on evaporation leaves it in crystals, with a little resinous matter, which is removed by washing with alcoholic water. These crystals effloresce, turn the syrup of violets green, and restore turnsol paper, reddened by an acid. They combine with various acids, and form pearly salts, crystallizable like those of quinia, and precipitable by soda. It resembles quinia in its form, small degree of volatility, its solubility in alcohol much diluted, and its saline combinations. It differs from quinia by its greater tendency to crystallize, and its being less fusible, its being soluble in sulphuric ether, and by the property it has in its resinous state of assuming in the air the form of crystals, when washed with alcoholic water.

Quinodine is found in the yellowish waters which float on quinia and cinchonia, after the distillation of the alcoholic tinctures, and the preparation of quinia. It is accompanied by a yellow substance, supposed to be an acid.

I am not aware whether the promise of the discoverers to publish the process for obtaining quinodine pure has ever been fulfilled.—*Tr.*]

VERATRIA.

We are again indebted for the discovery of this new alkali to the labours of MM. Pelletier and Caventou. These indefatigable chemists having observed that all the individuals of the *veratrum* family possessed a very acrid taste, and exercised a similar action on the animal economy, were led to inquire whether some common principle did not pervade the whole of these plants. An analysis of the *veratrum sabadilla* confirmed their conjectures, and they separated from it an acrid principle which they also found in succession in the bulb of the *colchicum autumnale*, and in the *veratrum commune;* to this they gave the name of *veratria*.

* Annali Universali di Medicina, Juillet et Août, 1825.

Preparation of Veratria.

The seed of the sabadilla is treated several times with boiling alcohol. These tinctures, filtered while still nearly boiling, deposit on cooling flakes of a white waxy matter; the substance remaining in solution, reduced to the consistence of an extract, is again taken up by cold water and filtered; a small quantity of fatty matter remains upon the filter. The solution is then slowly evaporated, when an orange-yellow precipitate forms, exhibiting the characters of the colouring matter found in almost all ligneous vegetables. A solution of acetate of lead is poured into the liquor, which is still highly coloured, and immediately a new and very abundant yellow precipitate is formed, which is to be separated by filtering. The liquor, now nearly colourless, still contains, among other substances, the acetate of lead which has been added in excess. The lead is thrown down by means of a current of hydrosulphuric acid; the liquor, being filtered, is concentrated by evaporation, treated with magnesia, and again filtered. The magnesian precipitate is treated with boiling alcohol, and the tinctures afford by evaporation an exceedingly acrid pulverulent substance, presenting all the properties of an alkali. This substance is at first yellowish, but by repeated solution in alcohol, and precipitation by the addition of water, it is obtained in the form of a very white and perfectly inodorous powder.

Chemical properties of Veratria.

Veratria is very sparingly soluble in cold water; boiling water takes up one-thousandth part of its weight, and becomes sensibly acrid. It is readily soluble in ether, and still more so in alcohol. It is insoluble in the alkalis, and soluble in all the vegetable acids. It saturates all the acids and forms with them uncrystallizable salts, which by evaporation assume the ap-

pearance of gum. The sulphate alone presents the rudiments of crystals when the acid is in excess. Nitric acid combines with veratria, but when added in excess, and especially if concentrated, it does not strike a red colour, as happens with morphia, brucia, and impure strychnia; it, however, effects an immediate change on the vegetable substance, and occasions the formation of a yellow detonating matter, analogous to the *bitter of Welther*. Veratria restores the blue tinge to turnsol paper reddened by acids. It melts at a temperature of $50^{0}+0$, and in this state has the appearance of wax; on cooling it concretes into an amber-coloured translucid mass. Subjected to destructive distillation, it affords water, a great deal of oil, &c. and leaves a large quantity of charcoal, which when incinerated leaves but a very small residue, which is slightly alkaline.

MM. Dumas and Pelletier have made three analyses of veratria, derived from the sabadilla, which do not materially differ.

Carbon	65.65
Azote	5.04
Hydrogen	8.54
Oxygen	19.60
	99.93

Since that time, M. Couerbe has discovered that several other important principles are contained in the sabadilla, and he has severally named them *sabadilline*, *veratrin*, and the *gum resin* of sabadilla: besides which there is a black, gluey matter, which combines all the other substances, and prevents the isolated manifestation of their several properties.

The following is M. Couerbe's mode of obtaining veratria. Boil the seeds of the sabadilla with alcohol, and prepare an extract by distillation; treat this extract with sulphuric acid, and filter after a few minutes' boiling. In this manner, the veratria, the sabadilline, the veratrin, the gum resin, and dark colouring matter are dissolved, and may be precipitated by potass. Add alco-

hol to the precipitate and distil, and the compound matter representing the veratria of MM. Pelletier and Caventou is obtained. In order to purify, it must be again treated with sulphuric acid, precipitated by potass, and dried. This is veratria in a pure state, and appears as a fine, white, and exceedingly acrid powder, alkaline, and capable of uniting with acids, but forming no crystallizable salts.

In order to separate the new substances discovered by M. Couerbe, this veratria is to be dissolved in water acidulated with sulphuric acid, and nitric acid added by drops, until a viscid precipitate (the black gluey matter) ceases. The liquid is poured off, and precipitated by potass or ammonia; the deposit is washed with cold water, and taken up by alcohol, which is evaporated, and the residue consists of all the principles above stated, minus the black matter. Boiling water dissolves the *sabadilline* and *gum resin;* the former crystallizes on cooling, and the second is obtained by evaporating the mother-fluids to dryness.

The water therefore still leaves two undissolved matters, pure veratria and *veratrin*. The former is dissolved and separated by ether, which leaves the *veratrin* undissolved.

PURE VERATRIA.

Pure veratria is white, solid, and friable, melts at 115° C., is insoluble in water, very soluble in ether and in alcohol. M. Couerbe states than when *pure* it crystallizes on uniting with acids, the sulphate, for instance, forming long and thin needles.

According to the same authority, the composition of veratria is,

		At. comp.
Carbon	71.247	= 34
Azote	4.850	= 2
Hydrogen	7.510	= 43
Oxygen	16.394	= 6