of the sugar that you have allotted to the strawberries, which are to be done whole.—Put it into a porcelain kettle and boil and skim it till the scum ceases to rise; then put in the whole strawberries with the sugar in which they have been lying, and all the juice that may have exuded from them. Set them over the fire in the syrup, just long enough to heat them a little; and in a few minutes take them out, one by one, with a teaspoon, and spread them on dishes to cool; not allowing them to touch each other. Then take off what scum may arise from the additional sugar. Repeat this several times, taking out the strawberries and cooling them till they bcome quite clear. They must not be allowed to boil; and if they seem likely to break, they should be instantly and finally taken from the fire.—When quite cold, put them with the syrup into tumblers, or into white queensware pots, and cover close with fine paper.

Preserving Currants.

Currants and gooseberries may be preserved all the year round, as fresh and sweet as when taken from the bush. The fruit should be plucked while green, or before the berries assume the red color, which precedes and heralds maturity, and put into clean dry glass bottles, which should be corked and sealed tight, and placed in the cellar, or some other cool place, an ice house would be the best.

To Preserve Cherries.

Take large ripe morella cherries; weigh them, and to each pound allow a pound of loaf sugar. Stone the cherries, (opening them with a sharp quill,) and save the juice that comes from them in the process. As you stone them, throw them into a pan or tureen, and strew about half the sugar over them, and let them lie in it an hour or two after they are all stoned Then put them into a preserving kettle with the remainder of the sugar, and boil and skim them till the fruit is clear and syrup thick.

Cabbage and Greens.

All the cabbage tribe which includes cauliflower, brocoli, coleworts, sprouts, and turnip tops, in order to be delicate, should be dressed young, when they have a rapid growth but if they have stood the summer, they require the influence of the frost to become tender. In order to appear green at table, they must be boiled in hard water. Greens of the above description when of advanced growth, are better flavored when boiled in two waters, which is managed in the following manner. After they have been about half boiled, take them out of the pot, place them in the colander, and allow water to run on them for two or three minutes; then replace them in a fresh pot of boiling water, with some salt, and let them continue to boil briskly till done, Cauliflower should boil more slowly, as it is apt to be broken by the force of a violent ebullition. Brocoli, to be freed from its offensive odor, should be boiled in two waters.

Gropher Hunt.

A litttle animal called the "gropher" is very troublesome to the farmers in the Western States, throwing up mounds to the height of from twelve to fifteen inches. They are peculiarly destructive in corn fields. A few days since, the inhabitants of Porter, Wisconsin, had a hunt for the purpose of annihilating all the grophers in that vicinity. Forty men went to work, and succeeded in killing three thousand one hundred and ninety-six grophers.