

Sarah Bond

The gift of her Father

1833-

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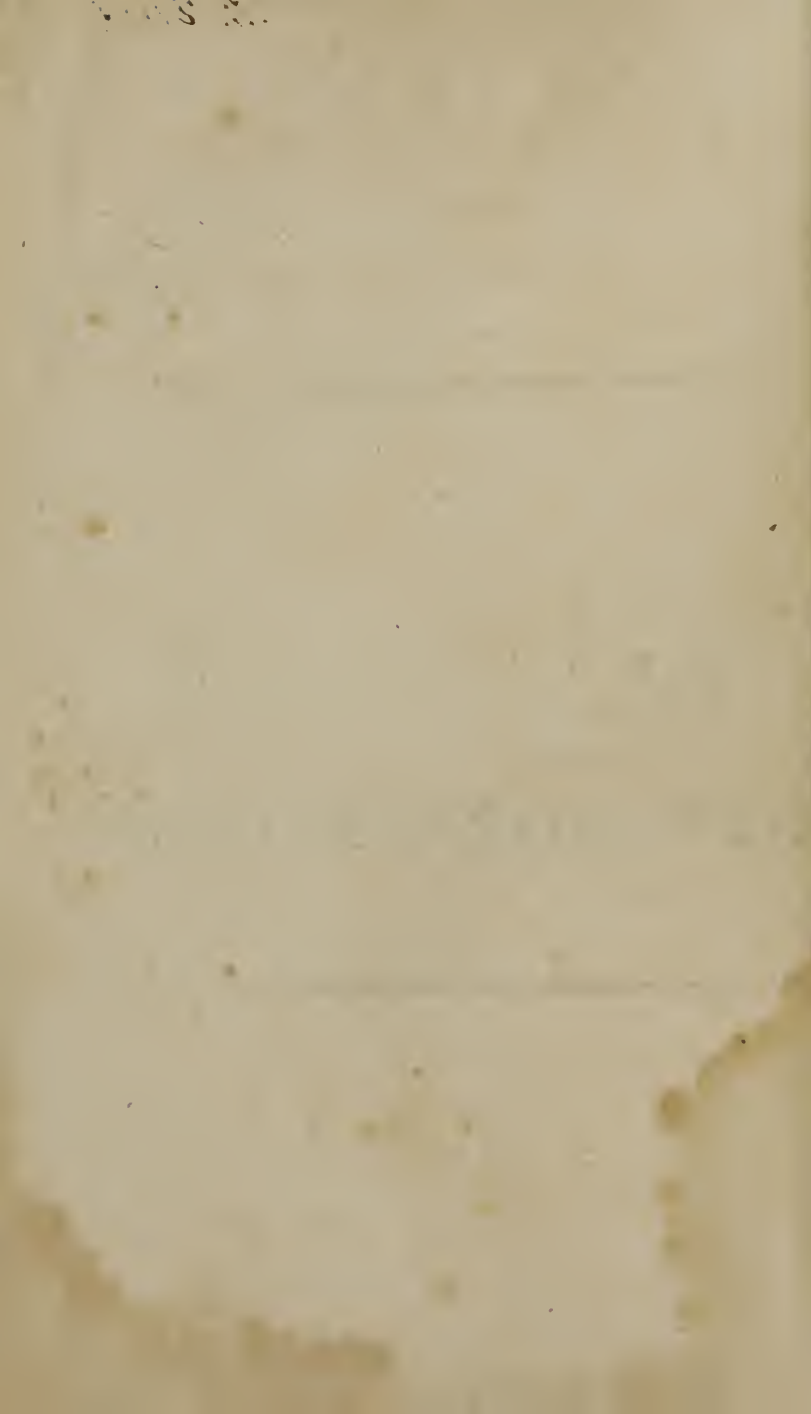
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THE

E D I N B U R G H

NEW DISPENSATORY.



Edinburgh

THE
E D I N B U R G H
NEW DISPENSATORY:

CONTAINING

I.
The ELEMENTS of PHARMA-
CEUTICAL CHEMISTRY.

II.
The MATERIA MEDICA; or, An
Account of the Natural History, Quali-
ties, Operations and Uses, of the diffe-
rent Substances employed in Medicine.

III.
The PHARMACEUTICAL PRE-
PARATIONS and MEDICI-
NAL COMPOSITIONS of
the New Editions of the LONDON
(1788) and EDINBURGH (1783) Phar-
macopoeias;

W I T H
EXPLANATORY, CRITICAL, AND PRACTICAL OBSERVATIONS
ON EACH:

Together with the Addition of those FORMULÆ,
FROM THE BEST FOREIGN PHARMACOPOEIAS,
Which are held in highest Esteem in other Parts of Europe.

THE WHOLE INTERSPERSED WITH
PRACTICAL CAUTIONS AND OBSERVATIONS,
AND ENRICHED BY THE LATEST DISCOVERIES IN
NATURAL HISTORY, CHEMISTRY, AND MEDICINE;

With New TABLES of
ELECTIVE ATTRACTIONS, of ANTIMONY, of MERCURY, &c.

A N D
COPPERPLATES of the most convenient FURNACES,
and Principal PHARMACEUTICAL INSTRUMENTS.

Being an IMPROVEMENT upon the
NEW DISPENSATORY OF DR LEWIS.

A NEW EDITION;
With many ALTERATIONS, CORRECTIONS, and ADDITIONS.

P H I L A D E L P H I A :

PRINTED BY T. DOBSON, AT THE STONE-HOUSE, N^o 41, IN
SECOND-STREET.

M, DCC, XCI.

M, DCC, XCI.

M, DCC, XCI.



TO
SIR GEORGE BAKER, BART.

PHYSICIAN TO THEIR MAJESTIES,

AND

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS
OF LONDON.

S I R,

IF the present edition of this work have any superiority over the last, that superiority principally arises from the many important improvements which have lately been made in the LONDON PHARMACOPOEIA; and for these improvements the public are not a little indebted to you. Permit me, therefore, to take this method of acknowledging, as an individual, the obligation which, in my opinion, you have conferred on every medical practitioner: And believe me to be, with sincere esteem,

Your most obedient servant,

EDINBURGH, }
Nov 1. 1788. }

ANDREW DUNCAN.

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P R E F A C E.

SUCH was the superiority of Dr Lewis's Dispensatory, at the time of its publication, over all others then extant, that it soon superseded every work of a similar nature in Britain, and obtained very high reputation abroad. During the life of the author, the improvements which that work received from his hands, in successive editions, corresponded to the discoveries that were then made in pharmaceutical chemistry; but during the period which has elapsed since the world was deprived of the labours of that ingenious, industrious, and learned man, chemistry, in all its branches, has received much greater improvements than before. It was therefore concluded, that an attempt to collect and apply the latest and most important discoveries to his Dispensatory, would not be unacceptable to the public.

This attempt was carried into execution about two years ago, by the publication of a work, under the title of EDINBURGH NEW DISPENSATORY. That work has met with an unequivocal proof of public approbation: for in little more than a year, a very large impression was completely sold off. Upon this event it would again have been immediately put to the press, had it not been from the expectation of a new edition of the London Pharmacopoeia; which was at that time in such forwardness, that a specimen of it had been distributed with the view of obtaining the opinion of other intelligent pharmacians respecting the intended alterations. That expectation has now been fulfilled. About the beginning of the present year, the London College, who had made no alteration in their Pharmacopoeia for near half a century before, republished that work, with many alterations and corrections: And as far as the present edition of this publication has any superiority over the former, that superiority principally arises from the many important improvements which the new London Pharmacopoeia contains.

This edition of the Edinburgh New Dispensatory includes a complete translation of the present London and Edinburgh Pharmacopoeias, which are by Royal authority the standards of pharmaceutical practice in Britain: and it contains also many additions from the best foreign Pharmacopoeias lately published on the continent of Europe, particularly from the Pharmacopoeia Suecica, Rossica, Danica, Brunsvicensis and Genevensis. But there is not a more material difference between the present and former impression of this work, in the additions which have taken place, than in the diminutions: And it is presumed, that no inconsiderable

able advantage arises from expunging from the present edition many articles which retained a place in the former, although obsolete, absurd, and not intitled to more notice than numbers of the prescriptions of Galen and Paracelsus, long since banished from every pharmacopœia. By omitting these, the time of the reader will not only be saved, but the danger of error avoided.

In the present edition, very considerable alterations have also been made in the arrangement of this work. In place of four, it is now divided into three parts: The first of these, *The Elements of Pharmacy*, was in the last edition adapted to the principles of modern chemistry, and illustrated by engravings of the most convenient furnaces and principal pharmaceutical instruments; here, therefore, there was but little room for alteration; and it is accordingly presented to the public very nearly in the same state as before.

In the second part, *The History of the Materia Medica*, we have retained the alphabetical mode of arrangement, which has in many particulars a decided superiority over every other which has yet been proposed, and which is now adopted in almost every modern Pharmacopœia. But to conjoin with this the advantages of other arrangements, a short view is annexed of some of the least exceptionable of these, both of ancient and modern date. The number of articles of which a history is given in this part of the work is now considerably abridged: for all those are now rejected which do not still retain the sanction of some modern Pharmacopœia of credit. But we have ventured to add to the list some articles which, although not yet received into any of the modern Pharmacopœias, have been recommended to the public on such authority as, at least, to point them out as the subject of future trials. The account which is given of the operation and use of each article, we have endeavoured to render correspondent to the pathological opinions at present most generally received among the moderns, and to the concurring testimony of faithful and accurate observers. We are indeed fully sensible, that in many particulars, with regard to the real effects of medicines, and still more with regard to their mode of operation, even the best informed moderns are still in a state of ignorance and uncertainty. But we have at least endeavoured, as far as we were able, both to shake off the trammels of theory and the authority of great names; and we flatter ourselves with the hope that our endeavours have not been altogether fruitless: We shall however be always ready to avail ourselves of the light which may hereafter be thrown by future experience and future observation; on any particular falling under this branch of our subject.

Under the third part, we have included what was formerly distributed into two, *Pharmaceutical Preparations* and *Medicinal Compositions*. In this we have followed both the London and Edinburgh Pharmacopœias; and, indeed, in many cases, it is totally impossible to draw an accurate line between preparations and compositions: accordingly most of those articles which were formerly referred to one or other of these heads, had an equal title to belong to both. In the arrangement of the different classes of preparations and compositions, we have followed the order of the London pharmacopœia; which, while it differs very little from that of the Edinburgh College,

College, is perhaps, in some particulars, preferable: But under each chapter, comprehending salts, spirits, powders, pills, or the like, we have introduced the most active and esteemed formulæ from foreign Pharmacopœias which have not a place in those of Britain. And we are inclined to think, that from these additions, medical practice in this island may derive some advantages.

By the changes which have now been pointed out, we trust that the present work has been not a little improved. We are, however, very far from considering it as a complete system of practical and scientific pharmacy. For accomplishing such a work, much yet remains to be discovered, much to be corrected; and the exertions of genius and industry may give future Dispensatories a better claim to the approbation of the learned and discerning reader: yet we hope, that our own labours bestowed on the present work will neither be altogether unacceptable nor useless to the public.

EDINBURGH, }
Nov. 1. 1788. }

*Explanation of the Contractions used for the Titles of
different Pharmacopœias quoted in this Work.*

Lond.—Pharmacopœia collegii regalis medicorum Londinensis, 4to, Londini 1788.

Edin.—Pharmacopœia collegii regii medicorum Edinburgensis, 8vo, Edinburgi 1783.

Gen.—Pharmacopœia Genevensis, ad usum nosocomiorum, 8vo, Genevæ 1780.

Susc.—Pharmacopœia Suecica, editio altera emendata, 8vo, Holmiæ 1779.

Ross.—Pharmacopœia Rossica, 4to, Petropoli 1778.

Brun.—Dispensatorium pharmaceuticum Brunsvicense, 4to, Brunsvici

Dan.—Pharmacopœia Danica, regia auctoritate, a collegii medico Hauniensi conscripta, 4to, Hauniæ 1772.

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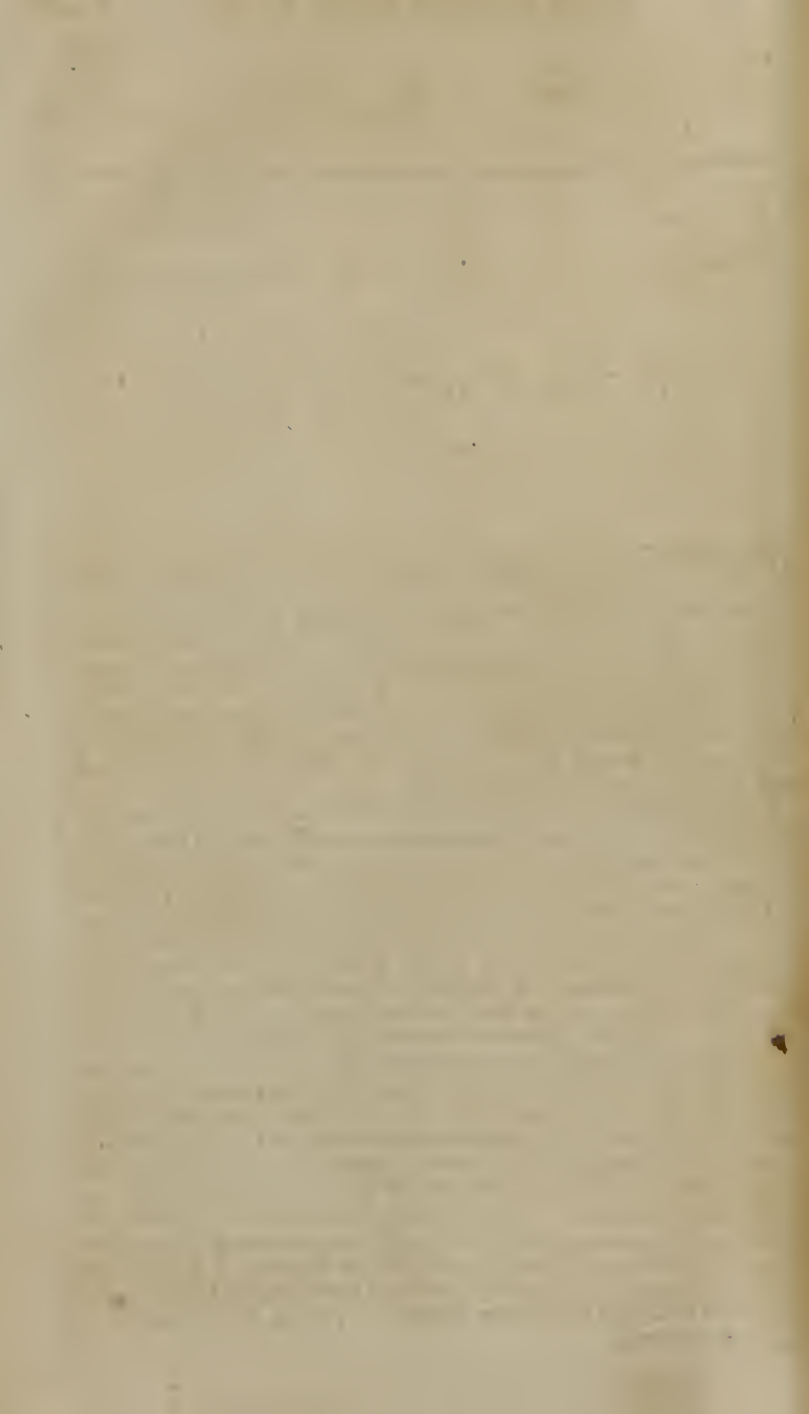
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I N T R O D U C T I O N .

PHARMACY is the art of preparing, preserving, and compounding substances for the purposes of medicine. This art has very commonly been divided into two branches, *Galenical* and *Chemical* pharmacy. But for this division there is no just foundation in nature : And accordingly, processes in one pharmacopœia referred to the head of *Chemical*, are in another referred to the head of *Galenical*. There can be no doubt, that even the most simple pharmaceutical preparations are to a certain extent chemical. Hence this division, founded on prejudice, and supported merely by a veneration for antiquity, is now banished from almost every modern pharmacopœia.

Pharmacy has also been divided into *Theoretical* and *Practical* ; the first, consisting not merely of speculative opinions ; but of a knowledge of facts and principles, tending to explain the *rationale* of processes ; the latter, comprehending the mere manual labour employed in processes.

The former of these may therefore be justly styled *Scientific Pharmacy*. And there can be no doubt that an acquaintance with it is essentially necessary to the due exercise of the healing art : For without it the practitioner must often err in the forms of preparations and compositions which he employs ; and he must often be deceived in the effects resulting from compositions, when he infers their properties from the known powers of the ingredients in their separate state. It would therefore be highly improper to detach the scientific and practical parts of pharmacy from each other. And accordingly, in the first part of this work a general view is given of the elements of pharmacy both practical and scientific, that the reader may be better prepared for the consideration of the particular subjects and processes which fall to be treated of under the second and third parts. As in some degree subservient to the same intention, we have here also subjoined an abstract from the Syllabus of Dr Webster's Lectures on Chemistry and Materia Medica. It will at least present the reader with an useful method of arranging the subjects ; and may at the same time be of some service in supplying the want of synonyms in this work.



ABSTRACT from Dr WEBSTER'S SYLLABUS of
Lectures on Chemistry and Materia Medica.

IN Chemistry we consider the dispositions of the *different* kinds of matter to unite, with their effects on union, as in dietetics and materia medica we do their effects on the human body.

That power by which *different* particles unite is called *chemical attraction*, or *unescence*.

MATTER has been commonly arranged into six kinds. 1. *Salts*; syn. saline bodies. 2. *Earths*; syn. earthy bodies, stones. 3. *Inflammables*; syn. combustibles. 4. *Metals*; syn. metallic bodies. 5. *Water*; syn. watery or aqueous bodies. 6. *Airs*; syn. gases, gaseous or aërial bodies, permanent vapours. The kinds of matter not comprehensible in the above arrangement are, 1. Heat; syn. absolute or elementary heat or fire; principle or matter of heat. 2. Light; syn. matter of light, luminous principle. 3. Electrical fluid. 4. Magnetical fluid. 5. Peculiar vegetable and animal matters: as gum; colouring-matter; starch, or amylaceous matter; vegeto-animal gluten, coagulable lymph or fibre of the blood.

1. SALTS are sapid, soluble in water, generally uninflamable. They are simple and compound.

The simple are so called, as being ingredients in the compound, and are *acids* and *alkalies*.

The compound salts are saline and middle, *i. e.* the earthy and metallic; as the acidated alkalies, earths, and metals.

The saline, syn. neutral, acido-alkaline, sales falsi, consist of two or more simple salts. The earthy, syn. saline earths, consist of a simple salt and an earth. The metallic consist of a simple or saline salt and a metal. The salts consolidated with water in a regular form are said to be crystallised.

A salt is said to be, 1. Deliquescent when it attracts water from the air; syn. aquescent. 2. Spontaneously calcinable, when the water of its crystals is attracted by the air; syn. efflorescent, deaquescent. 3. Subject to the watery fusion, when it is soluble by heat in its crystalline water. 4. Decrepitating, when it crackles in the fire, owing to its small quantity of water becoming suddenly elastic vapour; syn. subaquated. 5. Deflagrating, when, from the pure air which it contains, it can support and accelerate combustion; syn. detonating, deaërescent; as salts containing acid of nitre.

2. EARTHS, except lime, are insipid; difficultly soluble in water, difficultly fusible, becoming glass, uninflamable, unmetallisable, and not heavier than five times their bulk of water.

3. INFLAMMABLES, when set on fire, burn till resolved into salts, earths, water, or some mixture of these.

4. METALS are opaque, bright bodies, not lighter than six times their bulk of water.

The inflammables and metals are supposed to owe their distinguishing qualities to their containing a subtil fluid called *phlogiston*, syn. principle of inflamability or metallification, sulphureous, oleous, spirituous, or in-

flammable principle, fixt fire, pure inflammable air. The inflammables and metals are called *phlogistic bodies*; or, as their uninflammable part as well as their phlogiston have a disposition to unite with air, *aërescent bodies*. The metals are supposed to consist of peculiar earths or acids with phlogiston, or peculiar substances free from pure air.

5. WATER is a colourless, insipid body; which has a disposition to unite with salts and some airs, and thus forms mineral waters.

6. AIRS are invisible fluids, of indefinite elasticity, retaining their aërial form in any degree of cold yet known. Except two, called *pure* and *impure*, both ingredients of the atmosphere, they all seem to be acid, alkaline, or inflammable. The pure air supports life much longer, and promotes inflammation much more than common or atmospheric air: it is also called *empyreal*, *aphlogistic*, *dephlogisticated*, *vital*, *fire air*, *eminently respirable*, *principal of acidity*; and is supposed to be *dephlogisticated water*. The impure air, like all the rest, except pure and atmospheric air, destroys life and flame; and is also called *noxious*, *foul*, *corrupted*, *phlogisticated air*, or *atmospheric mephitis*.

The operations by which permanent effects are produced on the different kinds of matter, are,

I. Composition: *syn.* Mixture, combination, union, solution. As chemical attraction does not take place at any sensible distance, attention is necessary to diminish cohesion in solids, to approximate the particles of the ingredients, and to multiply their points of contact.

Bodies minutely divided, as in the state of vapour or air, refusing to unite, have no attraction; liquids refusing, have little; but a liquid uniting with a solid or air, shows a great attraction.

The general effects of chemical union are, 1. Condensation, consequently increase of specific gravity. 2. Heat, except it be absorbed by the production of liquidity or vapour. 3. Change of form, solids becoming fluids, and fluids becoming solids. 4. Extreme division of parts. 5. Change of colour. 6. Diminished attraction for other bodies: hence the more simple a body is, the stronger and more numerous are its attractions. 7. Alterations with regard to the effects of heat and other kinds of matter. 8. Different appearance on being mixed with other bodies. 9. Alteration of effects on the human body.

II. Decomposition: *syn.* Separation, as open evaporation; close evaporation; that is, distillation or sublimation; precipitation.

Besides the heads of Composition and Decomposition, another seems necessary; as in the operations of the calcination and reduction of metals and vitrification, there seems to be something parted with and something received. This head may be called *Reciprocation*.

As chemical attraction seems to dispose matter to unite with one kind rather than with another; by which a body added attracts an ingredient from a compound, thereby producing a new compound; and a compound changes ingredients with another compound, thereby producing two new compounds; the former is called a *single elective attraction*, and the latter a *double one*, as exhibited in the Tables. The supposed anomalies in the order of attractions were chiefly owing to overlooking the influence of heat, phlogiston, air, or water, as ingredients, the union of three of the ingredients, the solubility of some of them, or the excess of acid in some of the compound salts.

The most simple kinds of matter seem to be, 1. Heat. 2. Light. 3. Phlogiston. 4. Electrical fluid. 5. Magnetical fluid. 6. Pure air*.

Those considered as next in simplicity are, the acids, the alkalies, the earths, and water.

The different kinds of matter are rarely found pure in nature. They differ from each other in their origin, sensible qualities, chemical attractions, and the compounds which they form.

A C I D S.

ACIDS have a sour taste; redden certain vegetable blues; unite with alkalies, earths, inflammables, or metals; by which union the ingredients may lose their distinguishing qualities, the compound being then said to be neutral. The acids seem to contain pure air. They owe their liquid state to water, and their colour and volatility probably to phlogiston; for both which they in general, have a powerful attraction. The mineral acids burn animal and vegetable bodies like fire. Diluted with 40 or 50 times their weight of water, they are as active as the other acids. The vegetable and animal acids possess the general properties of acids in a much inferior degree; they contain oily and slimy matter, and are totally destroyed by a red heat. Acids, as articles of the materia medica, dissolve, at least out of the body, some animal concretions, neutralise the taste of bitters, correct vegetable poisons; seem to be locally stimulant and astringent; and are employed to obviate weakness, relaxation, spasm, acidity, putrescence, heat, thirst, sweat, hemorrhagy, chronic eruptions, increased discharges, the ill condition of certain ulcers. They occasionally increase the secretions, according to the dose and temperature of the patient. The vegetable acids are applied in external inflammation; and acid juices are used internally in active inflammatory and hemorrhagic states. Acid vapours are employed as antidotes to contagion. Acids render the stomach less capable of being acted on by other matters, as spirits, &c. They are sometimes observed to excite cough and spasms. Their administration requires only dilution with water, which may also be sweetened.

1. *Acid of vitriol*: syn. Vitriolic acid, oil of vitriol, acid of sulphur, sulphureous acid, acid of alum, aluminous acid; aërial, ethereal, primogenial, universal or catholic acid; acidum calcanthi, acidum vagum fossile. In its concrete state, it is called glacial or icy oil of vitriol; in its ordinary strong state, that is, when about double the weight of water, the epithet *strong* or *concentrated* is often added; and in a more diluted state, that is, with about seven waters, it is called weak vitriolic acid, spirit of vitriol, or spirit of sulphur by the bell. Its vaporific point when pure, is about 550° of heat. United with a certain proportion of phlogiston, it may exist in the form of vitriolic acid air; and this, combined with water, forms the volatile vitriolic or sulphureous acid. Saturated with phlogiston, it forms sulphur. It has a considerable attraction for phlogiston.

B 2

2. *Acid*

* Some, however, consider heat and light as different compounds of pure air and phlogiston; while others, denying the existence of phlogiston, consider pure air as consisting of heat and a certain matter which phlogistic bodies are disposed to absorb. Others, again, consider the five first as mere modifications of one another.

2. *Acid of nitre* ; syn. Nitrous acid, smoking acid or spirit of nitre, smoking nitrous acid, Glauber's spirit of nitre. Diluted, it is called single aquafortis. It exists in form of nitrous and nitrous acid air. It has a remarkable attraction for phlogiston.
3. *Acid of salt* ; syn. Acid of muria, muriatic or marine acid, spirit of salt, acid or spirit of sea-salt, Glauber's spirit of sea salt, spirit of sal gem, acid spirit of sal ammoniac. It exists in form of marine acid air. It seems to contain so much phlogiston that it has little attraction for it. It is dephlogisticated by black calx of manganese, calx of arsenic, acid of nitre, &c. These are the three chief mineral acids.
4. *Acid of tartar* ; syn. Tartareous acid, spirit of tartar.
5. *Acid of vinegar* ; syn. Spirit of vinegar or of verdegris, radical vinegar, acetous acid. It exists in form of acetous air.

Vinegar is a product of fermentation ; a process by which dead organic matter, exposed to air, moisture, and a heat at least above 32°, is decomposed ; and in the case of sweet matter produces successively alcohol, vinegar, and volatile alkali, with a respective ferment in each stage. These stages are called the vinous or spirituous, the acetous, and the putrefactive. The ferment in the first stage seems to be acid of chalk.

6. *Acid of Borax* ; syn. Sedative or narcotic salt of Homberg, Boracic acid.
7. *Acid of chalk* ; syn. Cretaceous, cretous, calcareous, chalky, aerial, or mephitic acid, air or gas ; fixt, fixable air or gas, gas sylvestre, deadly or choak damp. Water combined with it is called mephitic or acidulous water, or spirit of chalk.

The acid and alkaline airs are readily absorbable by water, and are considered as the vapours of the acids volatilised by phlogiston.

8. The other acids are, 1. *Aqua regia. 2. Acid of amber. 3. Acid of benzoin. 4. *Acid of sugar. 5. *Acid of milk. 6. *Acid of sugar of milk. 7. Acid of lemons. 8. Acid of tamarinds. 9. Acid of sorrel. 10. *Acid of fat. 11. *Acid of ants. 12. *Acid of arsenic. 13. *Acid of fluor or spar. 14. *Acid of phosphorus. 15. *Acidum perlatum. 16. *Acid of Prussian blue. 17. Acid of tungstein.

Perhaps the acid principle is the same in all acids, and they differ from one another only in their proportions of pure air and phlogiston.

A L K A L I E S .

ALKALIES, whether the *saline* or *earthy*, have many properties in common. They are found united with the acid of chalk, they have much the same appearance, they green vegetable blues, unite with acids, are fluxes to the stony earths, and render oil of sulphur miscible with water. The earthy are much less soluble in water ; and, except lime, have little or no taste. The earthy are deprived of their acid by heat, the saline require another attracting substance, as lime. The saline ones and lime, when pure, are corrosive, aquescent, and act on the metals in some

mea-

Those marked thus * are not used in medicine.

measure like the acids. They dissolve animal concretions and mucus, are said to correct animal poisons, and out of the body they obviate putrefaction. The earthy alkalies, if mild, whether with or without their acid, and common salt when in a small proportion, seem the only particular substances that promote putrefaction. When diluted, they are used externally in chronic eruptions, to stimulate the inactive vessels in foul ulcers, and in the form of injection to destroy ascarides. Some use them internally in scrophela. The saline ones increase the discharges by the skin, kidneys, and intestines, according to the dose and patient's temperature: the volatile alkali is used as a rubefacient; and its odour to excite the living principle; and likewise internally to stimulate and to obviate spasm and torpor. Lime-water is used as a tonic and astringent, as in dyspepsia, intermittents, and increased discharges. The other alkaline earths seem merely to absorb moisture and acid; and magnesia meeting with acid in the stomach purges. The use of the alkalies cannot be long continued without injuring the stomach and constitution. The saline ones may be given diluted, or with some conserve in form of bolus; and the mild earthy ones suspended in water by gum.

SALINE ALKALIES; *syn.* Alkaline or antacid salts.

1. *Vegetable alkali*: *syn.* Pure kali, caustic vegetable alkali, or alkali of tartar; caustic, infernal, or septic stone, potential cautery, common caustic. Dissolved in water, it is called caustic ley, or water of pure kali.

Subcretised vegetable alkali: *syn.* Kali, common or mild vegetable alkali; fixt nitre; salt of tartar; the impure, as that of wormwood, of plants, of woods, &c. pot-ash, pearl-ash, calshub, morcoft ashes, black or white flux. Dissolved in water, it is called oil of tartar, per deliquium, liquor of fixt alkali or of fixt nitre, ley of tartar, water of kali. It contains 20 parts of pure acid, 48 of pure alkali, and 32 of water in the hundred, and is soluble in 4 waters at 60° of Fahrenheit's scale. Its crystals are permanent.

