ELATERII PEPONES. L.E.D.

(Momordica Elaterium.)

Wild, or *Squirting Cucumber*.

This plant appears from the testimony of Dioscorides and othee writers, to have been employed by the ancient physicians with much confidence and success All the parts of the plants were considered as purgative, although not in an equal degree ; thus Geoffroy, "*radicum vis cathartica major est quam foliorum, minor vero quam fructuum*" This question has very lately been set at rest by the judicious experiments of Dr. Clutterbuck,* which prove that the active principle of this plant resides more particularly in the juice which is lodged in the centre of the fruit, and which spontaneously subsides from it ; when this substance is freed from extraneous matter, it possesses very energetic powers, and appears to me to be entitled to consideration as a distinct proximate principle, which I shall venture to call *Elatin*. See *Extractum Elaterii*.

ELEMI. L.D. (Amyris Elemifera. *Resina.*) *Elemi*.

This substance is what is generally termed a *gum-resin* ; that is, a compound consisting of gum, resin, and volatile oil : late researches however seem to shew that these bodies are compounds of a peculiar character, consisting of a volatile substance, something between essential oil and resin, and a constituent which possesses the properties of extractive rather than those of gum.

True Elemi has a fragrant aromatic odour, not unlike that of fennel-seeds, but more potent. *Sp gr.* 1·0182. When powdered it mixes with any unguent ; it also combines with balsams and oils, and by the aid of heat, with turpentine. Uses. It is only employed for forming the *mild digestive ointment* which bears its name, viz. *Unguent : Elemi comp :* L.D

EMPLASTRA. L.E.D. Plasters.

The principles upon which this form of preparation is to be constructed are fully detailed in the first part of this work, p. 213.

Emplastrum Ammoniaci. L. *Ammoniacum* reduced to a suitable consistence by distilled vinegar. It adheres to the skin without irritating it, and without being attended with any unpleasant smell.† There is a peculiar disease of the knee, to which servant maids, who scour floors upon their knees, are liable, and for which this plaster is a specific I have also found it particularly eligible in cases of delicate women with irritable skins.

Emplastrum Ammoniaci cum Hydrargyro. L.D. The mercury in this plaster is in the state of oxidation *ad minimum*. It is discutient and resolvent, and is applicable to indurated glands, and venereal nodes, and for removing indurations of the periosteum, remaining after a course of mercury ; the addition of the ammoniacum increases the stimulating and discutient powers of the mercury, which gives this plaster a superiority over the *Emplastrum Hydrargyri*. It is also powerfully adhesive.

Emplastrum Assafœtidæ. E. Emplast. Plumbi and Assafœtida, of each

* See London Medical Repository, Vol. xii. No. 67.

† A person of the name of Sterry, in the Borough, prepares a plaster of this description, which is sought after with great avidity. What a blessing it would be upon the community, if every nostrum were equally innocuous !

two parts, galbanum and yellow wax, of each *one part*. I have seen it useful in flatulent cholic, when applied over the umbilical region.

Emplastrum Cantharidis. L. *Emplast : Cantharidis vesicatoriæ*. E.D. A variety of substances has in different times been employed for producing vesication, but no one has been found to answer with so much certainty and mildness as the *Lyttæ* All the others are apt to leave ill conditioned ulcers ; true it is, that the emplastrum lyttæ will occasionally fail, but this is generally attributable to some inattention, or want of caution on the part of the person who prepares it ; in spreading it, the spatula should never be heated beyond the degree of boiling water ; the plaster also should be sufficiently secured on the part by slips of adhesive plaster, but it ought not to be bound on too tight ; where the cuticle is thick, the application of a poultice for an hour, previous to that of the blister, will be useful, or the part may be washed with vinegar. In consequence of the absorption of the active principle of the *Lyttæ*, blisters are apt to occasion strangury and bloody urine ; it has been a problem therefore of some importance to discover a plan by which such an absorption may be obviated ; for this purpose, camphor has been recommended to be mixed with the blistering composition, and a piece of thin gauze has been interposed between the plaster and the skin ; but it has been lately found, that ebullition in water deprives the *Cantharides* of all power of thus acting on the kidneys, without in the least diminishing their vesicatory properties : the ordinary time required for the full action of a blister is ten or twelve hours, but if it be applied to the head, double that period will be necessary. Children, owing to delicacy of skin, are more speedily blistered, the epispastic may therefore be removed earlier. In some cases the blistered parts, instead of healing kindly, become a spreading sore ; whenever this occurs, poultices are the best applications ; it may arise from a peculiar irritability of the constitution, although I apprehend that it not unfrequently depends upon the sophistication of the plaster with euphorbium. In cases where it is desirable to keep up the local irritation, it is still a question with some practitioners whether it be more advisable to encourage a discharge from the vesicated part by some appropriate stimulant, or to renew the vesication at short intervals by repeated blisters ; the latter mode is perhaps to be preferred, as being more effectual, and certainly less troublesome to the patient ; it has moreover been stated,* that by a repeated application of this nature, the influence excited appears to extend much deeper, so as to derive a greater quantity of blood from the immediate neighbourhood of the vessels, or from the vessels themselves which are in a state of disease, than the influence excited by an application less stimulating upon the surface of a part already abraded. The character of the discharge would likewise appear essentially different ; it being in the latter case a purulent secretion from the superficial exhalants of the surface only ; in the former, a copious effusion of serum, mixed with a large portion of lymph, produced from a deeper order of vessels.

Emplastum Ceræ. L. *Emplast : Simplex* : E. This is the *Emplast : Ceræ* of P.L 1787, the *Emplast : Attrahens* of 1745, so called because it was formerly employed to keep up a discharge from a blistered surface, and the *Emplastrum de melilolo simplex of* 1720.

* Pharmacopœia Chirurgica, p. 89.

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Emplastrum Cumini. L. A valuable combination of warm and stimulant ingredients.

Emplastrum Galbani Compositum. L.D. *Emplast: Gummos.* E. More powerful than the preceding plaster. In indolent glandular enlargements of a strumous character, in fixed and long continued pains in the neighbourhood of the joints, or in anomalous or arthritic pains of the ligaments, this plaster is said to be frequently beneficial.

