CALAMI RADIX. L. Acori Calami Radix. E.

Acorus. D. (Acorus Calamus). *Sweet Flag Root.*

Qualities. This root is full of joints, crooked, and flattened on the sides, internally of a white colour, and loose spongy texture. *Odour*, fragrant and aromatic. *Taste*, bitter and pungent, qualities which are improved by exsiccation. Chemical Composition. The principles in which its qualities reside appear to be essential oil, and bitter extractive; the root likewise contains fecula, which is copiously precipitated from its infusion by sub-acetate and acetate of lead. Watery infusion extracts all its virtues, but decoction impairs them. Spirit is also an appropriate solvent, and a resinous extract may be produced accordingly. Uses. It is not employed so frequently as it deserves;* it would be a useful addition to many of the compound infusions of vegetable stomachics. Dose. A cupful of the infusion made by adding ʒvj of the dried root to fʒxij of boiling water. It is so favourite a remedy with the native practitioners of India, in the bowel complaints of children, that there is a penalty incurred by any druggist who will not, in the middle of the night, open his door and sell it, if demanded.

CALUMBÆ RADIX. L. (*Cocculus Palmatus.*)

Colomba, Radix. E.D. *Calumba Root.*

Qualities. *Form*, the dried root imported into this country is in transverse sections; the bark is thick, and easily detached; the wood is spongy and yellowish; the pieces are frequently perforated, evidently by worms. *Odour*, slightly aromatic. *Taste*, bitter and somewhat acrid. Chemical Composition. Cinchonia, bitter resin, volatile oil, and starch, in addition to which, M. Planche has found a peculiar animal-like substance; it appears also to contain Malate and Sulphate of Lime. Solubility. Boiling water takes up about one third of its weight, but proof spirit appears to be its most perfect menstruum. Incompatible substances. No change is occasioned in the infusion by the solutions of nitrate of silver, sulphate of iron, muriate of mercury, or tartarized antimony; but precipitates are produced by the *infusion of galls, and yellow Cinchona bark*, by *sub-acetate and acetate of lead, oxy-muriate of mercury*, and *lime water*. The infusion very soon spoils. Dose of the powdered root gr. xv to ʒss; of the infusion fʒiss to fʒij. Uses. It is one of the most valuable tonics and stomachics which we possess. It seems to be superior to many others, from not possessing astringent, and stimulant powers, on which account it is singularly eligible in certain pulmo-

* Very lately our attention has been particularly called to this plant by Dr. E. G. Ludlow, of New-York, who speaks of it in terms of high commendation. He says "the diseases in which I have used it are exclusively those of the Chylopoietic viscera, as dyspepsia, diarrhœa, and cholera. For the removal of pain and flatulence in the bowels, which may be enumerated among the most frequent and distressing symptoms of the first stage of indigestion, calamus is superior to any other carminative; by virtue of its aroma it creates a strong sensation of warmth in the stomach, increasing its action without sensibly augmenting the force of the circulation, while its powerful bitter principle gives permanent tone to the relaxed state of the fibres." New-York Med. and Phys. Journal, No. 11, p. 321. The tincture is the preferable form of administering the Calamus. The dose is from ʒss to ʒj. *Ed.*

nary and mesenteric affections: it may be given in combination with chalybeates, aromatics, saline purgatives, or with rhubarb, as circumstances may require. (*Form.* 34, 155.) Officinal Preparations. *Infus: Calumbæ.* L. *Tinct: Calumbæ.* L.E D. It becomes worm-eaten by age, and, in that condition, should be rejected. Those pieces which have the brightest colour, and the greatest specific gravity, are the best. The root of *white briony*, tinged yellow with the tincture of Calumba, has been fraudulently substituted for this root.

CAMBOGIA. L. *Gamboge*, (*Stalagmitis Cambogioides.*) Gambogia. E.D.

Qualities. *Form*, lumps of a solid consistence, breaking with a vitreous fracture; *Odour*, none; *Colour* deep yellow, bordering on red, and becoming, when moistened, a brilliant light yellow. *Sp. Grav:* 1.221. *Taste*, slightly acrid, but which is not experienced unless it be allowed to remain long in the mouth. Chemical Composition. One part of gum, (*Cerasin,*) and four parts of a brittle resin; but this knowledge throws no light on the nature of its cathartic property. Solubility. When triturated with water two thirds of its substance are speedily dissolved, and a turbid solution results; alcohol dissolves nine tenths, and forms a yellow transparent tincture, which is rendered turbid by the addition of water; sulphuric ether dissolves six tenths of the substance; it is also soluble in alkaline solutions, and the resulting compound is not rendered turbid by water, but is instantly decomposed by acids, and the precipitate so produced is of an extremely brilliant yellow colour, and soluble in an excess of acid. Incompatible Substances. No bodies appear to produce in gamboge such a chemical change as to destroy the chemical properties which distinguish it, but by a mechanical admixture, its solubility, and consequently its operation may be materially modified. Dr. Cullen found that the inconvenience arising from its too rapid solubility, and sudden impression upon the stomach, might be obviated by diminishing the dose, and repeating it at short intervals as directed in *Form:* 89. Forms of Exhibition. No form is more judicious than that of pill. Its alkaline solution has been sometimes exhibited in dropsy, when it is said to operate both on the bowels and kidneys Dose, gr 2 to gr. 6. Uses. It is a powerful drastic cathartic, and hydragogue, very liable to excite vomiting, and from this peculiar action upon the stomach it has been frequently employed with success in the expulsion of teniæ (*Form:* 161.) and it accordingly enters as an ingredient into many of the empirical compositions which are sold for the cure of tape worms.* Officinal Preparations. *Pil: Cambogiæ comp:* L. There is considerable difference in the degree of purity in which this substance occurs in the market; it should be estimated by its clearness and brilliancy.

* The Specific of Herrenschwand, which formerly excited so much interest in Germany, consisted of 10 grains of Camboge with 20 of sub-carbonate of Potass; although it is said that on its being analyzed by order of Elizabeth of *Russia*, there were also found in it both Mercury and Arsenic.

Camboge is also the basis of the Specific of Clossius.

Golden Spirit of Scurvy Grass. This is merely a solution of Camboge in the Spir. Armoraciæ. comp:

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CAMPHORA. L.E D. (*Laurus Camphora.**)

Camphor.

QUALITIES. *Form*, a white brittle substance, unctuous to the touch, but possessing at the same time a degree of ductility which prevents its being easily pulverised, unless a few drops of spirit be previously added. It is capable of affecting a crystalline form.† *Odour*, peculiar, fragrant, and penetrating. *Taste*, bitter, pungent, and aromatic. *Specific gravity*, ·9887, it therefore swims on water; it is so volatile that during warm weather a considerable proportion will evaporate, especially if at the same time the atmosphere be rather moist, for the reason stated in page 180. It is readily ignited, and burns with a brilliant flame and much smoke; it melts at 288°, and boils at 400. CHEMICAL COMPOSITION. It is a proximate vegetable principle, resembling the essential oils in many of its habitudes, and probably differs from them in composition only in containing a larger proportion of carbon. SOLUBILITY. Water may be said to dissolve about a nine hundredth part of its weight, or f℥j rather more than gr. ½, but its solvent power is considerably increased by the addition of carbonic acid gas; camphor is also rendered more soluble by trituration with magnesia; it is soluble in an equal weight of alcohol, but it is again separated by the addition of water; it is also dissolved by oils, both fixed and volatile,‡ especially if their temperature be a little raised, and by sulphuric and other æthers, but strong acetic acid may be said to be its most powerful solvent. By repeatedly distilling it with nitric acid it is converted into *Camphoric acid*, an acid distinguished by peculiar properties, and composing, with alkalies and earths, a class of salts called *Camphorates*, but which do not possess any medicinal value. The alkalies do not produce any effect upon camphor. INCOMPATIBLE SUBSTANCES. It is not affected by any substance with which we can combine it. FORMS OF EXHIBITION. It is preferable in the form of mixture, since it is very liable in the solid state to excite nausea, and, from swimming on the contents of the stomach, to occasion pain at its

* Although the Camphor of commerce is generally furnished by the Laurus Camphora, yet it is abundantly yielded by many other plants. It is said that what is imported from Sumatra is the product of the Dryobobans Camphora. It is also contained in the roots of the Cinnamon, Cassia, and Sassafras laurels, and in those of Galangale, Zedoary, and Ginger; in Cardamom seeds and Long Pepper. The essential oils of Lavender, Sage, Thyme, Peppermint, Rosemary, and those of many other labiate plants yield camphor by distillation. Camphor may be also artificially formed by driving a stream of muriatic gas through oil of turpentine; this factitious product however, is to be distinguished from native camphor in not being soluble in weak nitric acid, and also in not being precipitated by water from its solution in strong nitric acid.

† The collection of the Materia Medica at the College of Physicians contains a beautiful specimen of native Camphor in the wood: having selected from it as perfect a crystal as I could find, I requested my friend and publisher Mr. W. Phillips, well known for his researches in crystallography, to undertake its examination: and he observes that "The crystal of native camphor (in the wood) appears as a flat octohedron; but the primary form is a right rhombic prism of 51°. 36′. and 128°. 24′. by measurement with the reflective goniometer on cleavage planes: the octohedral appearance arises from the deep replacement of four of the solid angles of the prism, by as many planes."

‡ AN ODONTALGIC REMEDY in great repute consists of a solution of camphor in oil of turpentine; a fluidounce of which will dissolve two drachms.

upper orifice. If a larger dose be required than that which water can dissolve, an additional proportion may be suspended by means of sugar, almonds, yelk of egg, or mucilage, for which purpose three times its weight of gum arabic is required. If Camphor be first dissolved by trituration in a very small portion of oil, it readily mixes with mucilage of gum arabic, and may then be conveniently blended with liquids. It has also the property of uniting with gum-resins, and of converting them into permanently soft, and uniform masses; hence they may sometimes be conveniently applied for diffusing it in water. It may be formed into pill-masses by stiff mucilage, fœtid gums, or by a confection. MEDICINAL USES. In moderate doses it exhilarates, without raising the pulse, and gives a tendency to diaphoresis; and under certain conditions of the body, when opium fails, it will frequently promote sleep. As its effects are transient, its dose should be repeated at short intervals. *Illustrative Formulæ* 1,6,21,125,134,164. Camphor is said to correct the bad effects of opium, mezereon, cantharides, and the drastic purgatives, and diuretics. Dose gr. ij to ℈j. In excessive doses it occasions anxiety, vomiting, syncope, and delirium; these violent effects are best counteracted by opium. OFFICINAL PREPARATIONS. *Mistura Camphoræ.* L.D. *Emulsio Camphorata.* E. *Spiritus Camphoræ*, L.E.D. *Tinctura Camphoræ comp:* L.E.D. *Acidum Acetosum Camphoratum.* E.D. *Linimentum Camphoræ* L.E.D. *Liniment: Camphoræ comp:* L. *Liniment: Saponis.* (G) L.E.D. ADULTERATIONS. It has been stated that pure camphor may be known by placing it upon hot bread, when it will turn moist, whereas an adulterated specimen becomes dry—but with what can it be adulterated?

CANELLÆ CORTEX. L.E.D. (*Canella Alba Cortex.*)

Canella Bark.

Wild Cinnamon.

QUALITIES. *Form*; it occurs in quilled and flat pieces; the former are of a whitish yellow colour, considerably thicker than cinnamon; the latter, which are probably the bark of the larger branches, or of the stem of the tree, are yellow on the outside, and pale brown within. *Odour*, resembling that of cloves. *Taste*, warm, pungent, and slightly bitter. CHEMICAL COMPOSITION. Its virtues depend upon an essential oil, and a bitter resin. SOLUBILITY. Water extracts only the bitterness, but proof spirits both the bitterness and aroma. MEDICINAL USES. As a warm stimulant to the stomach, and as a corrigent to other medicines. In America it is considered as a powerful antiscorbutic. DOSE of the powdered bark gr. x to ℥ss. OFFICINAL PREPARATIONS. *Tinct. Gentian. comp.* (B. G.) E. *Vinum Aloes*, (G) L.D. *Pulv. Aloes cum canella.* (G) D.

CANTHARIDES.* (*Cantharis Vesicatoria.*)

Blistering, or Spanish Flies.

This beautiful insect of the beetle tribe is exceedingly abundant in the southern parts of Europe, and particularly in Spain. They are collect-

* Although the London College, for reasons sufficiently weighty, were induced on a former occasion to transfer the Blistering fly from the genus Cantharis to that of

ed from the leaves of the different trees on which they delight to dwell, in June and July, and are afterwards destroyed, as recommended by Dioscorides, by the fumes of strong vinegar, and dried in the sun. The chemical history of Cantharides is still involved in some obscurity*; the blistering principle has been obtained by Robiquet in a separate state, when it assumes the form of small crystalline plates, having a micaceous lustre, not unlike spermaceti; Dr. Thompson has given to it the name of *Cantharidin*;* when pure, it is insoluble in water and in cold alcohol; boiling alcohol, however, dissolves it, but precipitates it again on being cooled. Æther and the oils dissolve it readily. Although not soluble in water it is rendered so by the presence of a yellow matter which exists in native combination with it. A very minute portion of this substance dissolved in sweet oil, and applied to the skin with a piece of paper, produces vesication in five or six hours. In addition to this active principle, Cantharides contain a green concrete oil; a yellow fluid oil; a peculiar black substance soluble in water and proof spirit, but not in pure alcohol: a saponaceous or yellow substance, soluble both in water and alcohol; Uric acid; Acetic acid; Phosphate of Magnesia, and a parenchymatous substance.† Medicinal Uses. Cantharides, when administered internally are powerfully stimulant and diuretic;‡ and whether applied as a vesicatory to the skin, or taken into the stomach, they have a peculiar tendency to act upon the urinary organs, and especially to irritate and inflame the neck of the bladder, and occasion strangury. On this account they have been very successfully employed both for the cure of incontinence of urine, and suppression of this discharge, from torpor or paralysis of the bladder; they have been used in gleet and leucorrhæa, and in cases of seminal weakness and impotence. In consulting the works of Dioscorides, Galen, and Pliny, we shall find they entertained a notion, that the *virus* existed only in the body of the fly, and that the head, feet and wings, contained its antidote! Hippocrates prescribed them internally in Dropsy, Jaundice, and Amenorrhœa; and yet in the end of the sixteenth century, Dr. Groenvelt was charged and sued§ for giving

Lytta; the Committee for revising the late Pharmacopœia determined, on the authority of Latreille, to restore it to its former genus. The work of Latreille, "Genera Crustaceorum et Insectorum" holds the highest rank in Etymology of any hitherto published.