2. *Mineral alkali*; *syn.* Pure or caustic, mineral, marine, or fossile alkali, natron, soda, alkali of salt. Dissolved in water, it is called soap-ley.

Subcretised mineral alkali: *syn.* common or mild mineral or fossile alkali, soda, or salt of soda, barilla, kelp, mural natron, aphronitrum, the nitre of the ancients, Egyptian nitre. It contains 16 of acid, 20 of alkali, and 64 of water; is soluble in two waters. Its crystals are deaquescent.

3. *Volatile alkali*: *syn.* Ammonia, pure or caustic volatile alkali, alkali of bones or of cali. Combined with water, it is called caustic volatile spirit, spirit of sal ammoniac prepared by quicklime, water of pure ammonia. It exists in form of alkaline air, which is capable of decomposition.

Subcretised volatile alkali or Amonia: *syn.* Common mild concrete volatile alkali, salt of urine, volatile alkali, or salt of sal ammoniac, volatile sal ammoniac, salt of foot, or hartshorn, volatile salt of bones, of ivory, of elks-hoof, of vipers, of earth-worms, &c. It contains 45 of acid, 43

of alkali, and 12 of water. Dissolved in water, it is called mild spirit of sal ammoniac, of hartshorn water of ammonia, &c.

This last is called volatile, as it exhales in the common temperature of the atmosphere. The epithet *fixed* is often added to the names of the other two, as they require a great degree of heat to convert them into vapour.

EARTHY ALKALIES; syn. Alkaline, absorbent, antacid earth.

1. * *Barytes*: syn. Pure ponderous, or heavy earth. Soluble in 900 waters at 60°; spec. grav. 4.
Subcretised barytes.
2. *Lime*: syn. Pure, calcined, burnt, caustic limestone, chalk, calcareous earth: quicklime. Soluble in 680 waters at 60°; spec. grave. 2. 3.
Subcretised lime: syn. mild calcareous earth, as limestone, chalk, marble, marle, gur; animal shells and concretions, as oyster shells; various spars, petrefactions, &c. It often contains 40 of acid.
3. *Magnesia*: syn. Pure, muriatic earth, or calcined magnesia. Soluble in 7692 waters at 60°; spec. grav. 2. 33.
Subcretised magnesia: syn. common magnesia, magnesia of nitre, of common salt, Count de Palma's powder, Valentini's laxative poly-chrest. It often contains $\frac{7}{4}$ of acid.
4. *Clay*: syn. Pure clay, argillaceous earth, earth of alum: As insoluble as magnesia. Bole, as French bole, is an impure clay; spec. grav. 2.
Subcretised clay.
5. The other primitive earth is the *Flinty*; syn. siliceous, crystalline, vitrescent, or vitrifiable; which is soluble in no acid but that of spar. Sp. gr. 2.66.

The volatile alkali seems naturally to contain phlogiston. All the three are alterable by certain phlogistic matters, and then said to be phlogisticated; the two fixt by such means yield volatile alkali. Perhaps the alkaline principle is the same in all the alkaline substances, and they differ from one another only in the proportions of earthy matter and phlogiston.

S A L I N E S A L T S.

The saline salts may be produced, 1. By mixing the ingredients to the point of saturation; and in the case of perfect neutrals, till the distinguishing qualities of the ingredients are lost. 2. By adding the acid to a compound containing the alkali. 3. By adding the alkali to a compound containing the acid. 4. By a double elective attraction. This applies in some measure to all compound salts.

The saline and earthy salts increase the discharges by the skin, the kidneys, and intestines, according to the dose and patient's temperature; are used chiefly in active inflammatory and hemorrhagic states, but sometimes with

with the view of carrying off effused water or acrimony. Saline salts are rendered more active by large dilutions; and more grateful by sugar, lemon-juice, and an aromatic. Alum is chiefly used as an astringent.

1. *Vitriolated Vegetable Alkali* or *Kali*; syn. Vitriolated nitre or tartar. Glaſer's ſal polychreſt. arcanum duplicatum, ſal enixum de duobus. It contains 40 of acid, 52 of alkali, and 18 of water; ſoluble in 5 waters at 212°, and in 16 at 60°. Its cryſtals are ſubaquated and permanent; taſte bitteriſh.
2. *Vitriolated Mineral Alkali* or *Natron*; ſyn. Glauber's purging or wonderful ſalt, vitriolated ſoda. It contains 27 of acid, 15 of alkali, and 58 of water; ſoluble in four-fifths its weight of water at 212°, in 3 at 60°, by heat in its own water, is deaqueſcent; loſing in both caſes above one half its weight. Taſte cool and bitteriſh.
3. *Nitriated Vegetable Alkali* or *Kali*; ſyn. Nitre, ſaltpetre, prismaic nitre, ſal prunel, mineral cryſtal. It contains 33 of acid, 49 of alkali, and 18 of water; ſoluble in one water at 212°, and in 7 at 60°: cryſtals permanent. Taſte cool, acrid, and bitteriſh.
4. *Muriated Vegetable Alkali*, or *Kali*; ſyn. Digefſtive ſalt, Sylvius's febrifuge ſalt, regenerated ſea-ſalt, ſpiritus ſalis marini coagulatus. It contains 31 of acid, 51 of alkali, and 8 of water; ſoluble in 2 waters at 212°, and in 3 at 60°. Cryſtals permanent and ſubaquated. Taſte ſalt and acrid.
5. *Muriated Mineral Alkali* or *Natron*; ſyn. Salited foſſile alkali; ſea, fountain, mountain, foſſile, marine, or common ſalt; ſal gem. It contains 52 of acid, 42 of alkali, and 6 of water. Soluble in 2½ waters at 212°, and in a little more at 60°. Cryſtals permanent and ſubaquated. Taſte ſalt and agreeable.
6. *Muriated Volatile Alkali* or *Ammonia*; ſyn. Crude, common, or ſimply ſal ammoniac, armoniac, armeniac, cyreniac; ſalt of ſand, flowers of ſal ammoniac. It contains 52 of acid, 40 of alkali, and 8 of water; ſoluble in one water at 212°, and in 3¼ at 60°. Cryſtals permanent. Taſte acrid.
7. *Supertartariſed Vegetable Alkali* or *Kali*; ſyn. Cryſtals or cream of tartar pure tartar. Tartar in its impure ſtate is called crude, red or white tartar, argol or wineſtone. It contains about one-fourth its weight of alkali; ſoluble in 28 waters at 212°, and in 150 at 60°. Cryſtals permanent. Taſte acid. The exceſs of acid in compound ſalts adheres leſs firmly than the neutraliſing portion.
8. *Tartariſed Vegetable Alkali* or *Kali*; ſyn. Tartariſed tartar, ſoluble tartar, vegetable ſalt. Soluble in 4 waters at 60°; aqueſcent, taſte bitter.
9. *Tartariſed Fixed Alkali* or *Kalination*; ſyn. Rochelle ſalt, Seignette's polychreſt ſalt, tartariſed ſoda. It contains more than one-fourth of mineral alkali, leſs than one-fourth of vegetable alkali ſoluble in 4 waters at 60°; deaqueſcent.
10. *Acetiſed Vegetable Alkali* or *Kali*; ſyn. diuretic ſalt, regenerated tartar, terra foliata tartari. It contains 19 of acid, 32 of alkali, and 49 of water; is very aqueſcent.
11. *Acetiſed Volatile Alkali* or *Ammonia*; ſyn. Mindererus's ſpirit, vegetable ammoniac. Very aqueſcent.

12. *Sub-boraxated Mineral Alkali* or *Natron*; syn. Borax, tincal, cryfocolla. It contains 34 of acid, 17 of alkali, and 47 of water; foluble in 6 waters at 212°, and in 12 at 60°; foluble by heat in its own water; and fomewhat deaquefcent.
13. *Lemonated Vegetable Alkali* or *Kali*; syn. Saline, or anti-emetic mixture.

E A R T H Y S A L T S.

1. * *Vitriolated Barytes*, syn. Ponderous fpar or gypfum, Bononian fstone, barofelenite, marmor metallicum. Not foluble in 1000 waters at 212°.
2. * *Vitriolated Lime*; syn. Gypfum, felenite, plafter of Paris. Soluble in 500 waters at 60°.
3. *Vitriolated Magnesia*; syn. Bitter falt, bitter purging falt; Englifh, Epfom, Sedlitz, or Seidschutz falt. It contains 33 of acid, 19 of magnesia, and 48 of water; foluble in two-thirds of water at 212° and in one water at 60°; foluble by heat in its own water; deaquefcent; lofing, in both cafes, one half its weight. Tafte cool and very bitter.
4. *Supervitriolated Clay*; syn. Alum. It contains 38 of acid, 18 of clay, 44 of water; foluble in two-thirds of water at 212°, and in 15 at 60°. Cryftals permanent; foluble by heat in their own water, and lofe one half their weight.

Glutinous fubftances, whether inffipid or fweet, are, like the falts, foluble in water; fufpend oil and heavier matters in water; are rendered mifcible in fpirit by effential oil or refın; defend from acrimony, and the fweets render other medicines agreeable. Glutinous fubftances, when pure, may be diluted; or fweetened in form of lozenge.

The *inffipid* are—*Gummi Arabicum*, *Gummi Tragacanthæ*, *Althæa Linum*, *Malva*, *Convallaria*, *Lilium album*, *Satyrium*, *Lichen*, *Parietaria*, *Trichomanes*, *Fænum*, *Græcum*.—The *fweet* are—*Saccharum*, *Manna*, *Mel Glycyrrhiza*, *Prunus Gallica*, *Uvæ paffæ majores et minores*, *Carica*, *Caffia fifularis*, *Ginfeng*.

I N F L A M M A B L E B O D I E S.

HEAT, from whatever fource, as from condenfation, in the fun's rays, electricity, chemical union, fermentation, animals, friction, or percuffion, or phlogiftic bodies, has the following general effects: Calefaction, rarefaction, as expansion, fluidity, and vapour; ignition; and, with regard to phlogiftic bodies expofed to the air, inflammation, or combuftion. The heat and phenomena of this laft may be from the double chemical union and condenfation which take place, viz. the union betwixt the elementary bodies pure air and phlogifton, and betwixt pure air and the refiduum.

- I. *Inffammable Air*; syn. Fire-damp.
- II. *Alcohol*; syn. Ardent fpirits, rectified fpirit, fpirit of wine, vinous fpirit, pure fpirit. It means a fpirit free from all water, except what enters

enters its composition as an ingredient. When its specific gravity is to water as 13 to 12, it is called rectified spirit. This diluted with an equal weight of water, is called a proof-spirit, a brandy, weak spirit of wine. Its vaporific and inflammable point is 174°. Its strength is judged of by its partial or entire inflammability, levity, and fluidity. When pure, it is the same from whatever fermented liquor it is distilled. Its ingredients seem to be water, acid, and a subtle oil containing its phlogiston. It dissolves the saline alkalies, and more or less of the following compound salts, most of the ammoniacal salts, acetified vegetable alkali, nitrated and muriated lime and magnesia, supervitriolated iron somewhat dephlogisticated, supermuriated mercury. It does not dissolve the vitriolic compounds. It is stimulant and intoxicating. Its compounds are,

1. *Vitriolic Æthereal Liquor*; syn. Vitriolic æther, *vitriocol*.
 2. *Dulcified Spirits*; syn. Weak æthers; as *sweet spirit of vitriol*, syn. Vinous vitriolic acid, weak vitriocol.
 3. *Sweet Spirit of Nitre*; syn. Vinous nitrous acid, spirit of nitrous æther, weak nitrocol.
 4. *Sweet Spirit of Salt*; syn. Vinous muriatic acid, weak murocol.
 5. *Sweet Spirit of Sal Ammoniac*; syn. Spirit of ammonia.
- Oily Substances*, whether the unctuous, essential, or fossile, seem to owe their origin to organic matter, to consist of phlogiston, acid and water; and show little disposition to unite with water.
- III. The *unctuous**; syn. Unguinous, expressed, bland; fat; grease. They feel slippery, inodorous, insipid; rise at 600°; form soap with alkali, plaster with metallic earth; evolve acid, or become rancid on keeping; and are only soluble in alcohol when rancid, distilled, that is, empyreumatic, or separated from soap or plaster by acid. They descend from acrimony, and relax. Their compounds are,
1. *Soap*; syn. *alkalised oil*.
 2. *Balsam of Sulphur*; syn. *sulphurated oil*.
- IV. *Essential Oil* †; syn. Aromatic oil; balsam, resin. The balsams and resins differ from the oils chiefly in consistence. This oil feels less slippery

* The unctuous substances are, *Amygdalæ amaræ et dulces, oliva, laurus, palma, sebum ovile, axungia porcina, spermaceti, cera alba, vipera*. Unctuous oil may be given mixed with water in form of emulsion or mixture, by means of gum or volatile alkali; or with mucilage in form of linctus. The external applications differ chiefly in consistence. The liniment consists of one part of wax and four of oil; the ointment, of one of wax and two and a half of oil; the cerate of one of wax and about two of oil, with one-eighth of spermaceti. These serve to keep parts soft and from the air. The plaster consists of oil and calx of lead; and serves to keep parts firm, and retain dressings. With these, substances supposed useful may be mixed.

† In this, in a gummy or saline matter, reside those sensible qualities by which the following medicines are arranged. They are not used inactive

pery than the unctuous, has a strong odour, pungent taste; rises at 212° , or less; soluble in alcohol; generally lighter than water.

V. *Fossil Oil*, syn. *Naphtha*, is a light, volatile, fragrant, penetrating oil, not soluble in alcohol, but unites with some essential oils. Its impure

tive inflammatory or hæmorrhagic states of the system, except when the evacuation they occasion may compensate any bad effects from their stimulus. In general they vary in their quantity of inert and active matters. Their active matter, dissolved in form of expressed juice, infusion, or tincture, or freed from the solvent, without an injuring heat, in form of extract, is their most certain state †. The less disagreeable ones, however, are often given simply divided, diffused in liquid, or suspended by gum in form of a mixture, or inviscated in form of electuary, bolus, or pill. The form of pill rendered soluble by gum or extract of liquorice, is in general best; as, except in infancy or difficult deglutition, it is easily swallowed, it covers any disagreeable taste, confines the active matter; and from its slowness of solubility, and as it can be longest continued without disgust, it is particularly suited to active medicines and chronic complaints in which these medicines are chiefly used.

Acrids excite local heat, pain, and blisters, and increase secretion. They are given internally to increase secretion; and some are chiefly used as emetic, cathartic, or anthelmintic. *Cantharides*; arum, rhododendron; urtica, millipedæ; pyrethrum, pimpinella; asarum, hippocastanum; dolichos, spigelia, filix mas, Geoffræa; *sinapi album*, cochlearia, nasturtium aquaticum, raphanus rusticus, cardamine; flammula Jovis, mezereon, sarsaparilla, bardana, lobelia syphilitica, pulsatilla nigricans; *scilla*, *allium*, colchicum, cinara, digitalis; iris palustris, seneka, sambucus, bryonia, melampodium, veratrum, gambogia, scammonium, *jalap*, *fenna*, *ricinus*, *ipecacuanha*.

Astringents, excite a sense of roughness in the mouth, and form ink with a solution of iron. They constringe the animal fibre, and are given to obviate weakness, increased discharges, and putrescence. Catechu, kino, bistorta, uva ursi, quercus, gallæ, agaricus, lignum Campechense, granata malus, cydonia malus, tormentilla, rosa rubra, plantago, hydrophatum, ulmus, tussilago, verbascum, scolopendrium; *rheum*.

Bitters are given to obviate weakness, morbid acid, worms, and putrescence. Some are chiefly used as cathartic. *Gentiana*, curcuta, quassia, simarouba, radix indica Lopeziana, *columbo*, *cortex*, *Peruvianus*, salix, *chamæmelum*, artemisa, absinthium, abrotanum, centaureum, minus, carduus benedictus, santonicum, tanacetum, taraxacum, menyanthes, fumaria, marrubium, rubia, dulcamara, dictamnus albus, scordium, genista, gratiola, elaterium, rhamnus catharticus, colocynthis, *aloe socotorina*, *aloe hepatica*.

† It might be of use to distinguish the solvent of the substance; as by the terms aquated, colifed, aquacolifed; and the extract, by the terms deaquated, decolifed, deaquacolifed.

- pure kinds are, Petroleum, or rock oil; mineral pitch, Barbadoes tar, or devil's dung; * asphaltum, Jews pitch, or mamia mineralis; * jet; amber; * fossil or pit-coal: and are called bitumens.
- VI. *Animal Oil*, syn. Dipellius's oil, is an empyreumatic oil, distilled chiefly from the glutinous parts of animals, and rectified by gentle distillations into a light, volatile, odorous, penetrating oil, containing volatile alkali.
- VII. *Sulphur*; syn. Brimstone, mineral sulphur, flowers of sulphur. It is idioelectric, insoluble in water, has little taste or smell till heated; its specific gravity about 2; rises at 170°, melts at 185°, and flames at 302°; contains of acid 60, of phlogiston 40 *per cent.* It is laxative and antipforic. Its compound is,
Liver of sulphur; syn. hepatic sulphur, *sulphur-cali*; hence hepatic or *sulphur-caline air*; an antidote to mineral poisons, and is used externally in chronic eruptions.
- VIII. *Phosphorus*, a kind of very inflammable sulphur, consisting of acid of bones and phlogiston.
- IX. * *Charcoal*: syn. Charred vegetables, as charred linen or tinder; charred

Odorous substances are subdivided into aromatics and fetids, between which it is not easy to draw the line of distinction.—The odorous principle in a moderate degree, stimulates, refreshes, and strengthens; in a certain greater degree, its stimulus is so considerable and quickly diffusive, that it has the appearance of being entirely and directly sedative. Aromatics render other medicines agreeable, and are grateful stimulants in cases of weakness, spasms, or flatus; but cannot be so long continued as the fetids, nor are they so important medicines. The fetids are much used in states of weakness attended with spasm, flatus, pain, watchfulness, and bad ulcers.

Aromatics. Cinnamomum, cassia lignea, canella alba, cascarilla, santalum citrinum, saffrastra, zedoaria, acorus, aristolochia, iris, Florentina, enula campana, contrayerva, serpentaria virginiana, zingiber, curcuma; pimento, cubebæ; piper longum, nigrum, et indicum caryophilli aromatici et rubri, nux moschata, limonia mala, aurantia Hispalensis, Juniperus; *anisum*, fœniculum dulce et vulgare, anethum, coriandrum, carvi, cardamomum minus, cuminum, petroselinum, dancus sylvestris, angelica fativa et sylvestris, ligusticum, imperatoria, mentha fativa et piperitis, melissa, millefolium, pulegium, hederæ terrestris, hyssopus, salvia, majorana, thymus, serpyllum, *lavendula*, rosmarinus, rosa pallida, arnica; terebinthina veneta, balsamum Canadense, Gileadense, copaibæ, peruvianum, toluatum, benzoinum, mastiche, styrax calamita, *storax liquida*; olibanum, myrrha.

Fetids. Gummi ammoniacum, sagapenum, galbanum, *asafœtida camphora*, moschus, castoreum, *guaiacum*, valeriana sylvestris, sabina, artiplex fœtida, ruta. The narcotic fetids are, *Opium*, cicuta, hyoscyamus, belladonna, aconitum, stramonium.

Colorants are such substances as are used for giving colour to medicines. Sanguis draconis, anchusa, concinella, rosa rubra, caryophilli rubri, viola.

red pit-coal, as coaks or cinders; animal charcoal, as charred ox-blood; charred oil, as lamp-black. These part with their phlogiston in the order in which they stand. It consists of phlogiston, earth, acid of chalk, and alkali. It is used for fuel, and for phlogisticating other matters. The earth of vegetables, whether from putrefaction or combustion, is either lime, or a mixture of all kinds, often with iron and manganese, the vitriolated and muriated fixt alkalies, vitriolated and phosphorated lime, and liver of sulphur. The earth of the shells of fish and eggs is lime; oyster-shells contain some vitriolated lime; the earth of bones, horns, claws, &c. is phosphorated lime.

M E T A L S .

THE Metals are found sometimes native, with their entire complement of phlogiston; or mineralised in the form of ore, that is, more or less dephlogisticated by their union with sulphur, arsenic, acid of chalk, sometimes of vitriol, and of salt, and even of phosphorus.

They are malleable in the following order; Gold, silver, copper, iron, tin, lead, mercury, and zinc: tenacious in the following order; Gold, iron, copper, silver, tin, and lead. Bismuth, antimony, and arsenic, have a foliated texture; the rest are of a granulated one. Metals by hammering are apt to harden; and by applying heat, and cooling slowly, the particles are separated, and allow a new approximation. Metals exposed to heat and air burn; some emitting flame, as zinc, iron, copper, silver, tin, lead, antimony, gold, and arsenic: And all, except the perfect metals, part with phlogiston; absorb pure air, seemingly changing it partly into acid of chalk; diminish in specific, but increase in absolute weight; lose their splendor, ductility, opacity, fusibility, volatility, solubility in acids, power of being reduced, their disposition to unite even with their own metals, their power of conducting electricity, their activity on the human system: they assume the appearance of earths called calces of different colours, as grey, brown, glassy, red, white; some becoming soluble in water, or even converted into acid. The process is called Calcination.

Iron, which is found in almost every part of nature, is the only metal seemingly friendly to the human system: the rest are either inert, or more or less deleterious, and their use cannot be continued long with safety. They are administered, 1. In the state of regulus, or metal simply divided. 2. Calcined by heat and air, or by nitre, as the calces; or by acids, as the precipitates. 3. Saline preparations. And, 4. Combined with sulphur.

Zinc, specific gravity $7\frac{1}{8}$; melts, inflames, and rises at 700° ; bluish.

Iron 8, 1695° ; bluish; capable of welding; magnetic.

Manganese $6\frac{2}{8}$; bluish.

Cobalt $7\frac{7}{8}$; bluish.

Nickel 9; whitish red; magnetic.

Lead $11\frac{4}{8}$; 585° ; bluish.

Tin $7\frac{7}{8}$; 408° ; white.

Copper 9; 1410 ; pale red; volatile.

Bismuth

Bismuth $9\frac{3}{8}$; 460° ; whitish-red.

Antimony $6\frac{7}{8}$; 809° ; rises, white.

Arsenic $8\frac{1}{8}$; bluish; volatile.

Mercury 14; congeals at 40° below 0° ; boils at 600° ; white.

Silver 11; 1000° ; white.

Gold $19\frac{1}{2}$; yellow.

Platina 23; white.

Tungstein metal.

METALS calcined by Heat and Air; syn. Calces, dephlogisticated Metals.

1. *Calcined Zinc*; syn. Calx of zinc, flowers of zinc, philosophical wool.
2. *Subcalcined Iron*; syn. Scales of iron.
3. *Red Lead*; syn. *Red calcined lead*.
4. *Litharge*; syn. *Subvitrified lead*.
5. *Grey Calx of Antimony*.
6. *Nitrated Calx of Antimony*; syn. James's powder, *nitro-recalcined antimony*.
7. *Glass of Antimony*; syn. *Vitrified antimony*.
8. *Crocus of Antimony*, syn. *Crocus of metals*, *red nitro-calcined antimony*.
9. *Calcined Mercury*; syn. Mercury precipitated by itself.

Metallic S A L T S .

ACID of nitre is the most powerful solvent of the metals: its action requires sometimes to be moderated, or the metal is apt to separate. The acid of vitriol requires even a boiling heat to attack mercury or silver. The acid of salt has still less disposition to unite with them; but when dephlogisticated, it dissolves all metals completely. To metals dephlogisticated as by the other acids, it shows a stronger attraction, even in its ordinary state, by taking the metals from them.

The other acids are in general weaker in solvent power.

Metals dephlogisticated to a certain degree are soluble both in acids and alkalies.

Metals cannot unite with acids without losing their phlogiston so far as to be in the state of calces; nor can they remain united if they lose more, which metallic solutions are very apt to do by exposure to the air. Perfect solutions are transparent, and tinged with the proper colour of the calx. The colour seems to vary according to the quantity of phlogiston present; and by a sufficient quantity, all colour is sometimes destroyed.

The causticity that is in some of the metallic salts seems to be owing to their attraction for phlogiston.

Precipitates retain some of the solvent and of the precipitant, from which they can hardly, if at all, be freed. Precipitates by mild fixt alkalies, carry down acid of chalk and water; and by volatile alkali, phlogiston.

1. *Vitriolated Zinc*; syn. White vitriol or copperas, vitriol of zinc or of Goflar; it contains 12 of acid, 20 of zinc, and 58 of water; soluble in two waters at 60°.
 2. *Super-vitriolated Iron*; syn. Green vitriol or copperas, salt or vitriol of iron, of steel, or of Mars; recently crystallised, contains 20 of acid, 25 of iron, and 55 of water; soluble in 6 waters at 60°.
 3. *Supertarified iron*.
 4. *Super-vitriolated Copper*; syn. Blue, Roman, Cyprus vitriol or copperas; contains 30 of acid, 27 of copper, and 34 of water; soluble in 4 waters at 60°.
 5. *Super-vitriolated Mercury*; syn. Vitriol of mercury: contains 19 of acid.
 6. *Super-nitrated Mercury*; syn. Nitre of mercury; contains 28 of acid.
 7. *Super-nitrated Silver*; syn. Salt of silver, lunar caustic or cathartic, contains 36 of acid.
 8. *Super-muriated Antimony*; syn. Butter or caustic of antimony.
 9. *Super-muriated Mercury*; syn. Corrosive sublimate Mercury; contains 16 of acid, 77 of mercury, and 6 of water, not decomposable by heat; crystals permanent; soluble in 19 waters at 60°, and in alcohol; unites with muriated volatile alkali, which renders it remarkably soluble.
 10. *Super-tartarified Antimony*; syn. Emetic tartar; soluble in 60 waters at 60°.
 11. *Super-acetified Lead or cerusse*; syn. Salt or sugar of lead, or of Saturn; acetified cerusse.
 12. *Super-acetified Mercury*, soluble in 3 waters at 60°.
- Ammoniacal Copper and Ammoniacal Iron, or Martial flowers, contain metal, volatile alkali, and acid.*

Subacidated Metals.

1. *Rust of Iron*; syn. Subcretified iron.
2. *Submuriated Mercury*; syn. Sweet mercury sublimate, calomel, aquila alba, mild muriated mercury. It contains 14 of acid and water, and 86 of mercury.
3. *Subacetified Lead*; syn. Cerusse, white lead.
4. *Subacetified Copper*; syn. Verdegris.

Calcined metallic Salts.

1. *White calcined Vitriol*; syn. *Calcined Vitriol*.
2. *Red calcined Vitriol*; syn. Colcothar of vitriol.
3. *Calcined Nitrated Mercury*; syn. Red corrosive mercury, red precipitate.

Sulphurated Metals.

1. *Sulphurated Antimony*; syn. Antimony, crude and prepared antimony, ore of antimony.
2. *Sulphurcaline Antimony*; syn. *Kermes mineral*.

3. *Dealcalified*

3. *Dealcalifed Sulphurcaline Antimony*; syn. Precipitated sulphur of antimony, *golden sulphur of antimony*.
4. *Sulphurated Mercury*; syn. Native and fictitious cinnabar, ore of mercury, vermilion, Æthiops mineral, antimonial Æthiops.

P R E C I P I T A T E S.

1. *Devitriolated mercury*; syn. Yellow emetic mercury; turbith mineral.
2. *Denitrated mercury*; syn. Athy powder of mercury.
3. *Demuriated antimony*; syn. Powder of algaroth; mercury of life.
4. *Demuriated mercury*; syn. White precipitate of mercury; white calx of quicksilver.

W A T E R.

WATER is about 850 times heavier than air; its vapour occupies 1400 times more space than when in a liquid state: like air, it exists in almost every body of nature, and is never found pure.

The chief substances found in water are, Pure, inflammable, and hepatic airs; acid of chalk; the fixed alkalies, vitriolated, muriated, cretified; the vegetable, oftener nitrated; cretified volatile alkali; muriated barytes; lime, and sometimes magnesia, vitriolated, nitrated, and subcretified; sometimes clay, super vitriolated and muriated; iron, vitriolated, muriated, cretified; manganese, muriated; copper, vitriolated; calx of arsenic; petroleum; vegetable and animal putrescent mucilage. Waters are examined by the senses, and by evaporation, during which the volatile and fixt matters are separated and collected, or by precipitants or tests. The chief of these tests are vegetable blue infusions, as that of red cabbage, for acids and alkalies; a saturated solution of an astringent, as that of gall-nut in spirit of wine, for iron; phlogisticated alkali for the metals; vitriolic acid for barytes; acid of sugar for cretified lime; cretified alkali for magnesia and clay; nitrated silver and muriated barytes for acids united with other substances; alcohol for acidated alkalies: any acid for saline, or earthy hepar, &c.

A I R S.

Pure Air, specific gravity 110.

Phlogisticated Air 140.

Acid of Chalk 220.

Common Air 152.

Inflammable Air 10.

Nitrous Air 157.

Marine Acid Air 252.

Vitriolic Acid Air 300.

Alkaline Air 70.

Cases of DOUBLE Elective Attraction.

BY WATER.

