it is nearly inodorous, but on being swallowed, excites a slight sensation of acrimony in the throat. It has all the chemical aptitudes of the other expressed oils, except those which relate to its solubility in alcoholic and ethereal menstrua. MED USES. It is mildlly cathartic, and is particularly eligible in cases where stimulating purgatives would prove hurtful, but in obstinate constipation, where copious evacuations are required, this oil cannot be trusted, it will insinuate itself through the intestinal canal, bringing with it a small portion of the more fluid contents, but leaving behind it the collection of indurated fæces. FORMS OF EXHIBITION. The most efficacious mode of administering it is by floating it upon tincture of senna, or peppermint water, or some other similar vehicle ; it is also sometimes given with success in coffee or mutton broth, or suspended in water by the intervention of mucilage, yelk of egg (*Form.* 75,) or by honey, which at the same time contributes to its laxative operation : alkalies, although they form an emulsion with it, convert it into a saponaceous compound, and impair its cathartic force. DOSE f℥ss to f℥iss. ADULTERATIONS. It is usually adulterated with olive oil or poppy oil, and when to a considerable extent, scammony is added to quicken its operation. There is however a peculiarity in castor oil which serves to distinguish it from every other fixed oil, viz. its great solubility in rectified spirit; for instance, f℥iv of alcohol of ·820 will mix uniformly with any proportion of castor oil, whereas it will not dissolve more than f℥j of *Linseed Oil ;* and a still less proportion of the expressed oils of almonds and of olives ; when the spirit is diluted, its action on all these oils is equally diminished, so that the common *spirit of wine* has but little power even over castor oil ; but here chemistry again interposes its aid, for by the addition of camphor in the proportion of one part to eight of spirit, spirit of ·840 is enabled to dissolve castor oil, whilst it has no influence upon the other fixed oils ; castor oil is also soluble in any proportion, in sulphuric æther of the specific gravity ·7563, while four fluid-ounces of the same liquid will only dissolve a fluid-ounce and a quarter of the expressed oil of *Almonds ;* a fluid ounce and a half of that of *Olives ;* and two fluid-ounces and a half of *Linseed* oil. Vogel introduced a composition, as a substitute for this oil, which some practitioners have greatly extolled ; it consisted of nine grains of the extract of Jalap, and three grains of Venetian soap, triturated in a mortar with an ounce and a half of Olive oil.

SABINÆ FOLIA. L. (Juniperus Sabina)

Savine Leaves.

QUALITIES. *Odour*, heavy and disagreeable ; *Taste*, bitter, hot, and acrimonious. CHEM. COMP. Essential oil, which may be obtained by distillation with water ; fixed oil, bitter extractive, and resin. SOLUBILITY. Both water and alcohol extract its active principles. MED. USES. *It* possesses highly stimulating properties, and has been used as a diaphoretic, anthelmintic and emmenagogue. Rave, a German writer of great respectability, speaks of its use in chronic rheumatism in the highest terms ; Alibert commends its anthelmintic powers, but its reputation has principally rested upon its generally acknowledged influence over the uterus. The testimony of Dr. Home of Edinburgh is strong in favour of its emmenagogue powers, but the adverse opinon of Dr. Cullen brought it

into disrepute. It occasions a manifest flow of blood to the uterus, but this is probably sympathetically produced by its direct action on the large intestines ; for if given in large doses it occasions great heat in the primæ viæ, hæmorrhage, and inflammation of the bowels. It is therefore inadmissible in all cases which are attended with fever, or much vascular action. When amenorrhœa depends upon a relaxed state of the general system, or on an inactive and torpid condition of the uterine system, it may often be employed with advantage. Wedekind, a German writer, extols it in the treatment of that atonic or relaxed state of the uterus, attended with an unnatural secretion and soft swelling of the uterus, which is sometimes met with in women who have suffered much from repeated child-bearing, and which is so generally attended with a train of hysteric disturbances. Dr. Eberle says that he has occasionally employed it in cases of Amenorrhœa, in females of a relaxed habit of body ; and although sometimes without success, he has had sufficient evidence of its powers to establish its claim to attention. In several cases, similar to those above stated, I have employed the Savine with much success, but I have found it very liable to disturb the stomach, and to produce head-ache. Forms of Exhibition. Some practitioners have recommended that of powder, but it is almost impossible to pulverize it without previously drying it at a temperature which will dissipate the essential oil, upon which its activity depends. The tincture affords a more convenient form, and a compound tincture formerly occupied a place in the Pharmacopœia, but has been abandoned. A decoction of an ounce of the leaves to a pint of water, with the addition of syrup, has been also recommended ; an infusion, however, would be preferable. Dose, of the powdered leaves from grs. v to x ; of the tincture f℥j ; of the decoction f℥ss to f℥j. As an external local stimulant, or escharotic, the dried leaves in powder are applied to warts, flabby ulcers, and carious bones ; and the expressed juice diluted, or an infusion of the leaves, as a lotion to gangrenous sores, scabies, and *tinea capitis* ; or mixed with lard and wax as an issue ointment. The German writers speak very highly of its effects as a poultice to old and obstinate sores. Officinal Prep *Oleum Volatile Juniperi Sabinæ*. E.D (the dose of which is from one to three minims.) *Extractum Sabinæ*. D. (a very inert preparation.) *Ceratum Sabinæ*. L.

The experiments of Orfila have shewn that Savine exerts a local action, but that its effects depend principally on its absorption ; through which medium it acts on the nervous system, the rectum, and the stomach. It still enjoys amongst the vulgar the reputation of being capable of producing abortion.

SACCHARUM. L.E.D. *Sugar.**

Sugar, as a pharmaceutical agent, is employed for accelerating the pulverization of various resinous substances, and when exhibited with the most acrid of them, it prevents their adhesion to the coats of the intestines, by which they might irritate and inflame them ; it is also extensively used on account of its power in preserving animal† and vegetable sub-

* The Sugar cane is called in Arabic *Lukseb*. The produce of it, *Assakur*, hence *Sugar*. Some authors have attempted to derive the word from *Succus* a juice ; this is obviously an error.

† For this purpose it may be added to certain ointments to prevent their becoming

stances. (See *Conservæ*.) Milk boiled with fine sugar will keep for a great length of time, and might be very conveniently employed during a long voyage. Dr. Darwin also observes that fresh meat cut into thin slices, either raw or boiled, might be preserved in coarse sugar or treacle, and would furnish a very salutary and nourishing diet to our sailors. Sugar exerts also some chemical affinities which are highly interesting to the pharmaceutic chemist. Vogel has published a paper to shew, that when sugar is boiled with various metallic oxides, and with different metalline salts, it has the property of decomposing them; sometimes reducing the oxide to the state of a metal, and at others depriving the oxide only of one of the proportionals of oxygen; thus *sulphate of copper* and *nitrate of mercury* are precipitated in a metallic form, whilst *per-oxide of mercury* and *acetate of copper* are converted into protoxides; *corrosive* sublimate is changed into *calomel*, but *calomel* is not susceptible of any further decomposition. All those metallic salts which have the power of decomposing water are not affected by sugar, as those of *iron*, *zinc*, *tin*, and *manganese*. It appears, moreover, that sugar has the property of rendering some of the Earths soluble in water. Sugar in water, at the temperature of 50°, is capable of dissolving one half of its weight of lime; the solution thus produced is of a beautiful white-wine colour, and has the smell of fresh-slacked quick lime. It is precipitated from the solution by the *carbonic*, *citric*, *tartaric*, *sulphuric*, and *oxalic* acids; and it is decomposed, by double affinity, by *caustic* and *carbonated potass* and *soda*, and by the *citrate*, *tartrate*, and *oxalate* of potass, &c. The union of sugar with the alkalies has been long known and in the decomposition of the solution of lime in sugar by the salts above mentioned, the acid unites with the lime, and the alkaline base forms a compound with the sugar.

SAPO. L.E.D. *Soap.*

I. Durus. (*Hispanicus.*) *Hard*, or *Spanish Soap.*

Chemical Composition. Oil 10·94, soda 9·56, water 30·50; the water is partially dissipated by being kept, and the soap therefore becomes lighter. Muriate of Soda is also an essential ingredient* of *hard* soap. Solubility. Water dissolves about one third of its weight of genuine soap, and forms a milky solution; alcohol also dissolves it, and affords a solution nearly transparent, although somewhat gelatinous.† Incompatible Substances. 1. All acids and acidulous salts, which combine with the alkali, and develope the oil. 2. Earthy salts, e. g. *Alum*; *muriate* and *sulphate of lime*; *sulphate of magnesia*. 3. Metallic salts. *Nitrate of silver*; *ammoniated copper*; *tincture of muriated iron*; *ammoniated iron*; *acetate*, *sub-muriate*, and *oxy-muriate of mercury*; *sub-acetate of lead*;‡ *tartarized*

rancid. For the reasons, however, above stated, it must not be boiled with the ingredients, but added after they are cold.

* In those districts where Soap is generally made from wood ashes, or from Russian or American potass, unless Salt were added in large quantities, it would not have any consistence. As Kelp and common Barilla contain a sufficient quantity of it, no further addition is required.

† Transparent Soap is made by carefully evaporating the alcoholic solution. The solution itself is sold under the name of Shaving Liquid, or "Essence Royale pour faire la Barbe."