Emplastrum Hydrargyri L E. The mercury in this plaster is in the state of oxidation *ad minimum*; each drachm containing about fifteen grains of mercury. (*sixteen grains. Edinb.*) It is alterative, discutient, and sometimes sialogogue; but it is inferior to the *Emplast: Ammoniac: cum Hydrargyro.*

Emplastrum Opii. L.E. This plaster is supposed to be anodyne, bu it is very doubtful whether the opium *can*, in such a state, produce any specific effect. *See Form: 5.*

Emplastrum Picis Compositum. L. *Emplast: Picis Burgundiæ*, P.L. 1787. It is stimulant and rubefacient, and is often employed as an application to the chest, in pulmonary complaints; the serous exudation however which it produces, frequently occasions so much irritation that we are compelled to remove it.

Emplastrum Plumbi. L. *Emplast: Oxydi Plumbi semi-vitrei.* E. *Emplast: Lythargyri.* P. L. 1787. *Emplast: commune*, 1745. *Diachylon* Simplex*, P.L. 1720.† This is a very important plaster, since it forms the basis of a great many others; under the name of *Diachylon* it has long been known, and employed as a common application to excoriations, and for retaining the edges of fresh cut wounds in a state of apposition, and at the same time for defending them from the action of the air; when long kept it changes its colour, and loses its adhesive properties, and by high temperature the oxyd of lead is revived.†

Emplastrum Resinæ. L. Olim, *Emplast: commune adhæsivum*, P.L. 1745. Emplast: Resinosum. E. Emplast: Lithargyri cum Resina. D. It is defensive, adhesive and stimulant ‡

Emplastrum Saponis. L.D. *Emplastrum Saponaceum.* E. The Soap Plaster is said to be a mild discutient application.

* Diachylon, a διὰ et χυλος succus, i. e. a Plaster prepared from expressed juices. It has been asserted that all the pharmaceutical names beginning with *Dia*, are of Arabian origin; this however is not the fact; we frequently meet with the expression in Galen, ἡ διὰ δικλαιων ἡ διὰ δυοιν ἀρισολοχιοιν ἡ δι, &c. &c.

† At Apothecaries' Hall, this plaster, as well as others, is made in a steam apparatus, which is so well regulated, that a uniform temperature of 240° Fah: is insured during the whole process.

‡ Baynton's Adhesive Plaster. (Strapping.) Differs only from this preparation in containing less resia, six drachms only being added to one pound of litharge plaster. This excellent plaster is sold ready spread on calico.

Court Plaster. Sticking Plaster. Black Silk is strained and brushed over ten or twelve times, with the following preparation. Dissolve ℥ss of Benzoin in f℥ vi of rectified spirit; in a separate vessel, dissolve ℥j of Isinglass in oss of water; strain each solution, mix them, and let the mixture rest so that the grosser parts may subside; when the clear liquor is cold, it will form a jelly, which must be warmed before it is applied to the silk. When the Plaster is quite dry, in order to prevent its cracking, it is finished off with a solution of Terebinth: Chia, ℥iv, in Tinct: Benzoes f℥vj.

Corn Plaster. The green coloured plaster sold under this title is usually composed of three parts of wax, 4 of Burgundy pitch, and 2 of common turpentine; to which is added one part of verdigris.

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EUPATORIUM PERFOLIATUM.

B oneset.

Herba et flores.

[The boneset is a plant indigenous to the United States, and is to be found in the neighbourhood of marshes and low situations. It is intensely bitter and somewhat astringent. According to the analysis of Dr. Andrew Anderson of New-York, it yields 1 A free acid; 2. Tannin; 3. Extractive matter; 4. A gummy matter. 5. A resin; 6. Azote; 7. Lime, probably the acetate of lime; 8. Gallic acid, propably modified; 9. A resiniform matter, soluble in water and in alcohol, and which seems to contain a bitter principle. It also appears from this analysis that the free acid may be obtained from all parts of the plant—that tannin is obtained in much the largest quantity from the leaves, and least from the roots—that the extractive and gummy matter reside chiefly in the roots—that the leaves and flowers also contain a larger proportion of resin than the roots—and that azote exists in the flowers, leaves, and roots. The principal properties of the boneset are those of a tonic and diaphoretic. The diseases in which it has been prescribed with success are intermitting and remitting fevers, typhoid peripneumony and catarrh. It may be given in powder, infusion, or tincture. When given as a tonic, the tincture is the preferable form. The dose of the powder is from 20 to 30 grains. When used as a sudorific, it is to be taken in infusion, and in large quantities.]

EUPHORBIA IPECACUANHA.

American Ipecacuanha. Radix.

[This plant is peculiar to the United States. The root is perennial, and of a sweetish taste. By analysis it yields caoutchouc, resin, mucus and fecula. In its medicinal properties it resembles, and perhaps equals, the common ipecacuanha. As an emetic the dose is from 15 to 25 grains.]

EUPHORBIÆ GUMMI-RESINA. L.

(Euphorbia Officinarum.) *Euphorbium.*

Qualities. This substance is imported from Barbary, in drops or irregular tears; its fracture is vitreous; it is inodorous, but yields a very acrid burning impression to the tongue. Chemical Composition. It is what is termed a *gum resin*, but its acrid constituent is exclusively in that portion which is soluble in alcohol, and which might be named *Euphorbin*; it appears to form as much as 37 per cent. to which are added of wax 19, malate of lime 20·5, malate of potass 2, and water 5. Solubility. Water by trituration is rendered milky, but dissolves only one-seventh part; and alcohol one-fourth of it. Uses. Internally administered, it proves very violently drastic, but it is never employed except as an errhine, cautiously diluted with starch, or some inert powder. The Indian practitioners administer it as a purge in obstinate visceral obstructions; and in those cases of costiveness which so often attend an enlargement and induration of the spleen and liver. Farriers use it for blistering horses, and there is good reason to believe that it is sometimes fraudulently introduced to quicken the powers of our Emplastrum Cantharidis. It enters as an ingredient into a plaster, which has been much celebrat-

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ed by Cheselden and others, as a stimulating application, to relieve diseases of the hip-joint, and to keep up inflammation of the skin in chronic states of visceral inflammation ; the following is its composition. ℞. *Emplast: Picis comp:* ℥iv.—*Euphorbiæ gum resinæ* ℥ss —*Terebinth: Vulgar. q. s.* Caution, in pulverizing this substance, the dispenser should previously moisten it with vinegar to prevent its rising and excoriating his face.

