Useful Information.

Value of Castor Oil.—A correspondent of the Germantown *Telegraph* writes: "We have used neatsfoot oil in its simple form and prepared in various ways, also the leather preservative oils, sold in cans at the stores; also all the oleaginous, butyraceous, and other lugubrious substances known to the farm-kitchen, but we give the preference over them all to castor oil. We have had boots a year old that we have oiled with it and the leather was soft, smooth and water-proof to the last time they were used. We apply it clear, without heat. A little lampblack might be used on old leather, but it is seldom necessary on new, as the oil itself seems to keep the blacking on and renders the leather black and of fine appearance. Those who have been annoyed with hard, cracked, water-soaked boots, the surface of the latter rough without blacking, and the leather shrunken and wrinkled so as to chafe, gall and otherwise punish their feet, will find castor oil well applied to be every way satisfactory. We have used it for wagons and buggies, and find that it is in every way superior. It will wear longer, lubricate better and is the least objectionable of anything we know of. We use it very little at once, not enough to cause it to run off and catch dirt at the ends of the hubs."

Greasing Buggies and Wagons.—Greasing buggies and wagons is of more importance than some imagine. Many a wheel is ruined by oiling too plentifully. A well-made wheel will endure constant wear from ten to twenty years, if care is taken to use the right kind and proper amount of oil; but if this matter is not attended to, the wheel will be used up in five or six years, or may be sooner. Lard should never be used on a wagon, for it will penetrate the hub and work its way around the tendons of the spokes and spoil the wheel. Castor oil is a good material for use on an iron axle; just oil enough should be applied to a spindle to give it a light coating; this is better than more, for the surplus put on will work out at the ends and be forced by the shoulders and nut into the hub around outside of the boxes. To oil the axletree, first wipe the spindles clean with a cloth wet with turpentine, if it won't wipe without it. On a buggy or carriage, wipe and clean off the back and front ends of the hubs, and then apply a very small quantity of castor oil, or more especially prepared lubricator near the shoulder's point.

To clean paper-hangings, the following is a very good method: Cut into eight half-quarters a stale loaf of bread and with one of these pieces, after having blown off all the dust from the paper to be cleaned, by means of a good pair of bellows, begin at the top of the room, holding the crust in the hand, and wipe lightly downward with the crumb, about half a yard at each stroke, till the upper part of the hangings is completely cleaned all around; then go round again with the light sweeping stroke downward, always commencing each successive stroke a little higher than the upper stroke had extended, till the bottom be finished. This operation, if carefully performed, will frequently make old paper look almost equal to new. Great caution must be used, not by any means to rub the paper hard, nor to attempt cleaning it across or horizontally. The dirty part of the bread must be each time cut away, and the pieces renewed as soon as at all necessary.

Preserving Charred Papers.—Mr. E. H. Hoskins, of Lowell, Mass., has suggested a very useful and practical way of preserving and giving toughness and flexibility to charred paper, which has proved to be of much importance in the identification and copying of valuable documents, charred by conflagrations such as the recent Boston and Chicago calamities. We have seen specimens of charred papers and bank notes thus treated, that can be handled with impunity. The printing upon the charred bank notes can be readily discerned. The preserving process consists, we believe, in pouring collodion upon the surface of the charred paper. The collodion forms a thin, transparent film, dries in a few minutes, when the process is complete.—*Scientific American.*

Removal of Glass Stoppers.—It may not have occurred to every one—at all events it is not noticed in any of our treatises on practical pharmacy—that the easiest way to take out a stopper which has become fixed in the neck of a bottle is to reverse the motion given to it when putting it in, that is to knock the stopper from right to left. In most instances when a stopper is fixed, without the intervention of an adhesive substance, it is by turning it as one would drive a screw. The direction is almost invariably from left to right, and thus a thread is formed, which it is easier to follow backwards than to break. The trouble with which the removal of stoppers is usually attended must form an apology for introducing a suggestion of so little apparent importance.—*Canad. Phar. Jour.*

Artificial Ebony.—This is prepared on a large scale by grinding to powder 60 parts of charcoal obtained from sea-weeds, previously treated with dilute sulphuric acid and dried, and mixing it with ten parts of liquid glue, five of gutta-percha, and two and a half of india-rubber, care having been taken to mix the two latter substances with coal-oil tar to render them gelatinous; then ten parts of coal-tar, five of pulverized sulphur, two of pulverized alum, and five of powdered resin are added, and the mixture heated to 300° Fahr. After having been cooled, a substance is obtained which is equal in many respects to genuine ebony wood, but far less expensive, and capable of receiving a finer polish.—*The Cabinet Maker.*

Parisian Wood Varnish.—To prepare a good varnish for fancy woods, dissolve one part of good shellac in three or four parts of alcohol of 92 per cent, in a water bath, and cautiously add distilled water until a curdy mass separates out, which is collected and pressed between linen; the liquid is filtered through paper, all the alcohol removed by distillation from the water bath, and the resin removed and dried at 100° Centigrade until it ceases to lose weight; it is then dissolved in double its weight of alcohol of at least 96 per cent., and the solution perfumed with lavender oil.