1. Phlogisticated iron with Vitriolated copper,
2. Acidated earth, or metal, with Cretified alkali,
3. Acidated ammonia with Cretified fixt alkali or earth,
4. Vitriolated alkali, magnesia, or clay, with Nitrated, muriated, or acetified lime,
5. Vitriolated or muriated alkali or earth with Nitrated or acetified lead, mercury, or silver,
6. Vitriolated, nitrated, or acetified silver, with Muriated alkali, or earth,
7. Vitriolated kali with Muriated lime, or lead,
8. Tartarified or acetified kali with Nitrated mercury,
9. Vitriolated ammonia with Nitrated, muriated, or acetified fixt alkali,
10. Vitriolated, nitrated, or muriated ammonia, with Acetified fixt alkali or lime,
11. Vitriolated mercury with Muriated natron,

Give

1. Phlogisticated copper and Vitriolated iron.
2. Acidated alkali and Cretified earth or metal.
3. Acidated fixt alkali or earth and Cretified ammonia.
4. Vitriolated lime, and Nitrated, muriated, or acetified alkali, magnesia, or clay.
5. Vitriolated or muriated lead, mercury, or silver, and Nitrated, or acetified alkali, or earth.
6. Vitriolated, nitrated, or acetified alkali, or earth, and Muriated silver.
7. Vitriolated lime, or lead, and Muriated kali.
8. Tartarified or acetified mercury and Nitrated kali.
9. Vitriolated fixt alkali, and Nitrated, muriated, or acetified ammonia.
10. Vitriolated, nitrated, or muriated fixt alkali or lime, and Acetified ammonia.
11. Vitriolated natron and Muriated mercury.

BY HEAT.

1. Muriated mercury with Sulphurated antimony,

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Give

1. Muriated antimony and Sulphurated mercury.

THE

THE EDINBURGH
NEW DISPENSATORY.

PART I.
ELEMENTS OF PHARMACY.

CHAPTER I.

*A general View of the Properties and Relations of
Medicinal Substances.*

SECT. I.

VEGETABLES.

VEGETABLES are organized bodies, furnished with a variety of vessels for the reception, transmission, and perspiration of different fluids. Analogous to animals, they are produced from seeds and eggs, and are endowed with functions, whereby the aliment they imbibe is changed into new forms, into solids and fluids, peculiar to particular plants, and to different parts of the same plant.

The analogy between the vegetable and animal kingdoms will appear still more striking, when we consider that the former exhibit, though in a less degree, all the phenomena of sensibility and motion.

The *pabulum* of vegetables, like that of most animals, is of a mixed nature; and is made up of the necessary union of water, heat, and light, and less necessarily of air and earth: the office of these two last seems to be that of filtres, or vehicles for conveying the other principles in proper form.

From varieties in the state and proportion of these several agents, a very multiplied diversity takes place in the external form, quantity, and quality of one and the same vegetable: hence the difference of plants from the soil, climate, season, and other similar circumstances. The influence of heat, and light, or what is probably the same thing, the absorption of the inflammable principle, is perhaps the most important article in the aliment of vegetables. This principle, whether derived from the solar rays, from putrid matter employed in manure, or from

the putrefaction of the wild growth, assisted by calcareous earths and other septics, is found at all times to modify, in a peculiar manner, the form, the quantity, and even the sensible and inherent properties of vegetables: it is of importance however to remark, that the soundness and specific principles of vegetables are not invariably the more complete in proportion to the vigour of their growth; high health, which is always a dangerous state in the constitution of animals, is often the means of perverting or destroying the œconomy of vegetable life! Thus the finer aromatics, which naturally inhabit the dry and sandy soils, when transplanted into a moist and rich one, or, in other words, when placed in mould abounding in the *fomites* of inflammable principle, grow with rapidity and vigour, have their bulk considerably increased, but lose very much of their fragrance, as if their active principles were exhausted by the luxuriance of their growth.

Plants are also found to differ considerably in the different periods of their growth. Thus some herbs in their infancy abound most with odoriferous matter; of which others yield little or none till they have attained to a more advanced age. Many fruits, in their immature state, contain an austere acid juice, which by maturation is changed into a sweet: others, as the orange, are first warm and aromatic, and afterwards by degrees become filled with a strong acid. The common grain, and sundry other seeds, when beginning to vegetate, are in taste remarkably sweet: yet the kernels of certain fruits prove, at the same period extremely acid. The roots of some of our indigenous plants, whose juice is, during the summer, thin and watery, if wounded early in the spring, yield rich balsamic juices, which, exposed to a gentle warmth, soon concrete into solid gummy-resins, superior to many of those brought from abroad. In open exposures, dry soils, and fair warm seasons, aromatic plants prove stronger and more fragrant, and solid ones weaker in smell than in the opposite circumstances. To these particulars therefore due regard ought to be had in collecting plants for medicinal uses.

It may be proper to observe also, that the different parts of one plant are often very different in quality from each other. Thus the bitter herb wormwood rises from an aromatic root; and the narcotic poppy-head includes seeds which have no narcotic power. These differences, though very obvious in the common culinary plants, do not seem to have been sufficiently observed, or attended to, in the medicinal ones.

Without any obvious dependence on the circumstances abovementioned, vegetables are also, like animals, obnoxious to diseases and death. These, whether occasioned by intense cold, by insects, lightning, or other causes, always maintain a striking analogy to the affections of animals. A difference however arises from this, that the several parts of vegetables do not constitute such a mutually depending system as those of the more perfect animals: Hence it is, that a very considerable part of a plant may be diseased or dead, whilst the rest enjoys a perfect integrity of life and health. Though the physiology of vegetables is hitherto insufficient for forming any complete doctrines of the causes and cure of their several diseases; yet it is commendable to have an eye to the formation of a pathology of the vegetable kingdom: in the state even of our present knowledge, it is of importance in the study of pharmacy to be aware that such diseases do really exist, and are capable of changing or destroying the active principles of many of our most valuable herbs. In

the plants more evidently sensitive, the diseases exhibit a very close proximity to many of those of animals: several of the remote causes are such as are known to obstruct perspiration, to induce general debility, or otherwise disorder the animal œconomy. The diseases also are evidently marked by a diminution of their sensitive and moving principle; and perhaps, in consequence of this, their solids, their sap, and other fluids, thrive and decay, and the whole plant assumes new forms, is impregnated with inert, or fraught with noxious principles. Analogous also to animals, the plant, when deprived of the living principle, runs into all those changes common to what is called inanimate matter. These changes we next proceed to examine.

I. *Productions from Vegetables by FERMENTATION.*

FERMENTATION is that spontaneous motion excited in dead vegetables and animals; but which is peculiar to those organic substances elaborated by the principle of vegetable or animal life.

The circumstances favouring fermentation in general are, a certain degree of fluidity, a certain degree of heat, and the contact of the air.

There are however several substances, of themselves not susceptible of fermentation, which nevertheless may be brought into that state by the admixture of those that are; as by adding to them, along with a proper quantity of water, a portion of the yeast or head thrown up to the surface of fermenting liquors. Without this expedient many vegetables would run immediately into the acetous, and some of them into the putrefactive fermentations. It is also found, that though acetous and putrefactive ferments are unable to stop the vinous fermentation, they are however capable of assimilating the liquor to their own nature in a more perfect form; and hence it is, that in the manufactures of wine, rum, and vinegar, it is found useful to keep the vessels well seasoned with the liquor intended to be prepared. Three different kinds or stages of fermentation have been generally distinguished by chemists. The vinous, which furnishes alcohol, or what is commonly called spirit; the acetous, which affords vinegar; and the putrefactive, which yields volatile alkali. Being pretty constant in succession to each other, the whole process will be best understood by considering each of them apart. All vegetable substances are not capable of the vinous fermentation: the conditions necessary to its production are, a saccharo-mucilaginous matter; a fluidity a little viscous, the proper degree of which is best learned from experience; a heat from 40 to 96 of Fahrenheit's thermometer; a considerable mass of matter; and, lastly, the access of the external air.

The phenomena exhibited in the vinous fermentation are, a brisk tumultuary motion, the liquor loses its transparency and homogeneous appearance, its bulk and heat are considerably increased, the solid parts are buoyed up to the top, and a great quantity of a permanently elastic fluid is disengaged. This fluid or gas being somewhat heavier than atmospheric air, floats in separate masses next the surface of the liquor; and is from this and other appearances easily distinguished from common air: It extinguishes flame and animal life, precipitates lime from lime-water, crystallises and renders mild the caustic alkali; and is therefore the gas sylvestre of Helmont, and the fixed air or aerial acid of modern chemists.

After some time the tumultuary motion in the liquor is suddenly checked, perhaps from the generation of the alcohol; a fine ley is also precipitated; and the floating matter, if not purposely prevented, subsides to the bottom of the vessel. In the wines produced from the grape, a large quantity of a saline concrete is likewise incrusted on the sides and bottom of the casks; and this is commonly known by the name of tartar, the properties of which we shall afterwards examine. At the termination of these phenomena, the vegetable matter has assumed new properties; and from being a mild, sweet, or gently acidulous infusion, is now become the brisk pungent, and inebriating liquor, called Wine or Vinous Liquor.

Fermented or vinous liquors are prepared from a great variety of substances: the saccharine, or those rendered so by a beginning vegetation, are in general fittest for the purpose; a multitude of collateral circumstances are also necessary for the proper management of the process; and in vinous liquors, great diversities are found independent of their being more or less watery. These differences are not only observable in wines produced from different substances, but also in those prepared from one and the same vegetable. These diversities may be referred to the different conditions of the substance to be fermented, to the states of fluidity and heat, and to the degree of fermentation to which the subject has been carried. This last is principally modified by the preceding causes, and not unfrequently by very minute and apparently trifling circumstances in the conduct of the operator. Hence the numberless varieties in the vinous liquors produced from the grape, which have been more peculiarly denominated *wines*: It is an important part of pharmacy to inquire into these differences with care and attention.

The diversity in vinous liquors is still more obvious in those produced from different vegetables. Many of the native qualities of the substance, such as colour, taste, flavour, &c. often remain in the wine; not being totally subdued by that degree of fermentation by which the liquor is rendered vinous. Hence the remarkable difference of wines as produced from the grape and those furnished by the graminous seeds: the wine produced from these last has been more strictly called *beer*; and this too is well known to differ as remarkably from those produced from apples, pears, apricots, &c. as those differ from wine properly called.

I. Of the Product of the VINOUS Fermentation.

THE product of all these fermented vegetables is, as we have just now mentioned, the pungent and intoxicating liquor called wine. It is proper, however, in pharmacy, to inquire into the different principles which enter into its composition as a mixt. As the wine furnished by grapes is the most valuable and generally known, we shall take it for our example. Grape-wine, then, is made up of a large quantity of water, of alcohol, of tartar, and of a colouring matter. It is proper, however, that we should lay down the proofs of such a combination in wine, and explain the methods by which it may be decomposed and separated into the constituent parts abovementioned.

For this purpose, the assistance of the fire is generally had recourse to. The liquor is put into an alembic; and as soon as it boils, a white milky fluid, of a pungent smell and taste, distils into the recipient. This fluid is called *aquavitæ*, or, in common language, *spirit*: it is compounded of

water

water and certain matters capable of suspension in water, of alcohol, and of a small proportion of oil; which last communicates to it the milky colour: the yellow colour, afterwards assumed, is partly owing to the same oil, and partly to a solution of the extractive matter of the wooden casks in which the aquavitæ has been infused. This aquavitæ, like wine, always partakes more or less of the flavour of the vegetable from whence the wine has been prepared; but by farther distillation, and other processes, it is freed of its water, and the native principles of the vegetable matter which the watery parts had kept in solution; when thus prepared, it is a pure *alcohol* or *inflammable spirit*, which is always the same from whatever vegetable the wine was produced.

After all the aquavitæ has been drawn off, the residuum now ceases to be wine; it is of a chocolate colour, of an acid and austere taste; it has now assumed a heterogeneous appearance, and a great quantity of saline crystals is observed in the liquor; these crystals are the *tartar*. By the above processes, then, we have fully decomposed *wine*: but it is to be observed, that by this analysis we have not separated the different parts of wine in their original and entire state; we are not hitherto acquainted with any method of regenerating the wine by recombining the aquavitæ with the residuum: some product, therefore, of the fermentation is changed or destroyed; and this product is probably some peculiar modification of fixed air or ærial acid. The residuum, when evaporated, assumes the form and consistence of an extract; the colouring part may be abstracted by rectified spirit of wine, but is not separated from it by the addition of water: it seems, therefore, to be of a gummi-resinous nature, and extracted from the grape by means of the alcohol generated during the fermentation.

From this analysis, then, it is obvious, that wine is composed of water, colouring matter, alcohol, and a something that is changed or lost. We refer the particular examination of alcohol and tartar to the proper places assigned them in this work; and we expect that from this general survey of the subject, the properties of wine, as a solvent of several medicinal substances to be afterwards examined, will be much more readily understood. Before we go farther it is proper also to add, that the *ley* precipitated from wine during the fermentation, is a compound of stones, pieces of grape, tartar, and vitriolated tartar: the two first are inert bodies; of the two last we shall inquire particularly in their proper order. We are now prepared to consider the nature and product of the next kind or stage of fermentation, viz, the

2. ACETOUS Fermentation.

To understand what goes on in the acetous fermentation, we must leave for the present our analysis of the product of the vinous fermentation and return to the wine itself in its most perfect and entire state. It is proper to observe, that though after the liquor has become vinous, a partial cessation of the more obvious phenomena takes place, yet the wine still suffers a slow and imperceptible degree of fermentation. We are not then to consider the liquor as being in a quiescent state, but as constantly approaching to the next stage, which we are now to consider viz. the *acetous fermentation*. This kind of insensible fermentation, or what we may call

the intermediate change, seems to be necessary to the perfection of the wine. Its degree, however, is to be regulated under certain limitations : when too much checked, as by cold, thunder, or such like causes, the wine becomes vapid ; when too much encouraged by heat, contact of air, &c. it approaches too far to the acetous change : but in order that the vinous shall proceed fully to the acetous fermentation, several circumstances are required ; and these are in general the same that were before necessary to the vinous stage. These conditions are, a temperate degree of heat, a quantity of unfermented mucilage, an acid matter, such as tartar, and the free access of external air. When thus situated, the liquor soon passes into the acetous fermentation : but during this stage the phenomena are not so remarkable as in the vinous ; the motion of air is now less considerable, a gross unctuous matter separates to the bottom, the liquor loses its vinous taste and flavour, it becomes sour, and on distillation affords no inflammable spirit. It is now the acetous acid or vinegar ; and when separated by distillation from the unctuous ley, may be preserved a considerable length of time without undergoing the putrid change : to this last, however, it always approaches less or more, in the same way as the vinous constantly verges to the acetous fermentation ; and this will much more readily happen if the acid be allowed to remain with the unctuous feculent matter abovementioned. When thus situated, the vinegar quickly loses its transparency, assumes a blackish colour, loses its sourness and agreeable odour, has now an offensive taste and smell, and when distilled at a certain period of the process it yields volatile alkali.

The liquor is now arrived at the last stage, viz.

3. The PUTREFACTIVE Fermentation.

From the preceding phenomena, it is obvious, that the same substance which is capable of the vinous and acetous, is also capable of the putrefactive fermentation. It is perhaps impossible to induce the first without a mixture of the second ; or the second without a mixture of the third. Hence it is that every wine is a little acid ; and there are few vinegars without some disposition towards putrefaction, and in which there is not a little volatile alkali, though it be neutralized by the acid which predominates. Notwithstanding this seeming continuation of one and the same process, the putrefaction of vegetables has its particular phenomena. The vegetable matter, if in a fluid state, becomes turbid and deposits a large quantity of feculent matter : a considerable number of air-bubbles are raised to the top ; but the motion of these is not so brisk in the putrefactive as in the vinous, or even the acetous fermentation : neither the bulk nor heat of the liquor seems to be increased ; but an acrid pungent vapour is perceived by the smell, and which, by chemical trials, is found to be the volatile alkali ; by degrees this pungent odour is changed into one less pungent, but much more nauseous. If we suppose the same train of phenomena to have taken place in a vegetable consisting of parts somewhat solid, its cohesion is now broken down into a soft pulpy mass ; this mass, on drying, loses at length its odour entirely, leaving a black, charry-like residuum, containing nothing but earthy and saline substances.

It is proper to observe, that though the circumstances favouring the putrefactive are the same with those requisite to the vinous and acetous fermentations,

fermentations, yet these several conditions are not so indispensable to the former as to the two latter stages. All vegetables have more or less tendency to putrefaction, and a great number are capable of the acetous fermentation: but the proportion of those capable of the vinous is not considerable: and these last will run into the putrid in circumstances in which they cannot undergo the vinous or even the acetous fermentations. Thus flour made into a soft paste will become sour: but it must be perfectly dissolved in water to make it fit for the vinous stage; whereas mere dampness sufficient to make it pass to the putrid fermentation; besides the condition of fluidity, a less degree of heat, and a more limited access of air, likewise suffice for producing the putrefactive fermentation.

It is therefore probable, that all vegetables, in whatever state, are liable to a kind of putrefaction: in wood and other solid parts the change is slow and gradual, but never fails at length to break down their texture and cohesion.

We formerly observed, that the vapours separated during the vinous fermentation were fixed air or aëreal acid; and it is indeed true, that in the incipient state a quantity of this gas is still evolved, and along with it a quantity of alkaline air: in the advanced state, however, we find these vapours of a different nature; they now tarnish silver, and render combinations of lead with the vegetable acids of a black colour. When produced in large quantity, and much confined, as happens in stacks of hay put up wet, they burst into actual flame, consuming the hay to ashes: on other occasions, the escape of these vapours discovers itself by an emission of light, as in the luminous appearance of rotten wood when placed in the dark. From the above phenomena it is evident, that these vapours abound with the principle of inflammability; and their odour probably depends on this principle loosely combined with the water, or some other parts of the volatilised matter. This gas is therefore different from that separated during the vinous fermentation; it is the phlogisticated, and sometimes the inflammable air of Dr Priestley.

We have thus, for the sake of clearness, and in order to comprehend the whole of the subject, traced the phenomena of fermentation through its different stages: it is proper, however, to observe, that though every vegetable that has suffered the vinous will proceed to the acetous and putrefactive fermentations, yet the second stage is not necessarily preceded by the first, nor the third by the second; or in other words, the acetous fermentation is not necessarily confined to those substances which have undergone the vinous, nor the putrefactive to those which have undergone the acetous fermentation. Thus it is, that gums dissolved in water shall pass to the acetous without undergoing the vinous fermentation; and glutinous matter seems to run into putrefaction without showing any previous ascension: and farther, these changes frequently happen although the matter be under those conditions which are favourable to the preceding stages.

From the foregoing sketch, the importance of this subject in the study of Pharmacy will be obvious at first sight: it cannot, however, afford us any useful information on the native principles of vegetables. But it presents to us new products, the importance of which is well known in chemistry, in medicine, and in arts. The necessity of being well acquainted with the several facts (for of theory we know none satisfactory), will

appear in the pharmaceutical history and preparations of many of our most valuable drugs. We are next to consider a set of no less complicated operations, viz.

II. Productions from vegetables by FIRE.

IN order to analyse, or rather to decompose vegetables by the naked fire, any given quantity of dry vegetable matter is put into a retort of glass or earth. Having filled the vessel about one half or two-thirds, we place it in a reverberatory furnace, adapting it to a proper receiver. To collect the elastic fluids, which, if confined, would burst the vessels (and which, too, it is proper to preserve, as being real products of the analysis), we use a perforated receiver with a crooked tube, the extremity of which is received into a vessel full of water, or rather of mercury, and inverted in a basin containing the same: by this contrivance, the liquid matters are collected in the receiver, and the æriform fluids pass into the inverted vessel. If the vegetable is capable of yielding any saline matter in a concrete state, we interpose between the retort and the receiver another vessel, upon whose sides the salt sublimes. These things being properly adjusted, we apply at first a gentle heat, and increase it gradually, that we may observe the different products in proper order. At first an insipid watery liquor passes over, which is chiefly made up of the water of vegetation; on the heat being a little farther increased, this watery liquor, or *phlegm*, becomes charged with an oily matter, having the odour of the vegetable, if it possessed any in its entire state; along with this oil we also obtain an acid resembling the acetous, and which communicates to the oil somewhat of a saponaceous nature; on the heat being carried still farther, we procure more acid, with an oil of a dark colour, and the colour gradually deepens as the distillation advances. The oil now ceases to retain the peculiar odour of the vegetable; and, being scorched by the heat, sends forth a strong disagreeable smell like tar: it is then called *empyreumatic oil*. About this time also some elastic vapours rush into the inverted vessel; these generally consist of inflammable or fixed airs, and very often of a mixture of both; the volatile salt now also sublimes, if the vegetable was of a nature to furnish it. By the time the matter in the retort has acquired a dull red heat, nothing further will arise: we then stop; and allowing the vessel to cool, we find a mass of charcoal, retaining more or less the form and appearance of the vegetable before its decomposition.

We have thus described, in the order of their succession, the several products obtained from the generality of vegetables when analysed in close vessels and in a naked fire.

It is, however, to be understood, that the proportion of these principles turns out very various; the more succulent yield more water, and the more solid afford a greater quantity of the other principles. Independently also of this difference, the nature of the products themselves are found to differ in different vegetables; thus in the cruciform plants, and in the emulsive and farinaceous seeds, the saline matter which comes over with the water and oil is found to be alkaline; sometimes again it is ammoniacal, from the combination of the acid with the volatile alkali passing over at the end of the process; it is also probable, that the acids of vegetables are not all of the same nature, though they exhibit the same external

nal marks. When volatile alkali is obtained, it is always found in the mild effervescing state; it is procured, however, from a few vegetables only; it is seldom in a concrete form, being generally dissolved in the phlegm; and as it ordinarily makes its appearance about the end of the process, it is probable that its formation is owing to some peculiar combination of the oil and fixed alkali. The plants containing much oily combustible matter seem to be those which more peculiarly yield inflammable air, whilst the mucilages appear to be as peculiarly fitted for affording the fixed air or ærial acid. The chemical properties of charcoal seem to be always the same from whatever vegetable it has been produced: on a minute examination (which however is not the business of pharmacy), it is found to consist of fixed air, the principle of inflammability, a small quantity of earth, saline matter, and a little water. The whole of the analysis then amounts to air, water, earth, and the principle of inflammability; for by repeated distillations the oil is resolved into water, the principle of inflammability, and a little earth; the saline matter also is a product arising from a combination of the earthy matter with water or the principle of inflammability, in some shape or other, or perhaps with both. That these combinations take place, has at least been the opinion of the chemists.

We formerly said that charcoal was partly composed of saline matter; it therefore remains that we should next decompose the charcoal, in order to obtain or separate the articles next to be mentioned.

The fixed Salts of Vegetables.

WHEN vegetable charcoal has been burnt, there remains a quantity of ashes or cinders of a blackish grey or white colour: these, when boiled or infused in water, communicate to it a pungent saline taste; the salt, thus held in solution may, by evaporation, be reduced to a concrete state: this saline matter, however, is generally found to be mixed with ferruginous, earthy, and other impurities, and likewise with a number of neutral salts of different kinds. In this mixed condition it is the

Potashes used in Commerce.

THIS salt, or rather compound of different salts, is procured by burning large quantities of wood of any kind; and this process is called *incineration*: the predominating salt, however, is alkaline; and as the neutral salts are obtained to better advantage by other means, they are generally neglected in the purification of potashes. Potashes, then, freed from its impurities, and separated from the other salts by processes to be hereafter mentioned, is now

The fixed Vegetable Alkali.

ALKALIES in general are distinguished by a pungent taste, the very reverse of that of sourness; by their destroying the acidity of every sour liquor; and by their changing the blue and red colours of vegetables to a green: they attract more or less the moisture of the air, and some of them deliquesce into a liquor. The fixed alkalies, which we shall at present consider more particularly, are fusible by a gentle heat: by a greater degree of heat they are dissipated; their fixity, therefore, is only relative to the other kind of alkalies, viz. the volatile: they dissolve and form glass with

with earths: and, lastly, when joined with acids to the point of saturation, they form what are called *Neutral Salts*.

These characters will afford some necessary and preliminary knowledge of these substances in general; and we shall afterwards find that they are sufficient to distinguish them from all other saline bodies: it is necessary, however, to examine them more minutely, and our analysis has not yet reached so far as to present them in their simplest state. Previous to the discoveries of Dr Black, the vegetable fixed alkali (which we at present speak of particularly), when separated from the foreign matters with which it is mixed in the ashes, was considered to be in its purest state; we shall afterwards find that it is still a compound body, and is really a neutral salt, compounded of pure alkali, and fixed air or the aërial acid. We presume, then, that the particular history of its chemical and medicinal properties will be better understood when we come to those processes by which it is brought to its most pure and simple state. We shall only therefore observe for the present, that fixed vegetable alkali, not only in its pure state, but also when neutralised by aërial acid, seems always to be one and the same thing, from whatever vegetable it has been produced. Those of some sea-plants must, however, be excepted: the saline matter obtained from these last is, like the former, in a mixed and impure state; it differs, however, from potashes, in containing an alkali of somewhat different properties. The cinder of sea-plants containing this alkali is called

Soda.

SODA, then, as we have just now hinted, is produced by the incineration of the kali and other sea-plants: And from this impure and mixed mass of cinder, is obtained the marine, mineral, or muriatic alkali, or natron, as it is now denominated by the London College. This alkali has acquired those names, because it is the base of the common marine, or sea salt: it differs from the vegetable alkali in being more easily chrystallizable; when dried, it does not like the former attract humidity sufficient to form a liquid; it is somewhat less pungent to the taste, and, according to Bergman, has less attraction for acids than the vegetable alkali.

It is, however, to be observed, that this alkali, when deprived of fixed air, that is to say, when brought to its purest state, can scarcely if at all be distinguished from the vegetable alkali; and indeed the true distinction can only be formed from their combinations, each of them affording with the same acid very different neutral salts. It belonged to this place to mention some of the characters of alkalies in general, and also some of those marks by which the vegetable and mineral alkalies are distinguished from each other; but for a more particular history of their chemical and medicinal properties, we refer to the account of the pharmaceutical preparations. As the volatile alkali is rarely produced from vegetables, but is very generally obtained from animal matter, we shall consider that kind of alkali when we come to analyse the animal kingdom.

Of Vegetable Earth.

AFTER all the saline matter contained in the ashes of vegetables has been washed off by the processes before mentioned, there yet remains an insipid

insipid earthy-like powder, generally of a whitish colour, insoluble in water, and from which some iron may be attracted by the magnet. It is said to have formed alum with the vitriolic acid; a kind of stelenite has also been obtained, but somewhat different from that produced by the union of the same acid with calcareous earth; this residuum of burnt vegetables differs also from calcareous earth; in not being susceptible of becoming quicklime by calcination. It has been found that this residuum, instead of an earth, is a calcareous phosphoric salt, similar to that obtained from the bones of animals.

WE have thus finished our analysis of vegetables by the naked fire; and have only to observe, that, like that by fermentation, it can afford us no useful information on the native principles of the vegetable itself.

When chemistry began first to be formed into a rational science, and to examine the component parts and internal constitution of bodies, it was imagined, that this resolution of vegetables by fire, discovering to us all their active principles, unclogged and unixed with each other, would afford the surest means of judging of their medicinal powers. But on prosecuting these experiments, it was soon found that they were insufficient for that end: that the analyses of poisonous and esculent plants agreed often as nearly as the analyses of one plant: that by the action of a burning heat, two principles of vegetables are not barely separated, but altered, transposed, and combined into new forms; insomuch that it was impossible to know in what form they existed, and with what qualities they were endowed, before these changes and transpositions happened. If, for example, thirty-two ounces of a certain vegetable substance are found to yield ten ounces and a half of acid liquor, above one ounce and five drams of oil, and three drams and a half of fixt alkaline salt; what idea can this analysis give of the medicinal qualities of *gum Arabic*?

III. SUBSTANCES naturally contained in Vegetables, and separable by Art without Alteration of their native Qualities.

It has been supposed, that there is one general fluid or blood which is common to all vegetables, and from which the fluids peculiar to particular plants and their parts are prepared by a kind of secretion: To this supposed general fluid botanists have given the name of *sap*. This opinion is rendered plausible from the analogy in many other respects between vegetable and animal substances: and indeed if we consider the water of vegetation as this general fluid, the opinion is perhaps not very far from the truth; but the notion has been carried much farther than supposing it to be mere water, and the opinion of naturalists on this subject does not seem to be well supported by experience. It is difficult to extract this sap without any mixture of their constituent parts. But in a few vegetables, from which it distils by wounding their bark, we find this supposed general blood possessing properties not a little various: Thus the juice effused from a wounded birch is considerably different from that poured out from an incision in the vine.

I. Gros Oils.

VEGETABLES, like animals, contain an oil in two different states. That is, in several vegetables a certain quantity of oil is superabundant to their constitution, is often lodged in distinct reservoirs, and does not enter into the composition of their other principles: in most vegetables, again, another quantity of oil is combined, and makes a constituent part of their principles. Of this last we formerly spoke in our analysis of vegetables by fire; and it is the former we mean to consider, under the three following heads.

Gros oils abound chiefly in the kernels of fruits and in certain seeds; from which they are commonly extracted by expression, and hence are distinguished by the name of *Expressed Oils*. They are contained also in all the parts of all vegetables that have been examined, and may be forced out by vehemence of fire; but here their qualities are much altered in the process by which they are extracted or discovered, as we have seen under the foregoing head.

These oils, in their common state, are not dissoluble either in vinous spirits or in water, though by means of certain intermedia they may be united both with one and the other. Thus a skilful interposition of sugar renders them miscible with water into what are called lochols and oily draughts: by the intervention of gum or mucilage they unite with water into a milky fluid: by alkaline salts they are changed into a soap, which is miscible both with water and spirituous liquors, and is perfectly dissolved by the latter into an uniform transparent fluid. The addition of any acid to the soapy solution absorbs the alkaline salt; and the oil, which of course separates, is found to have undergone this remarkable change, that it now dissolves without any intermedium in pure spirit of wine.