EXTRACTA. L.E.D. *Extracts.*

These preparations are obtained by evaporating the watery or spirituous solutions of vegetables, and the native juices obtained from fresh plants by expression, to masses of a tenacious consistence. The London college does not arrange the extracts under the titles of *watery* and *resinous*, which is the arrangement of the Edinburgh Pharmacopœia, nor under those of simple and resinous, which is in the division observed in that of Dublin, but rejecting all *specific* distinctions, includes, under the *generic* appellation of extract, both the species, as well as all the *inspissated juices.* Since however the former of these arrangements will afford greater facilities for introducing the observations which it is my intention to offer, it is retained in this work.

The chemical nature of extracts must obviously be very complicated and variable, depending in a great degree upon the powers of the *menstruum* employed for their preparation ; although Fourcroy and Vauquelin considered that *one peculiar* principle was the basis of them all, which they called *Extract*, *Extractive*, or the *Extractive Principle.* It is distinguished by the following characters, *viz.*

It has a strong taste, varying in different plants ; it is soluble in water, and in alcohol when it contains water, but is quite insoluble in *absolute* alcohol and æther ; its aqueous solution soon runs into a state of putrefaction ; by repeated solutions and evaporations, or by long ebullition, it acquires a deeper colour, and in consequence of its combination with oxygen it becomes insoluble and inert, a fact which is of extreme importance as it regards its pharmaceutical relations ; it unites with alumine, and if boiled with its salts, precipitates it, hence wool, cotton, or thread, impregnated with alum, may be dyed of a fawn-colour by *extractive ;* its habitudes with alkalies are very striking, combining most readily and forming with them compounds of a brownish yellow colour, which are very soluble in water ; if to a colourless and extremely dilute solution of extractive, an alkali be added, a brown or yellowish tint is immediately produced, so that under certain circumstances I have found an alkali to be a serviceable test in detecting the presence of extractive matter. The usual brown hue of the *liquor ammoniæ acetatis*, is owing to the action of the ammonia upon traces of vegetable extractive contained in the distilled vinegar.

Much confusion has arisen from the word *extract* having been employed in this double meaning,—*chemically* to express a peculiar vegetable proximate principle, and *pharmaceutically* to denote any substance however complicated in its nature, which has been obtained by the evaporation of a vegetable solution or a native vegetable juice. It is in the latter sense that it is to be understood in the present article.

The different proximate principles of vegetable matter undergo various and indefinite changes with such rapidity, when acted upon by heat, that

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the process of *extraction* must necessarily more or less impair the medicinal efficacy of a plant, and not unfrequently destroy it altogether, and hence, says Dr. Murray, " with the exception of some of the pure bitters, as gentian, or some of the saccharine vegetables, as liquorice, there is no medicine perhaps but what may be given with more advantage under some other form ;" this however is not exactly true, for when care is taken in the preparation, we are thus enabled to concentrate *many* very powerful qualities in a small space, and the process lately adopted of evaporating the solutions by the aid of steam, contributes very materially to obviate the failures which so frequently occurred from a too exalted temperature. There is, for instance, great reason to suppose that the black colour which so often characterises the extracts of commerce, is frequently owing to the decomposition and carbonization of the vegetable matter ; the colour therefore of an extract becomes in some degree a test of its goodness. I have lately examined the extracts of commerce with some attention, and I find the presence of iron by no means an uncommon circumstance ; when thus contaminated they afford a very dirty coloured solution, which rapidly becomes darker on exposure to air. The extracts mentioned in the preface as made by Mr. Barry, by *evaporating in vacuo*, deserve the attention of the profession ; the principle is without doubt well calculated to secure the active matter of the plant from those changes to which it is constantly liable during the ordinary operation of inspissation. The extracts, thus prepared, are certainly more powerful in their effects, and some few of them appear also to possess properties which are not to be distinguished in the Extracts of Commerce ; those of narcotic plants, as *Hemlock, Hyoscyamus, &c.* are decidedly more efficacious ; where the practitioner directs their use, he should, to prevent any mistake, add the words *in vacuo præp.* as in *Formula 4* ; for on account of the difference in the strength of these preparations, and of those prepared by the ordinary method, they cannot be indiscriminately employed. Dr. John Davy, at my request, has made trial of these extracts in the Military Hospital at Fort Pitt, and as his results coincide with those obtained in my own practice, I shall relate, under the history of each Extract, the comparative conclusions which have been obtained.

I. Watery or Simple Extracts.

Mucilaginous Extracts of Rouelle.

These extracts must, of course, contain all the principles of a plant which are soluble in water, such as gum, extractive matter, tannin, cinchonin, sugar, fecula, &c. together with any soluble salts which the vegetable may contain. I have also found by experiment that an aqueous extract may even contain, in small proportions, certain elements which, although quite insoluble in water, are nevertheless partially soluble in vegetable infusion. This law of vegetable chemistry has never been expressed, although we have repeated instances of its truth, and a knowledge of it may explain some hitherto unintelligible anomalies. It has been stated that extractive matter is perfectly insoluble in æther, but Mr. A. Thomson found repeatedly, that if a small portion of resin was present, æther would in that case take up extractive in combination with the resin which it so readily dissolves. As decoction or infusion is a process preliminary to that of extraction, the practitioner must refer to those

articles for an enumeration of the different sources of error which are attached to them.

Extractum Aloes Purificatum. L. The resinous element of the aloes is got rid of in this preparation; on which account it is supposed, in an equal dose, to be more purgative and less irritating. *Dose*, gr. x to xv. *Form*: 12, 13, 36.