‡ When a solution of soap and sub-acetate of lead are added together, the potass of the former combines with the acetic acid of the latter, and the fat and oxyd of lead are disengaged; the one rising to the surface, while the other is precipitated; and yet

iron ; tartarized antimony ; sulphates of zinc, copper and iron. 4. All astringent vegetables. 5. Hard water. MEDICINAL USES. In large doses it is purgative ; in smaller ones, it is decomposed *in transitu*, and its alkali is carried to the kidneys ; in this way it may act as a lithonthriptic ; or it may produce its effects by correcting any acidity which may prevail in the *primæ viæ*, for the weakest acid is capable of decomposing soap, and of uniting with its alkaline base ; a solution of soap in lime water was long regarded as one of the strongest solvents of urinary calculi that could be administered with safety, but the result of such a mixture is an insoluble soap of lime, and a solution of soda ; in habitual constipation, and in biliary obstructions it is frequently prescribed in conjunction with rhubarb, or some bitter ; in which cases it can only act as a laxative, or as a chemical agent, in increasing the solubility of the substance with which it is united. It has been also given in solution as an atidote to metallic poisons, and it is often successfully injected as a clyster, in unrelenting and habitual costiveness ; as an external application, it is used in the form of liniment, (see *Linimenta*.) Its pharmaceutical value, in forming pill-masses, has already been considered (page 200) and the following *formulæ* afford examples of such an application, viz. 14, 80, 105, 118, 165. OFFICINAL PREPARATIONS. *Pil. Saponis cum Opio.* L. (**L**). *Pil. Scillæ comp.* L. (**M**). *Pil. Aloet.* E. (**L**) *Pil. Aloes et Assafœtidæ.* E. (**L**). *Pil. Aloes cum Zinzib.* D. (**L**). *Pil. Colocynth. comp.* D. (**L**). *Emplast. Saponis.* L. E. *Ceratum Saponis.* L. *Liniment. Saponis. comp.* L. *Liniment. Saponis cum Opio.* L. ADULTERATIONS. Pulverized Lime, Gypsum, or Pipe clay, are sometimes added ; but the fraud is easily detected by solution in alcohol, when the earthy matters fall down.

II. SAPO MOLLIS. *Soft Soap.*

This differs from *hard soap* chiefly in its consistence, which is never greater than that of hog's lard : it is transparent, yellowish, with small seed-like lumps of tallow diffused through it : the alkali employed for its formation is a ley of potass, instead of that of soda.

SARSAPARILLA. L.E.D.

(Smilax Sarsaparilla. *Radix.*)

Sarsaparilla.

QUAILTIES. *Form*, long and slender twigs, covered with a wrinkled brown bark ; *Odour*, none ; *Taste*, mucilaginous and slightly bitter. CHEMICAL COMP. Its virtues appear to reside in fecula ; it also contains a very large proportion of vegetable albumen. SOLUBILITY. It communicates its active principle most completely to boiling water. (See *Decoct. Sarsaparillæ*). MED. USES. According to Monardes, it was imported by the Spaniards into Europe in 1549, as a specific remedy for the venereal disease ; but it soon fell into disrepute, and so continued until about the middle of the last century, when it was again brought into esteem by Hunter and Fordyce, as a medicine calculated to assist the operation of mercury, as well as to cure those symptoms which may be called the *sequelæ* of a mer-

notwithstanding this complete decomposition, some surgeons are in the habit of using an application which consists of a drachm of the Liquor Plumbi Sub-Acetatis, and two ounces of the Linimentum Saponis ! We cannot have any hesitation in deciding upon the inefficacy of such a mixture.

curial course. Dose, of the powdered root ℈j to ʒj, three times a day. In selecting the roots, it will be right to choose such as are plump, not carious, nor too dusty on breaking; but rough, and which easily split longitudinally. Officinal Prep. *Decoctum Sarsaparillæ.* L. E. D. *Decoct. Sarsaparillæ comp:* L. D. *Extractum Sarsaparillæ.* L. *Syrupus Sarsaparillæ.* L. There are several species of *Carex* which are substituted for Sarsaparilla. The *C. villosa* (German Sarsaparilla) is very commonly employed for this purpose.

SASSAFRAS. L.E.D.

(Laurus Sassafras. *Lignum, Radix, et Cortex.*)

The Wood, Root, and Bark of Sassafras.

Qualities. *Odour*, fragrant; *Taste*, sweet and aromatic. Chemical Composition. The qualities of this plant depend upon an essential oil and resin. Solubility. Its active parts are soluble in water and alcohol. Med. Uses. It is said to be diaphoretic, and diuretic; and has been employed in cases of scurvy, rheumatism, and in various cutaneous affections; it also formerly enjoyed the reputation of being an antisyphilitic remedy. Its powers are very questionable. Officinal Prep. *Oleum Sassafras.* L.E.D. *Decoct: Sarsaparillæ comp.* L.D. *Decoct: Guaiac:* L.E.D. *Aqua Calcis comp:* D.*

SCAMMONIA. L.E.D.

(Convolvulus Scammonia *Gummi-resina.*)

Scammonium. D. Scammony.

Qualities. *Form*, blackish-grey cakes; *Taste*, bitter and sub-acrid; *Odour*, heavy and peculiar; when rubbed with water, the surface lathers or *lactifies*. *Specific gravity* 1·235. Chemical Composition. Resin is the principal constituent; 16 parts of good *Aleppo* Scammony yield 11 parts of resin, and 3½ of watery extract. That from *Smyrna* contains not more than half the quantity of resin, but more extractive, and gum. Solubility. Water, by trituration, takes up one-fourth, alcohol two-thirds, and proof spirit dissolves all, except the impurities. Incompatible Substances. Neither acids, metallic salts, nor ammonia, produce any change in its solutions, but the fixed alkalies occasion yellow precipitates; and yet they do not appear to be *medicinally* incompatible with it; thus Gaubius, "*Scammoneum acidi commixtio*† *reddit inertius; Alcali fixum, contra, adjuvat.*" The mineral acids appear to destroy a part of the substance, without in the least altering the rest. The discrepancy which exists in authors respecting the power of this drug,

* Godfrey's Cordial.—The following receipt for this nostrum was obtained, from a wholesale druggist, who makes and sells many hundred dozen bottles in the course of a year. There are however several other formulæ for its preparation, but they are not essentially different. Infuse ʒ ix of Sassafras, and of the seeds of Carraway, Coriander, and Anise, of each ʒj, in six pints of water, simmer the mixture until it is reduced to four pints; then add lbvj of Treacle, and boil the whole for a few minutes; when it is cold, add fʒ iij of the tincture of opium. The extensive and indiscriminate use of this nostrum in the nursery, is a subject of national opprobrium, and is so considered by foreign writers. See Fodéré, Medicine Legale, vol. iv. p. 22.

† M. Virey says, "On observe que des acides châtrent, pour ainsi parler, tout l'energie de la Scammonée."

seems to have arisen from its operation being liable to uncertainty, in consequence of peculiar states of the alimentary canal; for instance, where the intestines are lined with an excess of mucus it passes through without producing any action, but where the natural mucus is deficient, a small dose of scammony may irritate and even inflame the bowels. In this latter case, my practice has been to administer the purgative in a mucilaginous draught, or emulsion. MED. USES. It is an efficacious and powerful cathartic, very eligible in worm cases, and in the disordered state of bowels which so commonly occurs in children. DOSE, grs. iij to xv, in the form of powders triturated with sulphate of potass, sugar, or almonds; when given alone, it is apt to irritate the fauces; it may be also administered as a solution, effected by triturating it with a strong decoction of liquorice, and straining. (*Form.* 78, 83.) OFFICINAL PREPARATIONS. *Confect: Scammon:* L.D. *Pulv: Scammon: co.* L.E. *Extract: Colocynth: co.* L. (F) *Pulv. Sennæ co.* L.* (F). ADULTERATIONS. Two kinds of Scammony are imported into this country, that from *Aleppo*, which is the best; and that from *Smyrna*, which is more compact and ponderous, but less pure: it is commonly mixed with the expressed juice of the *cynanchum monspeliacum*; it is also sophisticated with *flour*, *sand*, and *ashes*; their presence may be detected by dissolving the sample in proof spirit, when the impurities will sink, and remain undissolved; carbonate of lime is moreover frequently added to Scammony, in which case the sample will effervesce in acids: there is however a compound bearing the name of Scammony, to be met with in the market, which is altogether factitious, consisting of jalap, senna, manna, gamboge, and ivory black. Good Scammony ought to be friable, and when wetted with the finger, it should *lactify*, or become milky: and the powder should manifest its characteristic odour, which has been compared to that of old ewe milk cheese.

SCILLÆ RADIX. L.E.D. (Scilla Maritima.)

Squill Root. (Bulb.)

QUALITIES. *Odour*, none; *Taste*, bitter, nauseous, and acrid; when much handled, it inflames, and ulcerates the skin. By drying, the bulb loses about four-fifths of its weight, and with very little diminution of its powers, provided that too great a heat has not been applied. CHEMICAL COMPOSITION. According to Vogel, gum 6—tannin 24—sugar 6—bitter principle (*Scillitin*, which is white, transparent, and breaks with a resinous fracture) 35—woody fibre 30. SOLUBILITY. Squill gives out its virtues so perfectly to any of the ordinary menstrua, as to render the form of its exhibition, in that respect, a matter of indifference. INCOMPATIBLE SUBSTANCES. *Alkalies* diminish their acrimony and bitterness, and are probably *medicinally* inconsistent with their diuretic qualities, but farther experiments are required to decide this question: *vegetable acids* produce no effect upon their sensible qualities, but are said to increase their expectorant power. MED. USES. According to the dose, and circumstances under which it is administered, it proves expectorant, diure-

* COUNT WARWICK'S POWDER. The purgative long known and esteemed under this name, consisted of Scammony, Oxide of Antimony, and Cream of Tartar. It is much extolled by Baglivi, and by Van-Swieten, as an efficacious purgative in intermittent fevers.