Expressed oils, exposed to the cold, lose greatly of their fluidity: some of them, in a small degree of cold, congeal into a consistent mass. Kept for some time in a warm air, they become thin and highly rancid: their soft, lubricating, and relaxing quality is changed into a sharp acrimonious one: and in this state, instead of allaying, they occasion irritation; instead of obtunding corrosive humours, they corrode and inflame. These oils are liable to the same noxious alteration while contained in the original subject: hence arises the rancidity which the oily seeds and kernels, as almonds, and those called the cold seeds, are so liable to contract in keeping. Nevertheless on triturating these seeds or kernels with water, the oil, by the intervention of the other matter of the subject, unites with the water into an emulsion or milky liquor, which, instead of growing rancid, turns sour on standing.

It appears then that some kind of fermentation goes on in the progress of oils to the rancid state; and it would seem from some experiments by Mr Macquer, that an acid is evolved, which renders them more soluble in spirit of wine than before.

In the heat of boiling water, and even in a degree of heat as much exceeding this as the heat of boiling water does that of the human body, these oils suffer little dissipation of their parts. In a greater heat they emit a pungent vapour, seemingly of the acid kind; and when suffered to grow cold again, they are found to have acquired a greater degree of consistence than they had before, together with an acrid taste. In a
heat

heat approaching to ignition, in close vessels, the greatest part of the oil arises in an empyreumatic state, a black coal remaining behind.

2. Grosf sebaceous Matter.

FROM the kernel of some fruits, as that of the chocolate nut, we obtain instead of a fluid oil, a substance of a butyraceous consistence; and from others, as the nutmeg, a solid matter as firm as tallow. These concretes are most commodiously extracted by boiling the substance in water: the sebaceous matter, liquefied by the heat, separates and arises to the surface, and resumes its proper consistence as the liquor cools.

The substances of this class have the same general properties with expressed oils, but are less disposed to become rancid in keeping than most of the common fluid oils. It is supposed by the chemists, that their thick consistence is owing to a larger admixture of an acid principle: for, in their resolution by fire, they yield a vapour more sensibly acid than the fluid oils; and fluid oils, by the admixture of concentrated acids, are reduced to a thick or solid mass.

3. Essential Oils.

ESSENTIAL oils are obtained only from those vegetables, or parts of vegetables, that are considerably odorous. They are the direct principle, in which the odour, and oftentimes the warmth, pungency, and other active powers of the subject, reside; whence their name of *Essences* or *Essential Oils*.

Essential oils are secreted fluids; and are often lodged in one part of the plant, whilst the rest are entirely void of them. Sometimes they are found in separate spaces or receptacles; and there, too, visible by the naked eye; thus, in the rind of lemons, oranges, citrons, and many others there are placed every where very small pellucid vesicles, which, by expressing the peel near to the flame of a candle, squirt out a quantity of essential oil, forming a stream of lambent flame; hence, too, an oleo-faccharum may be made, by rubbing the exterior surface of these peels with a piece of lump-sugar, which at once tears open these vesicles, and absorbs their contained oil.

Essential oils unite with rectified spirit of wine, and compose with it one homogeneous transparent fluid; though some of them require for this purpose a much larger proportion of the spirit than others. The difference of their solubility perhaps depends on the quantity of disengaged acid; that being found by Mr Macquer not only to promote the solution of essential oils, but even of those of the unctuous kind. Water also, though it does not dissolve their whole substance, may be made to imbibe some portion of their more subtle matter, so as to become considerably impregnated with their flavour; by the admixture of sugar, gum, the yolk of an egg, or alkaline salts, they are made totally dissoluble in water. Digested with volatile alkali, they undergo various changes of colour, and some of the less odorous acquire considerable degrees of fragrance; whilst fixt alkali universally impairs their odour.

The specific gravity of most of these oils is less than that of water: some of them, however, are so heavy as to sink in water; and these varieties will be noticed when we come to their preparation.

In the heat of boiling water, these oils totally exhale; and on this principle

principle they are commonly extracted from subjects that contain them; for no other fluid, which naturally exists in vegetables, is exhalable by that degree of heat, excepting the aqueous moisture, from which greatest part of the oil is easily separated. Some of these oils arise with a much less heat, a heat little greater than that in which water begins visibly to evaporate. In their resolution by a burning heat, they differ little from expressed oils.

Essential oils, exposed for some time to a warm air, suffer an alteration very different from that which the expressed undergo. Instead of growing thin, rancid, and acrimonious, they gradually become thick, and at length harden into a solid brittle concrete; with a remarkable diminution of their volatility, fragrancy, pungency, and warm stimulating quality. In this state, they are found to consist of two kinds of matter; a fluid oil, volatile in the heat of boiling water, and nearly of the same quality with the original oil; and of a grosser substance which remains behind, not exhalable without a burning heat, or such as changes its nature and resolves it into an acid, an empyreumatic oil, and a black coal.

The admixture of a concentrated acid instantly produces, in essential oils, a change nearly similar to that which time effects. In making these kinds of mixtures, the operator ought to be on his guard; for when a strong acid, particularly that of nitre, is poured hastily into an essential oil, a great heat and ebullition ensue, and often an explosion happens, or the mixture bursts into flame. The union of expressed oils with acids is accompanied with much less conflict.

4. Concrete essential Oil.

SOME vegetables, as roses and elecampane root, instead of a fluid essential oil, yield a substance possessing the same general properties, but of a thick or sebaceous consistence. This substance appears to be of as great volatility, and subtilty of parts, as the fluid oils: it equally exhales in the heat of boiling water, and concretes upon the surface of the collected vapour. The total exhalation of this matter, and its concreting again into its original consistent state, without any separation of it into a fluid and a solid part, distinguishes it from essential oils that have been thickened or indurated by age or by acids.

5. Camphor.

CAMPHOR is a solid concrete, obtained chiefly from the woody parts of certain Indian trees. It is volatile like essential oils, and soluble both in oils and inflammable spirits: it unites freely with water by the intervention of gum, but very sparingly and imperfectly by the other media that render oils miscible with watery liquors. It differs from the sebaceous as well as fluid essential oils, in suffering no sensible alteration from long keeping; in being totally exhalable, not only by the heat of boiling water, but in a warm air, without any change or separation of its parts, the last particle that remains unexhaled appearing to be of the same nature with the original camphor: in its receiving no empyreumatic impression, and suffering no resolution, from any degree of fire to which it can be exposed in close vessels though readily combustible in the open air; in being dissolved by concentrated acids into a liquid form; and in several other properties which it is needless to specify in this place.

6. Resin

6. Resin.

ESSENTIAL oils, indurated by age or acids, are called *Resins*. When the indurated mass has been exposed to the heat of boiling water, till its more subtile part, or the pure essential oil that remained in it, has exhaled, the gross matter left behind is likewise called resin. We find, in many vegetables, resins analogous both to one and the other of these concretes; some containing a subtile oil, separable by the heat of boiling water; others containing nothing that is capable of exhaling in that heat.

Resins in general dissolve in rectified spirits of wine, though some of them much more difficultly than others: it is chiefly by means of this dissolvent that they are extracted from the subjects in which they are contained. They dissolve also in oils both expressed and essential; and may be united with watery liquors by means of the same intermedia which renders the fluid oils miscible with water. In a heat less than that of boiling water, they melt into an oily fluid; and in this state they may be incorporated one with another. In their resolution by fire, in close vessels, they yield a manifest acid, and a large quantity of empyreumatic oil.

7. Gum.

GUM differs from the foregoing substances in being inflammable: for though it may be burnt to a coal, and thence to ashes, it never yields any flame. It differs remarkably also in the proportion of the principles into which it is resolved by fire; the quantity of empyreumatic oil being far less, and that of an acid far greater. In the heat of boiling water, it suffers no dissipation: nor does it liquefy like resins: but continues unchanged, till the heat be so far increased as to scorch or turn it to a coal.

By a little quantity of water, it is softened into a viscous adhesive mass, called mucilage; by a larger quantity it is dissolved into a fluid, which proves more or less glutinous according to the proportion of gum. It does not dissolve in vinous spirits, or in any kind of oil: nevertheless, when softened with water into a mucilage, it is easily miscible both with the fluid oils and with resins; which by this means become soluble in watery liquors along with the gum, and are thus excellently fitted for medicinal purposes.

This elegant method of uniting oils with aqueous liquors, which has been kept a secret in few hands, appears to have been known to Dr Grew. "I took (says he) oil of aniseeds, and pouring it upon another body, I so ordered it, that it was thereby turned into a perfect milk-white balsam or butter; by which means the oil became mingleable with any vinous or watery liquor, easily and instantaneously dissolving therein in the form of a milk. And note, this is done without the least alteration of the smell, taste, nature, or operation of the said oil. By somewhat the like means any other stillaitious oil may be transformed into a milk-white butter, and in like manner be mingled with water or any other liquor: which is of various use in medicine, and what I find oftentimes very convenient and advantageous to be done." (*Grew of Mixture, chap. v. inst. i. § 7.*) This inquiry has lately been further prosecuted in the first volume of the Medical Observations published by a society of physicians in London; where various experiments are

are related, for rendering oils, both essential and expressed, and different unctuous and resinous bodies, soluble in water by the mediation of gum. Mucilages have also been used for suspending crude mercury, and some other ponderous and insoluble substances; the mercury is by this means not a little divided; but it is found that the particles are very apt to run together, or subside, if a pretty constant agitation be not kept up.

As oily and resinous substances are thus united to water by the means of gum, so gums may in like manner be united to spirit of wine by the intervention of resins and essential oils; though the spirit does not take up near so much of the gum as water does of the oil or resin.

Acid liquors, though they thicken pure oils, or render them consistent, do not impede the dissolution of gum, or of oils blended with gum. Alkaline salts, on the contrary, both fixt and volatile, though they render pure oils dissoluble in water, prevent the solution of gum, and of mixtures of gum and oil. If any pure gum be dissolved in water, the addition of any alkali will occasion the gum to separate, and fall to the bottom in a consistent form; if any oily or resinous body was previously blended with the gum, this also separates, and either sinks to the bottom, or rises to the top, according to its gravity.

8. Gum-resin.

By gum-resin is understood a mixture of gum and resin. Many vegetables contain mixtures of this kind, in which the component parts are so intimately united, with the interposition perhaps of some other matter, that the compound, in a pharmaceutical view, may be considered as a distinct kind of principle; the whole mass dissolving almost equally in aqueous and in spirituous liquors; and the solution being not turbid or milky, like those of the grosser mixtures of gum and resin, but perfectly transparent. Such is the astringent matter of bistort-root, and the bitter matter of gentian. It were to be wished that we had some particular name for this kind of matter; as the term gum-resin is appropriated to the grosser mixtures, in which the gummy and resinous part are but loosely joined, and easily separable from each other.

We shall afterwards find that it will be convenient to imitate this natural combination by art. As the effects of medicines very generally depend on their solubility in the stomach, it is often necessary to bring their more insoluble parts, such as resinous and oily matters, into the state of gum-resin: this is done, as we have mentioned in the former article, by the mediation of mucilage. By this management these matters become much more soluble in the stomach; and the liquor thus prepared is called an emulsion, from its whitish colour, resembling that of milk.

9. Saline Matter.

OF the saline juices of vegetables there are different kinds, which have hitherto been but little examined: the sweet and the acid ones are the most plentiful, and the best known.

There have lately, however, been discovered a considerable variety of salts in different vegetables. The mild fixed alkali, which was formerly considered as a product of the fire, has been obtained from almost all plants by macerating them in acids; the vegetable alkali is the most common, but the mineral is found also in the marine plants. Besides the
fixed

fixed alkali, several other salts have been detected in different vegetables; such as vitriolated tartar, common salt, Glauber's salt, nitre, febrifugal salt, and selenite. From some experiments, too, the volatile alkali has been supposed to exist ready formed in many plants of the cruciform or tetradynamian tribe.

It is, however, to be understood, that though some of these salts are really products of vegetation, yet others of them are not unfrequently adventitious, being imbibed from the soil without any change produced by the functions of the vegetable.

The juices of vegetables, exposed to a heat equal to that of boiling water, suffer generally no other change than the evaporation of their watery moisture; the saline matter remaining behind, with such of the other not volatile parts as were blended with it in the juice. From many, after the exhalation of great part of the water, the saline matter gradually separates in keeping, and concretes into little solid masses, leaving the other substances dissolved or in a moist state; from others no means have yet been found of obtaining a pure concrete salt.

The salts more peculiarly native and essential to vegetables are the sweet and the sour: these two are frequently blended together in the same vegetable, and sometimes pass into each other at different ages of the plant. Of the four salts several kinds are known in pharmacy and in the arts; such as those of sorrel, of lemons, oranges, citrons, &c. The saccharine salts are also obtained from a great number of vegetables; they may in general be easily discovered by their sweet taste: the sugar-cane is the vegetable from which this saline matter is procured in greatest quantity, and with most profit in commerce. For its medicinal and chemical properties we refer to the article SUGAR.

The sweet and sour salts abovementioned dissolve not only in water, like other saline bodies, but many of them, particularly the sweet, in rectified spirit also. The gross oily and gummy matter, with which they are almost always accompanied in the subject, dissolves freely along with them in water, but is by spirit in great measure left behind. Such heterogeneous matters as the spirit takes up, are almost completely retained by it, while the salt concretes; but of those which water takes up, a considerable part always adheres to the salt. Hence essential salts, as they are called, prepared in the common manner from the watery juices of vegetables, are always found to partake largely of the other soluble principles of the subject; whilst those extracted by spirit of wine prove far more pure. By means of rectified spirit, some productions of this kind may be freed from their impurities and imperfect saccharine concretions obtained from many of our indigenous sweets.

There is another kind of saline matter obtained from some resinous bodies, particularly from benzoine, which is of a different nature from the foregoing, and supposed by some the chemists to be a part of the essential oil of the resin, coagulated by an acid, with the acid more predominant or more disengaged, than in the other kinds of coagulated or indurated oils. These concretions dissolve both in water and in vinous spirits, though difficultly and sparingly in both: they show some marks of acidity, have a considerable share of smell like that of the resin they are obtained from,

exhale in a heat equal to that of boiling water, or a little greater, and prove inflammable in the fire.

10. Farina or Flour.

THIS substance has much of the nature of gum, but has more taste, is more fermentable, and much more nutritive. It abounds in very many vegetables, and is generally deposited in certain parts, seemingly for the purpose of its being more advantageously accommodated to their nourishment and growth. Several of the bulbous and other roots, such as those of potatoes, briony, those from which cassava is extracted, salep, and many others, contain a great deal of a white *fecule* resembling and really possessing the properties of farina. The plants of the leguminous tribe, such as peas and beans, are found also to abound with this matter. But the largest quantity of farina resides in grains, which are therefore called *farinaceous*. Of this kind are those of wheat, rye, barley oats, rice, and other similar plants.

At first sight we would suppose that farina was one homogeneous substance: it is however, found to be a compound of three different and separable parts. To illustrate this, we shall take for our example the farina of wheat, being the vegetable which affords it in greatest quantity, and in its most perfect state. To separate these different parts, then, we form a paste with any quantity of flour and cold water; we suspend this paste in a bag of muslin or of such like cloth; we next let fall upon it a stream of cold water from some height, and the bag may now and then be very gently squeezed; the water in its descent carries down with it a very fine white powder, which is to be received along with the water into a vessel placed below the bag: The process is thus to be continued till no more of this white powder comes off, which is known by the water which passes through the bag ceasing to be of a milky colour. The process being now finished the farina is found to be separated into three different substances: the glutinous or vegeto-animal part remains in the bag; the amyllum or starch is deposited from the water which has been received into the vessel placed below the bag; and, lastly, a mucous matter is held dissolved in the same water from which the starch has been deposited: This mucous part may be brought to the consistence of honey, by evaporating the water in which it is kept in solution.

These several parts are found also to differ remarkably in their sensible and chemical properties. The vegeto-animal part is of a whitish grey colour, is a tenacious, ductile, and elastic matter, possessing somewhat of the texture of animal membranes. Distilled in a retort, it yields like all animal matters, a true volatile alkali, and its coal affords no fixed alkali. It is not only insoluble, but even indiffusible, in water; both which appear from its remaining in the bag after long-continued lotions. Like gums, it is insoluble in alcohol, in oils, or æther: but it is also insoluble in water, and yields on distillation products very different from those afforded by gums: It is therefore of an animal nature, and approaches perhaps nearer to the coagulable lymph of animal blood than to any other substance.

The fixed alkali, by means of heat, dissolves the gluten vegeto-animal, but

but when it is precipitated from this solution by means of acids, it is found to have lost its elasticity. The mineral acids, and especially the nitrous, are also capable of dissolving the vegeto-animal part of the farina.

The starch, amyllum, or the amylaceous matter, makes the principal part of the farina. As we before noticed, it is that fine powder deposited from the water which has pervaded the entire farina: it is of a greyish white colour, but can be rendered much whiter by making it undergo a certain degree of fermentation. Starch is insoluble in cold water; but in hot water it forms a transparent glue: hence the necessity of employing cold water in separating it from the vegeto-animal part. Distilled in a retort, it yields an acid phlegm; and its coal affords, like other vegetables, a fixed alkaline salt. As starch forms the greatest part of the farina, it is probably the principal nutritive constituent in bread.

The mucous, or rather the mucoso-saccharine matter, is only in very small quantity in bread. This substance on distillation is found to exhibit the phenomena of sugar. The use of this matter seems to be that of producing the vinous fermentation: and we may observe once for all that the preparation of good bread probably depends on a proper proportion of the three different parts above described; that is to say, that the vinous fermentation is promoted by the mucoso-saccharine part, the acetous by the starch, and the putrid by the gluten vegeto-animale. From different states or degrees of these several stages of fermentation the qualities of good bread are very probably derived. What remains on this very important subject will be taken up when we come to speak of wheat in the *Materia Medica*.

II. Of the Colouring Matter of Vegetables.

THE colouring matter of vegetables seems to be of an intermediate nature between the gummy and resinous parts. It is in many plants equally well extracted by water and by rectified spirit: it is also, however, procurable in the form of a *lake*, not at all soluble in either of these menstrua. It would seem that the colouring matter, strictly so called, has hitherto eluded the researches of chemists. It is only the *base* or *nidus*, in which the real colouring matter is embodied, that chemistry has as yet reached; and on the chemical properties of this *base*, colours are capable of being extracted by different menstrua, and of being variously accommodated to the purposes of dyeing. The substance from which the colours of vegetables are *immediately* derived, is without doubt a very subtle body. Since plants are known to lose their colour when excluded from the light, there is reason to think that the *immediately* colouring substance is primarily derived from the matter of the sun, somehow elaborated by vegetable life.

Many of these dyes are evolved or variously modified by chemical operations. Thus a colouring matter is sometimes deposited in the form of a *fecula* during the putrefaction of the vegetable; in others it is evolved or changed by alum, by acids, or by alkali. We may also observe, that any part of the vegetable may be the base of the colouring matter. This appears from the solubility of the different dyes in their proper menstrua; and in these solutions we have not been able to separate the real colouring matter from the base in which it is inviscated. After all, then,

we must conclude, that a full investigation of this subject more properly belongs to the sublimer parts of chemistry, than to the business we are at present engaged in.

The colouring drugs will be considered in their proper places.

In finishing our history of the vegetable kingdom, it only remains that we should offer some

General Observations on the foregoing Principles.

1. ESSENTIAL oils, as already observed, are obtainable only from a few vegetables : but gross oil, resin, gum, and saline matter, appear to be common in greater or less proportion to all ; some abounding more with one, and others with another.

2. The several principles are in many cases intimately combined ; so as to be extracted together from the subject, by those dissolvents, in which some of them separately could not be dissolved. Hence watery infusions and spirituous tinctures of a plant, contain, respectively, more than water or spirit is the proper dissolvent of.

3. After a plant has been sufficiently infused in water, all that spirit extracts from the residuum may be looked upon as consisting wholly of such matter as directly belongs to the action of spirit. And, on the contrary, when spirit is applied first, all the water extracts afterwards may be looked upon as consisting only of that matter of which water is the direct dissolvent.

4. If a vegetable substance, containing all the principles we have been speaking of, be boiled in water, the essential oil, whether fluid or concrete, and the camphor, and volatile essential salt, will gradually exhale with the steam of the water, and may be collected by receiving the steam in proper vessels placed beyond the action of the heat. The other principles not being volatile in this degree of heat remain behind : the gross oil and sebaceous matter float on the top : the gummy and saline substance, and a part of the resin, are dissolved by the water, and may be obtained in a solid form by straining the liquor, and exposing it to a gentle heat till the water has exhaled. The rest of the resin, still retained by the subject, may be extracted by spirit of wine, and separated in its proper form by exhaling the spirit. On these foundations, most of the substances contained in vegetables may be extracted, and obtained in a pure state, however much they may be compounded together in the subject.

5. Sometimes one or more of the principles is found naturally disengaged from the others, lying in distinct receptacles within the subject, or extravasated and accumulated on the surface. Thus, in the dried roots of angelica, cut longitudinally, the microscope discovers veins of resin. In the flower cups of hypericum, and the leaves of the orange tree, transparent points are distinguished by the naked eye ; which, on the first view, seem to be holes, but on a closer examination are found to be little vesicles filled with essential oil. In the bark of the fir, pine, larch, and some other trees, the oily receptacles are extremely numerous, and so copiously supplied with the oily and resinous fluid, that they frequently burst, especially in the warm climates, and discharge their contents in great quantities. The acacia tree in Egypt, and the plum and cherry among ourselves, yield almost pure gummy exudations. From a species of ash is

secreted

secreted the saline sweet substance manna ; and the only kind of sugar with which the ancients were acquainted, appears to have been a natural exudation from the cane.

6. The foregoing principles are, as far as is known, all that naturally exist in vegetables ; and all that art can extract from them, without such operations as change their nature, and destroy their original qualities. In one or more of these principles, the colour, smell, taste, and medicinal virtues, of the subject, are almost always found concentrated.

7. In some vegetables, the whole medicinal activity resides in one principle. Thus, in sweet almonds, the only medicinal principle is a gross oil ; in horse-radish root, an essential oil ; in jalap root, a resin : in marsh-mallow root, a gum ; in the leaves of sorrel, a saline acid substance.

8. Others have one kind of virtue residing in one principle, and another in different. Thus Peruvian bark has an astringent resin, and a bitter gum ; wormwood, a strong-flavoured essential oil, and a bitter gum-resin.

9. The gross insipid oils and sebaceous matters, the simple insipid gums and the sweet and acid saline substances, appear nearly to agree respectively among themselves, in their medicinal qualities, as well as in their pharmaceutic properties.

10. But essential oils, resins, and gum-resins, differ much in different subjects. As essential oils are universally the principle of odour in vegetables, it is obvious that they must differ in this respect as much as the subjects from which they are obtained. Resins frequently partake of the oil, and consequently of the differences depending thereon ; with this further diversity, that the gross resinous part often contains other powers than those which reside in oils. Thus from wormwood a resin may be prepared, containing not only the strong smell and flavour, but likewise the whole bitterness of the herb ; from which last quality the oil is entirely free. The bitter, astringent, purgative, and emetic virtue of vegetables, reside generally in different sorts of resinous matter, either pure or blended with gummy and saline parts ; of which kind of combinations there are many so intimate, that the component parts can scarcely be separated from each other, the whole compound dissolving almost equally in aqueous and spirituous menstua.

11. There are some substances also, which, from their being totally dissoluble in water, and not in spirit, may be judged to be mere gums ; but which, nevertheless, possess virtues never to be found in the simple gums. Such are the astringent gum called *acacia*, and the purgative gum extracted from aloes.

12. It is supposed that vegetables contain certain subtle principles or presiding spirits, different in different plants, of too great tenuity to be collected in their pure state, and of which oils, gums, and resins are only the matrices or vehicles. This inquiry is foreign to the purposes of pharmacy, which is concerned only about grosser and more sensible objects. When we obtain from an odoriferous plant an essential oil, containing in a small compass the whole fragrance of a large quantity of the subject, our intentions are equally answered, whether the substance of the oil be the direct odorous matter, or whether it has dissolved through it a fragrant principle more subtle than itself. And when this oil, in long keeping, loses its odour, and becomes a resin, it is equal in regard to the present

considerations, whether the effect happens from the avolation of a subtile principle, or from a change produced in the substance of the oil itself.

S E C T. II.

A N I M A L S.

FROM the history we have already given of the vegetable kingdom, our details on animal substances may, in many particulars, be considerably abridged. All animals are fed on vegetables, either directly or by the intervention of other animals. No part of their substance is derived from any other source except water. The small quantity of salt used by man and some other animals, is only necessary as a seasoning or stimulus to the stomach. As the animal then is derived from the vegetable matter, we accordingly find that the former is capable of being resolved into the same principles as those of the latter. Thus, by repeated distillations, we obtain from animal substances, water, oil, air, an easily destructible salt, and charcoal. These secondary principles are by farther processes at length resolvable into the same proximate principles which we found in vegetables, viz. water, air, earth, and principle of inflammability. But though the principles of vegetable and animal substances are at bottom the same, yet these principles are combined in a very different manner. It is exceedingly rare that animal substances are capable of the vinous or acetous fermentations; and the putrefactive, into which they run remarkably fast, is also different in some particulars from the putrefaction of vegetables; the escape of the phlogiston in the form of light is more evident, and the smell is much more offensive, in the putrefaction of animal than of vegetable substances. The putrefaction of urine is indeed accompanied with a peculiar fetor, by no means so intolerable as that of other animal matters: this we suppose to be owing to the pangsency derived to the effluvia from the volatile alkali, and also from the urine containing less inflammable matter than the blood and many other fluids. When analysed by a destructive heat, animals afford also products very different from those of vegetables: the empyreumatic oil has a particular, and much more fetid odour; and the volatile salt instead of being an acid, as it is in most vegetables, is found to be in animals a volatile alkali. Chemists have indeed spoken of an acid procurable from animal substances; and indeed certain parts of animal bodies are found to yield a salt of this kind; but it by no means holds with animal substances in general; and though the proofs to the contrary were even conclusive, it is confessedly in such small quantity as not to deserve any particular regard. In some animals, however, an acid exists, uncombined and ready formed in their bodies. This is particularly manifest in some insects, especially ants, from which an acid resembling the acetous has been procured by boiling them in water. The solid parts of animal bodies, as the muscles, teguments, tendons, cartilages, and even the bones, when boiled with water, give a gelatinous matter or *glue* resembling the vegetable gums, but much more adhesive. We must, however, except the horny parts and the hair, which seem to be little soluble either in water or in the liquors of the stomach. The acids, the alkalies, and quicklime, are also found to be powerful solvents of animal matters.

matters. It is from the solid parts that the greatest quantity of volatile alkali is obtained; it arises along with a very fetid empyreumatic oil, from which it is in some measure separated by repeated rectifications. This salt is partly in a fluid, and partly in a concrete state; and from its having been anciently prepared in greatest quantity from the horns of the hart, it has been called *salt* or *spirit of hartshorn*. Volatile alkali is, however, procurable from all animals, and from almost every part of animal bodies. Though we are sometimes able to procure fixed alkali from an animal cinder, yet it is probable that this salt did not make any part of the living animal, but rather proceeded from the introduction of some saline matter, incapable of being assimilated by the functions of the living creature.

In speaking of the fluid parts of animals, we should first examine the general fluid, or blood, from whence the rest are secreted. The blood, which at first sight appears to be an homogeneous fluid, is composed of several parts, easily separable from each other, and which the microscope can even perceive in its uncoagulated state. On allowing it to stand at rest and be exposed to the air, it separates into what are called the *crassamentum* and the *serum*. The crassamentum, or cruor, chiefly consists of the red globules, joined together by another substance, viz. the coagulable lymph: the chemical properties of these globules are not as yet understood; but it appears that it is in these that the greatest quantity of the iron found in blood resides. The serum is a yellowish sub-viscid liquor, having little sensible taste or smell: at a heat of 160 of Fahrenheit it is converted into a jelly. This coagulation of the serum is also owing to its containing a matter of the same nature with that in the crassamentum, viz. the coagulable lymph: whatever, then, coagulates animal blood, produces that effect on this concretescible part. Several causes, and many chemical substances, are capable of effecting this coagulation; such as contact of air, heat, alcohol mineral acids, and their combinations with earths, as alum, and some of the metallic salts. The more perfect neutral salts are found to prevent the coagulation, such as common salt and nitre.

Of the fluids secreted from the blood, there are a great variety in men and other animals. The excrementitious and redundant fluids are those which afford in general the greatest quantity of volatile alkali and empyreumatic oil: there are also some of the secreted fluids, which on a chemical analysis yield products in some degree peculiar to themselves. Of this kind is the urine; which is found to contain in the greatest abundance the noted salt formed from the phosphoric acid and volatile alkali. The fat, too, has been said to differ from the other animal matters, in yielding by distillation a strong acid, but no volatile alkali. There is also much variety in the quantity and state of the combination of the saline and other matters in different secreted fluids: but a fuller investigation of this and other parts of the subject, we refer to the doctrines in Anatomy, Physiology, and Chemistry; with all which it is more immediately connected than with the Elements of Pharmacy.

Animal oils and fats, like the gross oils of vegetables, are not of themselves dissoluble either in water or vinous spirits: but they may be united with water by the intervention of gum or mucilage; and most of them

may be changed into soap; and thus rendered miscible with spirit, as well as water, by fixed alkaline salts.

The odorous matter of some odoriferous animal-substances, as musk, civet, castor, is like essential oil, soluble in spirit of wine, and volatile in the heat of boiling water. Carthuser relates, that from castor an actual essential oil has been obtained in a very small quantity, but of an exceedingly strong diffusive smell.

The vesicating matter of cantharides, and those parts of sundry animal-substances in which their peculiar tastes resides, are dissolved by rectified spirit, and seem to have some analogy with resins and gummy resins.

The gelatinous principle of animals, like the gum of vegetables, dissolves in water, but not in spirit or in oils: like gums also, it renders oils and fats miscible with water into a milky liquor.

Some insects, particularly the ant, are found to contain an acid juice, which approaches nearly to the nature of vegetable acids.