Extractum Anthemidis. L.E. *Extract. Florum Chamæmeli.* D. This extract furnishes an example of the change effected on some plants by the process of extraction; in this case the volatile oil is dissipated, and a simple bitter remains, possessing scarcely any of the characteristic properties of chamomile. This remark, however, does not apply to this extract, when prepared *in vacuo*. I have lately received from Mr. Pope of Oxford Street, a specimen which retains, in the most eminent degree, all the odour and taste of the recent flower. *Dose*, gr. x — ℈j.

Extractum Cinchonæ. L.D. The properties of the bark in this preparation are much invalidated, owing to the oxidizement of its extractive matter, which takes place to such an extent, that not more than one half of the preparation is soluble in water; it is not however altogether devoid of utility, and will often sit lightly on the stomach, when the powder is rejected. Its taste is very bitter, but less austere than the powder. The most beautiful extract of bark, which I have ever seen, was prepared by Mr. Barry of Plough Court; its colour was that of a deep brilliant ruby, and its flavour preserved all the characteristic peculiarity of the recent substance.* *Dose*, grs. x to ʒss. Fourteen ounces of the bark will yield about three ounces and a half of the extract. It should be kept *soft*, so as to be fit for forming pills, and hard, so that it may be reduced to powder.

Extractum Colocynthidis. L. This extract is much milder, although less powerful, than the pulp; *Dose*, grs. v to ʒss. It soon becomes hard and mouldy.†

Extractum Gentianæ. L. E. D. The bitter principle suffers no deterioration in the process: it is used principally as a vehicle for metallic preparations. *Form.* 36, 53, 103. *Dose*, gr x to ℈j.

Extractum Glycyrrhizæ. L.D. It is usually imported from Spain; in the coarser kinds, the pulps of various plums and of prunes are added; it should dissolve in water without leaving any feculence.‡

Extractum Hæmatoxyli. L.E.D. The astringent properties of the

* Mystery is rarely practised but as the cloak of imposture; it is therefore unnecessary to add that Mr. Barry made no difficulty in stating the following to be the formula by which it was prepared.

A tincture of Bark, made with rectified spirit, was distilled until the whole of the spirit was driven off, the remaining solution was then left to cool, after which the resin that floated on the surface was removed, and the residuum inspissated at a low temperature.

† Barclay's Antibilious Pills. Take of the Extract of Colocynth ʒij, Resin of Jalap (extract Jalap) ʒj, Almond Soap ʒjss, Guaiacum ʒiij, Tartarized Antimony, grs viij, essential oils of Juniper, Carraway, and Rosemary, of each gtt. iv, of Syrup of Buckthorn, as much as will be sufficient to form a mass, which is to be divided into sixty-four pills.

‡ Refined Liquorice. This article, which is sold in the form of cylinders, is made by gently evaporating a solution of the pure extract of liquorice with half its weight of gum arabic, rolling the mass, and cutting it into lengths, and then polishing, by rolling them together in a box: many impurities however are frequently introduced into this article, such even as glue, &c.

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logwood are preserved in the extract, but it becomes so extremely hard, that pills made of it very commonly pass through the body without undergoing the least change. *Dose*, grs. x to 3ss dissolved in cinnamon water: it sometimes imparts a bloody hue to the urine of those who have taken it.

Extractum Humuli L. The bitter taste of the hop characterises this preparation; whether it possesses or not, any anodyne properties, seems very doubtful. *Dose*, grs. v to ℈j.

Extractum Opii. L.D. As it contains less resinous matter than crude opium, it is supposed to produce its effects with less subsequent derangement. See *Opium*. *Dose*. gr. j to v, for an adult.

Extractum Papaveris. L.D. It is a weak opium. *Dose*. grs. ij to ℈j.

Extractum Sarsaparillæ. Notwithstanding the reputation which this preparation has acquired, it is very doubtful whether it possesses any medicinal powers. *Dose*, gr. x to 3j in pills, or dissolved in the decoction.

Extractum Stramonii. This extract was first recommended by Stöerck, as a powerful remedy in maniacal affections; its probable value in such diseases appears to have been suggested by a very curious process of reasoning, viz. that as it deranged the intellect of the sane, it might possibly correct that of the insane. Experience has certainly not confirmed the very sanguine report of Stöerck with regard to its powers, but it has satisfactorily shewn its occasional value in violent paroxysms, in quieting the mind, and procuring rest. I am informed by my friend Dr. Davy, that, for such an object, it has been very frequently and successively given, in the Lunatic Military Hospital at Fort Clarence. He farther states that he has himself made many trials with the extract of Stramonium, prepared by Mr. Barry (*in vacuo*) as well as with the common extract; and that he finds the former to be uniformly more powerful. "In most diseases," says he, "this medicine would seem uncertain in its operation, sometimes occasioning an anodyne effect, and, at other times, producing irritation, and preventing sleep; I have however, seen very beneficial effects from it in asthma, and in coughs that have a nightly exacerbation, in doses of from gr. $\frac{1}{4}$ to gr. 2, daily."

Extractum Taraxaci. L.D. The medicinal powers of Dandelion are asserted to exist unimpaired in this preparation, but it becomes inert by keeping. See *Taraxacum*. *Dose*, grs x to 3j, in combination with sulphate of potass.

2. *Spirituous or Resinous Extracts.*

These may contain, with the exception of gum, all the ingredients contained in watery extracts, besides resin: their composition however will greatly depend upon the strength of the spirit employed as the solvent; but of this I shall speak more fully under the article *Tincture*.

Extractum Cinchonæ Resinosum. L.E.D. The operation of spirit in this preparation is two fold; it extracts from the bark the element which is insoluble in water, and it diminishes the tendency in the extractive matter to absorb oxygen during the process. *Dose*, grs. x to xxx. It is said that a spurious extract of bark is to be met with in the market, consisting of the extract of the horse-chesnut tree bark, and yellow resin.

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Extractum Colocynthidis Compositum. L.D. *Extract. Catharticum.* P.L. 1775. *Pilulæ Rudii.* P.L. 1720. This preparation has been established through successive pharmacopœias, and has undergone some modification in each ; in the present edition the soap has been restored, and its solubility is thereby increased, as well as its mildness as a cathartic. The omission of this ingredient was formerly suggested by the consideration of its being incompatible with *Calomel ;* this however is *not* the case. It presents a combination of purgative substances which is highly judicious, and will be found to be more powerful than an equivalent dose of any *one* of the ingredients. *Dose*, gr. v to ʒss, *Form.* 71, 81, 88.