*Cantharidin may be obtained by the following process: Boil the cantharides in water until all the soluble parts are extracted; filter the decoction, and evaporate to the consistence of an extract. Digest this extract in concentrated alcohol, then pour off the alcohol and evaporate it; if sulphuric acid be then added to this extract, it will take up the Cantharadin, which may be obtained in a tolerably pure state by evaporation. The crystalline plates may be afterwards freed from the adhering colouring matter by alcohol.

† Annales de Chémie, tom. lxxvi.

‡ It forms the basis of the once celebrated diuretic of Tulpius, called Lithonthrypticum Tulpii, from its supposed efficacy in stone. The other ingredients were Cardamoms, made into a Tincture with Rectified Spirit, and Spirit of Nitric Æther.

§ He was cited before the censors of the College of Physicians in 1693, and committed to Newgate by a warrant from the President; but he was acquitted upon the plea that—bad practice must be accompanied with a bad intention to render it criminal. He published his vindication in a small tract, entitled "De tuto Cantharidum usu interno." The issue, says Dr. Quincey (Pharm: p. 152) ruined the unhappy Doctor, but taught his prosecutors the safety and value of his practice. The following was his formula. Of egg-shells calcined ℥ss; Camphor ℈ j; Spanish flies ℈ss; and Venice turpentine q. s. to make nine pills: three of which were to be swallowed every three hours.

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them inwardly, in substance, for the cure of the stone. Dose, in substance, not exceeding gr. i, combined with opium or hyoscyamus. See *Tinctura: Cantharid.* A strong decoction of the Cantharides in Oil of Turpentine furnishes a most powerful Epispastic, and may be easily applied by means of dossils of lint. As the general belief, which exists with respect to the aphrodisiac powers of this substance, may induce persons to try its efficacy in large doses, either for goading the exertions of exhausted nature, or for incensing the passions of females whose seduction is meditated, it behoves the medical practitioner to become acquainted with the symptoms which it may produce, and of which the following may be considered as the most prominent;—violent retching; copious alvine evacuations, frequently bloody; very severe colics; active inflammation of the stomach and intestines; sometimes universal convulsions, attended with a horror of liquids, resembling that which occurs in hydrophobia; furious delirium, &c. But the affections of the urinary passages, and organs of generation, may be regarded καλεξοχην, as the peculiar symptoms of poisoning by Cantharides; such as heat in the bladder, horrible strangury, prinful and obstinate priapism, *satyriasis*, &c. The method of treatment to be pursued on such occasions will consist in copious bleeding, warm bath, local fomentations, mild and mucilaginous drinks; and opium, especially in the form of clyster or suppository. Officinal Prep. *Tinct: Cantharid:* L. *Emplast: Cantharid:* L. *Ceratum Cantharid:* L. *Unguent: Infusi Cantharid: Vesicat:* E. *Unguent: Cantharid:* D. The flies do not lose their virtues by being kept; it is, however, curious that even those acrid insects are soon reduced to dust by others feeding upon them; but since the inert parenchymatous portion is alone selected by them, the residue is extremely active.*

CAPSICI BACCÆ. L.E.D. (*Capsicum annum.*)

Berries of the Capsicum.

Qualities. *Form*; pods, long, pointed, and pendulous; *Colour*, when ripe, a bright orange red. *Odour*, aromatic and pungent. *Taste*, extremely acrimonious and fiery. Solubility. Its qualities are partially extracted by water, but more completely by æther and spirit. Chemical Composition. Cinchonia, resin, mucilage, and an acrid principle said to be alkaline.† Incompatible Substances. The Infusions of capsicum are disturbed by *Infusion of Galls; Nitrate of Silver; Oxymuriate of Mercury; Acetate of Lead; the Sulphates of Iron, Copper and Zinc; Ammonia, Carbonate of Potass, and Alum*, but not by sulphuric, nitric, or muriatic acid. Medicinal Uses. It is a most powerful stimulant to the stomach, and is unaccompanied with any narcotic effect; as a gargle in cynanche maligna, and in relaxed states of the throat, it fur-

* Not less than sixteen species of the genus Cantharis have already been discovered in this country, by the industry of our Entomologists; most, if not all, of which possess vesicating powers. Of these the most common is the Lytta Vittata, or potatoe fly. The medicinal virtues of this insect were first discovered in 1797, by Dr. Isaac Chapman, of Pennsylvania, and found to be fully equal to those of the Spanish fly. Dr. Barton says "from frequent employment of the two articles, I cannot hesitate to prefer the American to the foreign fly. Long keeping, provided it be carefully kept, does not materially impair the blistering property of the Lytta Vittata. At the end of three or four years after being collected, I have found it equal in power to the shop Cantharides." Ed.

† Journal de Physique, p. 173, 1820.

nishes a valuable remedy; combined with purgatives, it proves serviceable in dyspepsia, (*Form:* 78,) it has lately been given with success in the advanced stages of acute rheumatism; in various diseases attended with cold feet, it has been recommended to wear socks dusted with Cayenne Pepper. Forms of Exhibition. It may be given, made into pills with crumb of bread, or in the form of tincture, diluted with water; for the purpose of a gargle, a simple infusion in the proportion of gr. j to f℥j of boiling water, or f℥vi of the tincture to f℥viij of the *Infusum Rosæ*, may be directed. Dose, of the substance, gr. vj to x, of the tincture f℥j to f℥ij in an aqueous vehicle. Officinal Preparations. *Tinct: Capsici:* L.D.*

Cayenne Pepper is an indiscriminate mixture of the powder of the dried pods of several species of capsicum, but especially of the Capsicum *baccatum*, (Bird pepper.)

Adulterations. Cayenne pepper is generally mixed with *muriate of soda*, which disposes it to deliquesce. *Red Lead* may be detected by digesting it in acetic acid, and adding to the solution sulphuret of ammonia, which will produce, if any lead be present, a dark coloured precipitate; or the fraud may be discovered by boiling some of the suspected pepper in vinegar, and after filtering the solution adding to it sulphate of soda, when a white precipitate will be formed, which, after being dried and exposed to the heat, and mixed with a little charcoal, will yield a metallic globule of lead.

CARBO LIGNI. L.E.D. *Charcoal.*

Qualities. It is a black, inodorous, insipid, brittle substance; when newly prepared it possesses the property of absorbing very considerable quantities of the different gases; it is also capable of destroying the smell and taste of a variety of vegetable and animal substances, especially of mucilages, oils, and of matter in which *extractive* abounds; and some medicines are said to be even deprived of their characteristic odour by remaining in contact with it, as Valerian, Galbanum, Balsam of Peru, and Musk. The use of charring the interior of water casks, and of wrapping charcoal in cloths that have acquired a bad smell, depends upon this property; for the same reason it furnishes a very excellent tooth powder†, for which purpose, that which is obtained from the shell of the cocoa nut is to be preferred. None of the fluid menstrua with which we are acquainted have any action whatever as solvents upon carbon.‡ Medicinal Uses. It is antiseptic, and has been administered internally, to correct the putrid eructations which sometimes attend dyspepsia, but in order to produce this effect it should be newly prepared, or such as has been preserved from the access of air, for it operates by absorbing the putrid gas, as well as by checking the decomposition of the undigest-

* Rymer's Cardiac Tincture. In the earlier editions of this work an erroneous account of this medicine has been given, in consequence of a spurious specimen having been examined: the following analysis is now confidently presented to the profession. It is an infusion of Capsicum, Camphor, Cardamom seeds, Rhubarb, Aloes, and Castor in Proof Spirit, with a very small quantity of Sulphuric acid.

† Lardner's Prepared Charcoal consists of cretaceous powder, or chalk finely powdered, rendered grey by the addition of charcoal, or Ivory black.

‡ Concentrated Solution of Charcoal. A preparation is sold under this absurd name for cleaning the teeth, and is nothing more than a tincture of Catechu. The name was probably suggested by the experiments of Mr. Hatchett, who succeeded in producing artificial tannin by the action of Nitric acid upon Charcoal.

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ed element.* Dose, grs. x to 3j. It has been lately asserted to possess powers as an antidote to arsenic ; if this be true, its action can only be mechanical by absorbing like a sponge the arsenical solution, and thereby defending the coats of the stomach from its virulence.† Charcoal, when mixed with boiled bread, forms a very valuable poultice for foul and gangrenous sores. In a state of impalpable powder, it is said to be effectual as a styptic ; Dr. Odier informs us that the celebrated *powder of Faynard*, for stopping hemorrhage, was nothing more than the charcoal of beech-wood finely powdered.

Charcoal is prepared for the purposes of medicine and the arts, from a variety of substances, viz.

Burnt Sponge. *Spongia Usta.* L. Consists of charcoal with portions of phosphate and carbonate of lime, and sub-carbonate of soda ; it has been highly commended in bronchocele and scrophulous complaints, in the form of an electuary, or in that of a lozenge, and it has been lately asserted that it owes its power to the presence of Iodine.

Vegetable Æthiops. *Pulvis Quercus marinæ.* From the *fucus vesiculosus*, or bladder-wrack, used as the preceding.

Ivory Black. *Ebur Ustum.* From ivory shavings burned ; used as a dentifrice and a pigment, under the name of "*blue-black*," for its hue is bluish ; but bone-black is usually sold for it.

Lamp Black. *Fuligo Lampadum.* By burning resinous bodies, as the refuse of pitch, in furnaces of a peculiar construction.

Wood Soot. *Fuligo ligni*, collected from chimnies under which wood is burnt. It contains sulphate of ammonia, which imparts to it its characteristic bitterness. It has been considered antispasmodic, and a tincture was formerly prepared of it.

CARDAMOMI SEMINA. L.D. (*Matonia*‡ *Cardamomum.*)

Amomum Repens. E. *Cardamom Seeds.*

Qualities. *Odour*, aromatic and agreeable ; *Taste*, warm and pungent, but unlike the peppers, they do not immoderately heat the stomach.

* In cases of obstinate constipation of the bowels, charcoal is one of the most efficient remedies in the whole Materia Medica. Many cases have yielded to it which had resisted every other cathartic medicine previously used. Dr. Daniell, of Savannah, to whom we are indebted for an interesting paper on this subject, states as the result of his experience, "that the most speedy, as well as the most certain relief, is to be obtained from the free use of Charcoal. If it does not wholly relieve, it always very much mitigates the pain in six or eight hours from the period of its first administration ; and within my observation," he adds "the patient has always been entirely composed before the operation of the medicine upon the bowels." "In relation to the dose of this medicine," he states that "the rule which I have pursued is to give it as freely and as frequently as the stomach will allow. The quantity required is considerable. It has a happy influence in lulling the irritability of the stomach, when nothing else which I have used, would control the nausea and vomiting of the patient; thus fulfilling the double intention of first alleviating a very distressing symptom, and then removing the disease itself. I usually give from one to three table-spoonsful of Charcoal every half hour or hour: whenever the stomach becomes overcharged with the medicine, the excess is thrown off, and the stomach is again quiet. I give it in lime water, milk, or water alone—the vehicle having appeared to me unimportant." Philadel. Journal of Med. and Phys. Sciences, Vol. 5. p. 120. Ed.

† See an account of Charcoal, as a test for Arsenic, and remarks thereon.

‡ Dr. Maton in a learned critical and botanical note to a paper on the Cardamom, by Mr. White, Surgeon of Bombay, (Trans: Lin: Soc: v. x, 229,) called the genus, of which it consists, Elettaria, a nomenclature which was accordingly adopted by the

Solubility. Water, alcohol and æther extract their virtues; the two latter most completely, and the result is transparent, whereas the watery infusion is turbid and mucilaginous. Chemical Composition. Fecula, mucilage, and essential oil. Medicinal Uses. They are carminative and stomachic, and prove grateful adjuncts to bitter infusions; they are principally employed to give warmth to other remedies. Dose of the powder, gr. vj. to ℈j. Officinal Preparations. *Extract: Colocynth: comp:* (E) L.D. *Tinc. Cardamomi*, L.E.D. *Tinct. Cardamom: comp:* L.D. *Tinct: Cinnamomi, co.* (B) L.E. *Tinct. Gentian, co.* (G) L *Tinct. Rhei* (E) L.E.D. *Tinct. Rhie cum Aloe*, (G) E. *Tinct. Sennæ*, (E) L. D. *Spir. Ether. Aromat.* B L. *Vinum Aloes Socot.* (G) E. *Confect. Aromat.* B L. *Pulv. Cinnamom. co.* (B) L.E.D. *Pil Scillitičæ*, (E) E. *Infus. Sennæ.* D (E.)

Cardamom seeds should be kept within their husks, or their virtues will soon be considerably impaired; they are frequently mixed with *grains of paradise*, which are much hotter and more spicy, but less aromatic in their flavour.