There are, however, sundry animal juices which differ greatly, even in these general kinds of properties, from the corresponding ones of vegetables. Thus animal serum, which appears analogous to vegetable gummy juices, has this remarkable difference, that though it mingles uniformly with cold or warm water, yet on considerably heating the mixture, the animal-matter separates from the watery fluid, and concretes into a solid mass. Some have been apprehensive, that the heat of the body, in some distempers, might rise to such a degree, as to produce this dangerous or mortal concretion of the serous humours: but the heat requisite for this effect is greater than the human body appears capable of sustaining, being nearly about the middle point between the greatest human heat commonly observed and that of boiling water.

THE soft and fluid parts of animals are strongly disposed to run into putrefaction: they putrefy much sooner than vegetable matters; and when corrupted, prove more offensive.

This process takes place, in some degree, in the bodies of living animals; as often as the juices stagnate long, or are prevented, by an obstruction of the natural excretories, from throwing off their more volatile and corruptible parts.

During putrefaction, a quantity of air is generated; all the humours become gradually thinner, and the fibrous parts more lax and tender. Hence the tympany, which succeeds the corruption of any of the viscera, or the imprudent suppression of dysenteries by astringents; and the weakness and laxity of the vessels observable in scurvies, &c.

The crassamentum of human blood changes, by putrefaction, into a dark livid coloured liquor; a few drops of which tinge the serum of a tawny hue, like that of the ichor of sores and dysenteric fluxes, and of the white of the eye, the saliva, the serum of blood drawn from a vein, and that which oozes from a blister in deep scurvies and the advanced state of malignant fevers.

The putrid crassamentum changes a large quantity of recent urine to a flame-coloured water, so common in fevers and in the scurvy. This mixture, after standing an hour or two, gathers a cloud resembling what is seen in the crude water of acute distempers, with some oily matter on the surface like the scum which floats on scorbutic urine.

The serum of blood deposites, in putrefaction, a sediment resembling well-digested pus, and changes to a faint olive green. A serum so far putrefied as to become green, is perhaps never to be seen in the vessels of living animals; but in dead bodies this serum is to be distinguished by the green colour which the flesh acquires in corrupting. In salted meats, this is commonly ascribed to the brine, but erroneously; for that has no power of giving this colour, but only of qualifying the taste, and in some degree the ill effects of corrupted aliments. In foul ulcers and other sores where the serum is left to stagnate long, the matter is likewise found of this colour, and is then always acrimonious.

The putrefaction of animal-substances is prevented or retarded by most saline matters, even by the fixed and volatile alkaline salts, which have generally been supposed to produce a contrary effect. Of all the salts that have been made trial of, sea-salt seems to resist putrefaction the least; in small quantities, it even accelerates the process. The vegetable bitters, as chamomile-flowers, are much stronger antiseptics, not only preserving flesh long uncorrupted, but likewise somewhat correcting it when putrid: the mineral acids have this last effect in a more remarkable degree. Vinous spirits, aromatic and warm substances, and the acrid plants, falsely called *alkalescent*, as scurvy-grass and horse-radish, are found also to resist putrefaction. Sugar and camphor are found to be powerfully antiseptic. Fixed air, or the ærial acid, is likewise thought to resist putrefaction; but above all the vapours of nitrous acid, in the form of air (the nitrous air of Dr Priestley), is found to be the most effectual in preserving animal bodies from corruption. The list of the septics, or of those substances that promote putrefaction, is very short; and such a property has only been discovered in calcareous earths and magnesia, and a very few salts, whose bases are of these earths.

It is observable, that notwithstanding the strong tendency of animal matters to putrefaction, yet broths made from them, with the admixture of vegetables, instead of putrefying, turn sour. Sir John Pringle has found, that when animal-flesh in substance is beaten up with bread or other farinaceous vegetables, and a proper quantity of water, into the consistence of a pap, this mixture likewise, kept in a heat equal to that of the human body, grows in a little time sour; whilst the vegetable matters, without the flesh, suffer no such change.

It was observed in the preceding section, that some few vegetables, in the resolution of them by fire, discover some agreement in the matter with bodies of the animal kingdom; yielding a volatile alkaline salt in considerable quantity, with little or nothing of the acid or fixed alkali, which the generality of vegetables afford. In animal-substances also, there are some exceptions to the general analysis: from animal fats, as we before observed, instead of a volatile alkali, an acid liquor is obtained; and their empyreumatic oil wants the peculiar offensiveness of the other animal oils.

S E C T. III.

MINERALS.

I. OILS and BITUMENS.

IN the mineral kingdom is found a fluid oil called *naphtha* or *petroleum*, floating on the surface of waters, or issuing from clefts of rocks, particularly in the eastern countries, of a strong smell, very different from that of vegetable or animal oils, limpid almost as water, highly inflammable, not soluble in spirit of wine, and more averse to union with water than any other oils.

There are different sorts of these mineral oils, more or less tinged, of a more or less agreeable, and a stronger or weaker smell. By the admixture of concentrated acids, which raise no great heat or conflict with them, they become thick, and at length consistent; and in these states are called *bitumens*.

These thickened or concreted oils, like the corresponding products of the vegetable kingdom, are generally soluble in spirit of wine, but much more difficultly, more sparingly, and for the most part only partially: they liquefy by heat, but require the heat to be considerably stronger. Their smells are various; but all of them, either in the natural state, or when melted or set on fire, yield a peculiar kind of strong scent, called from them *bituminous*.

The solid bitumens are, amber, jet, asphaltum, or bitumen of Judea, and fossil or pit-coal. All these bitumens, when distilled, give out an odorous phlegm, or water, more or less coloured and saline; an acid, frequently in a concrete state; an oil, at first light, and resembling the native petrolea, but soon becoming heavier and thicker; and, lastly, a quantity of volatile alkali is obtained: the residuum is a charry matter, differing in its appearances according to the nature of the bitumen which has been analysed.

From the observations of several naturalists, it is probable that all bitumens are of vegetable and animal origin; that the circumstances by which they differ from the resins and other oily matters of vegetables and animals, are the natural effects of time, or of an alteration produced on them by mineral acids; or perhaps they are the effect of both these causes combined. This opinion is the more probable, since bitumens, on a chemical analysis, yield oil and volatile alkali; neither of which are found in any other minerals.

II. EARTHS.

THE little impropriety of joining the vegetable and animal earths to the mineral, must be overlooked for the sake of bringing both under one synoptical view. Under the mineral earths are included stones; these being no other than earths in an indurated state.—The different kinds of these bodies hitherto taken notice of, are the following.

I. *Earths soluble in the nitrous, marine, and vegetable acids, but not at all or exceeding sparingly in the vitriolic acid. When previously dissolved in other acids, they are precipitated by the addition of this last, which thus unites*
with

with them into inspid, or nearly inspid concretes, not dissoluble in any liquor.

Of this kind are,

1. The mineral calcareous earth: distinguished by its being convertible in a strong fire, without addition, into an acrimonious calx called quicklime. This earth occurs in a variety of forms in the mineral kingdom. The fine soft chalk, the coarser lime-stones, the hard marbles, the transparent spars, the earthy matter contained in waters, and which separating from them, incrustates the sides of the caverns, or hangs in icicles from the top, receiving from its different appearances different appellations. How strongly soever some of these bodies have been recommended for particular medicinal purposes, they are at bottom no other than different forms of this calcareous earth; simple pulverization depriving them of the superficial characters by which they were distinguished in the mass. Most of them contain generally a greater or less admixture of some of the indissoluble kinds of earth; which however, affects their medicinal qualities no otherwise than by the addition which it makes to their bulk. Chalk appears to be one of the purest; and is therefore in general preferred. They all burn into a strong quicklime: in this state a part of them dissolves in water, which thus becomes impregnated with the astringent and lithontriptic powers that have been erroneously ascribed to some of the earths in their natural state.

During the calcination of calcareous earths, a large quantity of elastic vapour is discharged; the absence of this fluid is the cause of the causticity of quicklime, and of its solubility in water in the form of lime-water. For a more full enquiry into this subject; see the articles FIXED AIR, LIME-WATER, and CAUSTIC LEY.

2. The animal calcareous earth: burning into quicklime like the mineral. Of this kind are oyster-shells, and all the marine shells that have been examined; though with some variation in the strength of the quicklime produced from them.

3. The earth of bones and horns: not at all burning into quicklime. This kind of earth is more difficult of solution in acids than either of the preceding. It is accompanied in the subjects with a quantity of gelatinous matter, which may be separated by long boiling in water, and more perfectly by burning in the open air. The earth may be extracted also from the bone or horn, though difficultly, by means of acids; whereas vegetables and the soft parts of animals yield their pure earth by burning only.

II. Earths soluble with ease in the vitriolic as well as other acids, and yielding, in all other combinations therewith, saline concretes soluble in water.

1. Magnesia alba: composing with the vitriolic acid a bitter purgative salt. This earth has not yet been found naturally in a pure state. It is obtained from the purging mineral waters and their salts; from the bitter liquor which remains after the crystallisation of sea-salt from seawater; and from the fluid which remains uncrystallised in the putrefaction of the same sorts of rough nitre. The ashes of vegetables appear to be nearly the same kind of earth.

2. Aluminous earth: composing with the vitriolic acid a very astringent salt. This earth also has not been found naturally pure. It is obtained from

from alum; which is no other than a combination of it with the vitriolic acid: it may likewise be extracted, by strong boiling in that acid, from clays and boles.

III. *Earths which by digesting in acids, either in the cold or in a moderate warmth, are not at all dissolved.*

1. Argillaceous earth: *becoming hard, or acquiring an additional hardness, in the fire.* Of this kind of earth there are several varieties, differing in some particular properties: as the purer *clays*, which when moistened with water form a very viscous mass, difficultly diffusible through a larger quantity of the fluid, and slowly subsiding from it; *boles*, less viscous, more readily miscible with water, and more readily subsiding; and *ochres*, which have little or nothing of the viscosity of the two foregoing, and are commonly impregnated with a yellow or red ferruginous calx.

2. Crystalline earth: *naturally hard, so as to strike sparks with steel; becoming friable in a strong fire.* Of this kind are flints, crystals, &c. which appear to consist of one and the same earth, differing in the purity, hardness, and transparency of the mass.

2. Gypseous earth: *reducible by a gentle heat into a soft powder, which unites with water into a mass, somewhat viscous and tenacious while moist, but quickly drying and becoming hard. A greater heat deprives the powder of this property, without occasioning any other alteration.* Such are the transparent *selenites*: the fibrous stony masses improperly called *English talc*; and the granulated *gypsa*, or *plaster of Paris* stones. Though these bodies, however, have been commonly looked upon as mere earths, of a distinct kind from the rest, they appear both from analytical and synthetical experiments, to be no other than combinations of the mineral calcareous earth with vitriolic acid.

4. Talky earth: *scarcely alterable by a vehement fire.* The masses of this earth are generally of a fibrous or leafy texture; more or less pellucid, bright or glittering; smooth and unctuous to the touch; too flexible and elastic to be easily pulverised; soft, so as to be cut with a knife. In these respects some of the gypseous earths nearly resemble them, but the difference is readily discovered by fire; a weak heat reducing the gypseous to powder, while the strongest makes no other alteration in the talky, than somewhat diminishing the flexibility, brightness, and unctuousity.

III. METALS.

OF metals, the next division of mineral bodies, the most obvious characters are, their peculiar bright aspect, perfect opacity, and great weight; the lightest of them is six, and the heaviest upwards of nineteen, times heavier than an equal bulk of water.

To understand the writers in chemistry, it is proper to be informed, that metals are subdivided into the *perfect*, the *imperfect*, and the *semi-metals*.

Those possessed of ductility and malleability, and which are not sensibly altered by very violent degrees of heat, are called *perfect metals*: Of these there are three; gold, silver and platina. It is however, probable, that the mark of their indestructibility by fire is only relative; and indeed modern chemists have been able, by a very intense degree of heat,

to bring gold into the state of a *calx*, or something very nearly resembling it.

Those metallic substances which possess the distinctive properties of the perfect metals, but in a less degree, are called the *imperfect metals*: These are copper, iron, tin, lead.

Lastly, those bodies having the metallic characters in the most imperfect state, that is to say, those which have no ductility and the least fixity in the fire, are distinguished by the name of *semi-metals*: These are regulus of antimony, bismuth, zinc, regulus of cobalt, nickel, and regulus of arsenic; which last might be rather considered as the boundary between the metallic and saline bodies.

Mercury has been generally ranked in a class by itself.

All metallic bodies, when heated in close vessels, melt or *fuse*. This *fusion* takes place at different degrees of heat in different metals; and it does not appear that this process produces any change in the metals, provided it be conducted in close vessels. Metals, exposed to the combined action of air and fire, are converted into an earth-like substance called *calx*: by this process, which we call *calcination*, the metal suffers remarkable changes. From the distinctive marks we have before given of the metallic bodies, it will be obvious, that the perfect metals are most slowly, the imperfect more quickly, and the semi-metals most easily and soonest, affected in this operation. This earth-like powder, or *calx*, is found to possess no metallic aspect, but is considerably heavier than the metal before its calcination: it has no longer any affinity with metallic bodies, nor even with the metal from which it has been produced.

Besides this method of calcining metals by air and fire, they may likewise be brought into the state of a *calx*, by dissolving them in acids, from which they may be afterwards freed by evaporating the acid, or by adding to the solution an alkaline salt. Metals are also sometimes dephlogiticated by detonation with nitre. This change in their obvious properties is generally accompanied with a remarkable alteration in their medicinal virtues: thus quicksilver, which taken into the body in its crude state and undivided, seems inactive; when calcined by fire, proves even in small doses a strong emetic and cathartic, and in smaller ones, a powerful alterative in chronic disorders; while regulus of antimony, on the contrary is changed by the same treatment, from a high degree of virulence to a state of inactivity.

Calces of mercury and arsenic exhale in a heat below ignition; those of lead and bismuth, in a red or low white heat, run into a transparent glass: the others are not at all vitrescible, or not without extreme vehemence of fire. Both the calces and glasses recover their metallic form and qualities again by the skilful addition of any kind of inflammable substance that does not contain a mineral acid. This recovery of the metallic calces into the metallic form is called *reduction*. During this process an elastic aerial fluid escapes, which is found in many instances to be very *pure air*.

Is the conversion of metals into calces owing to the discharge of phlogiston, or to the absorption of pure air? And is the reduction to be ascribed to the absorption of phlogiston, or to the escape of pure air? And again, Is the calcination to be explained by the discharge of phlogiston and consequent precipitation of pure air? And is the reduction effected

by the absorption of phlogiston, either furnished by inflammable bodies; or precipitated in consequence of the discharge of pure air? On these questions there is much dispute among modern chemists: We thought it only necessary to state them here, as a full enquiry into the subject is by no means the province of pharmacy. We, however, think it prudent to retain the doctrine of Stahl: and we do this the more readily, that it has been followed in the former editions of this work; that it is abundantly clear in its illustration of the pharmaceutical processes; and, lastly, that perhaps it is not the most exceptionable. We shall not, however, reject any modern discovery which may serve to illustrate our subjects.

All metallic bodies dissolve in acids: some only in particular acids, as silver and lead in the nitrous; some only in compositions of acids, as gold in a mixture of the nitrous and marine: and others, as iron and zinc, in all acids. Some likewise dissolve in alkaline liquors, as copper: and others, as lead in expressed oils. Fused with a composition of sulphur and fixed alkaline salt, they are all, except zinc, made soluble in water.

All metallic substances, dissolved in saline liquors, have powerful effects in the human body, though many of them appear in their pure state to be inactive. Their activity is generally in proportion to the quantity of acid combined with them: Thus lead, which in its crude form has no sensible effect, when united with a small portion of vegetable acid into ceruss, discovers a low degree of the styptic and malignant quality, which it so strongly exerts when blended with a larger quantity of the same acid into what was called *saccharum saturni* but now more properly *sal plumbi*, or *plumbum acetatum*: and this mercury, with, a certain quantity of the marine acid, forms the violent corrosive sublimate, which by diminishing the proportion of acid becomes the mild medicine called *mercurius dulcis*.

IV. ACIDS.

THE salts of this order are very numerous; but as we are at present treating of *Minerals*, it is only therefore the *mineral* or *fossil* acids we mean to speak of in this place.

These are distinguished by the names of the concretes from which they have been principally extracted; the *vitriolic* from virioli, the *nitrous* from nitre or saltpetre, and the *marine* or *muratic* from common sea-salt. The form they are commonly in, is that of a watery fluid: They have all a remarkable attraction for water: they imbibe the humidity of the air with rapidity and the generation of heat. Although heat be produced by their union with water, yet when mixed with ice in a certain manner, they generate a prodigious degree of cold. Acids change the purple and blue colours of vegetables to a red; they resist fermentation; and, lastly, they impress that peculiar sensation on the tongue called *sourness*, and which their name imports. But it is to be observed, that they are all highly corrosive, inasmuch as not to be safely touched, unless largely diluted with water, or united with such substances as obtund, or suppress their acidity. Mixed hastily with vinous spirits, they raise a violent ebullition and heat, accompanied with a copious discharge of noxious fumes: a part of the acid unites intimately with the vinous spirit into a new compound, void of acidity, called *dulcified spirit*. It is observable, that the marine acid is much less disposed to this union with spirit of wine than

than either of the other two : nevertheless, many of the compound salts resulting from the combination of earthy and metallic bodies with this acid, are soluble in that spirit, while those with the other acids are not. All these acids effervesce strongly with alkaline salts, both fixed and volatile, and form with them neutral salts ; that is, such as discover no marks either of an acid or alkaline quality.

The nitrous and marine acids are obtained in the form of a thin liquor ; the acid part being blended with a large proportion of water, without which it would be diffused into an incoercible vapour : the vitriolic stands in need of so much less water for its condensation as to assume commonly an oily consistence (whence it is called *oil of vitriol*), and in some circumstances even a solid one. Alkaline salts, and the soluble earths and metals, absorb from the acid liquors only the pure acid part ; so that the water may now be evaporated by heat, and the compound salt left in a dry form.

From the coalition of the different acids with the three different alkalis, and with the several soluble earths and metallic bodies, result a variety of saline compounds ; the principal of which will be particularised in the sequel of this work.

The vitriolic acid, in its concentrated liquid state, is much more ponderous than the other two ; it emits no visible vapour in the heat of the atmosphere, but imbibes moisture therefrom, and increases in its weight : the nitrous and marine emit copious corrosive fumes, the nitrous yellowish red, and the marine white ones. If bottles containing the three acids be stopp'd with cork, the cork is found in a little time tinged black with the vitriolic, corroded into a yellow substance by the nitrous, and into a whitish one by the marine.

It is above laid down as a character of one of the classes of earths, that the vitriolic acid precipitates them when they are previously dissolved in any other acid : it is obvious, that on the same principle this particular acid may be distinguished from all others. This character serves not only for the acid in its pure state, but likewise for all its combinations that are soluble in water. If a solution of any compound salt, whose acid is the vitriolic, be added to a solution of chalk in any other acid, the vitriolic acid will part from the substance with which it was before combined, and join itself to the chalk, forming therewith a compound ; which, being no longer dissoluble in the liquor, renders the whole milky for a time, and then gradually subsides.

This acid may be distinguished also, in compound salts, by another criterion not less strongly marked : If any salt containing it be mixed with powdered charcoal, and the mixture exposed in a close vessel to a moderately strong fire, the acid will unite with the directly inflammable part of the charcoal, and compose therewith a genuine sulphur. Common brimstone is no other than a combination of the vitriolic acid with a small proportion of inflammable matter. With any kind of inflammable matter which is not volatile in close vessels, as the coal of vegetables, of animals, or of bitumens, this acid composes always the same identical sulphur.

The nitrous acid also, whatever kind of body it be combined with, is both distinguished and extricated therefrom by means of any inflammable substance brought to a state of ignition. If the subject be mixed with

with a little powdered charcoal and made red-hot, a deflagration or fulmination ensues; that is, a bright flame with a hissing noise; and the inflammable matter and the acid being thus consumed or dissipated together, there remains only the substance which was before combined with the acid, and the small quantity of ashes afforded by the coal.

These properties of the nitrous acid deflagrating with inflammable substances, and of the vitriolic forming sulphur with them, serve not only as criteria of the respective acids in the various forms and disguises, but likewise for discovering inflammable matter in bodies, when its quantity is too small to be sensible on other trials.

All these acids will be more particularly examined when we come to treat of each of them apart. There are, however, a few other mineral acids which are of importance to be known: these are *aqua regia*; *acid of borax*; *sparry acid*; and, lastly, *fixed air*, which has of late been called *aërial acid* or *acid of chalk*.

Aqua regia has been generally prepared by a mixture of certain proportions of the nitrous and muriatic acids. It is of little avail in pharmacy, whether we consider it as a distinct acid, or only as a modification of the muriatic. It has been found, that the muriatic acid, when distilled with *manganese* (a peculiar fossile substance, showing a remarkable attraction to phlogiston), suffers a change which renders it capable of dissolving gold and platina. Whether this change be produced by the acid acquiring a redundance of pure air, or by its being deprived of phlogiston, is not our business to decide. This experiment, however, renders it probable, that the nitrous acid in the common *aqua regia*, is only subservient to accomplishing the same change in the muriatic acid, which is produced by distilling that acid with *manganese*.

As *aqua regia* has been only used in the nicer operations in chemistry, and in the art of assaying, we think it unnecessary to say more of it in this place.

The *acid of borax*, or *sedative salt of Homberg*, may be extracted from borax, a neutral salt, with the base of mineral alkali. It has also been found native in the waters of several lakes in Tuscany. It is a light, crystallised concrete salt: its taste is sensibly acid: it is difficultly soluble in water; but the solution changes blue vegetable colours to a red. With vitrescent earths it fuses into a white glass: it unites with the other alkalies, with magnesia, and with quicklime. The salts resulting from these combinations are very imperfectly known. The salt has been called *sedative*, from its supposed virtues as an anodyne and refrigerant remedy; but modern physicians have very little faith in this once celebrated drug.

The *sparry acid* is so called, from its being extracted from a fossil called *sparry fluor*, or *vitreous spar*. It is not yet determined whether it be a distinct acid; and it has not yet been employed for any purpose in pharmacy, we think it would be improper to attempt any farther account of it here.

Besides the acids abovementioned, there have also been discovered acids seemingly of a particular nature, in amber, in arsenic, and in black-lead: but as these have not hitherto been applied to any use in pharmacy, they cannot properly have a place in this work.

We now come to the last, but perhaps the most generally diffused, acid in nature : this is the aërial acid, or

Fixed Air.

In our pharmaceutical history of this body, we shall only make use of the two names, *fixed air* and *aërial acid*, being those most generally used, and which in our opinion are most applicable to our own subject. Fixed air is a permanently elastic fluid, being only *fixed* when in a state of combination with calcareous earth or other substances from which it may be extricated. It has received many different names, according to the substances from which it is disengaged, and the different opinions concerning its nature ; it is the *gas silvestre* of Helmont, the *fixed air* of Dr Black, the *acid of chalk*, *calcareous gas*, *mephitic gas*, *mephitic acid*, and *aërial acid*, of many modern chemists. In accommodating our account of it to the purposes of pharmacy, it is most convenient to consider it in the light of an acid. The aërial acid, then, may be extricated by heat, or by other acids, from all calcareous earths ; that is, from all those earths which by calcination are converted into quicklime ; such as chalk, marble, limestone, sea-shells, &c. It is likewise extricated from mild, fixed, and volatile alkalis, and from the magnesia alba. Thus, if the vitriolic, or almost any other acid, be added to any quantity of calcareous earth or mild alkali, a brisk effervescence immediately ensues ; the fixed air, or aërial acid, is discharged in bubbles ; and the other acid takes its place. If this process be conducted with an apparatus to be afterwards described, the aërial acid, now separated from the calcareous earth, may be received and preserved in close vessels. When thus disengaged, it assumes its real character, viz. that of a *permanently elastic fluid*. Fixed air is also separated in great quantity during the vinous fermentation of vegetable matters. When a calcareous earth is deprived of this acid by heat, it is converted into the caustic substance, *quicklime*. When alkalis, fixed or volatile, are deprived by any means of their aërial acid, they are rendered much more caustic, incapable of crystallisation, or of effervescing with other acids. They are also in this *deaërated* state much more powerful in dissolving other bodies. By recombining this acid to the quicklime, the calcined magnesia, or to the alkali, any of which had been deprived of it, these substances again assume their former weight and properties. These bodies, then, when combined with aërial acid, are called *mild* ; as *mild calcareous earth*, *mild alkali*, &c. : and when deprived of this acid, they are called *caustic* ; as *caustic calcareous earths*, *caustic*, *alkali*, &c. but as magnesia is not rendered caustic by calcination, there would perhaps be less danger in calling them *aërated* and *deaërated*. The aërial acid is more disposed to unite with caustic calcareous earth (quicklime) than with any other substance ; next to that, its attraction stands for fixed alkali ; then with magnesia ; and, lastly, with volatile alkali. We shall afterwards find, that these relative powers of the different substances to unite with this acid, lay the foundation of many important processes in pharmacy.

When we pour a small quantity of the aërial acid into lime-water, the liquor instantly assumes a white colour, and the lime gradually precipitates, leaving the water clear and tasteless : the lime in this experiment has absorbed the acid, and has therefore become *mild* or *aërated* earth. The aërial acid is capable of being absorbed by water ; and the water

thus impregnated, precipitates lime in lime-water : but if a certain larger quantity of this impregnated water be added, the lime is redissolved, and the liquor recovers its transparency. Water impregnated with ærial acid is capable of dissolving iron ; and in this way are formed native and artificial chalybeate waters. Zinc is also soluble in the same liquor. This acid is easily expelled from the water by removing the pressure of the atmosphere, by boiling, and even by time alone, if the vessel be not kept close shut. Fixed air extinguishes flame, vegetable and animal life, and ought therefore to be cautiously managed : like other acids, it changes the blue colours of vegetables to a red, and communicates an acidulous taste to the water impregnated with it. The attraction of the ærial acid, even to quicklime, is but feeble ; as we know of no other acids whatever that are not able to disengage it.

From these several facts, it will appear obvious, that *mild* or *effervescing alkalies*, whether fixed or volatile, are really neutral salts, compounded of the ærial acid and pure alkali : like other acids, it unites with these bodies, diminishes their causticity, and effects their crystallisation. In speaking, therefore, of *pure alkali*, we ought to confine ourselves to those in the *caustic* or *deaërated* state ; or, in other words, to those which are deprived of their fixed air or ærial acid, with which they formed a compound salt. Many other properties of this acid might be mentioned, but we have now noticed all those which we thought were concerned in the business of pharmacy. We shall have occasion to recur to the subject when we come to the preparation of several compound drugs.

Let us next take a view of what passes in the combinations of acids with different substances.

If a fixt alkaline salt be united with a vegetable acid, as that of vinegar, into a neutral salt, on adding to this compound some marine acid, the acetous acid will be disengaged, so as to exhale totally in a moderate heat, leaving the marine in possession of the alkali : the addition of the nitrous will in like manner dispossess the marine, which now arises in its proper white fumes, though without such an addition it could not be extricated from the alkali by any degree of heat : on the addition of the vitriolic acid, the nitrous gives way in its turn, exhaling in red fumes, and leaving only the vitriolic acid and the alkali united together.

Again, if any metallic body be dissolved in an acid, the addition of any earthy body that is dissoluble in that acid will precipitate the metal : a volatile alkaline salt will in like manner precipitate the earth : and a fixt alkali will dislodge the volatile ; which last being readily exhalable by heat, the remaining salt will be the same as if the acid and fixt alkali had been joined together at first, without the intervention of any of other bodies.

THE power in bodies on which these various transpositions and combinations depend, is called by the chemists *affinity* or *elective attraction* ; a term, like the Newtonian *attraction*, designed to express not the cause, but the effect. When an acid spontaneously quits a metal to unite with an alkali, they say it has a greater *affinity* or *attraction* to the alkali than to the metal : and when, conversely, they say it has a greater affinity to fixt alkali than to those of the volatile kind, they mean only that it will

unite

unite with the fixt in preference to the volatile; and that if previously united with a volatile alkali, it will forsake this for a fixt one.

The doctrine of the affinities of bodies is of very extensive use in the chemical pharmacy: many of the officinal processes, as we shall see hereafter, are founded on it: several of the preparations turn out very different from what would be expected by a person unacquainted with these properties of bodies; and several of them, if, from an error in the process, or other causes, they prove unfit for the use intended, may be rendered applicable to other purposes, by such transpositions of their component parts as are pointed out by the knowledge of their affinities.

We shall here therefore subjoin a table of the principal affinities observed in pharmaceutical operations, formed chiefly on that of Mr Geoffroy (which was published in the Memoirs of the French Academy for the year 1718), with such corrections and additions as later experiments have furnished.

The table is thus to be understood. The substance printed in capitals, on the top of each series, has the greatest affinity with that immediately under it, a less affinity with the next, and so on to the end of the series: that is, if any of the remote bodies has been combined with the top one, the addition of any of the intermediate bodies will disunite them; the intermediate body uniting with the uppermost body of the series, and throwing out the remote one. Thus in the first series of the affinities of water, a fixt alkali being placed between the water and inflammable spirit, it is to be concluded, that wherever water and spirit are mixed together, the addition of any fixt alkaline salt will absorb the water, and occasion the pure spirit to be separated. Where several substances are expressed in one series, it is to be understood, that any one of those bodies which are nearest to the uppermost, will in like manner disengage from it any one of those which are more remote.

1. WATER.

Fixt alkaline salt,
Inflammable spirit.

2. WATER.

Inflammable spirit,
Volatile alkaline salt.

3. WATER.

Inflammable spirit,
Sundry compound salts.

4. INFLAMMABLE SPIRIT.

Water,
Oils and Resins.

5. VITRIOLIC ACID.

Inflammable principle,
Fixt alkaline salts,
Calcareous earths calcined,
Volatile alkaline salts,
Calcareous earths uncalcined,
Zinc and Iron,
Copper,
Silver.