Extractum Jalapæ. L.E.D. It is purgative, but is liable to gripe, unless it be triturated with sugar and almonds, or mucilage, so as to form an emulsion. *Dose*, grs. x to ℈j.

Extractum Rhei. L. The powers of the Rhubarb are considerably impaired in this extract. *Dose*, grs x to ʒss. *Form.* 78.

3. *Inspissated Juices.*

These preparations are obtained by expressing the juices from fresh plants, and evaporating them in a water bath ; they are generally of a lighter colour than common extracts, and they are certainly much more active, although there is a great difference in the activity of different samples ; and perhaps the *medicinal* powers of the juices themselves are very much under the controul of soil and season. That they vary *in quantity* from such causes we have ample proof; thus in moist seasons, Beaumé obtained five pounds of inspissated juice from thirty pounds of *elder berries*, whereas, in dry seasons, he could rarely get more than two. From *hemlock* he procured in October, 1796, 7·5 per cent of inspissated juice, and in May of the same year only 3·7 ; on the contrary, in August, 1768, 4 per cent., and in May, 1776, as much as 6·5 ; but in general, the product in the autumnal months was the most considerable.

The modes of preparing the inspissated juices of the same plant vary in the different pharmacopœias, and in several points that are very *essential :* some direct the expressed juices to be *immediately* inspissated, others allow them to undergo a slight degree of fermentation, and some *defecate* them, before they proceed to their inspissation.

Extractum (*Succus Spissatus.* E.) Aconiti. L.E. The medicinal properties of this preparation are analogous to those of the recent *Wolfsbane*, viz. narcotic, and in some cases diuretic, (see *Form.* 128.) It is however rarely used. *Dose*, at first, should not exceed gr. ½, but it may be gradually increased. I have not yet, says Dr. Davy, in a letter recently received from him, had much experience of the *Extractum Aconiti*, but that little is favourable to its use ; " in some cases of chronic rheumatism, and in some of intermittent fever, complicated with visceral disease, it has had a beneficial effect not to be mistaken ; the dose has been from one to two grains." Dr. Stoerck, who first tried this medicine, observed from it a powerful diaphoretic effect ; this, says Dr. Davy, " I have no noticed, and yet the extract which I have used was prep red by Mr. Barry, *in vacuo*, which is certainly far more powerful than that employed by Stoerck ; the latter, when applied to the tongue, " *levissimam tantum titillationem excitabat*," whereas that of Mr. Barry produces a most disagreeable sensation of burning, which extends to the throat ; and in one instance, when applied to the tip of my tongue, it occasioned ulceration."

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Extractum Belladonnæ. L.E. See *Belladonnæ Folia*. *Dose*, gr. j, gradually increased to gr. v, in the form of pill. Dr. Davy has made a few trials of Barry's Extract; the results of which he informs me are not at all favourable to the use of this medicine; it is much more powerful than the common extract, and can only be given with safety in small doses, "in several instances," says he, "I have not been able to repeat a grain dose daily, more than thrice, on account of the alarming symptoms produced, as head-ache, vertigo, indistinct vision with dilated pupil, and, in one case, irritation of the bladder, occasioning very frequent micturition; in chronic rheumatism and catarrh, with severe cough, the only diseases in which I have yet given it, it has not appeared to be the least serviceable; it may probably prove valuable to the occulist; from trials that have been made of it here by Mr. Miller, Assistant Surgeon to the Forces, it has been found to dilate the pupil beyond the common extract. Stoerck even introduced his extract into the eye with impunity. Acrid as the preparation is which I have used, the patients have never complained of it, nor have I known any disagreeable effects from it, when applied in solution, sufficiently dilute."

Extractum (*Succus Spissatus*. E.D.) Conii. L. Much of this extract, as it is found in commerce, has not been prepared with equal fidelity, nor with due attention to the season when the plant is in its greatest perfection; Dr. Fothergill says, "I know from repeated experiments, that the extract which has been prepared from *hemlock*, before the plant arrives at maturity, is much inferior to that which is made when the plant has acquired its full vigour, and is rather on the verge of decline: just when the flowers *fade*, the rudiments of the seeds become observable, and the *habit of the plant inclines to yellow*, *is the proper time* to collect it;" the plants which grow in places exposed to the sun should be selected, as being more *virose* than those that grow in the shade: still however with every precaution, it will always be uncertain in strength. Orfila found that an extract prepared by boiling the dried powder in water, and evaporating the decoction, was inert; in fact, the whole of the activity of the plant resides in a resinous element *insoluble* in water, and for which I have proposed the name of *Conein*. Extract of hemlock, when judiciously prepared, is a very valuable sedative; I state this from ample experience, and when combined with Hyoscyamus, and adapted by means of mucilage and syrup, to the form of a mixture, it affords a more effectual palliative than any remedy with which I am acquainted, for coughs and pulmonary irritation. *Form*. 19. is that, from which I have derived the greatest benefit in such cases. See also *Form*. 2, 3, 4, 19, 57. Since the fourth edition of the present work, I requested my friend Dr. John Davy to make trial of its efficacy in the Military Hospital at Chatham, and I here introduce his report upon the subject;—"My experience of the effects of the *Extractum Conii* perfectly agrees with that of Dr. Paris, as stated in the fourth edition of the Pharmacologia, and I am of his opinion that when properly prepared, and administered, it is a very valuable sedative; I have given it to the extent daily of from a scruple to a drachm, in chronic catarrh, and in phthisis pulmonalis, either alone or in conjunction with the Extract of Hyoscyamus, and it has afforded more relief than any other medicine that I have tried. From two or three trials of it in pneumonia, I am disposed to think it may be very serviceable in certain forms of this disease, in which venesection is contra-indicated by

