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. Œrstadt, 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

filter and the sides of the containing vessel. By adding water until the liquid no longer becomes turbid fresh quantities of piperine are obtained.

M. Pelletier approves of this process, though he prefers to obtain the crystalline matter by the following method. After exhausting the pepper by alcohol, and evaporating the tinctures, a fatty and resinous matter is obtained, which is acted on by boiling water, until the water comes away colourless. This fatty matter thus purified is dissolved in hot alcohol, and after leaving the solution for several days, a quantity of crystals form, that may be purified by repeated solutions in alcohol and ether, and several crystallizations. The crystals are piperine.

The crystalline matter of pepper is exhibited in the form of four-sided prisms, two of which, parallel to each other, are evidently broader; the prism itself is terminated by an inclined surface. This substance is totally insoluble in cold water; boiling water dissolves a small quantity of it, which precipitates on cooling. It is exceedingly soluble in alcohol, less so in ether, and rather in hot than cold.

M. Pelletier finds that piperine has a strong analogy with the resin of cubeb pepper, which Vauquelin formerly compared to capaiba balsam: the piperine of cubebs, however, has no crystalline property.

MM. Gobel and Henry have analyzed piperine, and make no mention of the azote which certainly exists in it in the proportion of four per cent. In 1830, M. Pelletier analyzed it, and found that 100 parts contain,

		Atoms
Carbon	70.41	= 20
Hydrogen	6.80	= 24
Azote	4.51	= 1
Oxygen	18.45	= 4

Since that time M. Liebeg has ascertained that M. Pelletier's analysis is perfectly correct.

Cases in which Piperine may be administered.

According to Dr. Dominic Meli, piperine possesses the same febrifuge qualities as the cinchonic alkalis. At the hospital of Ravenna he has treated a great number of fevers with it, and even goes so far as to assert that its action is more certain and speedy than that of sulphate of quinia. Piperine should be given in smaller doses than the sulphate of quinia. Intermittent fevers are the only diseases in which it has been hitherto employed. It may also be used in gonorrhœa, in the place of cubeb pepper.

Dr. Meli says, that the acrid oil of pepper possesses the same febrifuge properties as piperine, but in a less degree. This is no doubt owing to the retention by it of a certain portion of the crystalline matter.

UREA.

This substance, which is the immediate principle of the urine of mammels, was discovered by Rouelle Cadet, and most of its properties were investigated by Fourcroy and Vauquelin.

Physical and Chemical Properties.

The purest urea that can be obtained is exhibited in the form of elongated, brilliant pearly scales; it is colourless, transparent, of a cool and sharp taste, and has an odour similar to that of urine. Exposed to a heat of 120°, it fuses without being decomposed; and at a few degrees higher, it melts, is decomposed, and carbonate of ammonia without any intermixture of hydrocyanate is sublimed. By a regulated increase of heat a residue is obtained, consisting entirely of cyanuric acid: this by a furthur heat is resolved into its elements.