Useful Information.

CAN A STEAM PIPE SET FIRE TO WOOD?—At the Crescent Steel Works in this city, a steam pipe two and one-half inches in diameter, carrying 90 to 100 pounds pressure, was laid underground about three years ago, encased in common pine boards about one inch thick. A few days since occasion was had to dig up the pipe, and the whole length of the wooden drain was found to be charred, and apparently burnt, about three-fourths of the thickness of the wood, the other fourth being partially rotted. The whole inside of the drain was turned to charcoal, with here and there spots of white ashes, showing the ignition had actually taken place. It seems probable that if the casing had not been excluded from the air by the earth covering, it would have blazed and been entirely consumed. It is generally believed that a steam pipe cannot set fire to wood, but this case seems to prove the contrary, and it may explain the origin of many mysterious fires. It indicates at least that care should be taken to prevent the close proximity of easily combustible material to steam pipes carrying a high pressure of steam. The temperature of steam due to a pressure of 100 pounds per square inch is about 337° Fahr.—*American Manufacturer*.

PRESENCE OF MIND.—Prof. Wilder gives these short rules for action in cases of accident: For dust in the eyes, avoid rubbing; dash water into them. Remove cinders, etc., with the round point of a lead pencil. Remove insects from the ear by tepid water; never put a hard instrument into the ear. If an artery is cut, compress above the wound; if a vein is cut, compress below. If choked, get upon all fours and cough. For light burns, dip the parts in cold water; if the skin is destroyed, cover with varnish. Smother a fire with blankets, etc.; water will often spread burning oil and increase the danger. Before passing through smoke take a full breath, and then stoop low, but if carbon is suspected, walk erect. Suck poison wounds, unless your mouth is sore, enlarge the wound, or, better still, cut out the wound without delay, holding the wounded part as long as can be borne to a hot coal, or end of a cigar. In case of opium poison, give strong coffee and keep moving. If in water, float on the back, with the mouth and nose projecting. For apoplexy, raise the head and body; for fainting, lay the person flat.

FLAVORING MEAT ON FOOT.—M. Monclar, a noted agriculturist in France, advocates the flavoring of meat on foot, by appropriate feeding. He says that by flavoring the food of cattle, sheep, pigs and poultry, their flesh may be rendered much more agreeable to the palate than it often is. He is substantially right, for reasoning by contraries, we know that rabbits, quail, deer, etc., which feed and browse upon the artemisia and bitter seeds, have a disagreeable flavor when eaten. Any flavor may be given the meat—mint, anise, thyme, etc., and several tastes may be given the meat, or a compound flavor be added by a variety of flavors of any selection. For invalids particularly, or for epicurean palates, the common meaty flavor can be modified in flavor to suit the palate, and the aversion to healthy, nutritious meat be overcome by a delicious conglomeration of sweet flavors. We hope to see the experiment tried in this county.

FORMATION OF COAL.—E. Fremy holds that there are several kinds of isomeric cellulose, constituting the skeleton of plants. Coal is not an organized substance. The vegetal impressions presented by coal are produced as in shales or other mineral matters. The chief substances contained in the cells of plants under the double influence of heat and pressure produce bodies having a great analogy to coal. The pigments, the resin, and the fats of leaves, if submitted to heat and pressure, yield compounds which approximate to bitumens. The vegetable matter which gave rise to coal has undergone, first, the peaty fermentation, the coal being then formed by a secondary transformation.

ENAMEL FOR "PORCELAIN" KETTLES.—Grind together 100 parts of powdered calcined flints (or white quartz sand, free from iron), 50 parts of calcined borax (borax glass), and 20 parts of kaolin (white potter's clay), pass the mixture through an 80-mesh sieve, and mix it with water to form a thin paste. Line the clean vessel with this and let it dry slowly. Then fuse together 125 parts of white glass, 25 of borax, and 20 of soda; powder when cold, and make into a thin paste with four parts of soda and a sufficient quantity of hot water. Cover the first coating with this, and, after thoroughly drying, heat in a muffle until the glazing has properly fused.