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extreme debility ; and also in measles. In the trials alluded to, I commenced giving it in the large dose of a drachm, daily, suspended in water containing in solution a grain of *Antimonium Tartarizatum*. In a very few instances where I have from the commencement given it in a large dose, as from ʒj to ʒiss, it has occasioned hallucination of ideas, which in two cases was attended with excitement of the sensorium and increased action of the heart, and in one case, with diminished activity of both. The extract of Conium, prepared by Mr. Barry, is the most powerful one I have ever used, indeed, until I tried it, I had no just idea of the virtues of Conium as a medicine ; but I am now disposed to give credit to Stoerk's account of its efficacy in various chronic diseases ; and I have no doubt but that this valuable medicine has fallen into comparative disrepute and disuse from the bad quality of the extract commonly employed." Dr. Maton has found that the value of this extract is greatly increased by including the seeds in its preparation. *Dose*, grs. v to ℈j or more, twice or thrice a day ; in a full dose it produces giddiness, a slight nausea, and a tremor of the body ; a peculiar heavy sensation is also experienced about the eyes ; and the bowels become gently relaxed : unless some of these sensations are produced, we are ne ver sure that the remedy has had a *fair trial* of its effects. Patients will generally bear a larger dose at night than at noon, and at noon than in the morning.

Extractum Elaterii. L. This substance spontaneously subsides from the juice of the wild cucumber, in consequence I presume of one of those series of changes which vegetable matter is perpetually undergoing, although we are hitherto unable to express them by any known chemical law. It is therefore not an *extract*, either in the chemical or pharmaceutical acceptation of the term, nor an *inspissated juice*, nor is it a *fecula*,* as it has been termed ; the Dublin College has perhaps been more correct in simply calling it *Elaterium*, the name given to it by Dioscorides.

It occurs in commerce in little thin cakes, or broken pieces, bearing the impression of the muslin upon which it has been dried ; its *colour* is greenish, its *taste* bitter, and somewhat acrid ; and when tolerably pure, it is light, pulverulent, and inflammable.

The early history of this medicinal substance is involved in great perplexity, each author speaking of a different preparation by the same name ; for instance, the *Elaterium* of Dioscorides must have been a very different substance from that of *Theophrastus ;* and, wherever Hippocrates mentions the term, he evidently alludes to *any* violent purgative. "*Hippocrati Elaterium medicamentum est quod per alvum expurgat.*" (*Bod. in Theophrast.*) This will, in some degree, reconcile the discordant testimonies of different authors with regard to the powers of *Elaterium ;* for example, Dioscorides states its dose to be from grs. ii ℈j—in Ætius, Paulus, and Actuarius, it is recommended to the extent of ʒss—in Mesue from ℈ss to ℈j—in Bontius (*Med: Ind:*) from ℈j to ʒss—Massarias exhibits it in doses of gr. vj—Fernelius and Sennertus to ℈j—Herman from grs. v vj—Quincy to grs. v—and Boerhaave does not venture

* The juices of the Iris root, and Bryony root, and those of many other plants, allow their medicinal elements to separate and subside in a similar manner, leaving the super-natant liquid perfectly inert; if we must have a generic name to express such a substance, it should be termed a feculence, rather than a fecula.

to give more than gr. iv—while the practitioners of the present day limit their dose from gr. ½ to grs. ij. Dr. Clutterbuck, with a laudable intention to discover some method of procuring this article at a cheaper rate, and at the same time of establishing some process which might ensure a preparation of more uniform strength, has lately performed a series of interesting and instructive experiments,* the results of which prove in a satisfactory manner "that the active principle of this plant is neither lodged in the roots, leaves, flowers, nor stalks, in *any considerable quantity*; nor is it to be found in the body of the fruit itself, or in the seeds, but in *the juice around the seeds*; the substance which spontaneously subsides from this liquor, obtained without pressure, is *genuine* Elaterium, the quantity of which, contained in the fruit, is extremely small, for Dr. Clutterbuck obtained only six grains from *forty* cucumbers. This gentleman communicated the detail of these experiments to the President of the College of Physicians, who requested me, as professor of Materia Medica, to report upon them. I accordingly deemed it to be my duty to enter upon a series of new experiments, which I have lately completed, with the able assistance of Mr. Faraday, in the laboratory of the Royal Institution. The results of which will shew, that although Dr. Clutterbuck found that an eighth part of a grain of elaterium seldom failed to *purge violently*, yet, strange as it may appear that *not more than one grain in ten* of elaterium, as it occurs in commerce, possesses any active properties, and that this decimal part is a vegetable proximate principle, not hitherto noticed, to which I shall give the name of ELATIN. I shall subjoin the detail of my experiments, and I think it will appear that their results will authorise me to express the chemical composition of Elaterium in the following manner:

	F.	Water	·4
	B.	Extractive.	2·6
I.	B.DJ	Fecula	2·8
	C.	Gluten	·5
	K.	Woody matter	2·5
	H.	*Elatin*	1·2
	G.	Bitter Principle . . .	
			10 grains.

Proximate Analysis of Elaterium.

Experiments. Series 1st.

A.

Ten grains of Elaterium, obtained from a respectable chemist, and having all the sensible properties which indicated it to be genuine, were digested for twenty-four hours with distilled water, at a temperture far below that of boiling; *four grains* only were dissolved.

B.

The solution was intensely bitter, of a brownish yellow colour, and was not in the least disturbed by alcohol, although a solution of *Iodine* produced a blue colour; the solution therefore contained no gum, and only *slight traces* of starch.

C.

The solution, after standing twenty-four hours, yielded a *pellicle of* insoluble matter, which when burnt appeared to resemble *Gluten*.

* "Observations on the nature and preparation of the Elaterium," read at the Medical Society of London, April 24, 1819, and which were published in the Medical Repository, vol xii, No. 67.

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D.

The six grains which were insoluble in water, were treated for forty-eight hours with alcohol of the specific gravity ·817, at 66° of Fahrenheit: a green solution was obtained, but by slow evaporation *only half a grain* of solid green matter was procured. The insoluble residue obstinately adhered to, and coated the filtre like a varnish, and completely defended the mass from the action of the alcohol; it is probable that it consisted principally of *Starch*.

Experiments. Series 2d.

E.