Preservation of Wood.—Mueller employs for this purpose the phosphate of baryta formed within the fibre. The wood is first steeped in a solution of the phosphate of soda, containing seven per cent. of the salt. When dry, the wood is again treated with a solution of chloride of barium, containing thirteen per cent. The wood thus prepared resists damp well.

Pottery Varnish.—Coatings of lead oxide and salts are apt to dissolve off in acid liquids, thereby threatening the health of those who use them. Several successive coatings with a solution of sodic silicate, and then exposure to a bright red heat in a furnace, prevent any such solution from taking place when the vessels are used.

Removal of Nitric Acid Stains from the Hands.—It is said that a mixture of solutions of caustic potash and sulphate of ammonia will effect this object. It may be presumed that the skin will be removed at the same time of the stain.

An Agent for Removing Hair.—Professor Boettger recommends sulphydrate of sodium for removing hair from hides. The reagent is prepared by mixing one part by weight of crystalline sulphydrate of sodium, with three parts by weight of fine chalk. It can be kept in closely stoppered vessels any length of time. When required for use, moisten a small quantity and apply it to the hide; in a few minutes the thickest hair is attacked, and can be removed by water. Too long contact would soon injure the hide.

Fastening Leather upon Metal.—One part of crushed nutgalls is digested six hours with eight parts distilled water, and strained. Glue is macerated in its own weight of water for twenty-four hours, and then dissolved. The warm infusion of galls is spread upon the leather, the glue solution upon the roughened surface of the warm metal; the moist leather is pressed upon it and then dried, when it adheres so that it cannot be removed without tearing.

An excellent marking ink can be obtained from the anacardium nut (*a. orientale*). The juice, it appears, contains an oily matter which becomes black on exposure to the air, and is proof against all known detergents and decolorizers, acids and alkalies, cyanide of potassium, and chlorine. If linen be marked with this natural ink, and then moistened with a little ammonia, the black becomes very intense and is perfectly permanent.

Zinc Signs.—*The Manufacturer and Builder* gives the following recipe for lettering zinc labels: Two parts acetate of copper (verdigris), two parts chloride of ammonium (sal ammoniac); one part lamp-black, twenty parts water; mix well in a glass-stoppered bottle, and shake before using. For fine lettering you may apply it by means of a blunt-pointed steel pen.

Preserving Grindstones. — A grindstone should not be exposed to the weather, as it not only injures the wood-work, but the sun's rays harden the stone so much as, in time, to render it useless. Neither should it stand in the water in which it runs, as the part remaining in water softens so much that it wears unequally, and this is a common cause of grindstones becoming "out of true."

Bronzing and Varnishing Plaster Figures. These should be sized first, and painted with color according to the colored bronze required, as red, white, green, yellow, black, etc. Before the colors are thoroughly dry, that is, when they feel "tacky," the prominent parts should be bronzed with bronze powder, applied by a piece of chamois leather. Varnish afterwards with some quick drying varnish.

Good Health.

The Teeth.

Dr. Hayes, an eminent surgeon-dentist residing in London, gives the following useful hints about the care of the teeth. They are simple, timely, and deserve attention:

"In the first place, the teeth should be fairly used. By this I mean, not made to perform the duties of crackers for nuts, experimented on to ascertain their strength, or by ladies to rival scissors in cutting thread; for rest assured—in every case, more particularly the last—the party having recourse to such practices will surely some day rue them; the teeth so unwittingly injured being always the first to part company from their fellows. Those who indulge in such or similar habits may truly be called the dentist's friends. Cleanliness is absolutely essential for the preservation of the teeth, and they should be well brushed at least morning and evening, that any feculence which may be attached to them, either during sleep from the stomach, or by day from meals, may not be allowed permanently to adhere, causing, firstly, discoloration, then tartar, and subsequently, if I may so express myself, undermining the constitution of one or more, as from their position they may be more or less liable to corrosion. In order that the teeth should look natural—that is, retain their natural color—a dentifrice free from the smallest particle of acid should be used at the matin hour, and the mouth rinsed with tepid water, for extremes of heat and cold are most highly prejudicial, not only to their color, but also to their durability; and I know no method so simple of converting a really useful and ornamental set into one of pain and subsequent extinction, than the use of washing in either one or the other. The person who habituates him or herself, to any extent, to hot soup, tea, or other drinks, assuredly rivals the friend to the dentist just named. Brushes for the teeth should be of medium substance of bristle, and those made on what is called the penetrating principle are best. I would also observe that children at an early age should be instructed in the use of the toothbrush, and taught the value and importance of the teeth, in order to inculcate habits of cleanliness and a due appreciation of the ornaments of the mouth. A brush properly selected (not too hard) may be used by children of five years of age, every morning; and by being part and parcel of the general ablution, and thus directing habitual attention to the teeth, a useful and cleanly habit will be engendered which will insure for them proper care through life."