6. NITROUS ACID.

Inflammable principle,
Fixt alkaline salts,
Calcareous earths calcined,
Volatile alkaline salts,
Calcareous earths uncalcined,
Zinc,
Iron,
Copper,
Lead,
Mercury,
Silver,
Camphor.

7. MARINE ACID.

Fixt alkaline salts,
Calcareous earths calcined,
Volatile alkaline salts,
Calcareous uncalcined,
Zinc,
Iron,

Tin,
Regulus of antimony,
Copper,
Lead,
Silver,
Mercury.

8. ACETOUS ACID.

Iron,
Copper.

9. ALKALINE SALTS.

Vitriolic acid,
Nitrous acid,
Marine acid,
Vinegar,
Tartar,
Aërial acid,
Oils and Sulphur.

10. SOLUBLE EARTHS.

Vitriolic acid,
Nitrous acid,
Marine acid.

11. INFLAMMABLE PRINCIPLE.

Nitrous acid,
Vitriolic acid,
Metallic substances,
Fixt alkaline salts.

12. SULPHUR.

Fixt alkali and Quicklime,
Iron,
Copper,
Lead,
Silver,
Regulus of Antimony,
Mercury,
Arsenic.

13. GOLD.

Ethereal spirit,
Acids.

14. MERCURY.

Marine acid,

Vitriolic

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Vitriolic acid,
Nitrous acid.

15. LEAD.

Vitriolic acid,
Marine acid,
Nitrous acid,
Vinegar,
Oils.

16. SILVER.

Marine acid,
Vitriolic acid,
Nitrous acid.

17. COPPER.

Vitriolic acid,
Marine acid,
Nitrous acid.

18. IRON.

Vitriolic acid,
Marine acid,
Nitrous acid,
Aërial acid.

19. REGULUS OF ANTIMONY.

Vitriolic acid,
Nitrous acid,
Marine acid.

We think it may be useful to insert here another Table of single elective attractions, formed from a later and more complete knowledge of the subject. It is taken from Dr Webster's Syllabus; and as it principally concerns those bodies employed in pharmacy, we think it peculiarly adapted for this work. We have, however, delivered it in the common nomenclature of the art. Dr Webster's method is more short, and may be seen in the Syllabus alluded to.

TABLE OF ATTRACTIONS.

BY WATER.

{ Vitriolic acid, Nitrous acid, Muriatic acid.	Tartarous acid.	Vinegar.	Acid of Borax, or Sedative Salt.
Terra ponderosa, Vegetable alkali, Mineral alkali, Lime, Magnesia, Volatile alkali, Clay, Zinc, Iron, Lead, Tin, Copper, Antimony, Mercury, Silver, Water, Alcohol, Phlogiston.	Lime, Terra ponderosa, Magnesia, Vegetable alkali, &c.		Lime, Terra ponderosa, Magnesia, Vegetable alkali, &c.

BY HEAT.

Phlogiston, Terra ponderosa, &c. Magnesia, Metallic substan- ces, Volatile alkali, Clay.			
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TABLE of ATTRACTIONS *continued.*

By WATER.

Fixed air, or Aërial Acid.	Vegetable al- kali, Mineral alkali, Volatile alkali, Terra ponde- rosa.	Lime.	Magnesia, Clay.
Terra ponderosa, Lime, Vegetable alkali, &c. Alcohol, Essential oil, Unctuous oil.	Vitriolic acid, Nitrous acid, Muriatic acid, Tartarous acid, Vinegar, Acid of borax, Fixed air, Unctuous oils, Brimstone, Metallic substan- ces, Water.	Vitriolic acid, Tartarous acid, Nitrous acid, Muriatic acid, &c.	

By HEAT.

	Acid of borax, Vitriolic acid, &c.		
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TABLE of ATTRACTIONS *continued.*

BY W A T E R.

Phlogiston.	Brimstone.	Hepar Sulphuris.	Alcohol.
Nitrous acid, Vitriolic acid, Marine acid de- phlogistified, by manganese, Silver, Mercury, Antimony, Copper, Tin, Lead, Iron, Zinc, Water.	Lead, Tin, Silver, Mercury, Antimony, Iron, Fixed alkali, Volatile alkali, Terra ponderosa, Lime, Magnesia, Unctuous oils, Essential oils, Dulcified spirit of vitriol, Alcohol.	Silver, Mercury, Antimony, Copper, Tin, Lead, Iron, Alcohol, Water.	Water, Dulcified spirit of vitriol, Essential oils, Volatile alkali, Fixed alkali, Hepar sulphuris, Brimstone.

TABLE of ATTRACTIONS *continued.*

BY WATER.

Dulcified Spirit of Vitriol.	Essential oils.	Unctuous oils.	Zinc calcined.
Alcohol, Essential oils, Unctuous oils, Water, Brimstone.	Dulcified spirit of vitriol, Alcohol Unctuous oils, Water, Brimstone.	Dulcified spirit of vitriol, Essential oils, Fixed alkali, Volatile alkali, Brimstone.	Vitriolic acid, Muriatic acid, Nitrous acid, Tartarous acid, Vinegar, Acid of borax, Fixed air.

TABLE of ATTRACTIONS *continued.*

BY WATER.

Iron.	Lead.	Tin.	Copper.
Tartarous acid, Vitriolic acid, &c.	Vitriolic acid, Tartarous acid, Muriatic acid, &c. Fixed alkali, Unctuous oils.		Tartarous acid, Muriatic acid, Vitriolic acid, Nitrous acid, &c. Fixed alkali, Volatile alkali, Unctuous oils.

TABLE of ATTRACTIONS *continued.*

BY WATER.

Antimony.	Mercury.	Silver.	Water.
Muriatic acid, Vitriolated acid, &c.	Muriatic acid, Vitriolic acid, Tartarous acid, Nitrous acid, &c.	Muriatic acid, Vitriolic acid, &c.	Vegetable alkali, Mineral alkali, Volatile alkali, Alcohol.

BESIDES these cases of single elective attraction, there are also cases of what is called *double elective attraction*. These compose a table, in all the cases of which there are two compounds decomposed, and two new ones produced in their stead. We shall take for our example the first case in our table: If a plate of iron be put into a solution of vitriol of copper, the acid of the vitriol quits the copper and seizes upon the iron, whilst the phlogiston of the iron attaches itself to the calx of the copper. We have now, then, a vitriol of iron and metallic copper; that is to say, instead of vitriol of copper and a plate of iron, we have now a plate of copper and a vitriol of iron. As all chemical compositions and decompositions depend on these single or double elective attractions, we shall, for the sake of those more advanced in the study of chemistry, here subjoin a Table of Double Elective Attractions, extracted from the Syllabus of Dr Webster: but as his terms may appear difficult to beginners, we have illustrated the several cases by a single familiar example from each division.

Cases of DOUBLE Elective Attraction.

BY WATER.

1. Phlogificated iron with Vitriolated copper,	Give	1. Phlogificated copper and Vitriolated iron.
2. Acidated earth or metal with Aërated alkali,		2. Acidated alkali and Aërated earth or metal.
3. Acidated volatile alkali with Aërated fixed alkali or earth,		3. Acidated fixed alkali or earth and Aërated volatile alkali.
4. Vitriolated alkali, magnesia, or clay, with Nitrated, salited, or acetated lime,		4. Vitriolated lime and Nitrated, salited, or acetated alkali, magnesia, or clay.
5. Vitriolated or salited alkali or earth with Nitrated, or acetated lead, mercury, or silver,		5. Vitriolated or salited lead, mercury, or silver, and Nitrated or acetated alkali or earth.
6. Vitriolated, nitrated, or acetated alkali, earth, or metal, with Salited silver,		6. Vitriolated, nitrated, or acetated silver, and Salited alkali, earth, or metal.
7. Vitriolated vegetable alkali with Salited lime, lead, or silver,		7. Vitriolated lime, lead, or silver, and Salited vegetable alkali.
8. Tartarified or acetated vegetable alkali with Nitrated mercury,		8. Tartarified or acetated mercury and Nitrated vegetable alkali.

BY HEAT.

1. Vitriolated volatile alkali with Nitrated, salited, or acetated fixed alkali.	Give	1. Vitriolated fixed alkali and Nitrated, salited, or acetated volatile alkali.
2. Vitriolated, nitrated, or salited volatile alkali, with Acetated flint, alkali, or lime,		2. Vitriolated, nitrated, or salited fixed alkali, or lime, and Acetated volatile alkali.
3. Vitriolated mercury with Salited mineral alkali,		3. Vitriolated mineral alkali & Salited mercury.
4. Salited mercury with Sulphurated antimony,		4. Salited antimony and Sulphurated mercury.

Familiar Examples of a single Case in each of the opposite Divisions.

BY WATER.

1. Iron in its metallic state with Vitrol of copper,	Give	1. Copper in its metallic state and Vitriol of iron.
2. Epsom salt with Mild vegetable alkali,		2. Vitriolated tartar and Common magnesia.
3. Vitriolic ammoniac with Mild mineral alkali,		3. Glauber's salt and Mild volatile alkali.
4. Vitriolated tarar with Nitrous selenite,		4. Vitriolic selenite and Saltpetre.
5. Vitriolated tartar with Mercurial nitre,		5. Vitriol of mercury and Saltpetre.
6. Saltpetre with Luna cornea,		6. Lunar caustic and Cubic nitre.
7. Vitriolated tartar with Luna cornea,		7. Vitriol of silver and Febrifugal salt.
8. Regenerated tartar with Mercurial nitre,		8. Acetous mercurial salt and Saltpetre.

BY HEAT.

1. Vitriolic ammoniac with Common salt,	Give	1. Common sal ammoniac and Glauber's salt.
2. Vitriolic ammoniac with Regenerated tartar,		2. Acetous ammoniacal salt and Vitriolated tartar.
3. Vitriol of mercury with Common salt,		3. Glauber's salt and Sublimate corrosive mercury.
4. Crude antimony with Sublimate corrosive mercury,		4. Butter of antimony and Fæctitious cinnabar.

CHAPTER II.

Of the Pharmaceutical Apparatus.

ONE of the principal parts of the pharmaceutic apparatus consists in contrivances for containing and applying fire, and for directing and regulating its power. Of these contrivances, called *furnaces*, there are different kinds, according to the conveniency of the place, and the particular purposes they are intended to answer. We shall here endeavour to give a general idea of their structure, and of the principles on which they are built.

FURNACES.

THE simple furnace is the common stove, otherwise called the furnace for OPEN FIRE. This is usually made of an iron hoop, five or six inches deep; with a grate or some iron bars across the bottom, for supporting the fuel. It either stands upon feet, so as to be moveable from place to place; or is fixt in brickwork. In this last case, a cavity is left under the grate, for receiving the ashes that drop through it; and an aperture or door, in the forepart of the ash-pit, serves both for allowing the ashes to be occasionally raked out, and for admitting air to pass up through the fuel. This furnace is designed for such operations as require only a moderate heat; as infusion, decoction, and the evaporation of liquids. The vessel, containing the subject matter, is supported over the fire by a trevet. Fig. 1.

A deeper hoop or body, cylindrical, parallelipedal widening upwards, elliptical, or of other figures; formed of, or lined with, such materials as are capable of sustaining a strong fire: with a grate and ash-pit beneath, as in the preceding; and communicating at the top with a perpendicular pipe or chimney; makes a WIND FURNACE. Fig. 2.

The greater the perpendicular height of the chimney, the greater will be the draught of air through the furnace, and the more intensely will the fire burn; provided the width of the chimney is sufficient to allow a free passage to all the air that the furnace can receive through the grate; for which purpose, the area of the aperture of the chimney should be nearly equal to the area of the interstices of the grate.

Hence, where the chimney consists of moveable pipes, made to fit upon each other at the ends, so that the length can be occasionally increased or diminished, the vehemence of the fire will be increased or diminished in the same proportion.

In furnaces whose chimney is fixed, the same advantage may be procured on another principle. As the intensity of the fire depends wholly upon the quantity of air successively passing through and animating the burning fuel, it is obvious, that the most vehement fire may be suppressed or restrained at pleasure by more or less closing either the ash-pit door by which the air is admitted, or the chimney by which it passes off; and that

that the fire may be more or less raised again, by more or less opening those passages. A moveable plate, or REGISTER, in any convenient part of the chimney, affords commodious means of varying the width of the passage, and consequently of regulating the heat. This is most conveniently accomplished by keeping the ash-pit door entirely shut, and regulating the heat by a range of holes in a damping plate; each hole is provided with a proper pin, whereby we may shut it at pleasure. These holes may be made to bear a certain proportion to each other; the smallest being considered as one, the next to it in size must have twice the opening, the next to that double of the second, &c. and so on to the number of seven or eight; and by combining these holes variously together, we can admit any quantity of air from 1 to 128; as 1. 2. 4. 8. 16. 32. 64. 128: See Fig. 7. and 8

THERE are two general kinds of these wind-furnaces; one, with the chimney on the top, over the middle of the furnace, (fig. 2.); the other, with the chimney on one side, and the mouth clear, (fig. 3.)

In the first, either the upper part of the furnace is contracted to such an aperture, that the chimney may sit upon it; or it is covered with an arched dome, or with a flat plate, having a like aperture in the middle. As in this disposition of the chimney, the inside of the furnace cannot be come at from above, a door is made in the side, a little above the grate, for supplying fuel, inspecting the matter in the fire, &c. Fig. 2.

For performing FUSIONS in this furnace, the crucible, or melting vessel, is placed immediately among the fuel, with a slip of brick, or some other like support, between it and the grate, to keep the cold air, which enters underneath, from striking on its bottom.

When designed as a REVERBERATORY, that is for distillation in long necks or coated glass retorts, two iron bars are placed across, above the fire, for supporting the vessel, whose neck comes out at an aperture made for that purpose in the side. This aperture should be made in the side opposite to that in which is the door abovementioned; or at least so remote from it, that the receiver, fitted on the neck of the distilling vessel without the furnace, may not lie in the operator's way when he wants to stir the fire, or throw in fresh fuel. Fig. 4.

The other kind of wind-furnace communicates, by an aperture in its back part near the top, either with an upright pipe of its own, or with the chimney of the room; in which last case, all other passages into the chimney must be closed up. Here the mouth of the furnace serves for a door, which may be occasionally covered with a plate or tile. Of this kind is the furnace most commonly used for fusion in a crucible. Fig. 3.

THIS last construction, by leaving the mouth of the furnace clear, affords the conveniency of letting into it a boiling or evaporating pan, a copper still, an iron pot for distilling hartshorn, an iron sand-pot, or other like vessels, of such a size that they may be supported on the furnace by their rims. The mouth being thus occupied by the vessels, a door must be made in the side for supplying and stirring the fuel.

When a furnace of this kind is designed only for a *sand-bath*, it is most commodious to have the sand placed on a long iron plate, furnished with a ledge of freestone or brick-work at each side. The mouth of the furnace

is to be closely covered by one end of this plate; and the canal by which the furnace communicates with its chimney, is to be lengthened and carried along under the plate, the plate forming the upper side of the canal. In this kind of sand-bath, digestions, &c. requiring different degrees of heat, may be carried on at once; for the heat decreases gradually from the end over the furnace to the other. Fig. 5.

When large vessels, as *stills* and iron-pots for distilling hartshorn and aquafortis, are fixed in furnaces, a considerable part of the bottom of the vessel is commonly made to rest upon solid brick-work.

The large still, whose bottom is narrow in proportion to its height, and whose weight, when charged with liquor, requires great part of it to be thus supported, exposes but a small surface to the action of the fire underneath. To make up for this disadvantage, the heat, which rises at the further end of a long narrow grate, is conveyed all round the sides of the vessel by a spiral canal, which communicates at top with a common chimney.

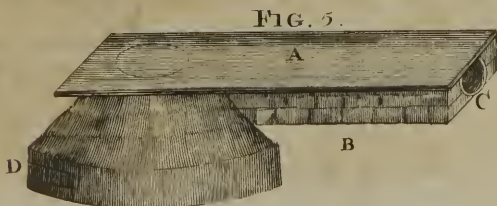
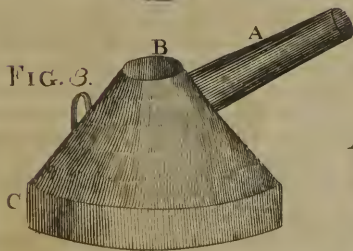
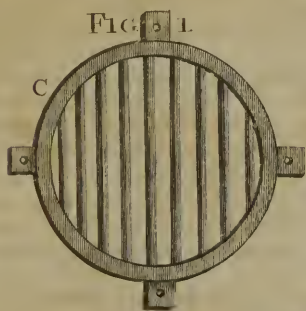
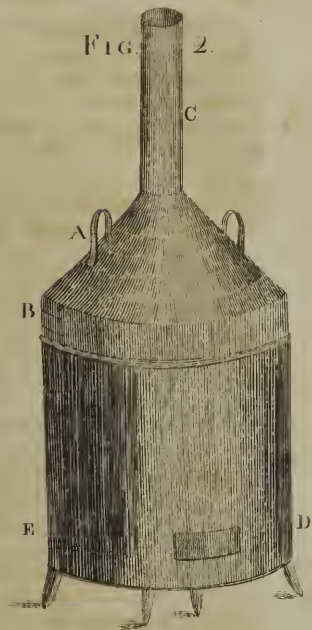
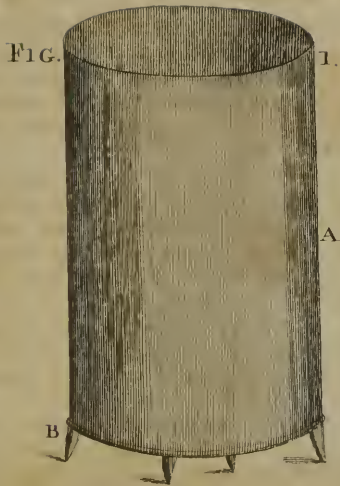
The pots for distilling hartshorn and aquafortis in the large way, have part of their great weight borne up by three strong pins or trunions at equal distances round the pot towards the middle reaching into a brick-work; so that less support being necessary underneath, a greater surface of the wide bottom lies exposed to the immediate action of the fire.

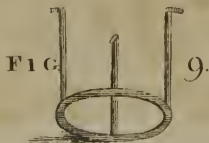
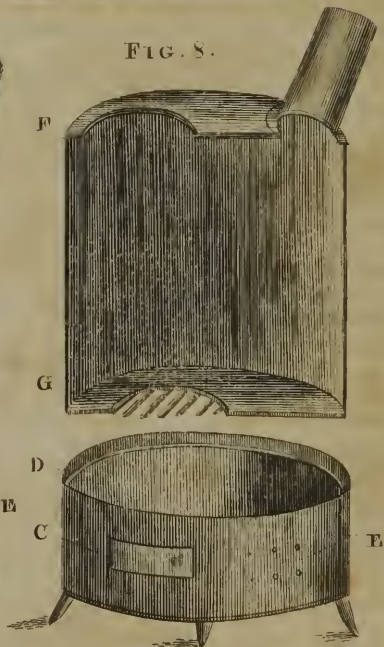
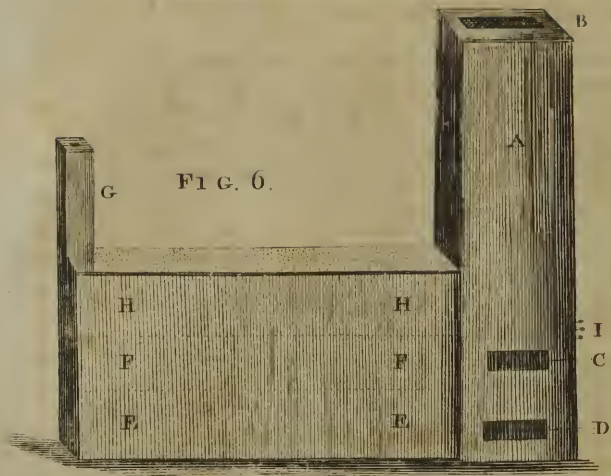
IF a furnace, communicating with its chimney by a lateral canal, as in the sand-furnace abovementioned, be carried to a considerable height above the part where this canal enters it, and if it be filled with fuel to the top, and closely covered, the fuel will burn no higher than up to the upper side of the canal through which the air passes off; and in proportion as this lower part of the fuel consumes, it will be supplied by that above, which falls down in its place. Hence in this furnace, called an *athanor*, a constant heat may be kept up for a considerable length of time without attendance. Fig. 6.

The tower of the *athanor*, or that part which receives the fuel, is commonly made to widen a little downwards, that the coals may fall the more freely; but not so much as that the part on fire at bottom may be too strongly pressed. A small aperture is made opposite to the canal or flue, or a number of openings, according to the size of the furnace and the degree of heat required for supplying the air, which is more conveniently admitted in this manner than through the grate, as the interstices of the grate are in time choked up by the ashes.

This furnace is designed only for heating bodies exterior to it. Its canal or flue, as in the sand-furnace already described, passes under a sand-bath or water-bath; at the farther end of which it rises perpendicularly to such a height, as may occasion a sufficient draught of air through the fire.

The flue may be so wide as to correspond to the whole height of the fire-place. A register or sliding-plate, placed between the flue and the furnace, enables us to increase or diminish this height, and consequently the quantity of fire at pleasure. If the space beneath the flue be inclosed to the ground, the heat in this cavity will be considerable enough to be applicable to some useful purposes.





With regard to the materials of furnaces, the fixed ones are built of bricks, cemented together by some good loam or clay. Any kind of loam or clayey composition that is of a proper degree of tenacity, which, when made into a paste with water, and well-worked, does not stick to the fingers, and which when thoroughly dried, neither cracks nor melts in a vehement fire, is fit for this use. The purer and more tenacious clays require to have their tenacity lessened by an admixture of sand, or rather of the same kind of clay burnt and grossly powdered.

Smaller portable furnaces are made of strong iron or copper plates, lined to the thickness of an inch or more with the same kind of clayey composition; which for this use may be beaten with some horse-dung, chopped straw, or cut hair or tow.

Very commodious portable furnaces, for a business of moderate extent, may be formed also of the larger kind of the common black-lead melting-pots; by cutting a door at the bottom of the pot for the ash-pit, another above this for the fire-place, and introducing a circular iron grate of such a size that it may rest between the two doors. A particular account of the method of preparing these furnaces for different uses may be seen in the first part of the *Commercium Philosophico-technicum* of Dr Lewis: They are, however, liable, by the repetition of violent heats, to a kind of calcination like inflammable substances; and the heat is not regulated with sufficient exactness.

In consideration of these inconveniences, Dr Black has contrived one of the most simple and elegant furnaces with which we are yet acquainted. Besides its durability, it will be found, though but one instrument, to answer all the purposes either of the practical or speculative chemist. Plate I. Fig. 7. and 8.

EXPLANATION of PLATE I.

Fig. 1. A common stove which stands on feet, and is moveable from place to place.

A, The body of the stove.

B, Its feet.

C, The grate, which is that used in Dr Black's furnace, to be afterwards described, and which we would recommend as the best for every kind of portable furnace.

Fig. 2. A wind-furnace.

A, Its dome.

B, The door for supplying fuel, and placing the matter to be wrought on.

C, The chimney.

D, The door of the ash-pit.

E, The register, or damping-plate.

Fig. 3. The furnace most commonly used for fusion in a crucible.

A, The beginning of its chimney from the back-part.

B, The mouth of the furnace, serving as the door.

C, The register.

Fig. 4. Plan of a wind-furnace when designed for a reverberatory.

F

A,

A, The iron bars, which cannot well be shown, but may very easily be conceived.

B, A retort, supported on the bars.

C, The neck of the retort, coming out at an aperture of the furnace in the opposite side of the door B, Fig. 2.

Fig. 5. Plan of a wind-furnace when designed for a sand-bath.

A, A long iron plate, one end of which closely shuts the mouth of the furnace.

B, A ledge of free-stone or brick-work.

C, The mouth of the canal.

D, the door for admitting fuel.

Registers, &c. as in other furnaces.

Fig. 6. An athanor.

A, The tower, which has a cover at the top B when used.

C, The fire-place.

D, The ash-pit.

E, E, An oblong frame of metal or stone connected to the tower A.

F, F, A chamber connected to the fire-place C, and continued up to the chimney G. Above this chamber the rest of the frame is lined with iron.

H, H, Which being covered with sand, and heated by the long range of fire in the chamber below, forms the sand-heat.

I, The register

Fig. 7. and 8. Dr Black's furnace. To render our description of this instrument as simple as possible, let the reader suppose that the body of the common stove, fig. 1. is made of an oval form, and closed at each end by a thick iron plate. The upper plate or end of the furnace is perforated with two holes: one of these, A, is pretty large, and is often the mouth of the furnace; the other hole B, is of an oval form, and is intended for screwing down the vent upon.

The undermost plate or end of the furnace has only one circular hole, somewhat nearer to one end of the ellipse than the other; hence a line passing through the centre of both circular holes has a little obliquity forwards: this is shown in fig. 8. which is a section of the body of the furnace, and exhibits one half of the upper and one half of the under nearly corresponding holes. The ash-pit, fig. 7. and 8. C, is made of an elliptical form like the furnace; but is somewhat wider, so that the bottom of the furnace goes within the brim; and a little below there is a border, D, fig. 8. that receives the bottom of the furnace. Except the holes of the damping-plate E, fig. 7. and 8. the parts are all close by means of a quantity of soft lute, upon which the body of the furnace is pressed down, whereby the joining is made quite tight: for it is to be observed, that in this furnace the body, ash-pit, vent, and grate, are all separate pieces as the furnace comes from the hands of the workman. The grate C, fig. 1. is made to apply to the outside of the lower part or circular hole: it consists of a ring set upon its edge, and bars likewise set on their edges. From the outer part of the ring proceed four pieces of iron, by means of which it can be screwed on: it is thus kept out of the cavity of the furnace, and preserved from the extremity of the heat, whereby

whereby it lasts much longer. The sides of the furnace are luted, to confine the heat, and to defend the iron from the action of it. The luting is so managed, that the inside of the furnace forms in some measure the figure of an inverted truncated cone.

We have thus combined the two figures 7. and 8. in order to describe as exactly as possible this furnace in its entire state; but to prevent confusion, it must be understood, that fig. 7. represents the body of the furnace with its bottom received within the ash-pit. As in this figure, then, we could not exhibit the bottom of the furnace, we have in fig. 8. supposed the body of the furnace to be cut down through its middle; whereby one half of the undermost hole, with a proportional part of the grate G applied to it, is exhibited along with, and nearly opposed to, one half of the upper hole F; the same hole which in fig. 7. is represented in its entire state by A. By fig. 8. then, the relation of the upper and under holes to one another is explained. It is also to be understood, that the ash-pit of fig. 8. is not, like the body of the furnace, divided in its middle, but is the ash-pit of fig. 7. only detached from the bottom of the furnace, in order to represent the border D, on which the bottom of the furnace is received.

Now to adapt this furnace to the different operations in chemistry, we may first observe, that for a melting furnace we need only provide a covering for the upper hole A, which in this case is made the door of the furnace. As this hole is immediately over the grate, it is very convenient for introducing and examining from time to time the substances that are to be acted upon. The cover for the door may be a flat and square tyle or brick. Dr. Black usually employs a sort of lid made of plate-iron with a rim that contains a quantity of luting. The degree of heat will be greater in proportion as we heighten the vent B, and to the number of holes we open in the damping-plate E: by this means the furnace may be employed in most operations in the way of assaying; and though it does not admit of the introduction of a muffle, yet if a small piece of brick is placed upon its one end in the middle of the grate, and if large pieces of fuel are employed, so that the air may have free passage through it, metals may be assayed in this furnace without coming in contact with the fuel. It may therefore be employed in those operations for which a muffle is used; and in this way lead and sundry other metals may be brought to their proper calces.

When we wish to employ this furnace for those distillations requiring an intense heat, the earthen retort is to be suspended by means of an iron ring, having three branches standing up from it, fig. 9. This ring hangs down from the hole A about one half foot; so that the bottom of the retort rests upon the ring, and is immediately hung over the fuel. The opening between the mouth of the furnace A is filled up with broken crucibles or potsherds, and these are covered over with ashes, which transmit the heat very slowly. This furnace, then, answers for distillations performed with the naked fire. Dr Black has also had some of them provided with a hole in the side from which the neck of the retort issued; and in this way he has distilled the phosphorus of urine, which requires a very strong heat.

For distillations with retorts, performed in the sand-bath, there is an

iron-pot (fig. 10.) fitted for the opening of the furnace A, and this is employed as a sand-pot. In these distillations the vent B becomes the door of the furnace, and it is more easily kept tight than when on the side. When it thus serves for the door, it may be covered with a lid of charcoal and clay.

This furnace answers very well too for the common still; part of which may be made to enter the opening A, and hang over the fire. In this case, likewise, the vent B is the door of the furnace, by which fresh fuel is to be added: but in ordinary distillations it is never necessary to add fresh fuel; and even in the distillation of mercury, phosphorus of urine, and indeed during any process whatever, the furnace generally contains sufficient to finish the operation; so effectually is the heat preserved from dissipation, and the consumption of the fuel is so very slow.

ON the subject of furnaces, we cannot pass over a very excellent one contrived by Dr Price. Though it is perhaps not necessary in the less operose processes in pharmacy; yet we think an explanation of it may be entertaining and useful to many of our readers. The plate of this instrument is taken from an excellent drawing in the possession of our ingenious friend Dr Schwediauer.

EXPLANATION of PLATE II.

THIS furnace consists of four separate pieces: the body, or largest cylinder, divides in two at the part marked M. The outermost or largest furnace is made of the composition usually employed in England for making the blue crucibles, but with a larger proportion of clay. It is strongly braced with iron as expressed in the drawing, with screws to tighten the circular braces, which press on and secure the vertical bars. These bars are terminated at each end by a clamp, which could not very well be expressed in the draught. The front of the furnace is also secured in the part most liable to suffer by the expansion in heating with an iron plate.