Ten grains of Elaterium, from the same sample, were treated with alcohol of the specific gravity ·817, at 66° Fahrenheit, for twenty-four hours; upon being filtered, and the residuum washed with successive portions of alcohol, the Elaterium was found to have lost 1·6 of a grain. The high specific gravity of the alcohol in this experiment was important: had it been lower, different results would have been produced.

F.

The alcoholic solution obtained in the last experiment, was of a most brilliant and beautiful green colour, resembling that of the oil of cajeput, but brighter; upon slowly evaporating it, 1·2 grains of solid green matter were obtained.

G.

The solid green matter of the last experiment was treated with boiling distilled water, when a minute portion was thus dissolved, and a solution of a most intensely bitter taste, and of a brownish yellow colour, resulted.

H.

The residue, insoluble in water, was inflammable, burning with smoke and an aromatic odour, not in the least bitter; it was soluble in alkalies, and was again precipitated from them unchanged in colour; it formed, with pure alcohol, a beautiful tincture, which yielded an odour of a very nauseous kind, but of very little flavour, and which gave a precipitate with water; it was soft, and of considerable specific gravity, sinking rapidly in water; circumstances which distinguish it from common resin; in very minute quantities it purges. It appears to be the element in which the purgative powers of the Elaterium are concentrated, and which I have denominated ELATIN.

I.

The residuum, insoluble in alcohol, weighing 3·4 grs. (Expt. E) was boiled in double distilled water, when 5·9 grs. were dissolved.

J.

The above solution was copiously precipitated blue by a solution of Iodine, and was scarcely disturbed by the Persulphate of Iron.

K.

The part insoluble, both in alcohol and water, which was left after Experiment I, amounting to 2·5 grains; it burnt like wood, and was insoluble in alkalies.

It appears that the whole of the *Elatin* does not separate itself from its native juice by spontaneous subsidence, and that, on this account, the supernatant liquor possesses some powers as a cathartic. We cannot be surprised therefore that the Elaterium of commerce should be a very variable and uncertain medicine; for independent of the great temptation which its high price holds out for adulterating it, which is frequently done with starch, it necessarily follows that where the active principle of a compound bears so small a proportion to its bulk, it is liable to be affected by the slightest variation in the process for its preparation, and even by the temperature of the season; were pressure is used for obtaining the juices, a greater or less quantity of the inactive parts of the cucumber will be mixed with the *Elatin*, in proportion to the extent of such pressure,

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and the *Elaterium* will of course be proportionally weak.* There is one curious result obtained in my experiments which deserves notice, *viz.* that there is a *bitter* principle in the Elaterium, very distinct from its extractive matter, and totally unconnected with its activity, for I diluted the solution obtained in experiment G. and swallowed it, but it produced upon me no effect, except, that which I generally experience upon taking a powerful bitter,—an increased appetite ; and yet notwithstanding this fact, when in combination with *Elatin*, it is far from being inert, since this latter body is considerably quickened by its presence. *See* page 157. The solution B was given to a person, but no effect whatever ensued. *Dose* of good Elaterium, as it occurs in commerce, is about one grain, or it is better to give it only to the extent of half a grain at a time, and to repeat that dose every hour until it begins to operate. It is probably, when thus managed, the best hydragogue cathartic which we possess ; it differs however from the class of remedies to which it belongs, for it excites the pulse and whole animal system, so as to produce a considerable degree of febrile action. It was strongly recommended by Sydenham, Lister, and Hoffman, and all their cotemporaries and immediate successors, as a valuable remedy in dropsy ; but in consequence of some fatal results from its improper application, it was driven from practice with a violence that marks prejudice rather than conviction ; one author in descanting upon its virulence, exclaims, "*Elaterium esse in catalogo diaboli quo necat homines.*" For its restoration to medicine, we are indebted to Dr. Ferriar of Manchester, who used it with great success in the cure of Hydrothorax.

Extractum (*Succus Spissatus.* E.D.) Hyoscyami. L. This preparation is certainly powerfully narcotic, and tends to relax rather than astringe the bowels ; where the constitution is rebellious to opium, it furnishes a more valuable resource to the practitioner, than any other narcotic extract. *Dose*, gr. v to ℈j, in pills. *See Form.* 1, 3, 4, 19, 139.

Extractum Lactucæ. L. Succus Spissatus Lactucæ Sativæ. E. This preparation has found its way into the London Pharmacopœia, in consequence of the testimony of many highly respectable practitioners in favour of its sedative properties. In the memoirs of the Caledonian Horticultural Society, various suggestions are offered as to the best mode of obtaining an extract from the milky juice of the garden Lettuce, to which Dr. Duncan has bestowed the name of "Lactucarium ;" it was first recommended to take the milk with cotton, afterwards with a sponge, and more recently with a painter's brush ; all these methods however are attended with considerable difficulty, and the juice cannot be collected in any quantity. Mr. Probart, a chemist in Great Portland Street, has lately cultivated large plantations of the lettuce, for the purpose of insti-

* When it has a dark green colour, approaching to black, is compact, and very heavy, and breaks with a shining resinous fracture, we may reject it as an inferior article.

Since the publication of my experiments upon the ordinary Elaterium of Commerce, I have been favoured by Mr. Barry with the results of his trials upon the Elaterium made by W. Allen & Co. according to the improved process of Dr. Clutterbuck ; of the first sample, he found that out of ten grains, 5·5 were soluble in spirit of the specific gravity 809, of the second 6·2, and of the third 6·4 ; of that prepared by the same process at Apothecaries' Hall, 6 grs. were soluble. The residue, insoluble in the spirit, was administered to a patient, and ascertained to be perfectly inert. This report confirms beyond a doubt the great superiority of the Elaterium when prepared, without pressure, according to the suggestion of Dr. Clutterbuck.