Study Beneficial to Health.

The London *Globe* editorially presents the following: True study is an eminently leisurely process, the great condition of success in it being deliberation, and though it always sufficiently interests the student to keep his faculties lively, it seldom excites him to any dangerous degree. Hence I believe that genuine study is much less injurious to health than is often supposed—certainly much less injurious than many things that are scarcely reputed injurious at all. The processes of genuine and well directed study positively saves the brain by their rational and orderly sequences by the safe advance from step to step. Study of this kind is like a well-built staircase, by which you can climb to a great height with a minimum of fatigue, never lifting the body more than a few inches at a time. But as there might be such a thing as racing up a staircase, so when we study against time, there is a strain in the more speed, however good may be the system we are following. There may also be a strain on the faculties in the direction of them toward a kind of study which is not adapted to our natural gifts. If we learn what nature qualified us to learn, and learn it step by step, without hurry, we incur a minimum of cerebral fatigue and gain a maximum of acquirement. Study of this kind gently stimulates and does not fatigue, unless prolonged for an unreasonable length of time. It is positively favorable to health, because it is favorable to cheerfulness; it makes life pleasanter and more interesting, and so far from being injurious to the nervous system, gives it tone and vigor exactly as manly exercises give tone and vigor to the muscular system. There can be no doubt that men were intended to bear intellectural labor without injury to their health; we are constituted to think and learn, just as a fish is constituted to swim or a bird to fly.

Sleep.—Infants cannot sleep too long; it is well when they can enjoy a calm and long-continued rest, of which they should by no means be deprived, as this is the greatest support granted them by nature. A child lives comparatively much faster than an adult; its blood flows more rapidly, and sleep promotes more uniform circulation, and facilitates digestion while a horizontal position is favorable to growth and development. Still, sleep should be proportioned to the age. After six months, the time of sleep can be regulated. An infant should always sleep the whole night in preference to the day, and as it grows older, a few hours morning and afternoon; and, after a while, to sleep after dinner will be sufficient. After a child is four or five years old, its time of sleep may be shortened one hour every succeeding year, so that a child of seven will not require to sleep more than eight or nine hours.

Domestic Economy.

House-Cleaning.—In cleaning a room, the carpet should come up first, not only because of the dust, but to give the floor all day to dry, not leaving it to be scrubbed last, as we have seen some bad managers do, and pay for it by influenzas. Where the walls are papered, they should next be swept with a clean towel pinned firmly round a broom, if there is not a brush kept for the purpose. The ceilings of chambers are usually whitewashed; this is the next proceeding; and the walls scrubbed, if painted or hard finished. Then come windows and wood-work, in all things being careful to use as little slop as will thoroughly answer the purpose. In cleaning wood-work, use little soap, but plenty of clean water, which will prevent discoloration. If dirty spots and patches are wiped off the year round, faithfully, there will be much less need of scrubbing the boards bare in "house cleaning." Oak, or dark woods, now so much the fashion, need not be touched, with good care, more than once a year; frequent dry rubbing will answer every purpose. Spots of grease may be removed from unpainted floor by soaking and rubbing them with turpentine, and afterward washing it off with soap or pearlash. If they are inveterate, make a paste of a quarter of a pound of potter's clay, and the same quantity of pearlash, stirred into a quart of boiling water; spread a thick coat on the floor, and leave it ten or twelve hours.

To Clean Looking-Glasses.—Take a newspaper, or part of one, according to the size of the glass. Fold it small, and dip it into a basin of clean, cold water; when thoroughly wet, squeeze it out in your hand, as you would a sponge, and then rub it hard all over the face of the glass, taking care that it is not so wet as to run down in streams. In fact, the paper must only be completely moistened, or damped all through. After the glass has been well rubbed with wet paper, let it rest a few minutes, and then go over it with a fresh, dry newspaper (folded small in your hand), till it looks clear and bright—which it will almost immediately, and with no further trouble. This method, simple as it is, is the best and most expeditious for cleaning mirrors, and it will be found so on trial — giving a clearness and polish that can be produced by no other process. It is equally convenient, speedy and effective. The inside of window frames may be cleaned in this manner to look beautifully clear; the windows being first washed from the outside; also the glasses of spectacles, etc. The glass globe of an astral lamp may be cleaned with a newspaper in the above manner.