A NEW PAINT FOR PLASTERED WALLS.—An excellent paint for ceilings and walls has been invented by a German named Reissig. It prevents the formation of fungi, and renders the surfaces coated with it impermeable to fluids or vapors, and capable of being washed down with boiling water without injury. This paint is a solution of about 50 grammes of stearate of soda in 1,000 grammes of spirit having a specific gravity of 66. The solution may be given any desired tint by the use of the aniline dyes, or of ocher, ultra-marine or such other colors as are not subject to decomposition.

TO PRESERVE NATURAL LEAVES.—The fresh leaves are spread and pressed into a suitable dish with alternate layers of fine, thoroughly dry sand, as hot as the hand can bear. When the sand has cooled they may be removed, smoothed, and dipped for a few moments in clear French spirit varnish, and allowed to dry in the air. By many melted white wax is preferred to varnish. This latter must not be too hot. The dried leaves are dipped in the melted wax, drawn several times over the edge of the vessel to remove excess, and hung up until the film of wax is thoroughly cooled and hardened.

PRESERVING INSECTS.—A. Laboulliere recommends plunging the insects, in the fresh state, into alcohol which has been saturated by digestion with arsenious acid (1½ pint will take up about 14 Troy grains of arsenic). The living insect put into this preparation absorbs about 0.003 of its own weight. When soaked in this liquid and dried the specimens are safe from the ravages of moths, *anthrenus* or *dermestes*. This treatment does not affect the color of blue, green or red beetles, if dried after soaking for 12 to 24 hours. *Hemiptera* and *orthoptera* can be treated in the same way; also the nests, cocoons and chrysalides of insects.

PROTECTING VULCANIZED RUBBER.—To protect vulcanized rubber against the action of oils and fats, Herr C. Schwanitz, Jr., of Berlin, works in the rubber by rolling through heated rollers a mixture of 6 pounds of prepared chalk, 3.2 ounces of sulphur, 1.67 ounces of litharge and 1 pound of glycerine of 1.23 specific gravity. In order to vulcanize articles made and shaped from this material, they are placed in a bath of glycerine, and all exposed to a pressure of steam of two to three atmospheres.

A BRICK-LINED TANK.—The *Metal Worker* says that some years since Prof. Chandler, President of the New York Board of Health, built a tank which was not only serviceable but cheap. He had made of stout plank a large box carefully braced, and lined it with bricks, each one of which was dipped in melted coal-tar just before it was laid in place, the coal-tar serving instead of mortar. A thin coat of this substance was spread over the inside, which made the tank thoroughly water-tight.

GUTTA-PERCHA SOLVENTS.—Caoutchouc and gutta-percha are both quite soluble in naphtha, benzole and carbon disulphide. The latter, when mixed with about 6% of absolute alcohol, is one of the best solvents. The solution is performed in the cold (best in the open air), as it would not be safe or economical to heat these volatile and inflammable liquids. Exposed to the air the solutions soon evaporate, leaving the gums in their original condition.

INDELIBLE INK.—The *Apotheker Zeitung* gives the following formula: 1.75 grammes aniline black are ground up with 60 drops hydrochloric acid and 42 grammes alcohol, and the liquid is diluted with a hot solution of 2.5 grammes gum arabic in 170 grammes water. If the aniline black solution is diluted with a solution of 2.5 grammes shellac in 170 grammes spirit instead of gum water, the result is an ink suitable for writing on wood, brass or leather.

BRASS CASTING FROM OLD METAL.—A white scum of oxide sometimes forms very rapidly, and going into the molds with the metal makes the castings porous and rotten. Especially is this the case when old metal is used. To prevent, stir the molten metal well with a stick of green wood, and sprinkle with a little dry argol and sal ammoniac before pouring.

SOLID EMERY WHEELS.—Many of the best wheels are cemented with vulcanized rubber, borax or zinc chloride (or oxychloride) and barium carbonate; other materials, such as feldspar and clay, alkaline silicates, litharge and japan, shellac, and other resinous and gummy matters, albumen and lime, etc.

CEMENT FOR BISULPHIDE PRISMS.—A good cement to fasten the sides of bisulphide of carbon prisms is made of a mixture of good glue and concentrated glycerine, the composition used for making rollers in printing presses.

LIME WATER.—Agitate an ounce of pure caustic lime in a pint bottle nearly filled with water, and after the lime has subsided decant the clear supernatant liquid. It must be kept in well stoppered bottles.