

French Cement.

A certain quantity of india-rubber scraps is carefully melted over a clear fire in a covered iron pot. When the mass is quite fluid, finely powdered lime, having been slacked by exposure to the air, is to be added by small quantities at a time, the mixture being well stirred. When moderately thick, it is removed from the fire and well beaten in a mortar, and moulded in the hands until of the consistence of putty. It may be coloured by the addition of vermilion or other colouring matter. It answers well for fixing on the glass tops of large preparation jars, but if moderately strong spirit be used a little air must be permitted to remain in the jar.

This cement is very valuable for mounting large microscopical preparations. The principal advantages are—that it never becomes perfectly hard, and thus permits considerable alteration to take place in the fluid contained in the cell without the entrance of air, and it adheres very intimately to glass, even if it be perfectly smooth and unground. If a glass cover is to be affixed to a large cell containing fluid, a small piece of the cement is taken between the finger and thumb and carefully rolled round until it can be drawn out into a thread about the eighth or tenth of an inch in thickness; this is applied to the top of the cell, before introducing any fluid, and slightly pressed down with the finger previously moistened. It adheres intimately. The preservative fluid with the preparation are now introduced, and the cell filled with fluid, which indeed is allowed to rise slightly above the walls. The glass cover, rather smaller than the external dimensions of the cell, and slightly roughened at the edges, is to be gently breathed upon, and then one edge is applied to the cement, so that it may be allowed to fall gradually upon the surface of the fluid until it completely covers the cell, and a certain quantity of the superfluous liquid is pressed out. By the aid of any pointed instrument a very little cement is removed from one part, so that more fluid may escape as the cover is pressed down gently into the cement. The pressure must be removed very gradually or air will enter through the hole. A bubble of air entering in this manner may often be expelled again by pressure, or it may be driven out by forcing in more fluid through a very fine syringe at another part of the cell, but it is far better to prevent the entrance of air in the first instance. The edge of the glass cover being thoroughly embedded in the cement, the small hole is to be carefully plugged up by a small piece of cement, and the cell allowed to stand perfectly still for a short time, when it may be very gently wiped with a soft cloth. The edges of the cement may be smoothed by the application of a warm iron wire, and any superabundance removed with a sharp knife. A little Brunswick black or other liquid cement may be applied to the edges for the purpose of giving the whole a neater appearance.

Sumac.

(*Sumac Rhus Glabrum*) has a large quantity of tannic acid in its leaves and bark, and is consequently useful in tanning leather.

Torpor produced by Artificial Means.

A scientific German publication states that among other curiosities, Dr. Grusselbake, professor of chemistry at the University of Upsal, has a little serpent which, although rigid and frozen as marble, can, by the aid of a stimulating aspersion, discovered by the Doctor, be brought to life in a few minutes, becoming as lively as the day it was captured, now some ten years ago. Dr. Grusselbake has discovered the means of benumbing and reviving it at his pleasure. If this principle could only be carried out for man as well as for reptiles, death would lose its empire over mankind, and we should preserve life as the Egyptians preserved their mummies. Dr. Grusselbake's process is nothing more, apparently, than simply lowering the temperature, just to that point where the cold produces a complete torpor without injuring any of the tissues. In this state the body is neither dead nor alive, it is torpid. The professor has laid his scheme before the Swedish Government, and proposes that a condemned criminal shall be handed over to him for the purpose of experiment? The savant purposes, if he can only get his man, to benumb him as he benumbs his little serpent, for one or two years, and then to resuscitate him from apparent death by his "*aspersion stimulante*"; verily, this German philosopher is a wonderful fellow, and the Swedish Government should let him have a criminal by all means.

New Method of Colouring Woods.

The surface to be coloured is smeared with a strong solution of permanganate of potash, which is left on a longer or shorter time, according to the shade required. In most cases five minutes suffice. Cherry and pear-tree woods are most easily attacked, but a few experiments will serve to show the most favourable circumstances. The woody fibre decomposes the permanganate, precipitating peroxide of manganese, which is fixed in the fibre by the potash simultaneously set free. When the action is ended, the wood is carefully washed, dried, and afterwards oiled and polished in the ordinary way. The effects of this treatment on many woods is said to be surprising, particularly on cherrywood, to which a very beautiful reddish tone is communicated. The colour is in all cases permanent in light and air.—Dr. Wiederhold, *Neues Gewerb. für Kurhessen*, 1863, s. 194.

A New Grafting Wax.

One pound of rosin, five ounces of 95 per cent. alcohol, one ounce of beef-tallow, one table-spoon of spirits of turpentine. Melt the rosin over a slow fire, add the beef-tallow, and stir with a perfectly dry stick or piece of wire. When somewhat cooled, add the turpentine, and last, the alcohol in small quantities, stirring the mass constantly. Should the alcohol cause it to lump, warm again until it melts. Keep in a bottle. Lay it on in a very thin coat with a brush. In a room of moderate temperature, the wax should be of the consistence of molasses. Should it prove thicker, thin it down with alcohol. It is always ready for use, is never affected by heat or cold, and heals up wounds hermetically.