Roast Oysters.—There is no pleasanter frolic for an autumn evening, in the regions where oysters are plentiful, than an impromptu "roast" in the kitchen. There the oysters are hastily thrown into the fire by the peck. You may consider that your fastidious taste is marvellously respected if they are washed first. A bushel basket is set to receive the empty shells, and the click of the oyster-knives forms a constant accompaniment to the music of laughing voices. Nor are roast oysters amiss upon your own quiet supper-table, when the "good man" comes in on a wet night, tired and hungry, and wants "something heartening." Wash and wipe the shell-oysters, and lay them in the oven, if it is quick; upon the top of the stove, if it is not. When they open, they are done. Pile in a large dish and send to table. Remove the upper shell by a dexterous wrench of the knife, season the oyster on the lower, with pepper-sauce and butter, or pepper, salt and vinegar in lieu of the sauce, and you have the very aroma of this pearl of bivalves, pure and undefiled.

Rapid Pickling of Meat.—The following is an English recipe: Roll the meat in a mixture of 16 oz. salt, ¼ oz. saltpeter, and 1 oz. sugar, so that all parts may be completely salted; then wrap closely in a piece of cotton cloth previously well scalded and dried, and place in a porcelain or other vessel. The cloth is essential with small pieces, to retain the brine formed in contact with the meat. After about 16 hours, however, some brine will drain off into the bottom of the vessel, and it will be necessary then to turn the meat, still wrapped up, daily. A piece of six pounds, treated in this way for six days, then unwrapped and boiled, will be found quite palatable and sufficiently pickled. For larger quantities the cloth may be dispensed with, since the brine formed will be sufficient to cover the mass, provided the pieces are closely packed, and any unavoidable cavities filled with stones.

Scalloped Oysters.—Crush and roll several handfuls of Boston or other friable crackers. Put a layer in the bottom of a buttered pudding-dish. Wet this with a mixture of the oyster liquor and milk, slightly warmed. Next have a layer of oysters. Sprinkle with salt and pepper, and lay small bits of butter upon them. Then another layer of moistened crumbs, and so on until the dish is full. Let the top layer be of crumbs, thicker than the rest, and beat an egg into the milk you pour over them. Stick bits of butter thickly over it, cover the dish, set it in the oven, bake half an hour; if the dish is large, remove the cover, and brown by setting it upon the upper grating of oven, or by holding a hot shovel over it.

One ounce of fresh quick-lime dissolved in water, will soften two barrels of ordinary hard water, and render it fit for washing purposes.

Indestructible Putty.—Boil 4 pounds brown umber in 7 pounds linseed oil for two hours; stir in 2 ounces of wax; take from the fire and mix in 5½ pounds chalk and 11 pounds white lead, and incorporate thoroughly. The latter operation is quite essential.

The heaping up of damp, washed or sodden wool is very objectionable as favoring rotting, and at all events the wool spins badly, and will not dye well. A chromium or alum and tartar bath is the best to use for sodden wool.

To remove stains from marble, take two parts common soda, one part of pumice stone, and one part of finely-powdered chalk; pass these through a sieve and mix with water. Rub the marble with this mixture and wash off clean.

Miscellaneous.

Wind and Water as Motors.