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tic, emetic, or purgative; as an expectorant, it can never be employed where pulmonary inflammation exists, for in such cases, instead of promoting, it will check any excretion from the lungs; its combination with a diaphoretic will frequently increase its powers, and generally be a measure of judicious caution. See *Form.* 133, 134, 135, 139 For the philosophy of its action, the reader must refer to the classification of Expectorants, page 105. As a diuretic, it seems to act by absorption, and we accordingly find, on the authority of Dr. Cullen, that *when the squill operates strongly on the stomach and intestines, its diuretic effects are less likely to happen;* he therefore found that by accompanying it with an opiate, (*Form.* 100) the emetic and purgative operation may be avoided, and the squill be thereby carried more entirely to the kidneys. Experience, moreover, has taught us the value of combining this medicine with some mercurial preparation, by which its diuretic powers are very considerably augmented; and it has been farther stated, that such a combination is particularly efficacious in Hydrothorax, especially when it produces inflammation of the gums, and of the glands about the throat, by which action it is supposed to cause a derivation from the exhalants of the pleura, and thereby to diminish the dropsical effusion. *Form:* 102, 103, 106, 107, 109, 112, 115,) but we must take care that the remedy does not occasion purging. In the exhibition of squill, it has been often delivered as a rule, to give it to the extent necessary to induce nausea, as affording a test of the medicine being in a state of activity; such a state of the system, moreover, may assist the absorption of the remedy. Dr. Home, in opposition to the opinion of Cullen maintained that the powers of Squill, as a diuretic, were increased by combining it with bodies capable of promoting its full emetic operation: after what has been observed, however, it is unnecessary to dwell upon the mischievous tendency of such a practice. By referring to our tabular arrangement of Diuretics, at page 105, the reader will find that I consider its action upon the urinary organs to depend upon its bitter principle (*Scillitin*) being developed, and carried, by the medium of the circulation, to the secreting vessels of the kidneys, which it thus stimulates by actual contact. As an emetic, it has been advised in solution, in cases of hooping cough, but its extreme uncertainty renders it unfit for exhibition, unless as an adjunct to emetic combinations, as in *Form:* 65. *Plenck* makes mention of a child which had convulsions in consequence of taking some Squill. Dose. Of the dried root gr. j to iv. Officinal Preparations. *Acetum Scillæ*, L.E.D. *Pil: Scill: comp:* L.E.D. *Pulv: Scill:* E.D. *Syrup. Scill: maritim:* E. *Tinct: Scill:* L.D.

SECALE CORNUTUM.

(Spurred Rye, or Ergot of Rye.)

[Various opinions have been entertained in relation to the nature of Ergot. The most probable is that it is a parasitic fungus, attached to several species of the gramina, but more especially to the rye. It is generally found most abundant in moist situations and in wet seasons. Its taste, at first scarcely perceptible, becomes shortly disagreeable and sub-acrid. By the analysis of Vauquelin, the ergot has been ascertained to contain, 1. A fawn-yellow colouring matter, soluble in alcohol, and having a taste resembling that of fish oil. 2. A white oily matter, of a sweetish taste, which appears to be very abundant. 3. A violet

colouring principle, of the same shade as that of orchil, but differing from it by its solubility in alcohol, and which can be readily fixed on aluminated wool and silk. 4. A free acid, supposed to be partly phosphoric. 5. A very abundant vegeto-animal substance, much disposed to putrefaction, and which furnishes a considerable quantity of thick oil and of ammonia by distillation 6. A small quantity of free ammonia, which can be obtained at the temperature of boiling water. As a medicinal substance, ergot exerts a specific effect upon the uterus, and is very generally used in this country for the purpose of facilitating the process of parturition. From the powerful effects produced by the ergot, it is obvious that it should be used with much caution. Dr Stearns, to whom the profession is indebted for the first introduction of this article into practice, and who must be considered as our highest authority on this subject, has laid down the following rules by which its administration should be regulated: 1. It should never be administered where nature is competent to a safe delivery. 2. It should never be administered until the regular pains have ceased, or are ineffectual, and there is danger to be apprehended from delay. 3. It should never be administered until the rigidity of the os tincæ has subsided, and a perfect relaxation has been induced. 4. It should never be administered in the incipient stages of labour, nor until the os tincæ is dilated to the size of a dollar. 5 It should never be administered in any case of preternatural presentation that will require the fœtus to be turned. 6. It should never be administered during the continuance of one labour, in larger quantities than thirty grains by decoction in half a pint of water A table spoonful of this given every ten minutes, generally succeeds better than a larger dose. While this quantity produces its most favourable effects upon the uterus, it does not affect the stomach with nausea or vomiting, which sometimes interrupts its successful operation.

The ergot is indicated, and may be administered, 1 When, in lingering labours, the child has descended into the pelvis, the parts dilated and relaxed, the pains having ceased, or being too ineffectual to advance the labour, there is danger to be apprehended from delay, by exhaustion of strength and vital energy, from hemorrhage or other alarming symptoms. 2. When the pains are transferred from the uterus to other parts of the body, or to the whole muscular system, producing general puerperal convulsions. After premising copious bleeding the ergot concentrates all these misplaced labour-pains upon the uterus, which it soon restores to its appropriate action, and the convulsions immediately cease. 3. When in the early stages of pregnancy, abortion becomes inevitable, accompanied with profuse hemorrhage and feeble uterine contractions. 4. When the placenta is retained from a deficiency of contractions. 5. In patients liable to hemorrhage immediately after delivery. In such cases the ergot may be given as a preventive, a few minutes before the termination of the labour. 6. When the hemorrhage or lochial discharges are too profuse immediately after delivery, and the uterus continues dilated and relaxed without any ability to contract.]

SENEGÆ RADIX. L.E.D.

(Polygala Senega) *Radix.*

QUALITIES. *Form*, the dried root is internally white: externally it is covered with a brownish grey, corrugated, transversely cracked cuticle. *Odour*, none. *Taste*, at first sweetish, but afterwards hot and pungent,

producing a very peculiar tingling sensation in the fauces. CHEMICAL COMPOSITION. Its virtues reside in resin. SOLUBILITY. Alcohol extracts the whole of its active matter; hot water only partially. MEDICINAL USES. As a stimulant; but it is rarely used. In America it is used against the bite of the rattlesnake.* OFFICINAL PREPARATIONS. *Decoctum Senegæ*. L.E.

SENNÆ FOLIA. L.E.D. (Cassia Senna.)

Senna Leaves.

QUALITIES. *Odour*, faint and sickly; *Taste*, slightly bitter, sweetish, and nauseous. CHEMICAL COMPOSITION. Extractive, resin, mucilage, and saline matter; it contains within itself a purgative principle and a bitter element; and although the latter is *per se* inert, yet in combination, its presence aids and exalts the efficacy of the former. M. M. Lassaigne and Fenuelle have lately announced the fact of their having procured the purgative principle of Senna in a separate form, and to which they have given the name of *Cathartine*. It is said to be an uncrystallizable substance, of a reddish-yellow colour, and of a particular smell, and bitter nauseous taste, soluble in alcohol and water, in all proportions; but farther experiments are required upon this subject. SOLUBILITY. Both water and spirit extract the virtues of Senna; to water and proof spirit the leaves communicate a brownish colour, more or less deep according to the proportions employed; to rectified spirit they impart a fine green colour. The powdered leaves of Senna are very apt to undergo a change by exposure to a humid atmosphere, becoming covered with a kind of mouldiness which contains as mall proportion of potass. MEDICINAL USES. See *Infus: Sennæ*. OFFICINAL PREPARATIONS. *Confectio Sennæ*, L E.D. *Extract: Cassiæ Sennæ* E. *Infus: Sennæ* L.D. *Infus: Tamarind: cum Senna*. E.D. *Pulv. Sennæ comp*: L. *Tinct: Sennæ*. L.D. *Tinct: Sennæ comp*: E. *Syrup: Sennæ* L.D. ADULTERATIONS. The leaves of Senna are imported from Alexandria in a state of adulteration, being mixed by the merchants of Cairo with the leaves of *Cynanchum Oleafolium*, (Arguel) and with those of *Colutea Arborescens*; the former are distinguished by their greater length as well as by their structure, which differs from the leaves of Senna in having a straight side, and being regular at their base, and in not displaying any lateral nerves on the under disk; the latter are so different from Senna leaves, that there is no difficulty in at once recognising them. The *Tripoli Senna* contains a much larger proportion of *Cynanchum*, and of the other adulterations; as a general rule, those leaves which appear bright, fresh, free from stalks and spots, that are well and strongly scented, smooth and soft to the touch, thoroughly dry, sharp pointed, bitterish, and somewhat nauseous, are to be preferred.

* The English physicians do not do justice to this valuable article. In this country, it enjoys a high and deserved reputation As a remedy in Croup it has long been esteemed as one of our most efficient resources, and more recently it has been very warmly recommended as a powerful emmenagogue. In Croup, it should not be given until after the use of venesection and other evacuants. It may then be administered in the form of decoction, prepared from half an ounce of the bruised root boiled in eight ounces of water down to four. Of this a teaspoonful is to be taken every hour or half hour as circumstances may require. When used as an emmenagogue, the decoction is to be prepared by simmering in a close vessel ℥j of the bruised root in a pint of boiling water, until it is reduced about one third—of this four ounces are to be taken daily, and to be increased as far as the stomach will bear, at the menstrual period. *Ed.*

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SERPENTARIÆ RADIX. L.D.

(Aristolochia Serpentaria, *Radix.*)

Serpentaria Root. Virginian Snake root, or Birthwort.

Qualities. *Odour*, of the dried root, aromatic, and somewhat resembling that of Valerian ; *Taste*, pungent and warm, with a degree of bitterness, not very unlike that of camphor, or of the *pinus canadensis*. Chemical Composition. Resin and an essential oil constitute its active ingredients. Solubility. Its virtues are extracted by water, as well as by alcohol. The tincture has a bright green colour, which is rendered turbid by water. It neither affects Tannin nor Gelatine, nor does it precipitate the salts of iron. Medicinal Uses. It has been regarded as serviceable in cases that required the combined powers of a diaphoretic and tonic, as in some of the stages of typhus and other low fevers ; it has also been found to exalt the febrifuge powers of the bark in cases of protracted intermittents. It is likewise valued on account of its efficacy in certain cases of dyspepsia, attended with a dry skin. Its stimulating properties will of course prevent its application in the inflammatory diathesis. Forms of Exhibition. In substance, or in an infusion, made by macerating ʒiv of the bruised root in f℥xij of boiling water in a covered vessel for two hours, and straining. Decoction will necessarily dissipate its essential oil, and impair its powers ; whenever therefore it is directed in combinations which require this process, it should not be added until after the other ingredients have been boiled, as illustrated by *Form* : 40. Dose of the powdered root ℈j to ʒss or more ; of the infusion f℥j—f℥ij. Officinal Preparations. *Tinct : Serpentariæ.* L.E.D.* *Tinct : Cinchonæ comp :* L.D. *Electuarium Opiatum.* E.