CARICÆ FRUCTUS, L.D. Fici Caricæ Fructus, E.

The preserved Fruit of the Fig.

Qualities of the dried fig are too well known to require description. The fig consists almost entirely of mucilage and sugar. Uses. It has been already stated that the most ancient cataplasm on record was made of figs, (2 Kings, chap. xx. 7.) they are employed medicinally in many demulcent decoctions, as *Decoctum Hordei comp:* L.D. They are gently aperient; it is curious to learn that they constituted the chief part of the food of the ancient Athletæ.

CARYOPHYLLI. L

(Eugenia Caryophyllata. *The unopened flowers dried.*)

Caryophilli Aromatici Germen, E.

Caryophilli aromat. Calyx, D. *Cloves.*

Cloves are the unexpanded flowers or flower-buds, of the clove tree, which are first obtained when the tree is six years old; they are gathered in October and November before they open, and when they are still green; and are dried in the sun, after having been exposed to smoke at a heat of 120°, till they assume a brown hue. It is a curious fact that the flowers when fully developed are quite inodorous, and that the real fruit is not in the least aromatic. Qualities. *Form*, that of a nail, consisting of a globular head, formed of the four petals of the corolla, and four leaves of the calyx not yet expanded; and a germen situated

College in their late Pharmacopœia; but, says Sir James Smith, as this name is of a barbarous origin, (viz. from Elettaria, the Malabar name of the plant,) we should greatly prefer that of Matonia; a suggestion which has been since adopted by Mr. Roscoe of Liverpool, in his description of the Scitamineœ. The College has therefore the gratifying task of erasing the term Elettaria from their Materia Medica, and of substituting for it a name, no less known than respected by the Medical profession.

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below nearly cylindrical, and scarcely an inch in length. *Odour*, strong, fragrant, and aromatic. *Taste*, acrid, aromatic and permanent. Benzoic acid has lately been discovered in them.

Solubility. Water extracts their odour, but little of their taste; alcohol and ether take up both completely. Medicinal Uses. They are more stimulant than any of the other aromatics; they are sometimes given alone, but more generally as a corrigent to other medicines. Officinal Preparations. *Infusum Caryophyllorum.* L. *Spir. Lavand. co.* D. (**B**) Frauds. The Dutch frequently mix the best cloves with those from which the oil has been drawn.

Caryophyllorum Oleum. This essential oil, in consequence of the resinous matter which it holds in solution, has a specific gravity of 1·020, and consequently sinks in water. When the oil has a hot fiery taste, and a great depth of colour, it is adulterated. It is imported from the spice islands. On account of its stimulant properties, it is added to griping extracts, or used as a local application in the tooth-ache. Vauquelin obtained from the leaves of the *Agathophyllum ravensara* an essential oil, in every respect similar to that of cloves; and I am informed by Dr. Davy that an oil exactly resembling in smell the oil of Cloves is procured in Ceylon from the leaf of the Cinnamon tree; but very little, if any, has ever been exported.

CASCARILLÆ CORTEX. L. D. Croton Eleutheria. E. (Croton Cascarilla.)

Cascarilla Bark.

Qualities. *Form*, curled pieces, or rolled up into short quills; *its* fracture is smooth and close, *of a dark brown colour*; *Odour*, light and agreeable; when burning, it emits a smell resembling that of musk, which at once distinguishes it from all other barks. *Taste*, moderately bitter, with some aromatic warmth. Chemical Composition. Mucilage, bitter extractive, resin, volatile oil, and a large proportion of woody fibre; neither *Cinchonia* nor *Quina* has hitherto been discovered in it. Solubility. Its active constituents are partially extracted by alcohol and water, and completely by proof spirit. Medicinal Uses. Carminative and tonic; it is an excellent adjunct to cinchona, rendering it by its aromatic qualities more agreeable to the stomach, and increasing its powers. It is valuable in dyspepsia and flatulent cholic, in dysentery and diarrhœa, and in the gangrenous thrush peculiar to children. Forms of Exhibition. It is most efficacious in substance; it may however be given in the form of infusion, or tincture. Decoction dissipates its aromatic principle; the extract therefore merely acts as a simple bitter. See *Infus. Cascarillæ*. Dose of the powder, grs. xij to ʒss. Officinal Preparations. *Infus. Cascarill.* L. *Tinct. Cascarill.* L.D. *Extract. Cascarill.* D.

CASSIÆ PULPA. L.E.D. (Cassia Fistula. *Lomentorum Pulpa.*)

Cassia Pulp.

The fruit is a cylindrical pod scarcely an inch in diameter, but a foot or more in length: the exterior is a hard brown bark; the interior is divided into numerous transverse cells, each of which con-

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tains an oval seed imbedded in a soft black pulp. QUALITIES. *Odour*, faint and rather sickly. *Taste*, sweet and mucilaginous. SOLUBILITY. Nearly the whole of the pulp is dissolved by water, partially by alcohol and sulphuric ether. CHEMICAL COMPOSITION. Sugar, gelatine, glutine, gum, and a small portion of resin, extractive, and some colouring matter. USES. It is gently laxative, and is adapted for children and very delicate women, but it should be always given in combination with manna or some other laxative, or it is apt to induce nausea, flatulence and griping. OFFICINAL PREPARATIONS. *Confectio Cassiæ* L E D. *Confectio Sennæ* (B O.) L.E.D.* There are two kinds of this drug in the market; that from the West Indies, the pods of which are generally large, rough, thick rinded, and contain a nauseous pulp; and that from the East Indies, which is to be preferred, and which is distinguished by smaller and smoother pods, and by their containing a much blacker pulp. The pulp ought not to have a harsh flavour, which arises from the fruit having been gathered before it was ripe, nor ought it to be sour, which it is very apt to become by keeping. The heaviest pods, and those in which the seeds do not rattle, are to be preferred.

CASTOREUM. L.E.D. (Castor Fiber. (*Rossicus.*) *Concretum sui generis.*) *Castor.*

This substance is secreted by the beaver, in bags near the rectum.† QUALITIES. *Odour*, strong and aromatic. *Taste*, bitter, sub-acrid, and nauseous. *Colour*, reddish brown. CHEMICAL COMPOSITION. Volatile oil, resin, mucilage, extractive, iron, and small portions of the carbonates of potass, lime and ammonia. It contains also, according to the analysis of Laugier, a small quantity of benzoic acid. The Canadian variety is also stated by Laugier to contain benzoic acid both free and combined. SOLUBILITY. Its active matter is dissolved by alcohol, proof spirit, and partially by water; the tincture made with alcohol is the least nauseous, and the most efficacious; the spirit of ammonia is also an excellent menstruum, and in many cases improves its virtues. FORMS OF EXHIBITION. It may be given in substance, as a bolus, or in the form of tincture, but its exhibition in the form of extract or decoction is chemically incorrect. DOSE, grs. x to ℈j, and, in clysters, to ʒj. MEDICINAL USES. It is antispasmodic, and seems to act more particularly on the uterine system. It certainly proves beneficial as an adjunct to antihysteric combinations; it was highly esteemed by Van Swieten, De Haen, and many other German practitioners. Baglivi states that it counteracts the narcotic powers of opium, but this is not the case. OFFICINAL PREPARATIONS. *Tinct. Castorei.*‡ L.E.D. ADULTER: It is sometimes counterfeited by a mixture of dried blood, gum ammoniacum, and a little real castor, stuffed into the scrotum of a goat; the fraud is de-

* ESSENCE OF COFFEE. The Cassia pulp is said to form the basis of this article.

† The ancients erroneously considered them as the testicles of the beaver, and Æsop relates that the animal bit them off when pursued by the huntsman, whence some have derived its name, *a castrando*; the true origin however of the word is from γαστηρ, i. e. animal *ventriculosum*, from his swaggy and prominent belly.

‡ BATEMAN'S PECTORAL DROPS consisted principally of the Tincture of Castor, with portions of Camphor and opium, flavoured by anise seeds, and coloured by cochineal.

tected by comparing the smell and taste with those of real castor; and by the deficiency of the subaceous follicles, which are always attached to genuine specimens. There are two kinds in the market, the Russian and Canadian, the former however, which is the best, has become extremely scarce; it may be distinguished from the latter, by being larger, rounder, heavier, and less corrugated on the outside.

CATECHU EXTRACTUM, L.E.D.

(Acacia Catechu, *Extractum.*)

Catechu; olim *Terra Japonica.** *Japan Earth.*

QUALITIES. There are too varieties of catechu in the market, the one of a light yellowish, the other of a chocolate colour; they differ only in the latter having a more austere and bitter taste. CHEMICAL COMPOSITION. Tannin, a peculiar extractive matter, mucilage, and earthy impurities. SOLUBILITY. It is almost totally dissolved both by water and spirit. INCOMPATIBLE SUBSTANCES. Its astringency is destroyed by alkaline salts; and precipitates are produced by metallic salts, especially by those of iron; and with gelatine it forms an insoluble compound. MEDICINAL USES. It is a most valuable astringent. FORMS OF EXHIBITION. In infusion, tincture, or powder. (*Form.* 51, 52, 58, 151.) In the form of a lozenge, from its gradual solution, it may be very advantageously applied in relaxed states of the uvula and fauces; I have found this remedy successful in cases where the *sulphate of zinc* was inefficient. From its great astringency it also forms an excellent dentifrice, especially when the gums are spongy; for this purpose I have employed equal parts of powdered catechu, and Peruvian bark, with one-fourth the quantity of the powder of myrrh. DOSE, grs. x to ℈i. OFFICINAL PREP. *Infus. Catechu, Tinct. Catechu,* L.E.D. *Electuarium Mimosæ Catechu,* E.D.

CENTAURII CACUMINA. L.E.D.

(Chironia Centaurium† *Cacumina.*)

The flowering tops of the common Centaury.

QUALITIES. *Odour,* none; *Taste,* intensely bitter. CHEMICAL COMPOSITION. Mucilage, resin, and bitter matter. SOLUBILITY. Alcohol and water dissolve all its active matter. MEDICINAL USES. All its value depends upon its bitterness. It entered into the composition of the once celebrated *Portland Powder* for the gout, for an account of which see page 32. DOSE, of an infusion, made in the proportion of ℥j to oj of boiling water, f℥ij; of the dry powder ℈i.

CERA. L.E.D. *Wax.*

It is admitted into the list of the Materia Medica under two forms, viz.

1. CERA FLAVA. *Yellow or Unbleached Wax.*

* It was formerly supposed to be a mineral production; and hence the term Terra Japonica. Hagedorn and Boulduc were among the first who opposed this error, and who established the fact of its vegetable origin (Mem. de l'Acad: des Sciences de Paris, A. 1709, p. 228.)

† So called from Chiron the Centaur, who is said to have employed it to cure himself of a wound accidentally received by letting one of the arrows of Hercules fall upon his foot.

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Qualities. *Odour*, faintly honey-like; It is brittle yet soft: when chewed, it does not, if pure, adhere to the teeth; it melts at 142°, and burns entirely away. Chemical Composition. It is the honey-comb of the bee melted with boiling water, pressed through cloth bags, and ultimately cast into round cakes for the market. Whether it be an animal product, or a vegetable substance merely collected by the bee, has been a question of dispute; the former opinion is probably correct, although wax is certainly produced as a secretion by many plants. The yellow wax contains a portion of pollen which imparts its colour to it, and increases its fusibility. Solubility. It is insoluble in water, and in cold alcohol or ether, but it is soluble in boiling alcohol and ether, in fixed oils, and in alkalies. Uses. It is chiefly employed in the composition of external applications. Adulterations. *Earth* or *peas-meal* may be suspected when the cake is very brittle, and the colour inclines to grey; *Resin* is detected by putting it in cold alcohol, which will dissolve the resinous part without acting on the wax. *Tallow* is discovered by the greater softness and unctuosity of the cake, and by its suffocating smell when melted; when this latter substance is employed, turmeric is added to disguise its paleness.

2. Cera Alba. *White, Bleached, or Virgin's Wax.*

Qualities. This substance differs only from the former, in being colourless, harder, heavier, and less fusible. Uses. It is said to be demulcent, and very useful in dysentery, but it is rarely used. Forms of Exhibition. It may be formed into a mixture by melting it with one-third of its weight of soap, and then gradually adding to it any mucilaginous liquid. Adulterations. *White Lead* may be detected by melting the wax in water, when the oxide will fall to the bottom of the vessel; *tallow* may be suspected when the cake wants its usual translucency.

CERATA. L.E. Cerates.

These compositions are characterized by a degree of consistence, intermediate between that of plasters, and that of ointments. As this consistence is obtained from the wax which they contain, they very properly derive from that substance the generic appellation of *Cerates.*

Ceratum Calaminæ. L. (*Ceratum lapidis Calaminaris. P. L.* 1787. *Ceratum epuloticum. P.L.* 1745). Ceratum Carbonatis Zinci Impuri. E. Unguentum Calaminare. D.—These preparations have been long known under the name of *Turner's Cerate;* they form the basis of many extemporaneous cerates, in some of which nitric oxide of mercury, in the proportion of 3j of the oxide to 3j of cerate, and in others, the liquor of subacetate of lead, are introduced. By the former combination we obtain a very useful application to indolent and ill-conditioned ulcers, a valuable stimulant for inducing an action conducive to the regeneration of parts. By the latter combination we derive a remedy highly extolled by our most experienced surgeons, in the cure of burns and scalds.

Ceratum Cantharidis. L. The basis of this preparation is spermaceti cerate *six parts*, to which is added, of powdered flies *one part:* as it is intended to promote a purulent discharge from a blistered surface, it may be reduced in strength according to circumstances.