In the lower division is placed a tripod with a circular ring, which supports a grate which may occasionally be changed. The tripod, by means of pieces of brick placed under the legs, may be raised according to the intended depth of the fire.

In the larger furnace, as thus described, may be placed a still, sand-pot, water-bath, evaporating vessel, and the like. The fire is to be fed by the aperture B, and the smoke passes off by the flue C, whose dimensions are shown by the dotted lines. The fire is easily regulated, by taking partly or entirely out the doors of the air draughts D and F.

A muffle may be placed and worked at B, this aperture being made of a proper shape for that purpose, the fuel being put in at top. The muffle being removed, a retort may be placed so as to have its neck passed through the same aperture; and if it be an earthen or coated glass one, may be worked in the naked fire, or with what is called a fire of suppression.

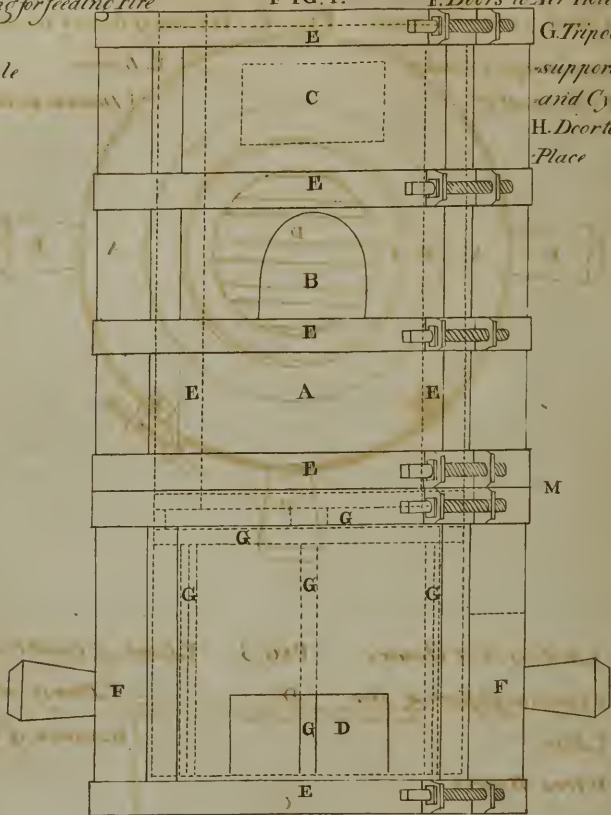
This larger furnace may be also used as a wind-furnace, or melting-furnace; but is rather larger than common experiments require: it will, however, give a very strong heat when employed for that purpose.

PLATE II. N^o 1.

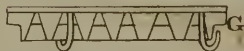
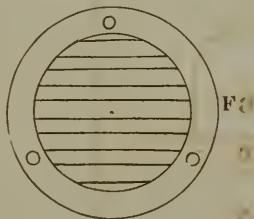
- A. Body of Furnace
- B. Opening for feeding Fire
- C. Flue
- D. Air Hole

- E. Braces w. Screws
- F. Doors to Air Holes

FIG. 1.



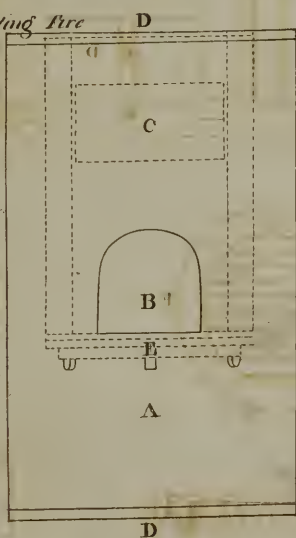
- G. Tripod to support Grate and Cylinder
- H. Door to Fire Place



A Thickness of outer Furnace
 B of larger Cylinder
 C of smaller d^o
 FIG. 2. D. Grate of large Cylinder
 E. Braces
 F. Doors to Air Holes



A Body of the Cylinder
 B. Opening for feeding Fire
 C. Flue
 D. Iron Braces
 FIG. 3. E. Grate of small Cylinder
 F. Plan of d^o
 G. Section of d^o



The cylinder marked A, fig. 3. is composed of a thick iron plate properly fastened to two rings of iron connected by perpendicular bars, to which also the plate is strongly rivetted.

It is stuck very full of nails, whose points projecting inwardly hold pieces of crucibles put between them edgewise; and these are covered, with a luting of Windsor loam, Stourbridge clay, and some glass-grinders sand, which partly vitrifying, renders the whole very compact.

This cylinder is put into the other, supported on the grate, and so placed that its apertures may correspond with those of the larger.

It thus affords a furnace in which a smaller sand-pot retort, or muffle, may be worked, as in the former. It is a much more convenient wind-furnace, being set at top, and the mouth of it covered with a kind of tile of the same materials with the outer furnace, which is to slide backwards and forwards over it. This method of charging a wind-furnace is much preferable to that of putting in the crucibles and fuel thro' a door laterally.

In this furnace a very intense heat may be excited, which the air-draughts will afford the operator means of regulating to the greatest exactness. By a proper choice of fuel, and some address in managing the fire, the most refractory metals (platina *perhaps* excepted) may be fused in it. The regulus of manganese has been obtained in it; and steel melts without a flux in a few minutes.

It should be observed that the size of the flue is full large, and therefore it may be occasionally closed, partly by pieces of brick of different sizes according to the intended purpose.

The smaller cylinder, marked C in the plan (fig. 2.), is composed as that just described, but without the aperture for the muffle, though it would not be amiss to have a similar but smaller aperture in this also. It would thus work a little still, sand-pot, bath, &c. but its flue should be considerably narrowed with slips of brick or tiles.

As a melting-furnace it answers very well for any heat not much greater than that of melting cast iron. It can with care be made to fuse steel. It seems particularly adapted to experiments on small quantities of metal, glass, or the like, as it requires little fuel, and yet gives a sufficient heat.

The grate of this cylinder is fastened to it, and it rests on three small projections on the outside at top, by which it catches on the ring of the second cylinder, and thus hangs in it.

It should be observed, that when these cylinders are used, the upper juncture should be pointed round and well closed with fire-lute; and it would be advantageous to sprinkle in some charcoal-dust, which will tend, both by excluding air and by other means, to prevent the scorification of the iron, and may perhaps be of some little use in retaining the heat, or at least will hinder the cold air from coming up and chilling the sides.

The chimney of this furnace is about eight feet high and nearly six inches square in the area of its cavity; but, if circumstances had permitted, it should have been at least twelve feet high and much thicker than it is. However, with these disadvantages, it works very well; but would probably give a much fiercer heat, had the situation of it suffered the chimney to be more lofty and massive.

The construction of this furnace requires a lateral flue. This should be

strongly braced with iron in the part near the furnace; for otherwise it will infallibly fall to pieces after the furnace has been used for a few times.

Let it be remarked, that opening all the air-draughts and unstopping the flue does *not* produce the greatest heat, for reasons which those who have studied the principles of the excitation of fire can readily assign, but which cannot be briefly explained to others. Their size is, however, *proper* on other accounts.

It should be further noticed, that if this kind of furnace be made on a smaller scale, it would require an enlargement of the flue and door to more than the proportional size; and that when made very small, the third cylinder may of course be omitted; but the bracing strongly, and luting, are indispensably requisite in furnaces of every dimension.

BATHS.

WHERE a strong degree of heat is requisite, as in the fusion of metals, &c. the vessel containing the subject-matter is placed among the burning fuel, or immediately over it: this is called *operating in a naked fire*. Where a smaller heat is sufficient, and the vessel employed is either of glass, or of the more tender kinds of earthen ware, the sand-bath or water-bath is used to defend the vessel from the immediate action of the fire, and to render the heat less fluctuating.

Both these baths have their particular advantages and inconveniences. In water, the heat is equal through every part of the fluid: whereas in sand, it varies in different parts of one perpendicular line, decreasing from the bottom to the top. Water cannot be made to receive, or to transmit to vessels immersed in it, above a certain degree of heat, viz. that which is sufficient to make it boil; and hence it secures effectually against any danger of an excess of heat in those operations wherein the product would be injured by a heat greater than of boiling water: but this advantage renders it useless for processes which require a greater heat, and for which sand or other solid intermedia are necessarily employed. There is this convenience also in the sand-bath, that the heat may be readily diminished or increased about any particular vessel, by raising it higher out of the sand or sinking it deeper; that different subjects may be exposed to different degrees of heat from one fire; and that it keeps the vessels steady. The sand made choice of should be a large coarse-grained kind, separated from the finer parts by washing, and from little stones by the sieve.

COATING of GLASSES, LUTES.

SOME processes require to be performed with glass vessels in a naked fire. For these purposes, vessels made of the thinnest glass should be chosen; for these bear the fire, without cracking, much better than those which are thicker, and in appearance stronger.

All glasses, or other vessels that are apt to crack in the fire, must be cautiously nealed, that is, heated by slow degrees: and when the process is finished, they should be as slowly cooled, unless where the vessel is to be broken to get out the preparation, as in some sublimations: in this case it is more advisable to expose the hot glass suddenly to the cold air, which will

will soon occasion it to crack, than to endanger throwing down the sublimed matter among the feces by a blow.

As a defence from the violence of the fire, and to prevent the contact of cold air on supplying fresh fuel, &c. the glass is to be coated over to the thickness of about half a crown, with Windsor loam, softened with water into a proper consistence, and beaten up with some horse-dung, or with the other clayey compositions abovementioned.

These compositions serve also as a lute, for securing the junctures of the vessels in the distillation of the volatile salts and spirits of animals: for the distillation of acid spirits, the matter may be moistened with a solution of fixed alkaline salt instead of water. For most other purposes, a piece of wet bladder, or a paste of flour and water, or of linseed meal (that is the cake left after the expression of oil of linseed), are sufficient lutes.

Sometimes clay and chalk are mixed up into a paste, and spread upon slips of paper; and sometimes gum arabic is used instead of the clay, and mixed up in the same manner.

Wet bladders contract so strongly by drying, that they not unfrequently break the vessels: And the fat lute of Mr Macquer, which is a composition of clay and chalk with oil, is too close for most operations. Where very elastic steams are to be condensed, we are often obliged, even when the common lutes are employed, to leave or make an opening which may be occasionally stopped by a plug: By this means we give passage to a part of these vapours, which prevents the bursting of the vessels and facilitates the condensation of the rest. If we wish to collect incondensable vapours, we receive them into a jar inverted under a basin of water, or quicksilver, as directed in our Analysis of Vegetables by fire.

Besides these, there is also required some other kinds of lutes for joining vessels together in operations requiring a strong heat, and for lining furnaces. Four parts of sand and one of clay answers best for luting: but for lining the inside of furnaces, six or seven parts of sand to one of clay is necessary, in order to prevent the contraction and consequent cracking of the clay, which it most readily does when free of sand. Besides this lute immediately next to the fire, three parts by weight, of charcoal, to one of common clay, are first mixed in a dry powder, and as much water is to be added as will make them form into balls of the consistence of snow: these balls are beat very firm and compact, by means of a hammer on the inside of the furnace, to the thickness of about one inch and a half: the other lute is spread over this to about the thickness of half an inch: and this too is beat solid by means of a hammer, and allowed to dry slowly, that all cracks and fissures may be prevented. After the body of the furnace, is thus lined, the vent is applied and lined in the same manner; and the whole being dried, which requires a long time, a fire is kindled in the furnace, which is gradually heated a day or two, and then is raised to the greatest intensity: By these means the whole luting acquires a hardness equal to that of free-stone. These are the lutes recommended and used by Dr Black; and, except for some operations in metallurgy, he seems to have been the first who thought of employing charcoal as an ingredient for the lining of furnaces.

The few simple lutes, here described, will be found to answer all the purposes of the more oporose compositions recommended for these intentions by the chemical writers.

VESSELS.

IN this place, we shall only give the operator a few general cautions with regard to the *matter* of the vessels designed for containing the subject; and refer their description to the plates, and to the account of the operations in which they are employed.

Metalline vessels possess the advantage of being able to bear sudden alterations of heat and cold, and of being very strong, so as to be capable of confining elastic steams: but except those made of gold or silver they are readily corroded by acids, even by the milder ones of the vegetable kingdom. Copper vessels are corroded also by alkaline liquors, and by some neutral ones, as solutions of sal ammoniac. It is observable, that vegetable acids do not act upon this metal by boiling, so much as by standing in the cold; for even lemon juice may be boiled in a clean copper vessel, without receiving from it any taste or ill quality; whereas, in the cold, it soon dissolves so much as to contract a pernicious taint. The tin, with which copper-vessels are usually lined, gives likewise a sensible impregnation to acid juices; and this impregnation also is probably not innocent, more especially as a quantity of lead is commonly mixed with the tin. From the want of transparency in these vessels, we are also deprived of the advantage of seeing the different changes during the operation.

The earthen vessels possess none of the desirable qualities for chemical operations, except that of sustaining very violent degrees of heat, without being melted or otherwise changed. These vessels are less liable to external cracks from sudden applications of heat and cold, when they are made with a certain proportion of sand, than with pure clay. Black-lead, too, mixed with the clay, makes the vessels sustain violent degrees and sudden alterations of heat surprisingly well: crude clay, reduced to a kind of sand by violent heat, and then mixed with raw clay, is also found to furnish vessels excellently fitted for those operations where sand might be corroded: but of all kinds of earthen-ware, the most perfect is porcelain, composed of the finest clay mixed with a stony matter capable of melting in a violent heat: This, however, is too costly an article for general use. Reaumur discovered a method of imitating porcelain, by melting the coarser kinds of glass with a mixture of sand and clay: this has been found to be nearly of the colour of porcelain, to be much stronger than glass, and to bear the most sudden changes of heat and cold that we have occasion to apply. There has not hitherto been any manufacture of this ware; and till then it will not probably come into general use.

The common earthen vessels are of a loose porous texture; and hence are apt to imbibe a considerable quantity of certain liquids particularly of those of the saline kind; which soon discover their penetrating the vessel, by shooting into saline efflorescences on the outside. Those which are *glazed* have their glazing corroded by acids: by vinegar, and the acid juices of fruits, as well as by the stronger acids of the mineral kingdom. And as this glazing consists chiefly of vitrified lead, the impregnation which it communicates to these liquors is of a very dangerous kind. If vinegar be boiled for some time in a glazed earthen vessel, it will yield on being inspissated, a pure sal plumbi, that is, a salt composed of lead and the acetous acid.

The vessels called, from their hardness and compactness, *stone-ware*, are

PLATE. D

FIG.



1.

FIG.

2.



FIG. 3.



FIG.

4.

B

C

D

A

E

F



A

B

FIG.

5.



FIG. 6.



FIG. 7.

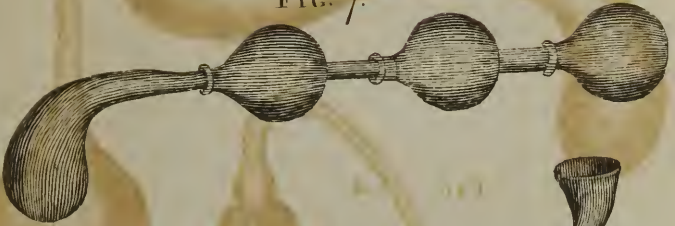


FIG. 8.

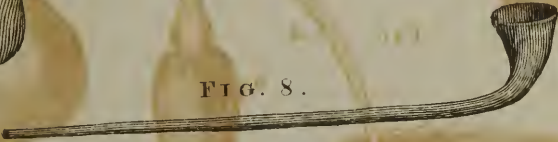
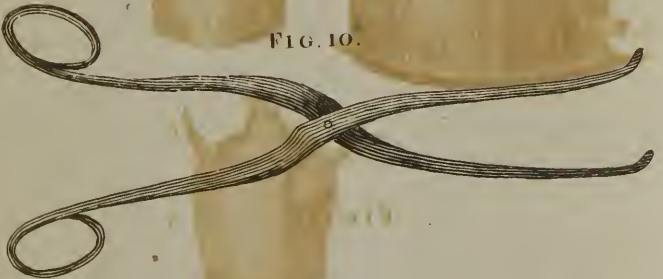


FIG. 9.



FIG. 10.



in a good measure free from the inconveniences of the coarser earthen ones. Their glazing being a part of the clay itself, superficially vitrified by means of the fumes of common salt, appears to be proof against acids.

Glass-vessels suffer no corrosion, and give no taint, in any of the pharmaceutical operations. When, therefore, they are made of a proper thinness, when they are well annealed, and when blown into a spherical form so that the heat may be equally applied, they are preferable to all others, where great and sudden changes of heat and cold are not to take place, and where strength is not required: What is called the *flint-glass*, which contains a quantity of lead in its composition, is the best for chemical purposes. Having made these general remarks, we next come to describe the particular instruments used in pharmacy: but as the nature and uses of each will be better understood after reading the following chapter, and the processes in which they are employed, we shall here only give a short explanation of the figures of these instruments; and to which the reader may occasionally recur in going over the sequel of the work.

EXPLANATION of PLATE III.

Fig. 1. An evaporating pan, being such a section of a globe of glass as is best fitted for exposing a large surface.

Fig. 2. The chemical phial or matraass, furnished with a long neck for allowing the vapours raised by heat or mixture to circulate and be condensed, whereby their escape is prevented.

Fig. 3. A retort and receiver together, to show their connection during distillation or sublimation. The receiver is of a conical figure; whereby the steams have more room to circulate and condense. Dr Black has found this form more convenient, when we wish to get out sublimed matter.

In the last figure was represented an example of the *distillatio per latus*, or the distillation by the retort and receiver; and it is used in all cases where nice operations are required, or where metallic vessels would be corroded by the contained matter. The *distillatio per ascensum* is performed by,

Fig. 4. A copper still.

A, The body of the still, containing the matter.

B, The head of the still into which the vapour immediately arises; this is made to fit very closely to the body, so as to require little or no luting.

C, A pipe issuing from the middle of the top of the head, and descending to C, is received into the pipe D.

D, The pipe or worm descending into a large vessel E, containing a quantity of cold water to keep the pipe cool, and thereby facilitate the condensation of the vapours.

F, The further extremity of this pipe, coming out at an opening, in the under part of the vessel E; from this extremity the condensed matter distills.

This instrument is on the construction used and recommended by Dr Black, and varies a little from the common form. He finds it unnecessary

fary that the pipe D should be made serpentine, which renders the cleaning of it very difficult and uncertain.

Fig. 5. A separatory, for separating oil from water.

This instrument is provided with two tubes, A, B, projecting from near its neck; and it is managed thus: If the oil to be separated is specifically lighter than water, the vessel is gently inclined to one side, in order to pour out the oil, which from its lightness has ascended into the tube: if, on the contrary, the oil is specifically heavier than water, the vessel, with its mouth shut, is to be inverted, that the oil at its bottom may be brought to sink into one of the tubes; from which it is to be poured till the water begins to come off along with it, when the mouth of the tube is to be instantly shut by the top of a finger. It is obvious, that to manage this instrument properly, requires considerable address and dexterity.

Fig. 6. An oblong glass vessel, the under part of which is kept hot, when intended to sublime solid matters, and the upper part is kept cool, whereby the vapour is condensed in the form of a cake at the top. The mouth of the vessel is to be stopt by a cotton stopple. This method is not so well fitted for large operations as the retort and receiver.

Fig. 7. An adopter, which is a receiver that has a pipe issuing from its farther extremity, and which is received into another receiver or adopter; we may increase or diminish the number of receivers at pleasure. It may be useful for the condensation of very elastic vapours, as those of the caustic volatile alkali, vitriolic ether, &c. The receivers in this instrument are of the usual form, and may show wherein that recommended by Dr Black differs.

Fig. 8. A retort-funnel for pouring in liquors, so as to prevent touching the neck of the retort; and it is necessary that in drawing out the funnel we should keep it applied to the upper part of the retort, whereby the drop hangs from the under edge of the funnel, and therefore cannot touch the inside of the retort.

Fig. 9. A crucible which is angled at the top for the conveniency of pouring out the contained matter. It is narrow below for receiving small quantities, which in a larger compass might be less easily brought out. The black-lead and clay crucibles are often acted on by saline matters, and sometimes destroyed by the inflammable matter of the black-lead: they, however, answer much better for fusing metals than those of clay and sand. These last answer best for saline substances; but being more liable to break than the other, they may be made securer by inclosing the crucible containing the matter within another crucible, and filling up the interstices with sand.

The crucible in this figure stands upon a pedestal, which is a piece of clay or brick betwixt the crucible and the grate to prevent the cold air striking the bottom whilst the top is hot; in which case the crucible generally breaks to pieces. To prevent the fuel from falling in we use covers made of clay, or we invert another crucible upon that containing the matter, and secure the joining by a proper lute.

Fig. 10. A pair of crucible tongs for putting in or taking out the matter to be wrought on.

WEIGHTS.

Two different kinds of weights are made use of in this country: one in the merchandise of gold and silver; the other for almost all other goods. The first we call Troy, the latter Averdupois weight.

The goldsmiths divide the Troy pound into twelve ounces, the ounce into twenty pennyweights; and the pennyweight into twenty-four grains. The Averdupois pound is divided into sixteen ounces; and the ounce into sixteen parts, called drams.

The pound of the London and Edinburgh dispensatories is that of the goldsmiths, divided in the following manner:

The pound	}	contains	}	twelve ounces.
The ounce				eight drams.
The dram				three scruples.
The scruple				twenty grains.
The grain is equal to the goldsmith's grain.				

The medical or Troy pound is less than the Averdupois, but the ounce and the dram greater. The Troy pound contains 5670 grains; the Averdupois 7000 grains. The Troy ounce contains 480 grains; the Averdupois only 437 $\frac{1}{2}$. The Troy dram 60; the Averdupois dram somewhat more than 27. Eleven drams Averdupois are equal to five drams Troy; twelve ounces Averdupois to nearly eleven ounces Troy; and nineteen pounds Averdupois are equal to somewhat more than twenty-three pounds Troy.

These differences in our weights have occasioned great confusion in the practice of pharmacy. As the druggists and grocers sell by the Averdupois weight, the apothecaries have not in general kept any weights adjusted to the Troy pound greater than two drams, using for all above Averdupois. By this means it is apparent, that in all compositions, where the ingredients are prescribed, some by pounds and others by ounces, they are taken in a wrong proportion to each other: and the same happens when they are directed in lesser denominations than the ounce, as these subdivisions, used by the apothecaries, are made to a different ounce.

MEASURES.

THE measures employed in pharmacy are the common wine measures.

A gallon	}	contains	}	eight pints (<i>librae.</i>)
The pint				sixteen ounces.
The ounce				eight drams.

Though the pint is called by Latin writers *libra* or pound, there is not any known liquor of which a pint-measure answers to that weight. A pint of the highest rectified spirit of wine exceeds a pound by above half an ounce; a pint of water exceeds it by upwards of three ounces; and a pint of oil of vitriol weighs more than two pounds and a quarter.

The Edinburgh College, sensible of the many errors from the promif-

ESSENTIAL OILS *continued.*

Oil of dill-seed	-	-	-
of fennel-seed	-	-	-
of cloves	-	-	-
of cinnamon	-	-	-
of saffrafas	-	-	-

ALKALINE LIQUORS.

Aqua kali puri, <i>Pharm. Lond.</i>	-	-	-
Spirit of fal ammoniac	-	-	-
Strong soap-boilers ley	-	-	-
Lixivium tartari	-	-	-

ACID LIQUORS.

Wine-venegar	-	-	-
Beer-venegar	-	-	-
Glauber's spirit of falt	-	-	-
Glauber's spirit of nitre	-	-	-
Strong oil of vitriol	-	-	-

ANIMAL FLUIDS.

Urine	-	-	-
Cows milk	-	-	-
Affes milk	-	-	-
Blood	-	-	-

WATERS.

Distilled water	-	-	-
Rain-water	-	-	-
Spring-water	-	-	-
Sea-water	-	-	-

QUICKSILVER.

Pint weighs			Ounce measure weighs	Dram measure weighs
ounces	drams	grains	grains	grains
			457	57
			458	57
			476	59 $\frac{1}{2}$
			576	49 $\frac{1}{2}$
			503	63
	16	0 0	480	60
	17	1 10	515	64 $\frac{1}{2}$
	17	6 24	534	67
	24	0 0	720	90
	15	3 44	464	58
	15	6 56	476	59 $\frac{1}{2}$
	17	4 0	525	65 $\frac{1}{2}$
	20	2 40	610	76
	28	5 20	860	107 $\frac{1}{2}$
	15	5 20	470	59
	15	6 40	475	59 $\frac{1}{2}$
	16	0 0	480	60
	16	1 4	484	60 $\frac{1}{2}$
	15	1 50	456	57
	15	2 40	460	57 $\frac{1}{2}$
	15	3 12	462	58
	15	5 20	470	59
	214	5 20	6440	805

CHAPTER III.

Of the Pharmaceutical Operations.

S E C T. I.

SOLUTION.

SOLUTION is an intimate commixture of solid bodies with fluids into one seemingly homogeneous liquor. The dissolving fluid is called a *menstruum* or *solvent*; and the body dissolved is called the *solvend*.

Objections have been made, and perhaps with propriety, to these terms; as it is supposed that the two bodies uniting in solution act reciprocally on each other: there is, however, no danger from the words themselves, if we do not derive them from a mistaken theory. Solution cannot take place, unless one of the bodies, at least, be in a fluid state; and this fluidity is effected either by water or fire: hence solution is said to be performed in the *humid*, or in the *dry way*. Thus, for instance, if any quantity of brimstone be dissolved in a solution of fixed alkali, the brimstone is said to be dissolved in the *humid way*: but if the brimstone be dissolved by melting it in a pan with the dry alkali, the solution is said to be done in the *dry way*. The hepar sulphuris is the same in both. Another kind of solution resembling that by the dry way, is, however, to be carefully distinguished from it: If, for example, a piece of Glauber's salt is put into a pan over the fire, the salt very soon assumes a liquid state; but on continuing the heat, it loses its fluidity, and becomes a white powder: but this powder is nothing but the salt freed from its water, and it is found to be very refractory. This liquidity depended on the water of crystallisation, being enabled by the heat to keep the salt in solution, and the salt ceased to be fluid as soon as its crystallising water was evaporated. This kind of solution, then, differs not from the first, or humid way.

If one of the two bodies to be united is transparent, the solution, if complete, is a transparent compound: this is the case in solutions of alkalies and calcareous earths in acids. But if the solution be opaque and milky, as is the case with soap and water, it is then considered as incomplete.

The principal menstrua made use of in pharmacy are, *water*, *vinous spirits*, *oils*, *acid* and *alkaline liquors*.

Water is the menstruum of all salts, of vegetable gums, and of animal gellies. Of salts, it dissolves only a determinate quantity, though of one kind of salt more than another; and being thus *saturated*, leaves any additional quantity of the same salt untouched.

Experiments have been made for determining the quantities of water which different salts require for the dissolution. Mr Eller has given a large

large set in the Memoirs of the Royal Academy of Sciences of Berlin for the year 1750, from which the following table is extracted.

Eight ounces by weight of distilled water dissolved.

	oz.	dr.	gr.
Of Refined sugar,	24	0	0
Green vitriol	9	4	0
Blue vitriol	9	0	0
White vitriol	4	4	0
Epsom salt	4	0	0
Purified nitre	4	0	0
Soluble tartar	4	0	0
Common salt	3	4	0
Sal gemmæ	3	4	0
Sal catharticus Glauberi	3	4	0
Seignette's salt	3	0	0
Alum	2	4	0
Sal ammoniac	2	4	0
Vitriolated tartar	1	4	0
Salt of hartshorn	1	4	0
Sugar of lead	1	2	0
Cream of tartar	1	0	0
Borax	0	4	20

Though great care appears to have been taken in making these experiments, it is not to be expected that the proportions of the several salts, soluble in a certain quantity of water, will always be found exactly the same with those above set down. Salts differ in their solubility according to the degree of their purity, perfection, and dryness: the vitriols, and the artificial compound salts in general, differ remarkably in this respect, according as they are more or less impregnated with the acid ingredient. Thus vitriolated tartar, perfectly neutralized, is extremely difficult of solution: the matter which remains in making Glauber's spirit of nitre is no other than a vitriolated tartar; and it dissolves so difficultly, that the operator is obliged to break the retort in order to get it out; but on adding more of the vitriolic acid, it dissolves with ease. Hence many have been tempted to use an over-proportion of acid in this preparation; and we frequently find in the shops, under the name of vitriolated tartar, this acid soluble salt. The degree of heat occasions also a remarkable difference in the quantity of salt taken up: in very cold weather, eight ounces of water will dissolve only about one ounce of nitre; whereas in warm weather, the same quantity will take up three ounces or more. To these circumstances are probably owing, in part, the remarkable differences in the proportional solubilities of salts, as determined by different authors. It is observable that common salt is less affected in its solubility by a variation of heat than any other; water in a temperate state dissolving nearly as much of it as very hot water: and accordingly this is the salt in which the different experiments agree the best. In the experiments of Hoffmann, Neumann, and Petit, the proportion of this salt, on a reduction of the numbers, comes out exactly the same, viz. three ounces of the salt to eight of water; Dr Brownrigg makes

makes the quantity of salt a little more; Dr Grew, a dram and a scruple more; and Eller, as appears in the above table, four drams more: so that in the trials of six different persons, made probably in different circumstances, the greatest difference is only one-sixth of the whole quantity of salt; whereas in some other salts there are differences of twice or thrice the quantity of the salt. In the experiments from which the table is drawn, the water was of the temperature of between 40 and 42 degrees of Fahrenheit's thermometer, or above freezing by about one-seventh of the interval between freezing and the human heat.

Some salts omitted by Eller are here subjoined: the first is taken from Dr Grew, and the other four from Neumann.