The roots of the *Collinsonia præcox* are frequently found mixed with those of Serpentaria in the market.

SIMAROUBÆ CORTEX. L.E.D.

(Quassia Simarouba *Cortex.*)

Simarouba Bark.

Qualities. *Form*, long pieces a few inches in breadth, and folded lengthwise ; fibrous, rough, and scaly ; and, when fresh, of a pale yellow colour on the inside. *Odour*, none ; *Taste*, bitter, without any astringency. Chemical Composition. Its virtues are principally connected with extractive matter ; it does not contain any tannin or gallic acid. Solubility. Alcohol and water take up all its active matter. Medicinal Uses. It has been considered tonic, and has been used with advantage as such in intermittent fevers. To *Dr. Wright* we are principally indebted for a knowledge of its powers. It has been much commended in the latter stages of dysentery, after the fever has abated, and the tenesmus continues with a sinking pulse. Alibert says that it has been used with much success at the hospital of St. Louis, in diarrhœa, following scurvy, and intermittent fever. Dose, ℈i to ʒss, but it is more conveniently given in the form of infusion, which see. Officinal Preparations. *Infus : Simaroubæ.* L.

The Dublin college has admitted the wood of this tree into their materia medica, but it is perfectly inert.

* It enters into the composition of Stoughton's Elixir, for which see Gentianæ Radix.

SINAPIS SEMINA.

(*Sinapis Nigra.* L. *Alba.* E.D.)

Mustard Seeds.

Chemical Composition. Fecula, mucilage, an acrid volatile oil on which their virtues depend and which on standing deposits a quantity of sulphur, a bland fixed oil, which considerably obtunds the acrimony of the former constituent;* and an ammoniacal salt. Solubility. Unbruised mustard seeds, when macerated in boiling water, yield only an insipid mucilage, which like that of linseed, resides in the skin; but when bruised, water takes up all the active matter, although it is scarcely imparted to alcohol. Medicinal Uses. It is a beneficial stimulant in dyspepsia; chlorosis, and paralysis; for which purpose, a tea spoonful of the bruised seeds may be administered; or a *whey* may be made, by boiling a table spoonful of the bruised seeds in oj of milk, and strainning; of which a fourth part may be taken three times a day, (see *Form.* 46), or it may be given in infusion, (*Form.* 45). The farina made into a paste with crumbs of bread and vinegar, affords one of the most powerful external stimulants which we can apply, and is technically termed a *Sinapism;* it produces intense pain, and excites an inflammation entering much more into the true skin than that which is excited by the Lyttæ; it is therefore worthy attention in all internal inflammations where bleeding is limited: if necessary it may be quickened by the addition of oil of turpentine. If a table spoonful of powdered mustard be added to oj of tepid water, it operates briskly as an emetic. Officinal Preparations. *Cataplasm: Sinap.* L.D. *Emplast: Meloes com:* E.† (**B**) *Infusum Armoraciæ comp:* L. (**B**) Adulterations. Fine powder, or flower of mustard, as it occurs in commerce, contains only one-sixth part of genuine mustard, the remainder consists of flour, coloured by turmeric, and made pungent by the addition of powdered capsicum.

SODA TARTARIZATA. L. Tartras Sodæ et Potassæ. E. Tartarus Sodæ et Kali. D. olim. *Sal de Seignette. Sal Rupellensis,* or *Rochelle Salt.*

Qualities. *Form,* a right prism, with rhombic terminations, very slightly efflorescent *Taste,* rather bitter and saline. Chemical Composition. It is a triple salt, formed by neutralizing the excess of acid in super-tartrate of potass, with soda, and consisting of 2 atoms of acid + 1 of soda + 1 of potass. By a strong heat it is resolved into a mixture of carbonate of potass and carbonate of soda. Solubility. It is soluble in five parts of water at 50°. Incompatible Substances. Most *acids* and *acidulous salts* (except the Super-tartrate of potass) which convert the tartrate of potass into bi-tartrate, or super-tartrate, The *acetate* and *sub-acetate of lead; byrytic salts,* and the *salts of lime* are decom-

* It is for this reason that the cake left after expression is so much more pungent than the seeds, for the fixed oil can be easily separated by pressure.

† Whitehead's Essence of Mustard.—This consists of oil of turpentine, camphor, and a portion of spirit of rosemary; to which is added a small quantity of flour of mustard.

Whitehead's Essence of Mustard Pills.—Balsam of Tolu, with resin.

Ready Made Mustard.—This is made up with currant wine, and sugar; formerly Must, or grape juice, was employed for this purpose, whence the name *Must*ard.

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posed by it. Med. Uses. Similar to those of *Potassæ Tartras*. See *Form.* 77, and 86, the latter of which presents a very grateful and efficacious purgative. Dose, ʒij to ℥j as a purgative.

SODÆ CARBONAS. L.E. *Carbonate of Soda.*

This salt, when properly prepared, is a *bi-carbonate*, but so delicately are the affinities of its constituent parts balanced, that the application of a very moderate temperature is sufficient to subvert them, and to occasion partial decomposition. Mr. Phillips states that although he has seen what he believes to be real bi-carbonate in the state of the moist crystals, yet he has never met with any that was dry which had not lost one-fourth of its carbonic acid by exposure to heat; it is then a white gritty powder, less soluble in water than the sub-carbonate, like which it possesses an alkaline taste, and turns vegetable yellows brown, but both in a less degree. This salt, which is generally sold as the carbonate of the pharmacopœia, and the bi-carbonate of chemists, Mr. Phillips considers as a compound of an atom of carbonate, (*sub-carbonate*) and an atom of bi-carbonate, combined with four atoms of water. It is therefore, according to the phraseology of some chemists, a *Sesqui-carbonate*,* as being equal to an atom and a half of acid and one atom of base. The chemical habitudes of this salt, as connected with its medicinal applications, are similar to those of the *carbonate of potass*, which see. Med. Uses. As it is less nauseous, so is it more eligible than the *sub*-carbonate of the same alkali; in other respects its effects are the same; *vide Sodæ Sub-carbonas*. Dose, grs. x to ʒss.† Adulterations. If the salt, after super-saturation with dilute nitric acid, give a precipitate with nitrate of baryta, it contains some sulphuric salt; and if with nitrate of silver, we may infer the presence of a muriate.

* This term is also applied to the Sub-carbonate of Ammonia. The objection to its use depends upon the solecism which it involves; the division of an atom, which, according to chemical principles, is indivisible; but this objection may be answered by stating, that the term is one merely of convenience, and serves to express the proportions of the acid and its base. The chemical difficulty is at once solved by multiplying each by two, which will make the proportions as 3 to 2, instead of 1½ to 1.

† Sodaic Powders.—Contained in two distinct papers, one of which is blue, the other white; that in the former consists of ʒss of the carbonate of soda, that in the latter of grs. xxv of tartaric acid. These powders require half a pint of water. It is very evident that a solution of these powders is by no means similar to "Soda Water," which it is intended to emulate; for in this latter preparation, the soda is in combination only with carbonic acid; whereas the solution of the "Sodaic Powders" is that of a neutral salt, with a portion of fixed air diffused through it.

Patent Seidlitz Powders.—These consist of two different powders; the one, contained in a white paper, consists of ʒij of Tartarized Soda, and ℈ij of Carbonate of Soda; that in the blue paper, of grs. xxxv of tartaric acid. The contents of the white paper are to be dissolved in half a pint of spring water, to which those of the blue paper are to be added; the draught is to be taken in a state of effervescence. The acid being in excess renders it more grateful, and no less efficacious as a purgative. This preparation cannot be said to bear any other resemblance to the mineral water of Seidlitz, than in being purgative. The water of this spring, which was discovered by Hoffmann about a century ago, contains Sulphate of Magnesia as its active ingredient, together with Muriate of Magnesia, and Sulphate, and Carbonate of Lime. In the Codex Medicamentarius of Paris there are two formulæ for the preparation of a water which may resemble that of Seidlitz, the one differing from the other merely in the proportion of its Sulphate of Magnesia.

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SODÆ MURIAS. L.E.

SAL COMMUNE, Murias Sodæ. D.

Muriate of Soda. Common Salt.

QUALITIES. *Form*, that of regular cubes, which do not deliquesce unless contaminated with muriate of magnesia.* CHEMICAL COMPOSITION. It consists, according to Berzelius, of 46·55 of muriatic acid, and 53·45 of soda; according to the new theory, however, this salt must be considered as a true *muriate of soda*, only while it remains in aqueous solution; for when it is reduced to dryness, the muriatic acid and the soda become both decomposed, and the hydrogen of the former uniting with the oxygen of the latter, they pass off in the form of water, while the chlorine of the muriatic acid unites with the metallic base of the soda, to form *chloride of sodium*, which consists of an atom of each constituent. It is perhaps difficult to believe that the same salt should be chloride of sodium in the hand, and muriate of soda in the mouth! but it is not the less true, nor is it more incredible than the change which Sulphuret of potass undergoes by solution, the decomposition of which is rendered evident to the senses by the evolved sulphuretted hydrogen. Late researches have also detected both in *rock* and in other salt, the presence of *muriate of potass*, and *muriate of magnesia*.† SOLUBILITY. It is equally soluble in cold and in hot water, one part of the salt requiring rather more than 2½ parts. MED. USES. The effects of salt upon the animal and vegetable kingdoms, are striking and important,‡ and have furnished objects of the most interesting enquiry to the physiologist, the chemist, the physician, and the agriculturist; it appears to be a natural stimulant to the digestive organs; and that animals are instinctively led to immense distances in pursuit of it; for proof of this fact the reader is referred to "*Parkes on the repeal of the Salt Laws*," and to an interesting work by my late lamented friend, Sir Thomas Bernard, entitled, "*Case of the Salt Duties, with Proofs and Illustrations.*" § Salt, when taken in moderate quantities, pro-

* Our English Salt is generally thus contaminated; for which reason it is unfit for the curing of several kinds of fish; this will not appear strange, says Mr. Parkes, when it is considered that merely its own weight of water is all that is necessary for the complete solution of muriate of magnesia; a circumstance which renders it impossible to preserve such salt for any length of time, in a dry state. This muriate however might be separated from common salt, on a large scale, for one shilling per cwt. By exposing the salt to a gentle heat in reverberatory furnaces, the muriatic acid of the magnesian muriate will fly off, and the magnesia (on a subsequent solution of the salt) will be precipitated. It is well known that muriate of magnesia begins to part with its acid at a temperature a little higher than that of boiling water.