Ceratum Cetacei. L. (*Ceratum Spermatis ceti. P.L.* 1787. Ceratum Album, P.L. 1745). Ceratum Simplex. E. It furnishes a soft and cool-

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ing dressing, and constitutes a convenient basis for more active combinations, as in the following instance.

Ceratum Plumbi acetatis. L. (*Unguèntum Cerussæ Acetatæ, P.L.* 1787.) This is cooling for burns, excoriations, and inflamed surfaces.

Ceratum Plumbi Compositum. L. (*Cerat: Lithargyri acetati compositum P.L.* 1787.) This is "*Goulard's Cerate*," and is applicable to the same cases as the former cerate; the camphor which enters into its composition imparts a gently stimulating power to it; it proves extremely serviceable in chronic opthalmia of the tarsus, and for the increased secretion of tears, which so frequently affects the eyes of persons advanced in years.

Ceratum Resinæ. L. (*Ceratum resinæ flavæ, P.L.* 1787. *Ceratum citrinum.* 1745. *Yellow Basilicon.*) Unguent: Resinosum, E. Unguent: Resinæ albæ. D. It is stimulant, digestive, and cleansing, and affords a very excellent application for foul and indolent ulcers.

Ceratum Sabinæ. L. *Savine Cerate.* It is intended to keep up a purulent discharge from a blistered surface; in practice however it is often found to fail from the difficulty of obtaining it good, since the acrid principle of the plant is injured by long boiling, and by being previously dried; the ointment also loses its virtue by exposure to the air.

Ceratum Saponis. L. This preparation was much used and recommended by the late Mr. Pott; in preparing it the greatest possible caution is required; the fire should never be too rapidly applied, the stirring should be uniform and incessant, and the heat should only be sufficient to keep the two compositions liquid at the time when they are united. The original intention of the cerate was to afford, when spread upon linen, a mechanical support to fractured limbs, and to keep the points of the bone in due opposition, while in consequence of the *acetate of lead* which is formed in the first stage of the process for its preparation, it possesses the virtues of a saturnine dressing. As a mechanical agent it may prove at once effectual and dangerous, for if it be applied before all inflammation and swelling have entirely disappeared, the inflamed vessels may be completely strangulated by its unrelenting pressure, and high erysipelatous inflammation, and a rapid state of gangrene may be the result.

Ceratum Simplex. A useful application to excoriations and sores.

Besides the above cerates, there are many magistral* preparations, of great practical value, and I must refer the surgical student for an account of them to that very useful little manuel, entitled "*Pharmacopœia Chirurgica.*"

* Kirkland's Neutral Cerate. Is formed by melting together ℥viij of Lead Plaster with f℥iv of olive oil, into which are to be stirred ℥iv of prepared chalk; when the mixture is sufficiently cooled f℥iv of acetic acid, and ℥iij of pulverized Acetate of lead are be added, and the whole is to be stirred until nearly cold.

Marshall's Cerate. ℞. Palm. Oil ℥v, Calomel ℥i, Acetate of Lead ℥ss, Nitrate of Mercury ℥ij.

Cold Cream (Ceratum Galeni.) Ol: Amygdal: lbj. Ceræ alb: ℥iv; melt, pour into a warm mortar, and add, gradually, Aq: Ros; oj. It should be very light and white. Gray's Supplement.

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CETACEUM. L.

(Physeter Macrocephalus, *Concretum sui generis.*)

Spermaceti. E D.

Qualities. *Form*, flakes, which are unctuous, friable, and white. *Odour* and *taste*, scarcely perceptible. *Sp. Grav.* 9·433. It melts at 112°. Chemical Composition. It is a peculiar modification of fatty matter Solubility. It is insoluble in water and cold alcohol, but soluble in hot alcohol, ether, and oil of turpentine, but it concretes again as the fluids cool; in the fixed oils it is completely soluble. The alkaline carbonates do not affect it, but it is partially dissolved in the pure alkalies, and with hot ammonia it forms an emulsion which is not decomposed on cooling. Uses. It is demulcent and emollient, but it possesses no advantages over the bland oils. Forms of Exhibition. It may be suspended in water by means of mucilage or yolk of egg. (*Formulæ* 76, 78, 79.) Officinal Preparations. *Ceratum Simplex.* E *Ceratum Cetacei.* L. *Unguent Cetacei.* L.D. From exposure to hot air, it becomes rancid; but it may be again purified, by being washed in a warm solution of potass.

CINCHONA. L.E.D. *Bark. Peruvian Bark.*

Jesuit's Bark.

Notwithstanding the labours of the Spanish botanists, the history of this important genus is still involved in considerable perplexity, and owing to the mixture of the barks of several species.* and their importation into Europe under one common name, it is extremely difficult to reconcile the contradictory opinions which exist upon the subject, nor indeed would such an investigation be consistent with the plan and objects of this work. Under the trivial name *officinalis*, Linnæus confounded no less than four distinct species of cinchona, and under the same denomination the British Pharmacopœias, for a long period, placed as varieties the three barks known in the shops; this error indeed is still maintained in the Dublin Pharmacopœias, but the London and Edinburgh colleges have at length adopted the arrangement of Mutis, a celebrated botanist, who has resided in South America, and held the official situation of Director of the exportation of bark for nearly forty years.

Cinchonæ Cordifoliæ Cortex. L.E. Cortex Peruvianus. D. Heart-leaved Cinchona Bark, commonly called *Yellow* Bark.

Cinchonæ Lancifoliæ Cortex. L.E. Cortex Peruvianus. D. Lance-leaved Cinchona Bark, common *Quilled* bark—*Pale* bark.

Cinchonæ Oblongifoliæ Cortex. L.E. Cortex Peruvianus. D Oblong-leaved Cinchona Bark, called *Red* bark.

Qualities. The *odour* and *taste* of these three species are essentially the same, although they differ in intensity. They are all bitter, subastringent and aromatic, but the flavour of the *Yellow* bark is incompar-

* There are no less than twenty-five distinct species of Cinchona, independent of any additions which we may owe to the zeal of Humboldt and Bonpland: and Mr. A. T. Thomson, in his London Dispensatory, states that in a large collection of dried specimens, of the genus Cinchona, in his possession, collected in 1805, both near Loxa and Santa Fé, he finds many species which are not mentioned in the works of any Spanish botanist.

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ably the most bitter, although less austere and astringent, whilst the red bark has a taste much less bitter, but more austere and nauseous than either of the other species. Chemical Composition. Few vegetable substances have been more frequently, or more ably submitted to chemical analysis than the Peruvian bark, and yet but few results of any great practical utility had been obtained previous to the recent experiments of Pelletier and Caventou, communicated to the Academy of Sciences at Paris, since the publication of the fourth edition of the present work.

Dr Maton* had several years ago observed, that an infusion of nut-galls produced a precipitate with the decoctions of Bark; a fact which necessarily produced considerable speculation. Seguin was induced to regard it as arising from the presence of *gelatine* (*see* page 57,) an opinion which Dr. Duncan proved to be erroneous, and shewed that it depended upon a new proximate principle, to which M. Gomez of Lisbon had previously assigned the name of *Cinchonine*. Besides which, bark was considered as containing resin, extractive, gluten, tannin, a small portion of volatile oil, and some salts with a base of lime; one of which however had been only found in *Yellow* bark, and had been discovered to contain a peculiar vegetable acid, denominated by Vauquelin *Kinic*, a name which Dr. Duncan very judiciously superseded by that of *Cinchonic* acid.

In the *Red* bark, Fourcroy detected also a portion of critic acid, some muriate of ammonia, and muriate of lime. Upon which of these principles the tonic and febrifuge virtues of bark depends, has ever proved a fruitful source of controversy. Deschamps attributed them to *Cinchonate of Lime*, and asserted that two doses of thirty-six grains each, would cure any intermittent. Westering considered *Tannin* as the active constituent; while M. Seguin assigned all the virtues to the principle which precipitates gallic acid, and which as it has been before stated, he mistook for gelatine. Fabroni concluded from his experiments, that the febrifuge power of the bark did not belong exclusively and essentially to the astringent, bitter, or to any other individual principle, since the quantity of these would necessarily be increased by long boiling, whereas the virtues of the bark are notoriously diminished by protracted ebullition. This argument however will not go far, when we consider the chemical changes which the liquid is known to suffer during that operation, and by which a considerable portion of its matter is rendered insoluble. Such was the state of our knowledge respecting the composition of the *Cinchona*, when Pelletier and Caventou, guided by analogy, were led to infer the presence of an alkaline element of activity in its composition. The merit, belonging to the researches of these eminent chemists, does not so much consist in the discovery of new elements, as in the proofs which they have furnished of the well known principle, *Cinchonine*, being a salifiable base,† and in demonstrating the peculiar states of combination in which it exists in the different species of Cinchona.

1. *Cinchona Lancifolia.*

Their analysis of the *Pale Bark*, furnished the following principles.

* See London Medical and Physical Journal. Vol. v. p. 33.

† Essential Salt of Bark. It is highly necessary that the public should know that the preparation sold under this empirical title, has no relation whatever to the late discoveries of Pelletier. It is merely an extract prepared by macerating the bruised substance of bark in cold water, and submitting the infusion to a very slow evaporation.

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1. *Acidulous Kinate of Cinchonia.**
2. *A green fatty matter.*
3. *Red Colouring matter, slightly soluble.*
4. *Ditto soluble.* (Tannin.)
5. *Yellow colouring matter.*
6. *Kinate of Lime.*
7. *Gum.*
8. *Starch.*
9. *Lignim.*

Cinchonia, when obtained in an isolated form,† is distinguished by the following characters and habitudes.

It is white, transparent, and crystallizes in the form of needles; it has but little taste, a circumstance depending upon its comparative insolubility, as it requires no less than 7000 parts of cold water for its solution; in boiling water it is soluble in 2500 times its weight, but a considerable part separates, on cooling. In alcohol and the acids it is much more soluble, and imparts to such menstrua the characteristic bitter of the bark; it dissolves only in small quantities in the fixed and volatile oils, or in sulphuric ether. Cinchonia restores the colour of litmus which has been reddened by an acid. With acids it combines and forms neutral salts, of which the solubility and crystalline form vary with the acid employed.

Sulphate of Cinchonia, easily crystallizable and moderately soluble, has been found to consist of *Cinchonia* 100, *Sulphuric acid* 13·02.

Nitrate of Cinchonia, uncrystallizable, and sparingly soluble.

Muriate of Cinchonia, crystallizes in very beautiful needles, and is more soluble than the preceding salts.

Oxalate of Cinchonia, nearly insoluble; hence by pouring oxalic acid, or oxalate of ammonia into solutions of any of the soluble salts of cinchonia, we obtain a very white and abundant precipitate, which might be mistaken for oxalate of lime; it is however soluble in an excess of acid, and in alcohol.

Gallate of Cinchonia, equally as insoluble as the *Oxalate*, whence the precipitate occasioned by pouring an infusion of galls into the decoctions of genuine cinchona.

Cinchonia, when heated, does not fuse before decomposition. Its ultimate elements are *oxygen*, *hydrogen*, and *carbon*; the latter being predominant.

The *Kinic acid*, which exists in native combination with the *Cinchonia*, amongst several other peculiar properties, is convertible by means of

* The designation of Cinchonin, consistent with the principles of chemical nomenclature, must now have a termination in *a*, and the name Cinchonia appears preferable to that of Cinchonina.

† The following is the process by which Cinchonia may be prepared. Take a pound of Pale Bark, bruised small, and boil it for an hour in three pints of a very dilute solution of pure Potass. After the liquid has cooled, it must be strained through a fine cloth with pressure, and the residuum be repeatedly washed and pressed. The cinchona, thus washed, is to be slightly heated in a sufficient quantity of water, adding muriatic acid gradually until litmus paper is slightly reddened. When the liquid is raised nearly to the boiling point, it is to be strained, and the cinchona again pressed. To the strained liquor, while hot, add an ounce of sulphate of magnesia, and after this add a solution of potass, till it ceases to occasion any precipitate. When the liquor is cold, collect the precipitate on a filtre, wash and dry it, and dissolve it in hot alcohol. On evaporation of the spirit, the cinchona will crystallize.

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heat into a substance (*acide pyrokinique*,) which is crystallizable, and capable of producing with iron a most beautiful green colour.

2. *Cinchona Cordifolia.*

In the *Yellow Bark*, these chemists discovered also a salifiable base, quite distinct however in its character and habitudes from *Cinchonia*; they accordingly designated it by another name, viz. *Quinine*, but which we shall hereafter call *Quina*. In speaking of these two bases, the authors compare them, in point of dissimilarity, to the fixed alkalies, potass and soda. *Quina* is distinguished from *Cinchonia* by the following characters. It cannot, like this latter body, be crystallized by evaporation from its alcoholic solution, although it may be obtained in transparent plates. *It is very soluble in æther*; in water it is as insoluble as cinchonia, but its taste is much more bitter. The salts which it forms are different from those of cinchonia, both in the proportion of their elements, and in the properties which they possess, being generally much more bitter. In comparing their composition, *Quina* will appear to have less capacity of saturation* than cinchonia.

Sulphate of Quina. It forms crystals quite remarkable for their satin-like and pearly lustre. It is soluble in cold water, a property which is very considerably increased by an excess of acid †. It appears from the observations of M. Callaude, apothecary at Annecy, that *Sulphate of Quina* exposed to a gentle heat, becomes highly luminous; and M. Pelletier has since found that *Sulphate of Cinchonia*, when exposed in a capsule to the steam of boiling water, exhibits the same phenomenon, but that neither *Quina* nor *Cinchonia*, by themselves, nor their acetates, possess this

* Thus, as we have stated, 100 parts of Cinchonia unite with 13.021 of Sulphuric acid, while the same weight of Quina requires for saturation not more than 10·91 of the same acid.