A writer in the *European Mail*, discussing the subject of wind and water as motors, says: In the case of a ship, there are two things to be considered. The pressure of the wind is of two kinds: 1. That upon the sails, which could be applied to machinery, and of which a certain proportion could be converted into energy, and applied to moving the vessel. 2. That upon the hull, rigging, &c., the total amount of which (added to the increased presure by any supposed advance) must be deducted from that available for conversion. Mr. Schucht gives his machine what Archimedes is said to have required in order to remove the world, a *point d'appui* outside of it. He had much better set about making a model which would realize some actual conditions, and tell us whether it has worked its way across a pond against the wind. When he can make such a statement, the matter will be worth inquiry as a mere interesting application of principals. Till then discussion is simply waste of time, because although the conditions are different from the usual perpetual motion nonsense (as it is not perfectly clear how large a proportion of the wind pressure could be applied to the machinery), yet it is perfectly certain that no practical benefit whatever could be obtained, and that such machinery would simply be an enormous outlay, made for the purpose of doing less advantageously what can be done already in a much simpler manner by means of sails. Of course, when a ship is working to windward, the pressure of the wind is really so applied as to overcome itself, and give a surplus energy; and this is effected by means of the friction of the water and the hull. Mr. Schucht might attach his windmill to a truck, substituting for the screw an axle and gearing to the wheels; he would then see whether the apparatus had power to drive itself up in the face of the wind upon a plank or rails. Even this, however, would give conditions much more favorable than those of a ship, because with the wheels locked, as would be the case, at least (the sails acting as a brake), the wind would not be able to drive the truck backward except in a strong breeze, while a ship would have no such bite upon its supporting water, but would drift freely. Rig a windwill, the axle of which should be supported by a spring balance, which would measure the pressure of the wind when the sails were fixed, and also when free to revolve. Affix gearing which would raise a weight, and measure the wind pressure with varying weights and velocities. Such experiments, frequently repeated in steady winds, would soon show how much of the wind pressure could be converted into work available. With a vertically mounted windmill, the axis would have to be mounted on a bridle, or fitted with two balances to support it against the pressure.

Atmospheric Telegraph at Paris.

The name, Parisian Atmospheric Telegraph Company, is somewhat a misnomer. By telegraphing we understand the transmission over wires of messages by means of electrical signals. The system we are about to describe briefly is exactly similar to that which has been in successful operation for some time in London, for the distribution of mails to and from the different post offices. It consists in the propulsion through tubes of small carriages containing within them messages, etc. These tubes are of small dimensions, and laid down beside the gas and water-pipes. The system is composed of sixteen tubes, each of which is about 1,300 yards in length. These sixteen tubes, placed end to end, are separated by sixteen telegraph offices, the distance between each of which is traversed in rather less than a minute. The carriages might be sent more rapidly, but the speed mentioned is quite sufficient. The oldest part of the work was constructed during the time of the Empire, and consists of six tubes forming an almost regular hexagon. These tubes are traversed every fifteen minutes by *trains* of small carriages or boxes which move with the sun.

On this central system are grafted two branch systems and three single lines. Counting stoppages, the trains travel at the rate of more than a mile in five minutes. It is said that, when properly delivered, a message should not take longer than when sent in a cab by a special messenger. The *trains* are propelled by atmospheric pressure, which is obtained by means of an ordinary air-pump piston. The despatch and reception of trains is communicated from station to station by electric telegraph signals. The simplicity of the operations is manifested by the fact that three men suffice for the work of the central station, one of whom is also employed occasionally as messenger. The principal work of the system, as may be gathered from its name, is the distribution through Paris of telegrams from the provinces.—*Canadian Patent Office Record.*

A New Poison.—There has lately been discovered a poison called *inoa*, which is said to be more subtle than digitaline. It is obtained by pressure from the seeds of *Strophanthus hispidus*, an apocynaceous plant, found in Gaboon, and from experiments made with samples of it, taken from arrows upon which the natives placed it, it appears that it acts more powerfully than digitaline or antiarine, and quickly paralyzes the heart. Three milligrams kill a frog, a sparrow or a dog, though the resistance of several animals varies. A snail, for instance, requires five milligrams; a mouse has withstood three milligrams of the extract (obtained by macerating the seeds in alcohol), while the latter dose kills a dog nearly a thousand times heavier than a mouse. The heart comes to a complete standstill after a few irregular efforts.

Potash in Plants.—A correspondent of the *Country Gentleman* gives the following table, showing the amount of potash contained in 1,000 lbs. of ashes made by burning different kinds of wood: pine, ½lb.; poplar, ¾lb.; beech, 1½lb.; maple, 4lb.; wheat-straw, 4lb.; corn-stalks, 17 lb.; oak-leaves, 24lb.; stems of potatoes, 55lb.; wormwood, 72lb.; sunflower stalks, 191b.; oak, 2½lb.; beach bark, 61b. The remaining portion of the ash, consisting of carbonate and prosphate of lime, iron, manganese, alumina, and silica, is an excellent fertiliser.

Artificial Cryolite. — Crude or, better, distilled hydrofluoric acid is taken containing 5 per cent. of anhydrous acid and half saturated with pure alumina. A solution of sodium chloride is then added until the mixture contains three equivalents of soda for one of alumina. The precipitate is artificial cryolite.

Chloral Hydrate as an Antiseptic.—Jacobsen finds that chloral hydrate has antiseptic properties, ¼ of one per cent. added to a concentrated solution of albumen (equal parts dry albumen and water) preventing decomposition for a long time.