† The annual quantity of salt raised from the Salt Mines and Springs in Europe, is estimated at from 25 to 30 millions of cwt.

‡ The respect paid to Salt amongst Eastern nations is very remarkable, and may be traced to the highest antiquity. Homer gives to it the epithet of θεῖον, Il. ix. p. 214.

§ In addition to the numerous instances cited by these authors, I may here introduce one which has been just communicated to me by my friend Mr. John Taylor, the agent of the London Company for working the Real del Monte Silver Mines in Mexico. He states that the ore, which consists of the Sulphuret of Silver, is, together with Mercury, amassed in heaps with iron pyrites and common salt; and that such is the greediness of the Mules employed in the works for the Salt, that they are constantly licking the materials; the consequence is that a portion of the Silver Amalgam is introduced into their stomachs; the animals, however, suffer no inconvenience; but, after death, on opening their stomachs, it is not unusual to find considerable masses of Silver, the mercury having escaped, or been dissolved by the gastric juice.

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motes,* while in excessive ones, it prevents digestion; it is therefore tonic and anthelminctic, correcting that disordered state of the bowels which favours the propagation of worms. In Ireland, where, from the bad quality of the food, the lower classes are greatly infested with worms,† a draught of salt and water is a popular and efficacious anthelmintic. *Form*: 162, is a prescription by Rush, who says that in this manner he has administered many pounds of common salt with great success in worm cases. In the first volume of the Medical Transactions we shall find an interesting account of a cure of this disease by salt, after the failure of other remedies; I beg also to refer the practitioner to another case illustrative of its anthelmintic powers, published by Mr. Marshall. (*London Medical and Physical Journal*, vol. xxxix. No. 231,) which is that of a lady who had a natural antipathy to salt, and was in consequence most dreadfully infested with worms during the whole of her life. In very large doses *Salt* proves purgative; it is also absorbed, and carried to the kidneys, but it undergoes no decomposition *in transitu*, nor does it appear to possess any considerable powers as a diuretic; its solution in tepid water, in the proportion of ℥ss—℥j in oj of water, forms the common domestic enema. Dose, when intended to act as a cathartic, from ℥ss to ℥j very largely diluted; when to answer the other intentions, from grs. x. to 3j.

SODÆ SUB-BORAS. L.D. Boras Sodæ. E.

Borax.

Qualities. *Form*, irregular hexaedral prisms, slightly efflorescent. *Taste*, alkaline and styptic; when heated it loses its water of crystallization, and becomes a porous friable mass (*calcined borax.*) Chemical Composition. Boracic acid, 34—soda, 17—water, 49. Solubility. It

* The celebrated Indian Tonic for Dyspepsia and Gout, called Bit laban, is prepared by fusing together muriate of soda and some other ingredients. See Dr. Fleming's Catalogue of Indian Medicinal plants and drugs, p. 54, 55.

† I have myself witnessed the bad effects of a diet of unsalted fish; and in my examination before a Committee of the house of Commons in 1818, appointed "for the purpose of inquiring into the laws respecting the Salt Duties," I stated the great injury which the poorer classes in many districts sustained in their health, from an inability to procure this essential article. Lord Somerville (in his address to the Board of Agriculture) gave an interesting account of the effects of a punishment which formerly existed in Holland. "The ancient laws of the country, ordained men to be kept on bread alone, UNMIXED WITH SALT, as the SEVEREST punishment that could be inflicted upon them in their moist climate; the effect was horrible: these wretched criminals are said to have been DEVOURED BY WORMS, engendered in their own stomachs."

Salt was an object of taxation at a very early period in this country; Ancus Martius, 640 years before our era '*Salinarum Vectigal* instituit.' This tribute was continued on the Britons when our Isle was possessed by the Romans, who worked the Droitwich Mines, and who made salt part of their soldiers *Salarium*, or salary. Hence the custom at the Eton Montem of asking for salt.

The great advantages which must ultimately accrue to this nation in its fisheries, agriculture, manufactures, and commerce, from a late remission of the odious and impolitic tax upon salt, are incalculable. The government of France appears to have been as impolitic with regard to this tax as the English. Buonaparte abolished the collection of turnpike dues; and imposed a tax on salt, payable at the Salt-pans, in its stead. It is not perhaps generally known, that by the aid of this tax he was enabled to complete the grand entrance into Italy, over the Simplon; so that it may be fairly observed, that if HANNIBAL was enabled to cross the Alps by the aid of VINEGAR—BUONAPARTE, by the assistance of SALT, succeeded in constructing a public road over the same mountains.

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is soluble in 20 parts of water at 60°, and in 6 parts at 212°. INCOMPATIBLE SUBSTANCES. It is decomposed by *acids*; *potass*; by the *sulphates* and *muriates* of the *earths*, and by those of *ammonia*. MEDICINAL USES. It is only applied in the form of powder mixed with 8 or 10 parts of honey, as a detergent linctus in aphthæ, &c. The Chinese employ it in imflammatory sore throats; for which purpose they first reduce it to an extremely fine powder, and then blow it through a reed upon the inflamed surface. OFFICINAL PREPARATIONS. *Mel Boracis*. L. ADULTERATIONS. *Alum*, and *fused muriate of soda*, are substances with which it is sometimes sophisticated; to discover which, dissolve it in distilled water, and after saturating the excess of the base with nitric acid, assay the solution with nitrate of barytes and nitrate of silver.

SODÆ SUB-CARBONAS. L.E.D.

Sub-carbonate of Soda.

QUALITIES. *Form*, octohedrons, truncated at the summits of the pyramids; it effloresces when exposed to the air, and at 150° Fah. undergoes watery fusion, its crystals containing as much as seven proportions of water; *Taste*, mild, alkalescent. CHEMICAL COMPOSITION. Soda 29·5—carbonic acid 20·7. SOLUBILITY. It is soluble in two parts of water at 60°, and in considerably less than its weight of boiling water; it is insoluble in alcohol. INCOMPATIBLE SUBSTANCES are enumerated under *Potassæ Carbonas*. MED. USES, are similar to those of the sub-carbonate of potass, but it is preferable to it for internal use, as being more mild and less nauseous; and moreover Fourcroy states it as his opinion that soda is more eligible for medicinal purposes than potass, on account of its analogy with animal substances, which always contain it, while on the contrary, no portion of potass is found in them. Sir Gilbert Blane assumes an opposite opinion, and observes that, as far as he can judge of the comparative powers of the two fixed alkalies, he should greatly prefer Potass to Soda, as a remedy for gravel, one reason of which he thinks may be found in the fact that the Soda is an element of the animal fluids, since it enters largely into the composition of bile, so that it is more likely to be arrested in the course of the circulation and diverted from the urinary organs. A gentleman, says Sir Gilbert, who was subject to frequent fits of gravel, and in the habit of making experiments on the small concretions which he passed, found that Soda dissolved them, but that Potass did not; nevertheless he experienced sensible relief, and even temporary cure, from the internal use of the latter alkali, but no benefit from the former. Are then the absorbents more disposed to take up soda than potass? The results of experience do not appear to sanction such a conclusion. FORMS OF EXHIBITION. It may be administered in solution, in an electuary, or in pills; when exhibited in the latter form, it must be previously deprived of its water of crystallization, (*Sodæ Sub-carbonas exsiccata*. L.) or the pills will fall into powder as they dry; unless where the water of crystallization is essential to the formation of the pill, as to that of *Pill: Ferri comp.* DOSE, gr. x to 3j, twice or thrice a day. See *Form.* 23, 143, 144.

SODÆ SULPHAS. L.E.D.

Natron Vitriolatum, P.L. 1787. *Sal Catharticus Glauberi*. P.L. 1745.

QUALITIES. *Form*, transparent prismatic crystals, which effloresce; when exposed to heat, they undergo watery fusion, that is, they melt in

their own water of crystallization. *Taste*, saline and bitter. CHEMICAL COMPOSITION. Sulphuric acid 24·64,—soda 19·36—water 56. SOLUBILITY. f℥j of water at 60° dissolves ℥iiiss ; in boiling water it is considerably more soluble ; it is quite insoluble in alcohol. INCOMPATIBLE SUBSTANCES. The same as those which decompose *sulphate of magnesia*. MED. USES. A common and useful purgative ; its nauseous taste may be in a great degree disguised by the addition of a small quantity of lemon juice, or *cream of tartar*. DOSE, ℥ss to ℥ij. In an effloresced state it is just equal in efficacy to double the weight of that which is in a crystalline form. It is rendered more active by being combined with other purgative salts, especially with sulphate of magnesia, and the compound is more soluble and less nauseous ; (*Form* 69, 72.) A portion of triple salt, a *magnesio-sulphate of soda*, probably results from the combination, a salt which may be frequently detected in parcels of sulphate of magnesia, and may be known by its crystals, which are regular rhomboids ; it is also contained, according to Dr. Murray, in the brine or *mother liquor* of sea-water ; and it constitutes the whole of that salt which was formerly sold under the name of "*Lymington Glauber's Salts.*" *

* CHELTENHAM SALTS.—A factitious compound has been long vended, as a popular purgative, under this name ; it is formed by triturating together the following salts. Sulphate of Soda, grs. 120. Sulphate of Magnesia, grs. 66. Muriate of Soda, 10. Sulphate of Iron, gr. ½. As a purgative it is very efficacious, and superior probably to that which is actually obtained by the evaporation of the Cheltenham water itself ; for notwithstanding the high pretensions with which this latter salt has been publicly announced, it will be found to be little else than common Glauber's Salt. This fact has been confirmed by the experiments of Mr. Richard Phillips, (Annals of Philosophy, No. lxi.) who observes, that the "REAL CHELTENHAM SALTS contain no chalybeate property," but are merely sulphate of soda, mixed with a minute quantity of soda, and a very small portion of common salt." It could not be imagined that the salt should contain oxide of iron even in a state of mixture, much less in combination, for carbonate of iron is readily decomposed by ebullition, and the oxide of iron is precipitated before the salt can be crystallized. A preparation, under the name of Thomson's Cheltenham Salts, is accordingly manufactured in London, by evaporating a solution consisting of sulphate of soda and sub-carbonate of soda.

