

Tincture of Lupuline.

Lupuline bruised..... 1 ounce.
Alcohol at 36° 2 ounces.

Digest for six days in a close vessel, strain, press it strongly, filter and add a sufficient quantity of alcohol at 36°, to make up three ounces of tincture.

Extract of Lupuline.

This may either be prepared from the aqueous infusion, and is then bitter and aromatic; or from the decoction, when it is equally bitter, less aromatic, and contains some resinous matter.

Syrup of Lupuline.

Spirituos tincture of lupuline.... 1 part.
Simple syrup 7 parts.

When the tincture is mixed with the simple syrup, the latter separates in a state of extreme division, and gives the lupuline syrup the appearance of orgeat. The mixture should therefore be well shaken each time that it is taken.

The doses of this preparation are not yet fixed in a precise manner; but as lupuline has no poisonous qualities, the practitioner may readily fix it for himself.

OIL OF CROTON TIGLIUM.

This oil is extracted from the seeds of the *croton tiglium*, a shrub belonging to the family of *euphorbiaceae*, which grows in the East Indies. It appears from M. Caventou's recent researches, that the croton plant is the same which produces the seeds known in commerce as the Indian purging-nut, (*pignon d'Inde*,) and analyzed by Pelletier and Caventou, in 1818, under the

name of *jatropha curcas*. Moreover, M. Caventou's chemical experiments show that the oil procured from the purging-nuts is the same as the croton oil imported from London. In fact they have the same odour, the same colour, the same taste, the same mode of responding to chemical reagents, and the same violent therapeutical action, as shown by MM. Recamier's, Bally's, and Kapeler's experiments in the hospitals.

It is cultivated in Malabar, Ceylon, and the Moluccas, on account of its medicinal properties. The croton oil was introduced into Europe more than two centuries ago, (in 1630,) and was used internally by some physicians with success. In 1632 Artus Gyselius lauded this oil in dropsies. In the *Herbarium Amboinense* of Rumphius, published at Amsterdam, in 1750, by Burmann, we find a description of the croton; whose seeds, says the author, furnish by expression an oil, a drop of which, taken in Canary wine, was then a common purgative. The medicine in question had, however, fallen into disuse in Europe, when Mr. Conwell, of the East India Company's service at Madras, drew attention to the oil—which is in general use in India—and introduced it into British practice.

Mode of Preparation.

The mode of obtaining croton oil pursued in the Indies is not known; it would appear, however, from M. Caventou's experiments, that it is by expression or by boiling. After digesting 100 parts of the bruised kernels in sulphuric ether, placing the whole on a filter carefully covered during the process of filtering, and washing the residue with a sufficient quantity of ether, Dr. Nimmo, of Glasgow, found that 40 parts remained and 60 had been dissolved. By this process he obtained from 300 grains of the seeds (from which 108 grains of envelope must be reduced, leaving 192 grains of kernels) two drachms of an oil that had the taste and medicinal properties of ordinary croton oil.

A spirituous solution of croton may also be obtained

by adding alcohol either to the seeds or to the oil itself; but Mr. Conwell does not state the proportions for this purpose: that which he made, however, would appear to have been much less active than the oil, since he gave it in the dose of half a drachm. According to Dr. Nimmo, the activity of croton oil is attributable to an acrid resinous principle, soluble in ether, alcohol, and the fixed and volatile oils. His experiments, also, show that 100 parts of the croton kernels contain of

Acrid principle	27
Fixed oil	33
Farinaceous matter.....	40
	<hr/>
	100

One hundred parts of the croton oil contain of

Acrid principle	45
Fixed oil.....	55
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	100

Vauquelin and Pelletier have made some attempts to isolate the active principle of croton oil, but unsuccessfully.

M. Caventou has obtained the oil of the croton tiglium by acting with alcohol at 38° on the kernel of the purging-nut reduced to a paste. He allows this to macerate for 48 hours, and filters: then adds a second, and sometimes a third, proportion of alcohol to the paste, which he afterwards submits to strong pressure. He collects the different spirituous macerations in an alembic, and distils them, in order to withdraw the alcohol, which serves for another operation. The oil remaining in the alembic is filtered through blotting-paper, and kept in a glass-stopped bottle.

The quantity of oil obtained from the seeds is at the rate of fifty per cent.

From the researches of M. Caventou it would appear that the jatrophic acid is not the principle in which the drastic properties of croton oil reside.

Action of Croton Oil on the Animal System.

The taste of this oil is excessively acrid and pungent, with something like that of common castor oil. A drop being placed on the tongue, a disagreeable sensation of heat, extending to the back of the mouth, is shortly felt, and continues for several minutes. A spoonful or two of cold water removes this: but it is nevertheless an objection to the administration of croton oil by itself. Mr. Conwell sent some of it to me, and I made experiments with it on animals. I found it purgative in the dose of half a drop or a drop; and that in large doses it is powerfully drastic, inducing inflammation of the intestinal canal, accompanied with frequent vomiting, and incessant purgation.

When injected into the veins it produced, according to the dose, either simple purging or inflammation of the digestive tube, or even the death of the animal.