† Sulphate of Quina. As this preparation is considered the most active form of the salifiable principle of bark, I have subjoined the most approved formula for its preparation. Boil for half an hour two pounds of the appropriate bark in powder, in sixteen pints of distilled water, acidulated with two fluid-ounces of sulphuric acid; strain the decoction through a linen cloth, and submit the residue to a second ebullition in a similar quantity of acidulated water; mix the decoctions, and add by small portions at a time, powdered lime, constantly stirring it to facilitate its action on the acid decoction. (Half a pound is near the quantity requisite.) When the decoction has become slightly alkaline it assumes a dark brown colour, and deposits a reddish brown flocculent precipitate, which is to be separated by passing it through a linen cloth. The precipitate is to be washed with a little cold distilled water and dried. When dry it is to be digested in rectified spirit, with a moderate heat for some hours; the liquid is then to be decanted, and fresh portions of spirit added till it no longer acquires a bitter taste. Unite the spirituous tinctures, and distill in a water-bath till three fourths of the spirit employed has distilled over. After this operation there remains in the vessel a brown viscid substance covered by a bitter very alkaline and milky fluid. The two products are to be separated and treated as follows. To the alkaline liquid add a sufficient quantity of sulphuric acid to saturate it; reduce it by evaporation to half the quantity; add a small portion of charcoal, and after some minutes ebullition, filter it whilst hot, and crystals of Sulphate of Quina will form. The brown mass is to be boiled in a small quantity of water, slightly acidulated with sulphuric acid, which will convert a large portion of it into Sulphate of Quina. The crystals are to be dried by a bibulous paper. Two pounds of bark will, it is said, yield 5 to 6 drachms of the sulphate; of which eight grains are considered equivalent to an ounce of bark. It has been prepared in this country by several manufacturing chemists, especially by Mr. Pope of Oxford Street, whose zeal and industry in Pharmaceutic experiments entitle him to great commendation. The superior price of the bark, however, from the duty in this country, as well as that of alcohol, must prevent us from entering into competition with the French in its manufacture, and it has accordingly been found more œconomical to import, than to prepare it.

phosphorescent quality. This appears to be the most efficient of all the salts of Bark, and is the one from which I have frequently derived much advantage. In its exhibition we must be careful not to combine it with substances that form insoluble compounds with it. The *Infusum Rosæ compositum* is objectionable as a vehicle, on account of the astringent matter which it contains, and which therefore precipitates the *Quina* from its solution. I have lately seen a prescription, in which the salt is directed to be rubbed with a few grains of *Cream of Tartar*, and then to be dissolved in mint water. This is obviously injudicious, since Tartaric acid decomposes the sulphate, and occasions an insoluble *Tartrate*, which is precipitated. The form in which I have usually prescribed it is in that of solution, with a small quantity of sulphuric acid, in the proportion of a minim to every grain of the salt. A *Wine of Quina* may be made by adding five grains of the sulphate to a pint of Sherry; a Tincture, by dissolving the same quantity in eight fluid-ounces of Rectified Spirit. The sulphate is to be preferred to the pure *Quina* in these cases, because, when the tincture is made by using the alkali, not saturated by an acid, a precipitate is formed on adding it to aqueous liquors. Dose of the Sulphate, gr. i.—v.

Acetate of Quina, very remarkable for the great facility with which it crystallizes, and for the pearly aspect and agreeable stellated grouping of the crystals; whereas the acetate of cinchonia crystallizes with difficulty, and simply in plates transparent, and devoid of lustre.

Quina forms with the oxalic, gallic and tartaric acids, salts as insoluble as those which the same acids form with *Cinchonia*.

3. Cinchona Oblongifolia.

The *Red Bark* upon analysis was found to contain a double basis, and to yield both *Cinchonia* and *Quina*, and what is still more extraordinary, the quantity of each exceeded that which is known to exist in the *grey* and yellow *barks*.

The latest experiments, however, made on very large quantities of the bark, have shewn that *Quina* and *Cinchonia* exist simultaneously in all the three species; but the *Cinchonia* is, relatively to the *Quina*, in greater quantity in the *grey* bark; whilst, in the *yellow* bark, the *Quina* so predominates, that the presence of the *Cinchonia* might well have escaped notice when small quantities were operated on.

Having thus furnished a sketch of this curious discovery, we have next to enquire whether the alkaline bases in question do actually concentrate all the virtues of the barks in which they reside? M. Majendie* informs us that Pelletier had very early after the discovery transmitted to him a portion of the new substances for trial, and that he has unequivocally determined that they do not possess any deleterious qualities,† and are therefore essentially different from the principles of *Nux vomica*, (*Strychnine*,) Opium, (*Morphia*,) &c. According to the testimony of Dr. Double, as related in the same journal, they would seem to possess themedicinal properties of the cinchona.

* Journal de Physiologie. No. 1, p. 90.

† Upon this point however a difference of opinion has existed; M. Halle entertained considerable fears on the subject, which were supported by M. M. Larrey, Emery, Duponchel and others, who communicated to the Société Médicale d'Émulation, facts which excited their apprehensions. The question, however, has been set at rest both in this country and on the Continent. They are perfectly harmless.

In the third number of *Majendie's Journal* we receive a report from M. le docteur Renauldin, of an intermittent cured by the *Sulphate of Cinchonia*, in doses of six grains.

As the discovery of an alkaline element in Opium led the way to the detection of salifiable bases in other active vegetables,* it has seemed to me preferable that I should introduce those general observations which I wish to offer upon the subject of those bodies, under the history of that narcotic. It is only necessary in this place to caution the practitioner against the hasty generalizations of the too sanguine chemist ; it has already been observed that those vegetable remedies, whose value has been established by the sober experience of ages consist of different principles of activity, or, at least, owe a modified power to the compound effect of their several ingredients. (*See* page 159, *note*.)

Solubility of the Bark Cold water extracts its bitter taste, with some share of its odour ; when assisted by a moderate heat, the infusion is stronger, but becomes turbid as it cools ; the infusion cannot be kept, even for a short time, without undergoing decomposition, and being spoiled ; wine also extracts the virtues of bark, and is prevented by this substance from becoming sour, a fact which probably depends upon the avidity with which some of the principles of bark combine with oxygen, and which may throw some light upon the cause of its antiseptic virtues. The colouring matter of wine is precipitated by bark, as it is by charcoal, in the course of a few days. By decoction the active matter of cinchona is in a great degree extracted, but if the process be protracted beyond eight or ten minutes, it undergoes a very important chemical change, the precise nature of which is not well understood ; the balance of affinities, however, by which the different elements are united, is evidently overthrown, and a considerable precipitation ensues ; oxygen would also appear to have been absorbed ; whether the *Cinchonia* becomes insoluble has not yet been ascertained, but experience has shewn that the general loss of solubility, produced by such a process, is accompanied with a corresponding loss of medicinal activity ; on which account, the extract is necessarily a very inefficient preparation ; if we attempt to redissolve it, not more than one half is soluble in water. Vinegar is a less powerful solvent than water ; the active matter of bark is rendered more soluble by the addition of mineral acids, and by the earths and alkalies ; these latter bodies deepen its colour, and precipitate the *Cinchonia*, for which reason, when they are employed, the decoction ought not to be filtered ; see *Form* 41, 42. and note thereon *Lime water* has been recommended as a solvent, and it affords an excellent form for children and dyspeptic patients ; for the same reason we obtain a stronger and perhaps a more efficient preparation, by triturating it with magnesia, previous to the process of infusion. Alcohol is a very powerful solvent, but the great activity of this menstruum so limits its dose that we are prevented from exhibiting a sufficient quantity of the bark in the form

*Cinchonia has been detected in other vegetables besides the Bark, as in the root of Cusparia, and in the berries of Capsicum, while in the bark of Cascarilla, a substance bearing a much nearer relation in medicinal effect to the Bark, its presence has not yet been discovered. It is said that experiments have been lately made by M. M. Robiquet and Petroz the Bark of the Carapa, which has been successfully used in several parts of America in the cure of agues, and that they have found in that bark a salifiable basis analogous to Quina.

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of tincture ; it furnishes however an excellent adjunct to other preparations.

Incompatible Substances. Precipitates are produced by the *salts of iron, sulphate of zinc, nitrate of silver, oxymuriate of mercury, tartarized antimony, solutions of arsenic, &c.* Any considerable portion of a tincture produces also a precipitation, which sometimes does not immediately take place, and the medicinal value of the bark is probably not impaired by it. As the infusions of *nut galls* and some other vegetable astringents precipitate the cinchonia from bark, it becomes a question how far such liquids are medicinally compatible ; saline additions, as *alum, muriate of ammonia, &c* have been frequently proposed, but in many such mixtures decompositions arise which must deceive us with regard to the expected effects. Forms of Exhibition. No form is so efficient as that of powder, a fact which would seem to argue against the *exclusive* value of he *Cinchonia ;* even the ligneous fibre which the chemist pronounces to be inert and useless, may produce its share of benefit by modifying the solubility of the other ingredients, or by performing some mechanical duty which we are at present unable to understand or appreciate ; but where the stomach rejects it, it must be administered in *infusion* or *decoction*, with the addition of its *tincture.* In cases where it is necessary to join cordials, an infusion of bark in Port wine* is a popular and very useful form for its administration. Dose of the powder, gr. v. to 3ij. or more, of the infusion or decoction 3ij. Medicinal Uses. It is powerfully tonic and antiseptic ; it was introduced into practice for curing intermittent fevers, but since that period it has been generally used in diseases of debility, in fevers of the typhoid type, and in gangrene. It was first conjectured to be useful in gout by Sydenham, and Dr. Haygarth has strongly recommended its exhibition in acute rheumatism ; when however it is used in these diseases, the greatest attention ought to be paid to the state of the bowels, and purgatives should be occasionally interposed. In Dyspepsia, the use of the purer bitters is to be greatly preferred to that of the bark. Officinal Preparations. *Infus. Cinchonæ*, L.E.D. *Decoct. Cinchon.* L.E.D. *Extractum Cinchon.* L.E. *Extract. Cinchonæ resinosum.* L.D. *Tinct. Cinchonæ*, L.E.D *Tinct. Cinchonæ comp.* L.E.D. *Tinct. Cinchon. Ammoniat.* L. Magistral Formulæ, 31, 37, 40, 44, 127. Adulterations. The frauds committed under this head are most extensive ; it is not only mixed with inferior barks, but frequently with genuine bark, the active constituents of which have been entirely extracted by decoction with water. In selecting cinchona bark, the following precautions may be useful ; it should be dense, heavy and dry, not musty, nor spoiled by moisture ; a decoction made of it should have a reddish colour when warm ; but when cold, it should become paler, and deposit a brownish red sediment. When the bark is of a dark *colour* between red and yellow, it is either of a bad species, or it has not been well preserved. Its *taste* should be bitter, with a slight acidity, but not nauseous, nor very astringent ; when chewed, it should not appear in threads, nor of much length ; the *odour* is not very strong, but when bark

* It was under this form that the celebrated empiric Talbor used to administer it in the paroxysm of intermittents, and so successful was his practice, that Louis XIV. was induced to purchase at a large price the secret of his specific ; and Charles the Second very unjustly protected him against the power of the College, and appointed him one of his physicians.

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has been well cured, it is always perceptible, and the stronger it is, provided it be pleasant, the better may the bark be considered. In order to give bark the form of *quill*, the bark gatherers not unfrequently call in the aid of artificial heat, by which its virtues are deteriorated ; the fraud is detected by the colour being much darker, and upon splitting the bark, by the inside exhibiting stripes of a whitish sickly hue. In the form of powder, cinchona is always found more or less adulterated. During a late official inspection of the shops of apothecaries and druggists, the Censors repeatedly met with powdered cinchona having a harsh metallic taste, quite foreign to that which characterizes good bark.* The best test of the goodness of bark is afforded by the quantity of *Cinchonia*, or *Quina* that may be extracted from it ; and the manufacturer should always institute such a trial before he purchases any quanity, taking a certain number of pieces indiscriminately from the bulk. Much has been said of late concerning the probability of the genuine species of the cinchona tree becoming extinct ; in consequence of which some succedaneum has been anxiously sought for ; the bark of the broad-leaved willow, *Salix Caprea*, has been proposed for this purpose. Vogel recommends the root of *Geum urbanum avens ;* others propose that of the *Dastisca canabina*.

The *Cinchona Caribæa* of the Edinburgh Pharmacopœia is said, by Dr. Wright, to whom we are indebted for our knowledge of it, to have satisfactorily answered in all cases where the Peruvian bark was indicated. The *Geoffræa Intermis* is often sold for it.

M. Ré, Professor of the Materia Medica at the Veterinary School at Turin, has announced that the *Lycopus Europæus* of Linnæus, called by the peasants of Piedmont the *Herb China*, is a complete succedaneum for Peruvian Bark.† The success with which bark has been imitated by medicinal combination has already been noticed in the first volume of this work.

CINNAMOMI CORTEX. L E.D. (Laurus Cinnamomum.)

Cinnamon.

The qualities of Cinnamon depend upon the presence of an *essential oil*. *Benzoic acid* has been found in it. It is principally employed to cover the taste of nauseous medicines, and to correct the griping quality of different purgatives. It is, however, in itself, astringent and tonic, whence it has been found efficacious in the relief of alvine fluxes. ADULTERATIONS. It is sometimes intermixed with cinnamon from which the oil has been drawn ; the fraud is detected by the weakness of the odour and taste of the specimen ; sometimes it is mixed with *cassia*, but this is soon discovered, for cassia is thick and clumsy, breaks short and smooth, and has a remarkably slimy taste, whereas the fracture of cinnamon is shivery, and its flavour warm and clean. Cinnamon ought not to

* Mr. Thompson has suggested the probability of this circumstance having arisen from the admixture of a species of bark, lately introduced into Europe from Martinique, resembling the Cinchona Floribunda, and which, by an analysis of M. Cadet, was found to contain iron. (London Disp. Edit. 3. p. 247.)