"EFFLORESCENCE OF REAL CHELTENHAM SALTS." The preceding salt deprived of its water of crystallization.

"EFFLORESCENCE OF REAL MAGNESIAN CHELTENHAM SALTS," MADE FROM THE WATERS OF THE MAGNESIAN SPA. This is asserted to be a sub-sulphate from nature, which combines both a pure and a sub-sulphated magnesia in its composition ; "but," says Mr. Phillips, "neither nature nor art has ever produced such a combination ; in truth, it consists of Epsom Salt, with small portions of magnesia, or muriate of soda."

MURIO-SULPHATE OF MAGNESIA AND IRON. The preparation thus named by Mr. Thomson, was found by Mr. Phillips to consist of Epsom Salt, deprived of part of its water of crystallization, and discoloured by a little rust of iron, and containing a small portion of muriate of magnesia.

Thus it appears, that not one of these preparations is similar to the water which is drank at the Spa ; in order to remedy this difficulty, Mr. Thompson prepared the "ORIGINAL COMBINED CHELTENHAM SALTS," by evaporating the waters to dryness ; but a very small share of chemical penetration is required to satisfy us that no process of this description can remedy the defect described, for as Mr. Phillips has observed, the chalybeate properties of the water must be essentially altered by such an operation.

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SPARTIUM. L.E. Genista. D.

Spartii *Cacumina*. L. *Summitates*. E.

The Tops of Broom.

Qualities. When bruised they yield an unpleasant odour, and a nauseous bitter *taste*. Solubility. Water and alcohol alike extract their active matter. Med. Uses. They certainly act as a powerful diuretic, and even prove so to animals that browse upon them. I have frequently exhibited them in the Westminster Hospital, with very great success in the form of decoction. By referring to my classification of diuretics, page 142, it will be seen that the *Broom* is placed under the second division of the first class; for analogy sanctions the theory, that the bitter element is separated by the powers of digestion, and carried to the kidneys by the medium of the circulation. (See Form. 113.) The ashes of this plant were extolled by Sydenham as a powerful diuretic, but the chemist has shewn that it is merely a fixed alkaline salt. Officinal Preparations. *Extractum Cacuminum Genistæ*. D.

SPIRÆA TRIFOLIATA.

Indian Physic. Radix.

[This plant abounds in the woods of hills and mountains, in every part of the United States. The root, which is the part used in medicine, is of a bitter taste, and yields by analysis extractive matter and resin. In its medicinal properties the spiræa resembles the ipecacuanha of the shops. The full dose in powder is 30 grs.]

SPIRITUS. L. Spiritus Stillatitii.

Distilled Spirits.

These are solutions of the essential oils of vegetables in diluted alcohol, or proof spirit; they are obtained by distilling spirit with recent vegetables; or, according to the recent directions of the Pharmacopœia, with their essential oils; sometimes however they are extemporaneously made by at once dissolving the oils in the spirit, without distillation. (See *Spiritus Tenuior*.) Med. Uses. Like the *distilled waters*, they serve as vehicles for the exhibition of more active medicines; they are also occasionally employed as grateful stimulants. It is unnecessary to dwell on each of these simple spirits, as their virtues are the same as those of the substances from which they are extracted, united to the stimulus of the alcohol. The following are officinal:—*Spirit: Anisi*. L. *Spir: Anisi comp:* L.D. *Armoraciæ comp:* L. *Carui*. L.E.D. *Cinnamomi*. L. E D. (*Form.* 5, 40.) *Juniperi comp:* L.D. *Lavandulæ*. L.E.D. *Lavandulæ comp:* L.E.D. *Menth: Pip:* L.D. *Menth: Virid:* L. *Myristic:* L.E.D. *Pimentæ*. L.D. *Pulegii*. L. *Raphani comp:* D. *Rosmarini.** L.E.D.

* Hungary Water. Aqua Reginæ Hungariæ. This article, when genuine, is a pure spirit distilled from the Rosemary, and is strongly scented with the rich perfume of that aromatic plant.

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SPIRITUS AMMONIÆ. L.D.

ALCOHOL AMMONIATUM. E.

Spiritus Salis Ammoniaci dulcis. P.L. 1745. *Spiritus Salis Ammoniaci.* P.L. 1720.

This is a solution of ammoniacal gas in spirit; in which a small portion of the sub-carbonate is also generally present. It is not easy to compare the strength of this preparation with that of the *Liquor Ammoniæ*, or *Liquor Ammoniæ Sub-carbonatis*, so as to give their medicinal equivalents, because the ammonia exists in a very different state of combination. The first is a mere solution of ammoniacal gas in water; in the second, as already stated; the ammonia exists as a *sesqui-carbonate*, while in the one now under consideration the alkali is in the state of a *carbonate*. This fact will explain the reason of the present preparation being superior in pungency to the *Liquor Ammoniæ Sub-carbonatis*. The Incompatibles are the same as those enumerated under the head of *Ammoniæ Sub-carbonas*. It is a powerful stimulant, but it is principally employed as the basis of the following compounds; viz. *Spirit: Ammoniæ Aromat.* L.E.D. *Spirit: Ammoniæ Succinatus.* L. *Tinctura Castorei comp:* E. *Tinct: Guaiaci comp:* E. *Tinct; Opii Ammoniat:* E.

SPIRITUS AMMONIÆ AROMATICUS. L.D.

ALCOHOL AMMONIATUM AROMATICUM E.

Spiritus Ammoniæ Compositus. P. L. 1785. *Spiritus Volatilis Aromaticus* P.L. 1745. *Spiritis salis volatilis oleosus.* P. L. 1720.

This is a solution of several essential oils, (*Cinnamon, Cloves*, and *Lemon.* L.—*Rosemary* and *Lemon.* E. *Lemon* and *Nutmeg.* D.) in the spirit of ammonia. It is a valuable stimulant, and an agreeable adjunct, and efficacious corrective to other remedies, see *Form* 42, 45. DOSE, f℥ss to f℥j. *Incompatibles.* Acids, Acidulous Salts, Earthy and Metallic Salts, and Lime Water. *Officinal Prep: Tinct. Guaiac: Ammoniat:* L.D. *Tinct. Valerian: Ammoniat:* L.D. Its ammoniacal pungency is rather inferior to that of the preceding preparations.

SPIRITUS AMMONIÆ FŒTIDUS. L.D.

TINCTURA ASSAFŒTIDÆ AMMONIATA. E.

This is a solution of the fœtid volatile oil of the Assafœtida in the spirit of ammonia; as little else than the odour and flavour of the gum-resin is taken up by the menstruum, it cannot be expected to possess many virtues. Dose, f℥ss to f℥i.

SPIRITUS AMMONIÆ SUCCINATUS. L.

This preparation was probably introduced as a substitute of the *Eau de luce.* It is stimulant and antispasmodic. It will be found, if properly prepared, to retain its milkiness for a considerable time, a circumstance by which its value is appreciated. The substances enumerated under the head of *Spir: Ammoniæ Aromat:* are also incompatible with this preparation.

SPIRITUS COLCHICI AMMONIATUS. L.

We have in this preparation the specific virtues of the Colchicum, with

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the stimulant property of the Ammonia; a medicinal combination, which is frequently indicated in practice. Dose f℥ss to f℥i, in some aqueous vehicle. The substances enumerated under the history of *Spiritus Ammoniæ Aromaticus*, are likewise incompatible with this spirit.

SPIRITUS ÆTHERIS AROMATICUS. L.

ÆTHER SULPHURICUS CUM ALCOHOLE AROMATICUS. E.

Elixir Vitrioli dulce. P.L. 1745.

This preparation, which was excluded from the London Pharmacopœia of 1787, is now restored. It consists of Sulphuric Ether *one part*, rectified spirit *two parts* impregnated with aromatics; the presence of spirit is necessary in this preparation, since the volatile oils would be insoluble in the æther without it. MED. USES. A grateful stimulant.

SPIRITUS ÆTHERIS NITRICI. L.

SPIRITUS ÆTHERIS NITROSI. E.

SPIRITUS ÆTHEREUS NITROSUS. D.

Spiritus Nitri dulcis. P.L. 1745.

QUALITIES. A colourless fluid of the *specific gravity* ·850. *Odour*, extremely fragrant; *Taste*, pungent and acidulous; it is very volatile and inflammable. CHEMICAL COMPOSITION. A portion of nitric æther and nitric acid, combined with alcohol. SOLUBILITY. It is soluble both in water and alcohol. INCOMPATIBLE SUBSTANCES. With a solution of *green sulphate of iron* it strikes a deep olive colour, owing probably to its holding a portion of nitrous gas in solution; with the *tinctures of guaiacum* it produces a green or blue coagulum. MED. USES. When properly diluted, it is refrigerant and diuretic; and has been long employed as a grateful draught in febrile affections; as a diuretic, it frequently proves a valuable auxiliary in dropsy, (see *Form.* 113, 116.) DOSE, ♏x to xl. in any aqueous vehicle. By age and exposure to the air, it is gradually decomposed, and gives rise to the reproduction of nitrous acid.