Proceeding on a knowledge of these effects I did not hesitate to employ croton oil as a medicine; I gave it to several patients, male and female, in the Hôtel Dieu with perfectly satisfactory results. One or two drops, mixed with half an ounce of syrup, purged gently, but copiously, about fifteen patients under my care, for various affections. Several pupils of the hospital tried its purgative property on themselves, after seeing its effects in these cases, and were not disappointed. I use it very frequently, and very successfully, at the Salpêtrière Infirmary. Nor have I found it less advantageous in my private practice.

Mr. Conwell says that in some persons the oil causes nausea and vomiting; this I have not observed. When vomiting ensues, the purgative effect is not thereby obviated. The same gentleman states, that the odour of croton oil, inhaled from a bottle containing sixteen ounces of it, was sufficient to purge a young girl: and that an adult having made the same experiment, suffered only from nausea.

Croton oil acts very rapidly—frequently in half an

hour. Besides the alvine evacuations, the secretion of the urine seems to be considerably augmented.

Doctors Recamier, Kapeler, and Bally made many experiments with the croton oil, obtained by M. Caventou from the Indian purging-nut, and always found that one or two drops were sufficient to produce 12, 15, or even 20 motions. They remarked, however, that it was liable to excite vomiting, in the same manner as that procured from England.

Cases for the Administration of Croton Oil.

It may be employed as a common purgative when no signs of gastric or enteric irritation are present; in old persons, in the same circumstances as veratium. But croton oil is more especially to be preferred after the common purgatives have been successfully used in apoplexy and dropsy: and when mechanical or other objections exist to the employment of a milder purgative, and particularly when a rapid effect is desired to be produced.

Dr. Ainslie, of Madras published there, in 1813, a work on the materia medica, in which he recommends the external application of croton oil in rheumatic affections. I have frequently used it in similar circumstances, especially when the acute stage of the rheumatism has been prolonged into a chronic condition.

Dr. Kinglake quotes several cases of obstinate constipation which he cured by a single drop of croton oil, given in the shape of a pill. One case of painters' colic, more particularly, was recovered in this manner. In this latter disease I have myself given it successfully in the dose of one or two drops in twenty-four hours.

Mode of Administration.

One, two, or three drops are generally given in half an ounce of mucilage, or some syrup.

Mr. Conwell recommends the following formula.

Alcoholic solution	$\frac{1}{2}$ drachm.
Simple syrup	3 drachms.
Mucilage	3 drachms.

It has been already stated that Mr. Conwell makes no mention of the proportion of the oil in the alcoholic solution, so that it may be better to confine the administration to the oil. The solution is, however, probably a saturated one.

Mr. Conwell has also used the oil in friction of four drops around the umbilicus with a purgative effect: a slight eruption is consequent on the friction.

Croton Oil Soap.

As the therapeutical administration of croton oil in drops presents obstacles to exactitude in prescribing, M. Caventou has prepared a soap with a sodaic base that has been successfully employed by Dr. Bally.

Triturate two parts of oil, and one part of caustic soda together in the cold. When the mixture has acquired consistence, it is run into pasteboard moulds, and after some days the soap is taken out in slices which are to be kept in a well-stopped bottle.

Administration of the Croton Soap.

Dr. Bally gives it in the dose of two or three grains diffused in a little water, mixed with sugar, or made into pills. The purgative effect is similar to that of croton oil.

M. Gondret has since also used this soap with considerable success.

[The endermic employment of croton oil is a mode now frequent among British practitioners. So applied, it proves a most rapid and efficacious counter-irritant in inflammations of the pectoral and abdominal viscera. The best form for the purpose is that of ointments in

the proportions of eight to ten drops of the oil to half an ounce of simple cerate, to which may, if necessary, be added a scruple or half a drachm of tartar emetic.

From some cause or other, the croton oil met with in this country is of most uncertain strength and operation.—*Tr.*]

PIPERINE.

This substance was discovered in black pepper (*Journ. de Physique*, 1820,) by M. CErstadt, who regarded it as a vegetable alkali.

M. Pelletier has since analyzed the grain of the pepper, and proved that piperine is by no means a vegetable alkali, but has considerable resemblance to the resins, though altogether it is a matter *sui generis*. (*Examen chimique du Poivre*, in 8vo.)

Piperine has been employed in Italy as a febrifuge. I have not been able to confirm by my own experience the existence of the properties attributed to it by Dr. Dominique Meli, (*Annali Universali di Medicina*, T. 27 and 28.) I shall therefore confine myself to stating his process for obtaining piperine, and the doses in which it is given.

Preparation of Piperine.

Digest two pounds of bruised pepper seeds in three pounds of alcohol, at 36° at a gentle heat. The heat must afterwards be raised to ebullition, subsequently to which the liquid is to be allowed to cool and settle, then decanted, and the operation repeated with fresh alcohol. Both alcoholic fluids are to be mixed, and two pounds of distilled water, with three ounces of hydrochloric acid added to them. Upon this the fluid becomes turbid, and a dark grey precipitate, chiefly composed of fatty matter, is formed. This being separated, fine crystals of piperine are collected on the