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tuting experiments upon the subject, and I am happy in being enabled through his liberality, to introduce in this place, an account of the process which he pursues, and which he considers the only one by which the article can be brought into the market at any reasonable price.*

In concluding the history of Inspissated juices, it deserves notice that the London College uniformly directs that the *feculence* should be preserevd in the compound ; there can be no doubt of the propriety of such advice, but the Colleges of Edinburgh and Dublin reject it. The French Codex gives directions for two extracts from each of these substances, one containing what they please to denominate the *fecula*, the other not ; thus there is "*Extractum Cicutæ absque Fecula*," and "*Extract: Cicut: cum Fecula.*" There is one curious fact respecting these *narcotic* preparations, that most, if not all of them, contain *nitre*, *common salt*, and *muriate of potass*.

Manufacturing chemists, in order to give a smooth and glossy appearance to their Extracts, generally add to every lbj, about 3ss of gum, f3j

* "I have the Cos Lettuce planted about eight inches asunder in rows, between which there is sufficient space to enable persons to pass up and down without injuring the plants. I commence my operations just before the plant is about to flower, by cutting off an inch of the stem ; the milky juice immediately exudes, and is collected on pieces of Wove Cotton, about half a yard square. As soon as this becomes charged, it is throwa from time to time into a vessel containing a small quantity of water, which when sufficiently impregnated is evaporated at the common temperature of the atmosphere, by exposure in a number of shallow dishes. The LACTUCARIUM, in a few hours, is found adhering to the vessels in the form of an Extract, but differing from every other in all its sensible properties : this method enables me to collect LACTUCARIUM with great facility and dispatch, but it is still attended with considerable expense, as the proportion of milky product is necessarily very small, and the price of the medicine consequently high, and therefore not within the reach of general practice. This consideration led me to make farther experiments, for the purpose of ascertaining whether an EXTRACT might not be obtained from the plant possessing all the properties of Lactucarium, when administered in large doses, and which could be introduced at a comparatively trifling cost. In prosecuting this enquiry. I found that the plants contain most of the milky juice when they have flowered and the leaves are beginning to assume a yellow hue, and I observed that when cut down, the milky juice assumes for the most part a concrete form, having subsided in the bark of the stalk and in the old leaves, a circumstance which accounts for the extreme bitterness of these parts. I was naturally led from these circumstances to choose the above period for my operations, and to select those parts only of the plant for my extract, rejecting the substance of the stalk, and the young sprouts. My method of procuring the extract is as follows. I first macerate the parts in water, for twenty-four hours, and then boil them for two, after which I allow the clear decoction to drain through a sieve, without using any pressure; this is then evaporated, as far as it can be done with safety, and the process is finished in shallow dishes, in the manner above described, for obtaining Lactucarium. This extract, which I have called "EXTRACTUM LACTUCÆ CONCENTRATUM," is of course less powerful than Lactucarium, but it possesses all the properties in larger doses, and it has been found equally useful in a number and variety of cases, and is not more than a sixth part of the price."

Mr. Probart has retired from trade, but I have just learnt that the same article is now prepared, by a similar process, by Mr. Selway, Chemist, of New Cavendish Street, and the specimens which I have received authorise me to recommend it for trial. A concentrated tincture is also prepared.

The "Succus Spissatus Lactucæ sativæ," of the shops, must of necessity be almost inert, since it is commonly prepared at that period, when the plant contains none, or very little of the milky juice; and even if the Lettuce be employed at a more mature season, it must still fail to afford an extract of any strength, as it is merely the expressed juice, and that too of the whole plant indiscriminately, and will be found to contain a very minute proportion of Lactucarium, the great bulk being nothing more than inspissated green juice.

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of olive oil, and mxx of rectified spirit : there is no harm in the practice.

FERRI SUB-CARBONAS. L. Carbonas Ferri Præcipitatus. E. Carbonas Ferri. D.

Carbonate of Iron.

In a former Pharmacopœia of London, a sub-carbonate of iron was prepared, under the name of *ferrirubigo* (rust of iron), by exposing iron-filings to the action of air and water ; and although the Colleges of Edinburgh and Dublin still retain this mode of preparation yet they admit at the same time of another which, like the *sub-carbonate* of the present London Pharmacopœia, is produced by precipitation. Qualities. *Form*, a chocolate brown powder. *Odour*, none. *Taste*, slightly styptic. Chemical Composition. Mr. Phillips has shewn that this precipitate is liable to vary according to the temperature at which it is prepared, as well as from other differences of manipulation; it generally consists of mixtures of per-oxide, and proto-carbonate of iron, in the proportion of four parts of the latter, and six of the former By referring to the *Medicinal Dynameter* the practitioner may find the quantity of those ingredients in any given weight of the preparation, and compare its strength with the other chalybeate medicines. Solubility It is insoluble in water, but acids dissolve it with effervescence. Forms of Exhibition. In powder or pills, combined with aromatics. Dose, gr. v to xxx. (*Form.* 38.) It has lately been brought into particular notice by the publication of Mr Hutchinson of Southwell, who states that in doses of half a drachm to a drachm, two or three times a day, it has proved in his hands a most efficacious remedy in the cure of *Tic douloureux*. Mr. Hutchinson is well known to the profession as a judicious and inquiring practitioner, and we are well satisfied that he would not recommend any remedy to the attention of his brethren, without a well grounded assurance of its efficacy ; at the same time it must be remembered that this disease is very frequently the consequence of an irritation in some nerve, by the mechanical operation of osseous spiculæ ; in such cases we cannot expect the sub-carbonate of Iron to afford relief. A noble Marquis who lost his leg at Waterloo, suffered excruciating pains in his face, in consequence of exfoliation in the stump, which were relieved as soon as the local irritation subsided ; and a late lamented physician appears to have owed his severe sufferings to the irritation produced on the brain by a bony excrescence I have little doubt if cases of *Tic douloureux* were more carefully examined, they would be frequently found to derive their origin from a similar source. If it were necessary I could add several of such instances to those already enumerated.*

FERRI RAMENTA ET FILA. L. Fila et Limatura. E. Ferri Scobs. D.

Iron Filings and Wire.

Iron seems to be a metal that proves active in its *metallic* state ; its filings may be given in the form of powder, conjoined to some aromatic,

* Doctor Eights of Albany has related two cases of Neuralgia, in which the use of the Carbonate of Iron was attended with complete success. See New-York Medical and Physical Journal, Vol. I. p. 323. Ed.