SPIRITUS ÆTHERIS SULPHURICI. L.

ÆTHER SULPHURICUS-CUM ALCOHOLE. E.

LIQUOR ÆTHEREUS SULPHURICUS. D.

Spiritus Ætheris Vitriolici. P.L. 1787.

Spirit Vitrioli. dulcis. 1745.

QUALITIES. A fluid of the *specific gravity* ·816, consisting of *two parts* (by measure) of rectified spirit, and *one part* of sulphuric æther. MED. USES. It has all the properties of æther, but in an inferior degree. DOSE, f℥j to f℥iij.

SPIRITUS ÆTHERIS SULPHURICI COMPOSITUS. L.

This is intended as a substitute for the *Liquor Anodynus* of Hoffmann, although its composition was never revealed by him. In addition to its stimulating properties, it is suppposed to add those of an anodyne nature. DOSE, f℥ss to f℥ij. See *Form.* 7.

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SPIRITUS CAMPHORÆ. L.

Spirit of Camphor; vulgo, *Camphorated Spirits.*

This preparation is principally useful as an external application. As an embrocation to chilblains it is often of essential service; and it has been found useful when thus applied to parts affected with chronic rheumatism and paralytic numbness. It is instantly decomposed by water, which precipitates the camphor. It furnishes an easy mode of forming camphor mixture extemporaneously, and if a few drops be rubbed with mucilage, we are thus enabled to form a stronger preparation than by the ordinary process.

SPIRITUS RECTIFICATUS. L.

Alcohol Fortius. E. Spiritus Vinosus Rectificatus. D.

In this preparation, alcohol is nearly in the highest state of concentration, in which it can be easily prepared in the large way for the purposes of trade; its specific gravity however varies in the different pharmacopœias, viz. the London and Edinburgh preparation is stated to have that of ·835, while the rectified spirit of Dublin is ordered to be only ·840. The former at the temperature of 60° *Fah.* consists of 85 parts of pure alcohol and 15 of water, the latter only of 83 per cent. of alcohol. It is a most powerful stimulant, but is rarely employed except in combination; as a pharmaceutical agent, its use is highly valuable and extensive. (See *Tincturæ.*) During the evaporation of spirit, a considerable reduction of temperature takes place, which renders it a useful ingredient in refrigerating lotions. See *Form.* 147, 148 It has lately been ascertained by Mr. Ritchie of Perth, that "*the degree of cold induced by the evaporation of spirit of different degrees of strength are proportional to the strength of these spirits, reckoning from the degrees of cold induced by the evaporation of water.*" The application of this theorem will enable us to ascertain the strength of a spirit by the "Differential Thermometer" of Leslie.

SPIRITUS TENUIOR. L.

Alcohol Dilutum. E.

Spiritus Vinosus Tenuior. D.

Weaker or *Proof Spirit.*

This is rectified spirit diluted with a certain proportion of water, and it is to be regretted that the quantity ordered for this purpose, should vary in the different Pharmacopœias; thus, according to the London and Dublin Colleges, its specific gravity is ·930, while the College of Edinburgh directs it to be of ·935. The former consists of 44 per cent. of pure alcohol, and may be formed by mixing *four* parts, by measure, of rectified spirit, with *three* of water; the latter contains only 42 *per cent.* of pure alcohol, and may be made by adding together *equal parts* of rectified spirit and distilled water. Alcohol in this state of dilution, is better adapted for taking up the principles of vegetables than rectified spirit; indeed diluted alcohol acts upon bodies as a chemical compound, and will dissolve what neither the same proportion of water nor of alcohol would, if separately applied; we perceive therefore the importance of ensuring

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uniformity of strength in our spirits. (See *Tincturæ*.) It is necessary to remark that almost all the spirit sold under the name of "*Proof Spirit*," is contaminated with empyreumatic oil, and is unfit for the purposes of pharmacy; it ought therefore to be extemporaneously prepared by mixing together rectified spirit and water, in the proportions above stated. This however is rarely done, except the liquors are intended for the toilet, and hence it has been observed, that the cordials of the apothecary are generally less grateful than those of the distiller, the latter being extremely curious in rectifying and purifying his spirit. If common water be employed for the dilution of alcohol, the resulting spirit will be turbid, owing principally to the precipitation of sulphuric salts; this circumstance lately occasioned considerable embarrassment to the Curators of the Hunterian Museum at the College of Surgeons, who were compelled to prepare their own spirit, in consequence of an excise regulation preventing the distiller from sending out any spirit of that strength which is required for their anatomical purposes. A curious fact has just been noticed in the Laboratory of the Royal Institution, which is, that diluted spirit *becomes stronger* by being kept in vessels that are carefully closed by bladder! whence it would seem, that alcoholic vapour transpires through this animal membrane less freely than aqueous vapour; we are at present unable to offer a satisfactory explanation of this anomalous case of distillation, but it is probably connected with the different solvent powers of these two liquids, in relation to the animal membrane. Med. Uses. Alcohol, although diluted to the degree of proof spirit, is still too strong for internal exhibition; indeed, where its use is indicated, it is more generally given in the form of wine, malt liquors, or ardent spirits, which must be regarded only as diluted alcohol, although each has a peculiarity of operation, owing to the modifying influence of the other elements of the liquid; thus *Brandy** is said to be simply cordial and stomachic;† *Rum*,‡ heating and sudorific; *Gin* and *Whiskey*, diuretic; and *Arrack*,§ styptic, heating, and narcotic; it seems also probable that a modified effect is produced by the addition of various other substances, such as sugar and acids, which latter bodies, besides their anti-narcotic powers, appear to act by favouring a more perfect combination and mutual penetration of the par-

* I apprehend that the peculiar flavour of Cogniac depends upon the presence of an æthereal spirit, formed by the action of Tartaric or perhaps Acetic acid upon Alcohol; it is on this account that Nitric Æther when added to Malt spirits, gives them the flavour of French Brandy. The same flavour is also successfully obtained by distilling British spirits over wine lees, or by distilling a spirit obtained from Raisin Wine, which has become acescent.

In new brandy there also appears to be an uncombined acid, giving to it a peculiar taste and quality, which are lost by age. This explains the reason why the addition of five or six drops of "liquor ammoniæ," to each bottle of new brandy, will impart to it the qualities of that of the oldest date.

† Taylor's Red Bottle, commonly called the Whitworth Doctor. British Brandy coloured with Cochineal, and flavoured with oil of Origanum.

‡ Mr. Parkes, in his Chemical Essays, has the following remark: "an ingenious friend assures me that if new rum be exposed for a night to a severe frost, and then removed to a heated room, and thus alternately treated for a week or two, it will in that short time have acquired a flavour equal to fine *old* spirits. The mischievous effects of new rum, as drank in the West Indies, would seem to depend upon the presence of Lead; see Plumbi Acetas.

§ Mock Arrack. The author of 'Apicius Redivivus,' directs, for the purpose of making a mock Arrack, that two scruples of Benzoic acid be added to every quart of Rum. By a receipt of this kind the celebrated Punch of Vauxhall is prepared.

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ticles of spirit and water. Foreign brandy derives its colour from the oak cask, the intensity of which, therefore, affords some criterion of its age. The English have been in the habit of colouring their spirits with burnt sugar until lately, but now, since the cause of the foreign colour is discovered, the scrapings of gall-nuts are employed for that purpose, whence the sulphate of iron is no longer a test of brandy being genuine.* The effects, also, which are produced by the habitual use of fermented liquors, differ essentially according to the kind that is drunk; thus Ale and Porter, in consequence of the nutritive matter, and perhaps the invigorating bitter with which they are charged, and the comparatively small proportion of alcohol which they contain, dispose to a plethora, which is not unfrequently terminated by apoplexy; Spirits, on the other hand, induce severe dyspepsia, obstructed and hardened liver, dropsy and more than half of all our chronical diseases; and Dr. Darwin moreover remarks that when they arise from this cause, they are liable to become hereditary, even to the third generation, gradually increasing, if the cause be continued, till the family become extinct: with regard to Wine, Rush has truly observed that its effects, like those of tyranny in a well formed government, are first felt in the extremities, while spirits like a bold invader, seize at once upon the vitals of the constitution; the different kinds of wine, however, produce very different and even opposite effects, as stated under the history of that article, (see *Vinum.*) The excise officers frequently avail themselves of the peculiar power of the sub-acetate of lead to precipitate colouring matter, in order to remove from seized Holland Gin, the colour which it obtains by being long kept in the tubs in which it is smuggled over. This practice, however, renders the gin liable to gripe.

SPIRITUS TEREBINTHINÆ.

See *Terebinthinæ Oleum.*

SPONGIA USTA. L.

See *Carbo Ligni.*

STANNI LIMATURA. L.E.D.

The filings of Tin.

The anthelmintic properties of Tin have been explained by three different hypotheses, viz. 1. *That it acts mechanically by dislodging the mucus from the intestines;* if this be true, it is difficult to explain the fact of its activity being increased by pulverization. 2. *That its efficacy depends upon the presence of arsenic;* if so, why should the *purest* specimens act with equal efficacy ?† 3. *That it operates by generating hydrogen gas in the in-*

* The famous Helvetian Styptic, described in page 85, depended wholly on this accidental contamination for its colour, and it was no small mortification to our chemists, when this nostrum was first introduced amongst us, that they could not prepare it with our own spirits, but were obliged to be at the expense of true French Brandy. Our own Spirits, although equally coloured, would never produce a violet tincture; at length, however the mystery was discovered, and the gall-nut imparted to the tincture that characteristic colour which was so long considered essential to its efficacy; but the discovery threw discredit upon the nostrum, and it fell into disuse.