† This plant is found in abundance in Piedmont, principally in the marshes, where of course it is most needed. Nature is very kind in this respect, for the particular situation which engenders endemic diseases, is generally congenial to the growth of the plants that operate as antidotes to them.

leave a mawkish taste in the mouth ; this circumstance denotes an inferior quality. There is an inferior kind imported into Europe from China, through the hands of private merchants ; this is distinguished by being darker coloured, rougher, denser, and by breaking shorter ; the taste is also harsher, more pungent, and ligneous, without the sweetness of Ceylon cinnamon. Dose of the cinnamon in powder is from grs. x to ℈j. Officinal Prep. *Aqua Cinnamomi*, L.E.D. *Spir. Cinnamomi*, L.E.D. *Tinct. Cinnamomi*, L.E.D. *Tinct. Cinnamom. co.* L. *Pulv. Cinnamom. comp.* L.E.

Cinnamomi Oleum. It is principally imported from Ceylon : it has a whitish yellow colour, a pungent burning taste, and the peculiar fine flavour of cinnamon in a very great degree.* It should sink in water, and be entirely soluble in alcohol. It is one of the most powerful stimulants which we possess. Dose, ♏ i to iij, on a lump of sugar.

COCCUS. L.E. (Coccus Cacti.) Coccinella. D.

Cochineal.

It is an insect imported from Mexico and New Spain, and has the appearance of a wrinkled berry or seed of a deep mulberry colour, with a white powder between the wrinkles. Uses. Its medicinal virtues are now entirely discredited, and it is only employed for the sake of its colouring matter, for the purpose of a dye ; it was known to the Phœnicians, and was the *tolu* of the Jews. Its watery solution is of a violet crimson, its alcoholic of a deep crimson, and its alkaline of a purple hue ; the colour of the watery infusion is brightened by acids, cream of tartar, and alum, and at the same time partly precipitated. Dr. John has given the name of *Cochenelin* to this colouring principle, which M. M. Pelletier and Caventou have lately obtained in a perfectly pure state, as a very brilliant purple red powder with a granular crystalline appearance : these chemists propose to call it *Carmine*, but as Mr. Children very justly observes, if we adopt the term, its termination should be altered, to avoid confounding the pure colouring matter with the pigment in common use. It may be called *Carmina*, a more harmonious name than Cochenelin, (Ann : de Chimie, vol. viii). Incompatible Substances. The colouring matter is decomposed by *sulphate of iron*, *sulphate of zinc*, and *acetate of lead*. Officinal Preparations. *Tinct : Cardamom : comp :* L. D. *Tinct : Cinchon : comp :* L.D. *Tinct : Gentian, comp :* E. *Tinct : Cantharid.* D. Adulterations. It is invariably adulterated with pieces of dough, formed in moulds, and coloured with cochineal. I understand that this fraud gives employment to a very considerable number of women and children in this metropolis. A cargo of the counterfeit article was some time since exported, in order to obtain the drawback ; by throwing a suspected sample into water, we shall dissolve the spurious ones, and ascertain the extent of the adulteration.

* Dr. Davy, in a letter to me upon this subject, says, " there are two kinds of oil of cinnamon procured in Ceylon, one of greater, the other of less specific gravity than water. In distillation they come over together. On what the difference depends I do not know, nor am I aware that the subject has yet been investigated."

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COLCHICI RADIX, ET SEMINA. L.E.D.

Colchicum Autumnale.

The *Bulb* of the Meadow Saffron.

QUALITIES. When recent it has scarcely any *odour*, but its *taste* is bitter, hot and acrid. CHEMICAL COMPOSITION. Its properties reside in a milky juice, and depend upon an alkaline principle ; it contains also gum, starch, inulin, and extractive matter, which, when in solution, undergoes a chemical change, analogous, I apprehend, to that which takes place in the infusion of Senna, and it would appear with similar inconvenience. Sir Everard Home ascertained that this deposit, in the vinous infusion, excites nausea and griping, but that it may be removed without destroying the efficacy of the medicine. The alkaline element, similar to that of the Hellebore (*Veratria*), lately found in it, appears to exist in combination with gallic acid. (*Annales de Chimie, tom.* XIV *Mai*, 1820.) This alkaline body would seem to display its greatest energies by its action upon mucous surfaces ; in small portions it excites violent sneezing, and when applied to the membrane of the stomach, immediate vomiting and purging are the result. See *Veratri radix*. The virtues of the bulb of Colchicum are very variable, according to the place of growth and season of the year. Since the third edition of this work, I have been favoured with some valuable observations upon this subject by Mr. Alexander Gordon : he says that it is in its greatest perfection from the beginning of June until the middle of August.* It is also necessary to extract the virtues of the bulb as soon as it is gathered, for although removed from the earth, the developing process of vegetation continues, and the substance undergoes a corresponding series of chemical changes, and finally becomes as inert as if it had remained in the ground. It is a problem of some importance to discover a method of destroying the vegetable life of the bulb, without at the same time injuring its virtues, for I apprehend that a want of attention to the above precaution frequently renders the vinous infusion inactive. The practitioner engaged in preparing this vegetable remedy will find some valuable directions in the third edition of Thomson's Dispensatory The flower of the *meadow saffron* is very poisonous to cattle. SOLUBILITY. Vinegar and wine† are the

* With this opinion Mr. A. T Thomson concides, for in the 3d edition of his Dispensatory, he says, " the thick old bulb begins to decay after the flower is perfectly expanded, and the new bulbs, of which there are always two formed on each old bulb, are perfected in the following June; from which time until the middle of August, they may be taken up for medicinal use."

† EAU MEDICINALE DE HUSSON. After various attempts to discover the active ingredient of this Parisian remedy, it is at length determined to be the colchicum autumnale which several ancient authors, under the name of hermodactyllus, have recommended in the cure of gout, as stated in the historical preface to this work. The following is the receipt for preparing this medicine. Take two ounces of the root of colchicum, cut it into slices, macerate it in four fluid-ounces of Spanish white wine, and filter. See Veratri Radix *(note)*.

Dr. WILSON'S TINCTURE FOR THE GOUT. This is merely an infusion of colchicum, as Dr. Williams of Ipswich has satisfactorily shewn. Since the discovery of colchicum being the active ingredient of the Eau medicinale, numerous empirical remedies have started up, containing the principles of the plant in different forms.

The expressed juice of the colchicum is used in Alsace to destroy vermin in the hair : it is very acrid, and excoriates the parts to which it is applied.

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best menstrua for extracting its active qualities ; by decoction its essential oil is dissipated. Medicinal Uses. It has been much extolled on the continent as a remedy in dropsy, especially in hydro-thorax, and in humoral asthma ; its operation however as a diuretic, is less certain than squill, although its *modus operandi* is analogous to it, as will be seen by referring to our new arrangement of Diuretic remedies. As a *specific* in gout its efficacy has been fully ascertained ; it allays pain, and cuts short the paroxysm. It has also a decided action upon the arterial system, which it would appear to control through the medium of the nerves. Incompatible Substances. In my opinion, acids, and all oxygenated substances render the vinous infusion drastic : on the contrary, alkalies render its principles more soluble, and its operation more mild, but not less efficacious. Magnesia may judiciously accompany its exhibition. Dose of the saturated vinous infusion, the only form in which its successful operation can be insured, f3ss to f3j, whenever the patient is in pain. See *Vinum Colchici*. Officinal Preparations. *Acetum Colchici*, L. *Oxymel Colchici*, D. *Vinum Colchici*, L. *Spiritus Colchici Ammoniatus*, L. *Syrupus Colchici Autumnalis*, E.

Colchici Semina. Dr. Williams of Ipswich has lately published an account of the efficacy of the *Seeds* of Colchicum which he says possess all the virtues of the root, without its pernicious* qualities ; the form in which he administers them, is in that of vinous infusion.† He also informs me that he has experienced considerable tonic effects from these seeds ; and that unlike other narcotic remedies they do not appear to produce, or favour congestion in the head. The seeds ought not to be bruised, as their virtues reside chiefly in the husk, or cortical part.

COLOCYNTHIDIS PULPA. L.E.D.

(Cucumis Colocynthis.)

Colocynth. Coloquintida. *Bitter Cucumber*.

Qualities. The medullary part of this fruit, which is alone made use of, is a light, white, spongy body. *Taste*, intensely bitter and nauseous. *Odour*, when dry, none. Chemical Composition. Mucilage, resin, a bitter principle, and some gallic acid. Solubility. Alcohol and water alike extract its virtues, but the active principle resides both in the portion soluble in water, and in that which is insoluble. Medicinal Uses. It is a very powerful drastic cathartic, and was employed by the ancients in dropsical and lethargic diseases. Many attempts have been made to mitigate its violence, which is best effected by triturating it with gummy farinaceous substances, or the oily seeds ; the watery decoction or infusion is much less severe, and has been recommended in worm cases, but it is rarely employed, except in combination with other purgatives. Thunberg informs us, (*see his Travels, vol.* ii *p.* 171) that this article is rendered so perfectly mild at the Cape of Good Hope by being pickled,

* Dr. Davy, however, informs me that he is acquainted with a fatal instance from an excessive dose of these seeds, viz. 3j, taken by a medical man for gout. On dissection, most of the viscera, more especially the brain and intestines, exhibited great sanguineous turgescence, and appearances of inflammation.

† This preparation, or the Seeds, may be procured for trial, from the house of Savory, Moore, and Davidson, of New Bond Street.

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that it is absolutely used as food both by the natives and colonists. Mixed with paste or other cements, it is used to keep away insects, which it does by its extreme bitterness. Dose, grs. iv. to x. Incompatible Substances. The infusion is disturbed by *sub-acetate*, and *acetate of lead; nitrate of silver; sulphate of iron*, and by the *fixed alkalies*. Officinal Preparations. *Extract Colocynth.* L. *Extract. Colocynth. comp.* L.D. *Pil. Aloes cum Colocynth.* D.E. (**B**) When the fruit is larger than a St. Michael's orange, and has black acute pointed seeds, it is not good.

CONFECTIONES. L. *Confections.*

Under this title the London College comprehends the *conserves* and *electuaries* of its former Pharmacopœias; but in strict propriety, and for practical convenience, the distinction between *conserves* and *electuaries* ought to have been maintained. Saccharine matter enters into each of these compositions, but in different objects. In conserves it is intended to preserve the virtues of recent vegetables; in electuaries, to impart convenience of form. See *Electuaria*.

Confectio Amygdalarum. L. This preparation affords an expeditious mode of preparing the almond emulsion; it should be used in the proportion of a drachm to each fluid-ounce of distilled water.

Confectio Aromatica. L. *Electuarium Aromaticum.* E.D. This is a very useful combination of various aromatics, to which the London and Dublin colleges have added a *carbonate of lime*; this circumstance makes the preparation a judicious constituent for the exhibition of active salts, liable to be invalidated by the presence of acid in the stomach, but, at the same time, rendering it incompatible with *acids, antimonial wine, &c.* These observations do not of course extend to the *aromatic electuary* of the Edinburgh pharmacopœia. See *Form:* 15, 42, 49, 125, 126. Dose ℈j to 3j.

Confectio Cassiæ. L. The ingredients of this confection are manna, tamarind pulp, and syrup of roses. It is gently laxative, and from its agreeable flavour is well calculated for children. The pharmaceutist, in preparing it, must take care that he does not substitute the syrup of the *red*, for that of the *damask* rose: a substitution, as stated under the head of Syrupi, not very unusual. The confection does not ferment or become acescent. Dose 3j to 3j.

Confectio Opii. L. *Electuarium Opiatum.* E. This is a combination of aromatics with opium, intended as a substitute for the *Mithridate* and *Theriaca* of the old pharmacopœias. It is highly useful in flatulent cholic and diarrhœa, and in all cases where a stimulant narcotic is indicated. One grain of opium is contained in grs. 36 of the London, and in grs. 43 of the Edinburgh preparation. Dose, grs. x to xxx

Confectio Piperis Nigri L. This preparation has been introduced into the Pharmacopœia, on the suggestion of several eminent practitioners, who have experienced its utility in certain cases of Piles. It is intended to resemble Ward's* Paste, whose composition has been given

* Ward was originally a footman, and, during his attendance upon his master on the Continent, obtained from the Monks those receipts which afterwards became his nostrums. It may be observed that this Confection appears to be well adapted for the cure of that species of Piles which probably attended the sedentary, and luxurious habits of the monks.

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in all the former editions of this work, and according to which Formula the committee have directed the present preparation. It is principally useful in those cases attended with considerable debility, in leucophlegmatic habits, and when piles arise from a deficient secretion in the rectum. On the other hand, the composition will as certainly prove injurious in those cases which are accompanied with erysipelatous inflammation and which require cooling laxatives, and a total abstinence from all stimulants, for their cure.

Confectio Rosæ Caninæ, olim *Conserva Cynosbati*. Its acidity depends upon uncombined citric acid, a circumstance which it is essential to remember when we direct its use in combination. The hip, or fruit of this plant, beat up with sugar, and mixed with wine, is a very acceptable treat in the north of Europe.