† If any additional argument were necessary, we might repeat, that Arsenic in its metallic state is not poisonous. As it is almost impossible to reduce metallic arsenic to a state of powder, without its becoming oxidized, M. Renault had recourse to its alloys for deciding the question; and he found that Mispickel (an alloy of iron and arsenic,) when given to the extent of two drachms, had no apparent effect; this result

testinal canal: it has been observed that this opinion is rendered probable by the fact, that sulphur increases its powers.* Dose, 3j or 3ji, mixed with honey, treacle or conserve, and exhibited for several successive mornings, a purgative medicine being occasionally interposed, (see *Form.* 150.) The use of this remedy however is entirely superseded by the more efficacious exhibition of oil of turpentine.

SUCCI SPISSATI. E. See *Extracta.*

SULPHUR SUBLIMATUM. L.E.D.

Sublimed Sulphur. Flowers of Sulphur.

Chemical Composition. It is probably a triple compound of oxygen, hydrogen, and some unknown base. Solubility. It is insoluble in water and alcohol, but soluble in oils, especially in that of linseed, which is a powerful solvent of all sulphureous substances. In boiling oil of turpentine it is entirely soluble. Medicinal Uses. It is laxative and diaphoretic; it acts principally upon the large intestines, and very mildly; whence it proves useful in hæmorrhoidal affections (*Form.* 74); and in consequence of the diaphoresis which it also excites, it is useful in chronic rheumatisms, catarrhs, and in some cutaneous affections.† To promote its purgative effects, *magnesia* will be found a serviceable adjunct in hæmorrhoids; it may be given in the form of an electuary, or suspended in milk; its solution in oil (*Oleum Sulphuratum*) is a most nauseous and acrid preparation. When sulphur is combined with metallic remedies, it generally lessens their activity. Its effects in curing psora are universally admitted, and the only objection to its use is the disgusting smell which accompanies its application; see *Unguent: Sulphuris.* Dr. Clarke of Dublin recommends a lotion which he says contains a sufficient impregnation of sulphur for the cure of psora in children, to be made by adding an ounce of broken sulphur to a quart of boiling water, and allowing it to infuse for twelve hours. In this process, the water probably takes up a small portion of sulphurous acid; it is difficult to explain the efficacy of the lotion in any other manner. When sulphur is internally administered, it transpires through the skin in the state of sulphuretted hydrogen, and blackens the silver in the pockets of those who take it. Dose 3j to 3ij. Officinal Prep. *Sulphur Lotum.* L.E.D. *Sulphur Præcipitatum.* L. *Unguent. Sulph.* L.E.D. *Unguent. Sulph. comp.* L.

Sulphur Lotum. When sulphur is kept in loosely covered drawers its surface is soon acidified, when it is said to operate with griping, hence the common *flowers* are directed to be washed with water to get rid of any sulphurous acid; it is however rarely performed, and would seem to be a useless subtlety.

agrees with the conclusion of Bayen in his work on Tin, and proves that the arsenic which may be contained in that metal cannot produce any medicinal effect, as it exists in its metallic state. Recherches Chimiques sur l'Etain, par Bayen et Charlard, 1781.

* Guy's Powder of Ethiopia. This once celebrated remedy consisted of pure rasped Tin, Mercury, and Sublimed Sulphur, triturated together.

Blaine's Powder for the Distemper in Dogs. The basis of this nostrum is the Aurum Musivum, or Sulphuret of Tin, and which has been said to be more efficacious in cases of Tænia than the simple metal.

Mathieu's Vermifuge was indebted to Tin for its efficacy, see Filicis Radix.

† Sulphur Lozenges. Sublimed Sulphur one part, sugar eight parts, Tragacanth mucilage q. s. used in Asthma, and in Hæmorrhoids.

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Sulphur Præcipitatum. L. *Lac Sulphuris*, P.L. 1720. This, when pure, differs in no other respect from sublimed sulphur than in its superior whiteness, which it owes to the presence of a small proportion of water; in consequence however of its mode of preparation, it always contains a small quantity of sulphate of lime, and not unfrequently other impurities; it may be assayed by pouring upon a suspected sample a sufficient quantity of *liquor potassæ* to cover it, and setting it aside in a warm place to digest, when the sulphur will be dissolved and the impurities remain; or it might be at once subjected to the operation of heat; which would volatilize the sulphur, and thus separate it from its contaminations.

SYRUPI. L.E D. *Syrups.*

These are solutions of sugar in water, watery infusions, or in vegetable juices; the proportion of sugar is generally *two parts* to one of the fluid; if it exceeds this, the solution will crystallize, if it be less, ferment, and become acescent*. The most certain test of the proper consistence of a syrup is its specific gravity; a bottle that holds three ounces of water at 55 *Fah.* ought to hold four ounces of syrup. Syrups are introduced into medicinal furmulæ for several purposes, viz.

I. *To correct or disguise the flavour of disagreeable remedies.* Syrup: Aurantiorum. L.D. (*Form*, 48, 51, 107.)—Limonum, L.E.D.—Simplex (124, 145).—Zingiberis (88, 95, 105.) Bitter infusions, and saline solutions are rendered more nauseous by the addition of syrups.

II. *To produce Medicinal Effects.* Syrup: Allii. D.—*Altheæ* L.E. (135)—*Acidi Acetosi.* E.—Colchici. E.—Sennæ. E.D (70)—Scillæ Maritimæ. E.—Rhamni. L. *Papaveris.* L.E.D. (5, 7, 75, 169, 170.)—Rosæ (74)—Zingiberis (47, 150)—Sarsaparillæ. L.

III. *To communicate peculiar forms.*

Every syrup answers this purpose; for the necessary proportions, see *Electuria.*

IV. *To communicate an agreeable colour.* Syrup, Croci. L.—Rhæados. L.D. (166, 168.)—Caryophylli Rubri. D.—Violæ. E. Except that of Saffron, these syrups are rendered green by alkalies, and red by acids.

General Remarks. The practitioner should never introduce syrups into those medicines which are liable to be injured by the generation of acids: I have frequently seen the *cretaceous mixture*, when charged with syrup, increase, instead of check, a diarrhœa; and the syrup of poppies, from its disposition to become acescent, will often aggravate rather than allay the cholic of infants. The syrup of Senna furnishes the practitioner with a convenient purgative for children; that of buckthorn is more violent, and is on that account but rarely used; besides which, in

* Sugar, perfectly free from the extractive matter with which it exists in combination in nature, and which constitutes that compound to which the name of Sweet Principle has been given, will not, however diluted, undergo any kind of fermentation; for it is the presence of this peculiar extractive matter, the natural leaven of fruits, that enables it to undergo that process; since, however, all clayed sugars, or modifications of sugar which are short of perfect purity, still contain a small proportion of this extractive, they are capable of fermenting, when sufficiently dilute; Dr. Macculloch, in his essay on the art of making wine, observes, that by the addition of a very small quantity of the Sulphite of Potass, the fermentation of syrups and preserves may be effectually prevented; he states also, that the same object may generally be attained by the use of Oxy-muriate of Potass, a salt absolutely tasteless, and easily procured.

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preparing it the chemist not unfrequently substitutes the berries of the *Cornus Sanguinea*, the Dogberry tree, or those of the *Rhamnus Frangula*, the Alder buckthorn, for the Rhamnus Catharticus; a circumstance which necessarily renders the efficacy of this syrup variable and uncertain; it is moreover often sophisticated with treacle and jalap. The syrup of the rose, when made with the leaves of the *Damask** rose, is gently laxative, and is well adapted for weak children; it is however not unusual, *coloris gratia*, to substitute the leaves of the *red* rose, in which case the syrup will possess astringent instead of laxative properties. In the preparation of the syrup of poppies,† the directions of the College are frequently not obeyed; it is sometimes made by dissolving the extract in syrup, formed with coarse sugar, or even with treacle; at others, by adding tincture of opium to a coarse syrup, in the proportion of ♏x to every ʒj. In the preparation of the syrups of violets, the juice of red cabbage is generally substituted; this is at least a harmless fraud. Note. The syrups which are printed in *Italics*, are very susceptible of decomposition, and should be kept in cool places.

TABACI FOLIA. L.E.

(Nicotiana Tabacum. Folia Siccata. *Virginiana.*)

NICOTIANÆ FOLIA. D.

Tobacco.

QUALITIES. *Odour*, strong, narcotic, and fœtid; *Taste*, bitter and extremely acrid; *Colour*, yellowish green, (its brown appearance is artificial, being produced by the action of *sulphate of iron.*) CHEMICAL COMPOSITION. *Mucilage, albumen, gluten, extractive, a bitter principle, an essential oil, nitrate of potass, which occasions its deflagration, muriate* of potass, and a peculiar proximate principle upon which the properties of the plant are supposed to depend, and which has therefore been named *Nicotin.*‡ Vauquelin considers it as approaching the volatile oils in its properties; it is colourless, has an acrid taste, and the peculiar smell of tobacco, and occasions violent sneezing; with alcohol and water, it produces colourless solutions, from which it is thrown down by tincture of galls. SOLUBILITY. Tobacco yields its active matter both to water and spirit, but more perfectly to the latter; long coction weakens its powers. An oil of Tobacco of a most powerful nature, may be obtained by distilling the leaves and separating it from the water, on the top of which it will be found to float.§ MED. USES. Tobacco is endued with ener-

* The Damask Rose, Rosa Centifolia, of which this syrup is composed, was imported into this country by Linacre, on his return from Italy.

† MAJOR COCHRANE'S COUGH MEDICINE. White poppy heads without seeds are made into a decoction, which is strained, and boiled again with vinegar and brown sugar, until it assumes the consistence of syrup, which in then acidified by elixir of vitriol.

‡ It would appear that there are two principles of activity in Tobacco, an essential oil, and nicotin, either of which are, individually, capable of producing death, but by a very different physiological action, the former by its effects on the brain, the latter by its influence on the heart! See page 135.

§ "It seems very probable that the "juice of cursed hebenon," by which, according to Shakespeare, the king of Denmark was poisoned, was no other than the essential oil of Tobacco:—

——— "Sleeping within mine orchard,
My custom always of the afternoon,