Confectio Rosæ Gallicæ. *Confection of the Red Rose.* Principally used as a vehicle for more active medicines. It is sometimes brightened by the addition of a small proportion of sulphuric acid ; this is a circumstance of great importance, where the confection is used for making the mercurial pill. See *Pilulæ Hydrarg.* It is a very common excipient for pills, see *Form :* 21, 59, 66, 73, 122, 160, 170.

Confectio Rutæ, *Confection of Rue.* The principal use of this preparation is as an ingredient in antispasmodic enemas.

Confectio Scammoneæ. L.D Scammony, *two parts*, powdered cloves and ginger, of each, *one part*, to which are added a small portion of oil of carraway, and of syrup of roses, q. s. It is a stimulating cathartic, and may be given in the dose of 3ss to 3j

Confectio Sennæ. L.E.D. olim *Electuarium Lenitivum.* The ingredients of this preparation are senna leaves, figs, tamarind pulp, cassia pulp, the pulp of prunes, coriander seeds, liquorice root, and refined sugar. It is gently laxative, and is an excellent vehicle for the exhibition of more powerful cathartics. (*Form.* 74, 93.) When properly made, it is an elegant preparation, not apt to ferment, nor to become acescent ; the directions of the pharmacopœia are however rarely followed. Jalap blackened with walnut liquor, is frequently substituted for the more expensive article cassia ; and the great bulk of it, sold in London, is little else than prunes, figs and jalap I understand that a considerable quantity is also manufactured in Staffordshire, into which unsound and spoilt apples enter as a principal ingredient. The preparation sold at Apothecaries' Hall is certainly unique in excellence. Dose 3ij or more

The above are the principal confections which are employed in modern practice, for happily the shops are at length disencumbered of those nauseous insignificant conserves, unknown to the ancients, but which were ushered into use by the Arabian physicians, and which continued for so many years to disgrace our dispensatories and to embarrass our practice. The French, in their new Codex Medicamentarius have limited their electuaries to a number not exceeding nine ; they have however made up in complexity for deficiency in number ; the *Electuarium de croco*, which is intended to answer the same ends as our confectio aromatica, has no less than twelve ingredients, although the force of the combination depends entirely upon carbonate of lime, cinnamon, and saffron ; and so it is with the rest.

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CONII FOLIA. L.E. (Conium Maculatum.)

Cicuta. D. *Hemlock.*

Qualities. The leaves, when properly dried, have a strong and narcotic odour, and a slightly bitter and nauseous taste: the fresh leaves contain not only the narcotic, but also the acrid principle: by exsiccation, the latter is nearly lost, but the former undergoes no change: the medicinal properties of the leaves are therefore improved by the operation of drying. Chemical Composition. The medicinal activity of the plant resides in a resinous element, which may be obtained in an insulated form, by evaporating an ethereal tincture made with the leaves, on the surface of water; it has a rich dark green colour, and contains the peculiar odour and taste of hemlock in perfection; a dose of half a grain will produce vertigo and head-ache. It may be distinguished by the name of *Conein*. The watery extract of this plant can therefore possess but little power, a fact which Orfila has fully established by experiment. No part of the plant is entirely destitute of efficacy, though the leaves possess the most activity. Solubility. Alcohol and æther extract its virtues. Incompatible Substances. Its energies are greatly diminished by vegetable acids; hence vinegar is its best antidote. Medicinal Uses. It is a powerful sedative, and has been deservedly commended for its powers in allaying morbid irritability: according to my own experience, it is, in well directed doses, by far the most efficacious of all palliatives, for quieting pulmonary irritation. It has been extolled also in the cure of schirrus and cancer, and it will without doubt prove in such cases a valuable resource, from its sedative influence. Externally, it will afford considerable relief in irritable ulcers, when applied in the form of fomentation or cataplasm, see *Form.* 17, 18. Forms of Exhibition. The dried leaves, powdered, and made into pills, (*Form.* 2, 17, 18.) The powder ought to have a fine lively green colour. Dose, gr. iij, gradually increased, until some effect is produced. Several different plants have been mistaken for, and employed in the place of hemlock, such as *Cicuta Virosa*, (the water hemlock,) *Æthusa Cynapium*, *Caucalis anthriscus*, and several species of *Chærophyllum*. Officinal Preparations. *Extract. Conii.* L.E.D.

CONTRAJERVÆ RADIX. L. E.

(Dorstenia Contrajerva, Radix.) *Contrajerva Root.*

The qualities of this plant are alike extracted by spirit and water; the watery decoction, however, is very mucilaginous; as it contains no astringent matter, the salts of iron do not affect it. Dose of the powdered root, gr. v to ʒss, but it is rarely used. It is considered cordial, and diaphoretic. Has it any virtues? The Spanish Indians have long used it as an antidote to poisons; the Spanish word *contrahierba* signifies antidote. Officinal Prep. *Pulv. Contrajerv. co.* L.

COPAIBA. L.E. (Copaifera Officinalis.)

Balsamum Copaibæ. D.

Copaiba, *Copaiva*, or *Capivi Balsam.*

Qualities. *Consistence*, that of oil, or a little thicker. *Colour*, pale golden yellow. *Odour*, fragrant and peculiar. *Taste*, aromatic, bitter,

and sharp. *Sp. Grav.* 0·950. Chemical Composition. It is improperly denominated a balsam, for it contains no benzoic acid, but consists of resin and essential oil. Solubility. It is insoluble in water, but soluble in ten parts of alcohol, and in expressed and essential oils; with the pure alkalies it forms white saponaceous compounds which are soluble in water, forming opaque emulsions. Medicinal Uses. Stimulant, diuretic, and laxative; it seems to act more powerfully on the urinary passages than any of the other resinous fluids; hence its use in gleets and in fluor albus. Its use gives the urine an intensely bitter taste, but not a violet smell, as the turpentines do. By referring to the Synoptical arrangement of Diuretic remedies, it will appear that *Copaiba* is referred to class I, 1. *b.* for there is reason to believe that its active principle undergoes absorption, and by coming in contact with the urinary organs, produces the medicinal effects for which it is so highly valued. Forms of Exhibition. Diffused in soft or distilled water by yolk of egg, or by twice its weight of mucilage, f℥ss to every f℥j of water, forms an elegant mixture, or it may be given dropped on sugar, and in this latter form it is certainly more disposed to act on the urinary organs, than when exhibited in that of an emulsion. (*Form.* 156.) Dr. Chapman has proposed a new mode of exhibiting this medicine; he advises us to pour the Copaiba on half a wine glassful of water, and afterwards to add slowly a few drops of a common bitter tincture, by which means the Copaiba will be collected in a small globule that may be easily swallowed, while its taste, so nauseous to most patients, will be entirely masked by the bitterness of the vehicle. In whatever form, however, this medicine is administered, it is extremely apt to derange the digestive organs, if long continued, and the unpleasant effects thus occasioned remain, in some cases, for a very long period.* Adulterations. A considerable quantity sold in London is entirely *factitious*. A curious trial took place some time since, between the owner of certain premises that were burnt down, and the Governors of the Sun Fire Office, in consequence of the latter refusing to indemnify the proprietor for his loss, because the fire had been occasioned by his *making* Balsam of Copaiba. This article is also adulterated with mastiche and oil; M. Bucholz asserts that if it does not dissolve in a mixture of four parts of pure alcohol, and one of rectified æther, we may infer its adulteration; *rape oil* is also frequently mixed with it, in which case if dropped into water, the drops will not retain their spherical form, as they invariably will, if pure.

CORNUA. L.E.D. Cervus Elaphus.

Stag's, or *Hart's Horn.*

The horns of the stag differ only from bone, in containing less of the phosphate of lime, and a larger proportion of gelatine; by boiling, they yield a clear, transparent, and flavourless jelly, in quantity about one-fourth of the weight of the shavings employed; to obtain which we should

* Dr. Chapman recommends the liberal use of the Copaiva in the very commencement of Gonorrhœa, disregarding ardor ruinæ, chordee, and every other symptom of inflammation that may be present. Than this, we do not know a medical precept more erroneous in theory, or more mischievous in practice. We are convinced that a great majority of gleets may be traced to the premature use of balsam Copaiva, and other stimulating articles in the inflammatory stage of the disease.—*Ed.*

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boil ℥iv in f℥vij of water, until reduced to f℥vi. ADULTERATIONS. This article is often sophisticated with the shavings of mutton bone ; the fraud is detected by their greater degree of brittleness. They were formerly so much used for the preparation of ammonia, that the alkali was commonly called *Salt*, or *Spirit, of Hartshorn.*

CORNUS FLORIDA.

(Common Dogwood.)

Cortex.

The dogwood is a common forest tree, abundant in almost every part of the United States. It flowers in the months of May and June. The bark, which is the part used in medicine, yields by analysis tannin, gallic acid, resin, gum resin, bitter extractive, and mucilage. The dogwood is a powerful tonic, and by many practitioners has been used as a substitute for the Peruvian bark. The diseases in which it has been found serviceable are intermitting and remitting fevers, dyspepsia, general debility, &c. It may be given in substance, in doses of ℥j to ℥ij—in extract, from 5 to 15 grs. or in infusion and decoction. ED.

CRETA PRÆPARATA. L.D.

Carbonas Calcis Preparatus. E. *Prepared Chalk.*

This is common chalk, the coarser particles of which have been removed by the mechanical operation of washing. It consists of carbonate of lime, with various earthy impurities. The Dublin Pharmacopœia directs a chemical process for obtaining a perfectly pure carbonate (*Creta Præcipitata*), but it appears to be an unnecessary refinement. MED. USES. It is antacid and absorbent, on which account it is useful in acidities of the primæ viæ, and in diarrhœas, after removing all irritating matters by previous evacuation. (*Form.* 52.) From its absorbent properties, it is a good external application to ulcers discharging a thin ichorous matter. DOSE, grs. x to ʒij, or more It is almost unnecessary to state that it must not be combined with acidulous salts ; I have however seen a formula for a powder, intended as an astringent, in which chalk and alum entered as ingredients. OFFICINAL PREP. *Hydrargyrum cum creta.* L. *Pulvis cretæ comp* L.E. *Pulv. Opiatus.* E. (**F**) *Mist. Cretæ.* L.E. *Trochisci Carbonatis Calcis.* E. *Confectio Aromatica.* L.E. (**G**)

CROCI STIGMATA. L.E.

(Crocus Sativus.)

Crocus. D. *Saffron.*

QUALITIES. *Form*, cakes, consisting of the stigmata of the flower, closely pressed together. *Odour*, sweet, penetrating and diffusive. *Taste*, warm and bitterish. *Colour*, a rich and deep orange red. CHEMICAL COMPOSITION. One hundred parts consist of sixty-two of extractive, the remaining parts are chiefly ligneous fibre, with small portions of resin and essential oil. Bouillon Lagrange and Vogel have examined this extractive matter very accurately, and from the circumstance of its watery infusion assuming different colours when treated with different agents, they

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have named it *polychroite*. Thus chlorine and light destroy its colour, sulphuric acid changes it to indigo which gradually becomes lilac, and nitric acid gives it a green hue. SOLUBILITY. It yields its colour and active ingredients to water, alcohol, proof spirit, wine, vinegar, and in a less degree to æther; the watery infusion, and the vinous tincture soon grow sour, and lose their properties, and the solution in vinegar becomes quickly colourless. MED. USES. It is now never employed but for the sake of its colour or aromatic flavour, as an adjunct to other substances. It is much used in foreign cookery to colour rice, &c. OFFICINAL PREP. *Syrup. Croci.* L *Tinct. Croci sativi.* E. *Confect. Aromat* L.D. (☉). *Pil. Aloes cum Myrrha.* L. (☿). *Tinct. Aloes comp.* L.E.D (☉) *Tinct. Cinchonæ comp.* L.D. *Tinct. Rhei.* L. (☉). *Tinct. Rhei comp.* L. (☉). ADULTERATIONS. It is not unfrequently sophisticated with the fibres of smoked beef, or the petals of flowers, especially of the marigold, (*Calendula Officinalis,*) and of the safflower, (*Carthamus Tinctorius*) The former of these fraudulent ingredients is indicated by the unpleasant odour which arises when the saffron is thrown upon live coals; the latter, by infusing the specimen in hot water, when the expanded stigmata may be easily distinguished from the other petals of substituted flowers; a deficency of colour and odour in the infusion indicates that a tincture or infusion has already been drawn from the saffron, and that it has been subsequently pressed again into a cake. In the market is to be found saffron from Sicily, France, and Spain, besides the English; that which is imported from Spain, is generally spoiled with oil, in which it is dipt with the intention of preserving it. The cake saffron sold in some of the less respectable shops, consists of one part of saffron and nine of marigold, made into a cake with oil, and then pressed; it is sold in considerable quantities for the use of birds, when in moult.

CUBEBA.* L. (Piper Cubeba.) *Baccæ.*

Cubebs, or *Java Pepper.*

This Indian spice, a native of Java, formerly held a place in our materia medica, and entered into the composition of *mithridate* and *theriaca*, but being inferior in pungency and aromatic warmth to pepper, it fell into disuse. Lately, however, it has been ushered into surgical practice for the cure of gonorrhœa, with all the extravagance of praise which usually attends the revival of an old, or the introduction of a new medicine.† It has been pronounced to be a specific in this complaint, if taken in the early stages, in the dose of a dessert spoonful three times a day, in a sufficient quantity of water.‡ The Indians have been long acquainted with the influence which cubebs exerts upon these organs; thus Garcias, "*Apud Indos cubebarum in vino maceratarum est usus ad exitandam venerem.*" CHEMICAL COMPOSITION. M. Vauquelin has lately made a very accurate analysis of this pepper, from which its

* Cūbĕba—Indis Cubab: Avicennæ Kebâba. It makes short the penultima, because Actuarius and other modern Greeks call it κυβετερ, κομπεπερ, and κομβεβα.

† See "Practical Observations on the use of Cubebs, in the cure of Gonorrhœa," by H. JEFFREYS, Esq.

‡ It is very questionable whether Cubebs is entitled to any other preference over the copaiva, than that it is not so liable to derange the digestive organs. As a specific for gonorrhœa it has received praise altogether too unqualified. The most convenient form in which it can be given is that of Tincture. *Ed.*

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composition may be stated as follows: 1. A volatile oil, which is nearly solid.—2. A resin, *resembling Balsam of Copaiba.*—3. Another and coloured resin.—4. A coloured gummy matter.—5. An extractive principle, similar to that which is found in leguminous plants.—6. Some saline substances. He considers the resin *resembling the Copaiba*, to be the peculiar matter in which that property resides, which imparts to it the power of curing gonorrhœa. As the qualities of this spice do not reside in volatile elements, an extract made with rectified spirit will be found to possess the whole of its virtues. The French, in their new *Codex Medicamentarius*, have introduced the cubebs into their list of materia medica. There is a precaution, with respect to the exhibition of Cubebs, which it is important for the practitioner to remember—to keep the bowels thoroughly open; for where hardened fæces are allowed to accumulate, the spice insinuates itself into the mass, and produces excoriations in the rectum. ADULTERATIONS. The "Turkey Yellow Berries," i. e. the dried fruit of the *Rhamnus Catharticus*, are often substituted for the Cubebs, and the similarity between them is so great, that the casual observer may be easily deceived.

CUMINI * SEMINA. L. Cumin Seeds.

QUALITIES. *Odour*, strong, heavy, and peculiar; *Taste*, bitterish and warm. CHEMICAL COMPOSITION. Gum, resin, and a yellow pungent oil, upon which the peculiar properties of the seeds depend. SOLUBILITY. Water does not extract more that their odour, but alcohol dissolves all the principles in which their virtues reside, and leaves upon evaporation a powerful extract. MEDICINAL USES. Carminative and stomachic; they are however but rarely used, except as an ingredient in plasters.

CUPRI SULPHAS. L.E.D. Sulphate of Copper. vulgo *Blue Vitriol. Blue Copperas.*

QUALITIES. *Form*, crystals, which are rhomboidal prisms. *Colour*, a deep rich blue. *Taste*, harsh, acrid, and styptic; they slightly effloresce; when treated with Sulphuric acid, no effervescence occurs, a circumstance which at once distinguishes this salt from *Œrugo*. CHEMICAL COMPOSITION. According to the latest experiments, it is an *oxy-sulphate*, consisting of one proportional of peroxide with two proportionals of sulphuric acid, and when crystallized it contains ten proportionals of water; its beautiful colour depends on this last ingredient. SOLUBILITY. It is soluble in four parts of water at 60 and in less than two at 212°; the solution shews an excess of acid by reddening litmus. In alcohol it is insoluble. INCOMPATIBLE SUBSTANCES. *Alkalies and their carbonates:*

* "Cŭminum makes long the penultima, thus—
"Rugosum Piper et pallentis grana Cumini:"
Pers: Sat: v.

This line of the satirist also records an opinion which is worthy notice, that Cumin will make those who drink it, or wash themselves with it, or as some say, who smoke it, of a pale visage. This belief is mentioned by Dioscorides; and Pliny informs us that the disciples of Porcius Latro, a famous master of the art of speaking, were reported to have used Cumin, in order to imitate that paleness which their master had contracted by his studies; thus too Horace,

——————— Proh si
"Pallerem casu, biberent exsangue Cuminum."
Epist. 19. Lib. 1, lin: 18.

sub-borate of soda; acetate of ammonia; tartrate of potass; muriate of lime; nitrate of silver; subacetate, and acetate of lead; oxy-muriate of mercury; all astringent vegetable infusions and tinctures. Iron immersed in the solution, precipitates copper in a metallic form; hence the exhibition of the filings of iron has been proposed as an antidote.* MEDICINAL USES. It is emetic from grs. ij to xv tonic gr. ¼; it is, however, but rarely used internally except as an emetic; externally it is employed as an escharotic; and, in solution, as a stimulant to foul obstinate ulcers.† In the proportion of half a drachm to eight ounces of rose water,

* It may be here observed that Copper, in its metallic form, exerts no action on the system. A most striking instance of this fact occurred during my hospital practice, in the case of a young woman who swallowed six copper penny pieces with a view of destroying herself; she was attended by Dr. Maton and myself in the Westminster Hospital for two years, for a disease which we considered visceral, but which was evidently the effect of mechanical obstruction, occasioned by the coin. After a lapse of five years she voided them, and then confessed the cause of her protracted disease, during the whole course of which no symptom arose which could in any way be attributed to the poisonous influence of copper. Dr. Baillie, in his morbid anatomy, relates a case, in which five halfpence had been lodged in a pouch in the stomach, for a considerable time, without occasioning any irritation; and Theodore Gardelle, after his conviction for the murder of Mrs. King, in Leicester Square, swallowed a number of halfpence, for the purpose of destroying himself, but without any ill effects. Mr. A. T. Thomson relates also two cases of halfpence being swallowed by children, in one of which the copper coin remained six months in the intestines, and in the other two months. The filings of copper were formerly a favourite remedy in rheumatism, a drachm of which has been taken with impunity for a dose. It appears therefore that metallic copper does not undergo any change in the digestive organ, by which it is converted into a poison, notwithstanding the presence of substances, which, out of the body, would at once render it destructive, as we have too many cases to show, from the careless use of copper utensils in cookery. It is, however, a very important fact, that copper cannot be dissolved while tin is co-existent in the mixture, hence the great use of tinning copper utensils: and farther, it is asserted that untinned coppers are less liable to be injurious when pewter spoons are used for stirring, than when silver ones are employed for that purpose: the explanation of this fact is to be sought for in the well known principle of Electro-Chemistry, and which has lately been applied with so much ingenuity by the illustrious President of the Royal Society, for the protection of copper on the bottom of ships, by the juxta-position of small discs of Tin or iron.‡ For the same reason, M. Proust has shewn that the tinning of kitchen utensils, which consists of equal parts of tin and lead, cannot be dangerous from the presence of the latter metal, since it is sufficient that the lead should be combined with tin, in order to prevent it from being dissolved in any vegetable acid. M. Guersent therefore is wrong when, speaking of the tinning of copper vessels, he says, "it is a light veil, which conceals the danger, instead of being a true preservative, and that it only inspires a security often fatal." Some recent experiments, however, of Dr. Bostock, have shewn, that, in consequence of the volatility of acetic acid, copper is not protected by the juxta-position of discs of tin; since the acid under such circumstances ceases to form a part of the galvanic circle. The poisonous effects of the *salts* of Copper have been strikingly illustrated during the prosecution of Sir H. Davy's experiments above alluded to, for it is found that when the copper sheathing of ships is not protected by the contact of another metal, they are uniformly free from marine animals, but that where the solution of the copper is prevented by galvanic action, the bottoms soon become covered with every species of sea insect.

† BATES'S AQUA CAMPHORATA.—Sulphate of Copper is the base of this preparation, which was strongly recommended by Mr. Ware The following was his recipe; ℞. Cupri Sulph. Boli Gallic, a. a. gr. xv. Camphoræ gr. iv. solve. in aq. fervent. ℥ iv, dilueque cum aquæ frigidæ oiv ut fiat Collyrium.

‡ For a further explanation of this curious fact the student may consult my work on Medical Chemistry.

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it forms a lotion which has been found very efficacious in phagedenic ulcers of the face, and in allaying itching when attended with erysipelatous inflammation about the anus and labia pudendi. It is also a styptic when applied in solution. Officinal Preparation. *Solut. Cupri Sulphat. com.* E. *Cuprum Ammoniatum* L.E.D. (I) (*Form.* 68.)

CUPRUM AMMONIATUM. L.D.

Ammoniaretum Cupri. E. *Ammoniated Copper.*

Qualities. *Form*, a violet coloured mass, which on exposure to air becomes green, and is probably converted into a carbonate. *Taste*, styptic and metalline. *Odour*, ammoniacal. Chemical Composition. It is a triple salt, a sub-sulphate of oxide of copper, and ammonia. The Edinburgh college is certainly incorrect in calling it an *ammoniuret*. Solubility, f℥j of water dissolves ℈j of this salt. Incompatible Substances; *Acids*; the *fixed Alkalies*; *Lime water*. Medicinal Uses. It is tonic and antispasmodic. Dr. Cullen first proposed its exhibition in epilepsy, and it has frequently been employed with evident advantage in that disease. It has been also given in chorea, after a course of purgatives. Brera considers it quite equal to Arsenic, in the cure of obstinate Intermittents; other physicians have commended it in cases of Hysteria. Forms of Exhibition. It may be formed into pills with bread; to which an addition of sugar has been recommended, to prevent them from becoming hard; but we must remember that recent experiments have shewn that sugar has the power of counteracting the operation of copper. Dose, gr. ¼ cautiously encreased to grs. v. twice a day. Officinal Preparations. *Liquor Cupri Ammoniati.* L.

CUSPARIÆ CORTEX. L. (Cusparia febrifuga.)

Bonplandiæ Trifoliatæ Cortex. E.

Angustura, Cortex. D.

Cusparia, or Angustura Bark.

Qualities. *Form*, pieces covered with a whitish wrinkled thin epidermis; the inner surface is smooth, of a brownish yellow colour. *Odour*, not strong, but peculiar. *Taste*, bitter, slightly aromatic, and permanent. Chemical Composition. Cinchonia, resin, extractive, carbonate of ammonia, and essential oil. Solubility. Its active matter is taken up by cold and hot water, and is not injured by long decoction, but the addition of alcohol precipitates part of the extractive. Alcohol dissolves its bitter and aromatic parts, but proof spirit appears to be its most complete menstruum. Incompatible Substances. *Sulphate of Iron*; *Sulphate of Copper*; *Oxy-muriate of Mercury*; *Nitrate of Silver*; *Tartarized Antimony*; *Subacetate, and Acetate of Lead*; *Potass*; and perhaps the *Mineral Acids*, for they produce precipitates, as also the *infusions of Galls*, and *Yellow Cinchona*. Medicinal Uses. Stimulant and tonic; it does not, like cinchona, oppress the stomach, but imparts a degree of warmth, expels flatus, and increases the appetite for food: with respect to its powers in the cure of intermittents, many doubts are entertained. Forms of Exhibition. In substance, infusion, decoction, tincture, or extract; its nauseous taste is the best disguised by cinnamon. Dose of

the powder, grs. v to ℈j ; of the infusion or decoction, f℥j ; in large doses all the forms are liable to produce nausea. *Form.* 58. Officinal Prep. *Infusum Cuspariæ.* L. *Tinct. Bonplandiæ Trifoliatæ.* E. *Tinct. Angusturæ.* D. Adulterations. There is found in the market a particular bark, which has been called Fine Angustura, but which is of a different species, and is a very energetic poison. This bark is characterized by having its epidermis covered with a matter which has the appearance of rust of iron, and which, moreover, possesses certain chemical properties of this metal ; for if water acidulated with muriatic acid be agitated in contact with its powder, it assumes a beautiful green colour, and affords with an alkaline prussiate, (*Hydro-cyanate of Potass*) a Prussian blue precipitate. Late researches have detected the presence of an alkaline element in this bark, on which the name of *Brucia* has been bestowed. When this alkali is dissolved in boiling alcohol, and crystallized by spontaneous evaporation, it yields colourless and transparent crystals in the form of oblique quadrangular prisms.

DATURÆ STRAMONII HERBA. E. D.

The Herbaceous part of the Thorn Apple.

Qualities. *Odour*, fœtid and narcotic, occasioning head-ache and stupor ; *Taste*, bitter and somewhat nauseous. Chemical Composition. Gum, resin, and carbonate of ammonia ; the recent experiments of M. Brandes have also developed an alkaline element of activity, to which the name of *Daturia* has been assigned ; it appears to exist in native combination with malic acid ; when in an uncombined state it is nearly insoluble in water, and in cold alcohol, but boiling alcohol dissolves it. It has been obtained with difficulty in the form of quadrangular prisms. Solubility. The medicinal powers of the herb are alike extracted by aqueous and spirituous menstrua. Incompatible Substances. The infusion is precipitated by the salts of lead, silver, mercury, and iron ; the mineral acids would also appear to produce some essential changes which may diminish its efficacy. Acetic acid increases its powers, although it relieves the effects of an over-dose, if administered after the stomach has been emptied. This apparent anomaly is easily explained when we consider, that in the first case its operation is purely *chemical*, increasing the solubility of the active principle of the plant, while in the latter case it operates as a *vital* agent, restoring to the nervous system that energy which has been suspended by the narcotic influence of the vegetable. Medicinal Uses. It is narcotic, and has been regarded by many authors as eminently antispasmodic ; Dr. Barton, an American physician, made very extensive trials of its efficacy in Mania, the result of which is highly favourable to its use. Dr. Marcet first noticed its salutary effects in chronic diseases attended with violent pain ; he found it to lessen powerfully, and quickly, sensibility and pain, and to produce a sort of nervous shock, attended with a momentary affection of the head and eyes, with a degree of nausea, and with phænomena resembling those which are produced by intoxication. It seems to be more particularly beneficial in chronic rheumatism, sciatica, &c. Its root, smoked in the manner of tobacco, has been much extolled as a remedy in the paroxysms of spasmodic asthma ; this practice however, is not unattended with danger ;* the

* It is said to have been introduced into this country from Ceylon. See the observations made upon the subject of the narcotics used by the Indians, in page 9.