Eight ounces of water dissolved

			oz.	dr.	gr.
Of fixed alkaline salt	-	-	above 8	0	0
Sal diureticus	-	-	8	0	0
Sugar-candy, both brown and white	-	-	9	0	0
Sugar of milk	-	-	0	2	40
Essential salt of sorrel	-	-	0	1	20

Though water takes up only a certain quantity of one kind of salt, yet when saturated with one, it will still dissolve some portion of another; and when it can bear no more of either of these, it will still take up a third, without letting go any of the former. The principal experiments of this kind which have been made relative to pharmaceutic subjects, are exhibited in the following table; of which the two first articles are from Grew, and the others from Eller:

		Water, 32 parts by weight,					
Fully saturated with	}	dissolved afterwards	}	Nitre	10	Sal ammoniac	2
				Common salt	10	Common salt	2
				Nitre	7	Fixed alkali	2 $\frac{1}{2}$
				Common salt	2	Sugar	2
				Volatile alkali	4		
				Sal ammoniac	2 $\frac{1}{2}$		
				Soluble tartar	2		
				Vitriolated tartar	2		
				Glauber's salt	1	Sugar	1
				Epsom	6		
Borax	2						

In regard to the other class of bodies for which water is a menstruum, viz. those of the gummy gelatinous kind, there is no determinate point of saturation: the water unites readily with any proportions of them, forming with different qualities liquors of different consistence. This fluid takes up likewise, when assisted by trituration, the vegetable gummy resins, as ammoniacum and mirrh; the solutions of which, though *imperfect*, that is, not transparent, but turbid and of a milky hue, are nevertheless applicable to valuable purposes in medicine. It mingles with vinous spirits, with acid and alkaline liquors, not with oils, but imbibes some of the

the more subtile parts of essential oils, so as to become impregnated with their smell and taste.

Rectified *spirit of wine*, or rather *alcohol*, is the menstruum of the essential oils and resins of vegetables; of the pure distilled oils, and several of the colouring and medicinal parts of animals; of some mineral bituminous substances, as of ambergris; and of soaps, though it does not act upon the expressed oil and fixed alkaline salt, of which soap is composed: whence if soap contains any superfluous quantity of either the oil or salt, it may by means of this menstruum be excellently purified therefrom. It dissolves, by the assistance of heat, volatile alkaline salts; and more readily the neutral ones, composed either of fixed alkali and the acetous acid, as the sal diureticus, or of the volatile alkali and the nitrous acid, as also the salt of amber, &c. It mingles with water and with acids; not with alkaline lixivia.

OILS dissolve vegetable resins and balsams, wax, animal fats, mineral bitumens, sulphur, and certain metallic substances, particularly lead. The expressed oils are, for most of these bodies, more powerful menstrua than those obtained by distillation; as the former are more capable of sustaining, without injury, a strong heat, which is in most cases necessary to enable them to act. It is said, that one ounce of sulphur will dissolve in three ounces of expressed oil, particularly that of linseed; but requires six ounces of essential oil, as that of turpentine.

ALL acids dissolve alkaline salts, alkaline earths, and metallic substances. The different acids differ greatly in their action upon these last; one dissolving only some particular metals; and another, others.

The *vegetable* acids dissolve a considerable quantity of zinc, iron, copper, lead, and tin; and extract so much from the metallic part of antimony, as to become powerfully emetic: They dissolve lead more readily, if the metal be previously calcined by fire, than in its metallic state.

The *marine* acid dissolves zinc, iron, and copper; and though it scarcely acts on any other metallic substance in the common way of making solutions, it may nevertheless be artfully combined with them all except gold. The corrosive sublimate, and antimonial caustic of the shops, are combinations of it with mercury and the metallic part of antimony, effected by applying the acid, in the form of fume, to the subjects, at the same time also strongly heated.

The *nitrous* acid is the common menstruum of all metallic substances, except gold and the metallic part of antimony; of which two, the proper solvent is a mixture of the nitrous and marine acids, called *aqua regia*.

The *vitriolic* acid, diluted with water, easily dissolves zinc and iron. In its concentrated state, and assisted by a boiling heat, it may be made to corrode, or imperfectly dissolve, most of the other metals.

The *aërial* acid dissolves iron, zinc, and calcareous earth; and those solutions must be conducted without heat.

ALKALINE *lixivia* dissolve oils, resinous substances, and sulphur. Their power is greatly promoted by the addition of quicklime; instances of which occur in the preparation of soap, and in the common caustic. Thus acua-

ted, they reduce the flesh, bones, and other solid parts of animals, into a gelatinous matter.

This increased acrimony in alkaline salts, is owing to the abstraction of their fixed air; that acid having a greater attraction for quicklime than for alkalies.

Solutions made in water and spirit of wine possess the virtues of the body dissolved; whilst oils generally sheath its activity, and acids and alkalies vary its quality. Hence watery and spirituous liquors are the proper menstrua of the native virtues of vegetable and animal matters.

Most of the foregoing solutions are easily effected, by pouring the menstruum on the body to be dissolved, and suffering them to stand together for some time exposed to a suitable warmth. A strong heat is generally requisite to enable oils and alkaline liquors to perform their office; nor will acids act on some metallic bodies without its assistance. The action of watery and spirituous menstrua is likewise expedited by a moderate heat; though the quantity which they afterwards keep dissolved is not, as some suppose, by this means increased: all that heat occasions these to take up, more than they would do in a longer time in the cold, will, when the heat ceases, subside again. This at least is most commonly the case, though there may be some instances of the contrary.

The action of acids on the bodies which they dissolve, is generally accompanied with heat, effervescence, and a copious discharge of fumes. The fumes which arise during the dissolution of some metals in the vitriolic acid, prove inflammable: hence in the preparation of the artificial vitriols of iron and zinc, the operator ought to be careful, especially where the solution is made in a narrow-mouthed vessel, lest by the imprudent approach of a candle the exhaling vapour be set on fire. The vapour is the inflammable air of Dr Priestley and other modern chemists.

There is another species of solution, in which the moisture of the air is the menstruum. Fixed alkaline salts, and those of the neutral kind, composed of alkaline salts and the vegetable acids, or of soluble earths and any acid, except the vitriolic, and some metallic salts, on being exposed for some time to a moist air, gradually attract its humidity, and at length become liquid. Some substances, not dissoluble by the application of water in its grosser form, as the butter of antimony, are easily liquefied by this slow action of the aerial moisture. This process is termed *deliquation*.

S E C T. II.

EXTRACTION.

THE liquors which dissolve certain substances in their pure state, serve likewise to *extract* them from admixtures of other matter. Thus ardent spirit, the menstruum of essential oils and resins, takes up the virtues of the resinous and oily vegetables, as water does those of the mucilaginous and saline; the inactive earthy parts remaining untouched by both. Water extracts likewise from many plants, substances which by themselves it has little effect upon; even essential oils being, as we have formerly observed, rendered soluble in that fluid by the admixture of gummy and saline matter, of which all vegetables participate in

in a greater or less degree. Thus many of the aromatic plants, and most of the bitters and astringents, yield their virtues to this menstruum.

Extraction is performed, by *macerating* or *sleeping* the subject in its appropriated menstruum in the cold; or *digesting* or *circulating* them in a moderate warmth; or *infusing* the plant in the boiling liquor, and suffering them to stand in a covered vessel till grown cold; or actually *boiling* them together for some time. If the vegetable matter is itself succulent and watery, it is sometimes only necessary to express the juice, and evaporate it to the proper consistence.

The term *digestion* is sometimes used for maceration; and in this case the process is directed to be performed *without heat*: where this circumstance is not expressed, digestion always implies the use of heat. Circulation differs from digestion only in this: that the steam, into which a part of the liquor is resolved by the heat, is, by means of a proper disposition of the vessels, condensed and conveyed back again upon the subject. Digestion is usually performed in a matrafs (or bolt-head), Florence flask, or the like; either of which may be converted into a circulatory vessel, by inverting another into the mouth, and securing the juncture with a piece of wet bladder. A single matrafs, if its neck be very long and narrow, will answer the purpose as effectually; the vapour cooling and condensing before it can rise to the top, in a vessel of this kind, even spirit of wine, one of the most volatile liquors we know of, may be boiled without any considerable loss: the use of this instrument is likewise free from an inconvenience, which may in some cases attend the other, of the uppermost vessel being burst or thrown off. As the long-necked matrasses here recommended, are difficultly filled or emptied, and likewise very dear, a long glass pipe may be occasionally luted to the shorter ones.

Heat greatly expedites extraction; but by this means proves as injurious to some substances, by occasioning the menstruum to take up their grosser and more ungrateful parts, as it is necessary for enabling it to extract the virtues of others. Thus guaiacum and logwood impart little to aqueous liquors without a boiling heat; whilst even a small degree of warmth proves greatly prejudicial to the fine bitter of *carduus benedictus*. This plant which infused in boiling, or digested in sensibly hot water, gives out a nauseous taste, so offensive to the stomach as to promote vomiting, yields to the cold element a grateful balsamic bitter.

As heat promotes the dissolving power of liquids; so cold, on the other hand, diminishes it. Hence tinctures or extractions made by a considerable heat, deposit in cold weather a part of their contents, and thus become proportionally weaker: a circumstance which deserves particular regard.

S E C T III.

DEPURATION.

THERE are different methods of *depurating* or purifying liquors from their feculencies, according as the liquor itself is more or less tenacious, or the feculent matter of greater or less gravity.

Thin fluids readily deposite their more ponderous impurities upon standing at rest for some time in a cool place ; and may then be *decanted*, or poured off clear, by inclining the vessel.

Glutinous, unctuous, or thick substances, are to be liquefied by a suitable heat ; when the grosser feculencies will fall to the bottom ; the lighter arising to the surface, to be *despumated* or scummed off.

Where the impurities are neither so ponderous as to subside freely to the bottom, nor so light as to arise readily to the surface, they may be separated in great measure by *colature* through strainers of linen, woolen, or other cloth ; and more perfectly by *filtration* through a soft bibulous kind of paper made for this purpose.

The grey paper which covers pill-boxes as they come from abroad, is one of the best for this purpose : it does not easily break when wetted, or tinge the liquor which passes through it, which the reddish sort called *blossom paper* frequently does. The paper is supported by a funnel or piece of canvas fixed in a frame. When the funnel is used, it is convenient to put some straws or small sticks between the paper and its sides, to prevent the weight of the liquor from pressing the paper so close to it, as not to allow room for this fluid to transude. In some cases a funnel made of wire is put betwixt the paper and the glass funnel. There is also a kind of glass funnel with ridges down its sides made on purpose for this use.

Glutinous and unctuous liquors, which do not easily pass through the pores of a filter or strainer, are *clarified* by beating them up with whites of eggs ; which concreting or growing hard when heated, and entangling the impure matter, arise with it to the surface : the mixture is to be gently boiled till the scum begins to break, when the vessel is to be removed from the fire, the crust taken off, and the liquor passed through a flannel bag.

Decantation, colature, and filtration, are applicable to most of the medicated liquors that stand in need of purification. Despumation and clarification very rarely have place : since these, along with the impurities of the liquor, frequently separate its medicinal parts. Thus, if the decoction of poppy heads, for making diacodium, be solicitously scummed or clarified, the medicine will lose almost all that the poppies communicated ; and instead of a mild opiate, turn out little other than a plain syrup of sugar.

It may be proper to observe, that the common sorts of filtering paper are apt to communicate a disagreeable flavour : and hence in filtering fine bitters or other liquor, whose gratefulness is of primary consequence, the part which passes through first ought to be kept apart for inferior purposes.

S E C T. IV.

CRYSTALLISATION.

WATER, assisted by heat, dissolves a larger proportion of most saline substances than it can retain when grown cold : hence, on the abatement of the heat, a part of the salt separates from the menstruum, and concretes at the sides and bottom of the vessel. The concretions,

tions, unless too hastily formed by the sudden cooling of the liquor, or disturbed in their coalescence by agitation, or other similar causes, prove transparent and of regular figures, resembling in appearance the natural sprig-crystals.

Salts, dissolved in a large quantity of water, may in like manner be recovered from it in their crystalline form, by boiling down the solution, till so much of the fluid has exhales as that the remainder will be too little to keep the salt dissolved when grown perfectly cold. It is customary to continue the evaporation till the salt shows a disposition to concrete even from the hot water, by forming a pellicle on that part which is least hot, viz. on the surface. If large, beautiful, and perfectly-figured crystals are required, this point is somewhat too late: for if the salt thus begins to coalesce whilst considerably hot, on being removed into a cold place its particles will run too hastily and irregularly together: the pellicle at the same time falling down through the liquor, and thus proving a farther disturbance to the regularity of the crystallization.

In order to perform this process in perfection, the evaporation must be gentle, and continued no longer than till some drops of the liquor, let fall on a cold glass plate, discover crystalline filaments. When this mark of sufficient exhalation appears, the vessel is to be immediately removed from the fire into a less warm, but not cold place, and covered with a cloth to prevent the access of cold air, and consequently the formation of a pellicle.

The fixed alkalies, especially the mineral, when fully saturated with fixed air or the aerial acid, assume a crystalline form; but these crystals are not so perfect as when the same alkalies are united with the other acids. The volatile alkalies cannot crystallise, because they escape before the menstruum exhales.

Some even of the other neutral salts, particularly those of which certain metallic bodies are the basis, are so strongly retained by the aqueous fluid, as not to exhibit any appearance of crystallisation, unless some other substance be added, with which the water has a greater affinity. The Table of Affinity shows that such a substance is spirit of wine; by the prudent addition of which, these kinds of salt separate freely from the menstruum, and form large and beautiful crystals, scarce obtainable by any other means.

The operator must be careful not to add too much of the spirit; lest, instead of a gradual and regular crystallisation, the basis of the salt be hastily precipitated in a powdery form. One-twentieth part of the weight of the liquor will in most cases be a sufficient, and in some too large a quantity.

Different salts require different quantities of water to keep them dissolved: and hence, if a mixture of two or more be dissolved in this fluid, they will begin to separate and crystallise at different periods of the evaporation. Upon this foundation, salts are freed, not only from such impurities as water is not capable of dissolving and carrying through the pores of a filter, but likewise to admixtures of each other; that which requires most water to dissolve in shooting first into crystals.

It is proper to remark, that a salt, when crystallising, still retains and combines with a certain portion of water: this water is not essential to the salt as a salt, but is essential to a salt as being crystallised; it is therefore called by the chemists the *water of crystallisation*. The quantity of

this water varies in different salts : In some of them, as in Glauber's salt, alum, and copperas, it makes up about one half of their weight ; in others, as in nitre, common salt, and especially selenites, it is in very small quantity. As salts unite to the water of their crystallisation by their attraction for water alone, we accordingly find that this water is perfectly pure, and contains, in complete crystals, no substance foreign to the salt. Salts not only differ in the quantity of water necessary to their solution, but some of them also are soluble with equal facility in cold as in hot water. Sometimes, then, we employ evaporation ; sometimes cooling ; and at other times both these expedients are used alternately, to separate different salts dissolved in the same liquor. It is obvious, then, that those which are nearly, or equally soluble in cold as in boiling water, can only be crystallised by evaporation ; those again, which are much more soluble in boiling than in cold water, are to be separated by cooling. Of the first of these is common or marine salt : of the latter is nitre or saltpetre. It remains, then, that we should know how to separate these two salts, when both of them happen to be dissolved in the same water : this method consists in alternate evaporation and cooling. If in such a solution a pellicle appears in the boiling liquor before crystals can be formed in the cooling, we then conclude that the common salt predominates : In this case we evaporate the water, and separate the common salt as fast as it is formed, till the liquor on cooling shows crystals of nitre : we then allow the nitre to crystallise by cooling. After all the nitre which had been dissolved by the heat alone has now separated by cooling, we resume the evaporation, and separate the common salt till the cooling liquor again shows crystals of nitre. We thus repeat the same series of operations, by which means these two salts may be alternately crystallised ; the one by evaporation, the other by cooling, till they are perfectly separated from each other. If in the beginning of the operation the liquor had, upon trial, given crystals of nitre by cooling before any pellicle appeared on its surface when boiling, this would have indicated that the nitre was predominant in the solution ; the nitre in this case would have been crystallised, first by cooling, till the quantity of nitre exceeding that of the common salt having been separated, the common salt would next have crystallised in its turn by evaporation. The example we have now given may be applied to other salts, or to a number of salts which may happen to be dissolved in the same liquor. For though there are few so completely soluble in cold water as common salt, and few so scantily as nitre ; yet there are scarcely two salts which either precisely show the same solubility or the same appearance of their crystals. It is obvious, too, that by crystallisation we discover the peculiar predominant salt in any solution of mixed saline matter ; but as one salt always takes down a small portion of another, it is necessary to redissolve the first products, and repeat the crystallisation, in order to render the separation complete.

We see, then, that though the crystal appearance and form does not alter the salt itself, yet that this process affords an elegant method of discovering compound solutions of salts, of judging of their purity, and, lastly, of separating different salts very completely from each other. Crystallisation, then, is one of the most important agents in pharmacy, and ought to be well understood. We shall attempt to explain the particular

cular management in crystallising particular salts, when we come to treat of each of them separately.

S E C T. V.

PRECIPITATION.

BY this operation bodies are recovered from their solutions, by means of the addition of some other substance, with which either the menstruum or the body dissolved, have a greater affinity than they have with each other.

Precipitation, therefore, is of two kinds; one, where the substance superadded unites with the menstruum, and occasions that before dissolved to be thrown down; the other in which it unites with the dissolved body, and falls along with it to the bottom. Of the first, we have an example in the precipitation of sulphur from alkaline lixivium by the means of acids; of the second, in the precipitation of mercury from aquafortis by sea-salt, or its acid.

The subjects of this operation, as well those which are capable of being precipitated as those which precipitate them, will readily appear from inspection of the Table of Affinity. The manner of performing it is so simple, as not to stand in need of any particular directions; no more being required than to add the precipitant by degrees, so long as it continues to occasion any precipitation. When the whole of the powder has fallen, it is to be well *edulcorated*, that is, washed in several fresh parcels of water, and afterwards dried for use.

Where metals are employed as precipitants, as in the purification of martial vitriol from copper by the addition of fresh iron, they ought to be perfectly clean and free from any rusty or greasy matter; otherwise they will not readily, if at all, dissolve, and consequently the precipitation will not succeed; for the substance to be precipitated separates only by the additional one dissolving and taking its place. The separated powder, often, instead of falling to the bottom, lodges upon the precipitant; from which it must be occasionally shaken off, for reasons sufficiently obvious.

Though, in this operation, the precipitated powder is generally the part required for use, yet some advantage may frequently be made of the liquor remaining after the precipitation. Thus when fixed alkaline salt is dissolved in water, and sulphur dissolved in this lixivium; the addition of acids separates and throws down the sulphur, only in virtue of the acid uniting with, and neutralising the alkali by which the sulphur was held dissolved; consequently, if the precipitation be made with the vitriolic acid, and the acid gradually dropt in till the alkali be completely satiated, that is, so long as it continues to occasion any precipitation or turbidness, the liquor will yield, by proper evaporation and crystallisation, a neutral salt, composed of the vitriolic acid and fixed alkali, that is vitriolated tartar. In like manner, if the precipitation be made with the nitrous acid, a true nitre may be recovered from the liquor; if with the marine, the salt, called *spiritus salis marini coagulatus*; and if with the acid of vinegar, the *sal diureticus*.

S E C T. VI.

EVAPORATION.

EVAPORATION is a third method of recovering solid bodies from their solutions, effected by the means of heat; which *evaporating* the fluid part, that is, forcing it off in steam, the matter which was dissolved therein is left behind in its solid form.

The general rules of evaporation are, To place the matter in a flat, shallow, wide vessel, so that a large surface of the liquor may be presented to the air: for it is only from the surface that evaporation takes place. The degree of heat ought to be proportioned to the volatility of the substance to be evaporated, and to the degree of fixity of the matter to be left: Thus, the less fixed the matter to be left is, and the more strongly it adheres to the volatile parts, the less the degree of heat ought to be; and, in such cases too, a forcible current of air is sometimes scarcely admissible: On the contrary, when the matter to be evaporated is not very volatile, and when the matter to be left is very fixed, and does not adhere strongly to the volatile part, the evaporation may be urged by a strong heat, aided by a current of air directed upon the surface of the liquor.

This process is applicable to the solutions of all those substances which are less volatile than the menstruum, or which will not exhale by the heat requisite for the evaporation of the fluid; as the solutions of fixed alkaline salts; of the gummy, gelatinous, and other inodorous parts of vegetables and animals in water; and of many resinous and odorous substances in spirit of wine.

Water extracts the virtues of sundry fragrant aromatic herbs, almost as perfectly as rectified spirit of wine: but the aqueous infusions are far from being equally suited to this process with those made in spirit; water carrying off the whole odour and flavour of the subject, which that lighter liquor leaves entire behind it. Thus a watery infusion of mint loses in evaporation the smell, taste and virtues, of the herb; whilst a tincture drawn with pure spirit, yields on the same treatment, a thick balsamic liquid, or solid gummy resin, extremely rich in the peculiar qualities of the mint.

In evaporating these kinds of liquors, particular care must be had, towards the end of the process, that the heat be very gentle; otherwise the matter as it grows thick will burn to the vessel, and contract a disagreeable smell and taste; this burnt flavour is called an *empyreuma*. The liquor ought to be kept stirring during the evaporation; otherwise a part of the matter concretes on the surface exposed to the air, and forms a pellicle which impedes the farther evaporation. More particular directions for performing this operation to the greatest advantage will be given hereafter.

S E C T. VII.

DISTILLATION.

IN the foregoing operation fluids are rarefied by heat into steam or vapour, which is suffered to exhale in the air, but which it is the business of this to collect and preserve. For this purpose the steam is received in proper vessels, luted to that in which the subject is contained; and being there cooled, condenses into a fluid form again.

There are two kinds of distillation: by the one, the more subtile and volatile parts of liquors are elevated from the grosser; by the other, liquids incorporated with solid bodies are forced out from them by vehemence of fire.

To the first belong, the distillation of the pure inflammable spirit from vinous liquors; and of such of the active parts of vegetables as are capable of being extracted by boiling water or spirit, and at the same time of arising along with their steam.

As boiling water extracts or dissolves the essential oils of vegetables, whilst blended with the other principles of the subject, without saturation, but imbibes only a determinate, and that a small proportion of them, in their pure state; as these oils are the only substances, contained in common vegetables, which prove totally volatile in that degree of heat; and as it is in them that the virtues of aromatics, and the peculiar odour and flavour of all plants, reside; it is evident, that water may be impregnated by distillation, with the more valuable parts of many vegetables: that this impregnation is limited, the oil arising in this process pure from those parts of the plant which before rendered it soluble in water without limitation; hence greatest part of the oil separates from the distilled aqueous liquor, and, according to its greater or less gravity, either sinks to the bottom or swims on the surface: that consequently infusions and distilled waters are very different from each other: that the first may be rendered stronger by pouring the liquor on fresh parcels of the subject; but that the latter cannot be in like manner improved by *cohobating*, or re-distilling them from fresh ingredients.

As the oils of many vegetables do not freely distil with a less heat than that in which water boils; as rectified spirit of wine is not susceptible of this degree of heat: and as this menstruum totally dissolves these oils in their pure state; it follows, that spirit elevates far less from most vegetables than water; but that nevertheless the distilled spirit, by keeping all that it does elevate, perfectly dissolved, may, in some cases, prove as strong of the subject as the distilled water. The more gentle the heat, and the slower the distillation goes on, the volatile parts are the more perfectly separated in their native state.

The apparatus made use of for distilling spirits, waters and oils, consist of a *still*, or copper vessel, for containing the subject, on which is luted a large *head* with a *swan-neck*. The vapour arising into the head, is hence conveyed through a *worm*, or long spiral pipe, placed in a vessel of cold water called a *refrigeratory*; and being there condensed, runs down into a *receiver*.

It may be observed, that as the parts which are preserved in evaporation cannot arise in distillation, the liquor remaining after the distillation, properly depurated and inspissated, will yield the same extracts as those prepared from the tincture or decoction of the subject made on purpose for that use; the one of these operations collecting only the volatile parts, and the other the more fixed: so that where one subject contains medicinal parts of both kinds, they may thus be obtained distinct, without one being injured by the process which collects the other.

THE subjects of the second kind of distillation are, the gross oils of vegetables and animals, the mineral acid spirits, and the metallic fluid quicksilver; which as they require a much stronger degree of heat to elevate them than the foregoing liquors can sustain, so they likewise condense without arising so far from the action of the fire. The distillation of these is performed in low glass vessels, called, from their neck being bent to one side, *retorts*: to the farther end of the neck a *receiver* is luted, which standing without the furnace the vapours soon condense in it, without the use of a refrigeratory: nevertheless, to promote this effect, some are accustomed, especially in warm weather, to cool the receiver, by occasionally applying wet cloths to it, or keeping it partly immersed in a vessel of cold water.

The vapours of some substances are so sluggish, or strongly retained by a fixed matter, as scarce to arise even over the low neck of the retort. These are most commodiously distilled in straight-necked earthen vessels, called *longnecks*, laid on their sides, so that the vapour passes off laterally with little or no ascent; a receiver is luted to the end of the neck without the furnace. In this manner the acid spirit of vitriol is distilled. The matter which remains in the retort or longneck, after the distillation, is vulgarly called *caput mortuum*.

In these distillations, a quantity of elastic air is frequently generated; which unless an exit be allowed, blows off or bursts the receiver. The danger of this may in good measure be prevented, by slowly raising the fire: but more effectually, by leaving a small hole in the luting, to be occasionally opened or stopped with a wooden plug; or inserting at the juncture an upright pipe of such a height, that the steam of the distilling liquor may not be able to rise to the top: but it is still better done by fitting to the apparatus other vessels, by which their vapours may be condensed.

S E C T. VIII.

SUBLIMATION.

AS all fluids are volatile by heat, and consequently capable of being separated, in most cases, from fixed matters, by the foregoing processes; so various solid bodies are subjected to a similar treatment. Fluids are said to *distil*, and solids to *sublime*: though sometimes both are obtained in one and the same operation. If the subliming matter concretes into

into a mass, it is commonly called a *sublimate*; if into a powdery form, *flowers*.

The principal subject of this operation are volatile alkaline salts; neutral salts, composed of volatile alkalies and acids, as sal ammoniac; the salt of amber, and flowers of benzoine; mercurial preparations; and sulphur. Bodies of themselves not volatile, are frequently made to sublime by the mixture of volatile ones: thus iron is carried up by sal ammoniac in the preparation of the *flores martiales*, or *ferrum ammoniacale*.

The fumes of solid bodies in close vessels rise but little way, and adhere to that part of the vessel where they congregate. Hence a receiver or condenser is less necessary here than in the preceding operation; a single vessel, as a *matrass*, or tall *vial*, or the like, being frequently sufficient.

S E C T. IX.

EXPRESSION.

THE *press* is chiefly made use of for forcing out the juices of succulent herbs and fruits, and the insipid oils of the unctuous seeds and kernels.

The harder fruits, as quinces, require to be previously well beat or ground; but herbs are to be only moderately bruised. The subject is then included in a hair-bag, and pressed between wooden plates, in the common screw-press, as long as any juice runs from it.

THE expression of oils is performed nearly in the same manner as that of juices; only here, iron-plates are substituted for the wooden ones there made use of. The subject is well pounded, and included in a strong canvas bag, betwixt which and the plates of the press a haircloth is interposed.

The insipid oils of all the unctuous seeds are obtained, uninjured, by this operation, if performed without the use of heat; which though it greatly promotes the extraction of the oil, at the same time impresses an ungrateful flavour, and increases its disposition to grow rancid.

The oils expressed from aromatic substances generally carry with them a portion of their essential oil; hence the smell and flavour of the expressed oils of nutmegs and mace. They are very rarely found impregnated with any of the other qualities of the subject: oil of mustard-seed, for instance, is as soft and void of acrimony as that of the almond, the pungency of the mustard remaining entire in the cake left after the expression.

S E C T. X.

EXSICCATION.

THERE are two general methods of exsiccating or drying moist bodies; in the one, their humid parts are exhale by heat: in the other they are imbibed or absorbed by substances, whose soft and spongy texture adapts them to that use. Bodies intimately combined with, or dissolved in a fluid, as recent vegetables and their juices, require the first: such as are superficially mixed, as when earthy or indissoluble pow-

ders are ground with water, are commodiously separated from it by the second.

Vegetables and their parts are usually exsiccated by the natural warmth of the air: the assistance of a gentle artificial heat, may nevertheless, in general, be not only safely, but advantageously had recourse to. By a moderate fire, even the more tender flowers may be dried, in a little time, without any considerable loss, either of their odour or lively colour; which would both be greatly injured or destroyed by a more slow exsiccation in the air. Some plants indeed, particularly those of the acrid kind, as horse-radish, scurvy-grass, and arum, lose their virtues by this process, however carefully performed; but far the greater number retain them unimpaired, and often improved.

The thicker vegetable juices may be exsiccated by the heat of the sun; or, where this is not sufficient, by that of a water-bath, or an oven moderately warm. The thinner juices may be gently boiled till they begin to thicken, and then treated as the foregoing. This process, termed *inspissation* or *evaporation*, has been spoken of already. The juices of some plants, as arum root, briony root, orris root, wild cucumbers, &c. separate upon standing for some time, into a thick part, which falls to the bottom; and a thin aqueous one, which swims above it: this last is to be poured off, and the first exsiccated by a gentle warmth. Preparations of this kind have been usually called *fecule*; that of the cucumber, to be spoken of in its place, is the only one which practice now retains.

Indissoluble bodies, mixed with water into a thick consistence, may be easily freed from the greatest part of it, by dropping them on a *chalk-stone*, or some powdered chalk pressed into a smooth mass, which readily imbibes their humidity. Where the quantity of fluid is large, as in the edulcoration of precipitates, it may be separated by decantation or filtration.

We have observed, that one of the principal circumstances favouring fermentation, was a certain degree of moisture. Exsiccation is therefore employed to dissipate humidity, and render vegetables thereby less liable to those changes produced by a kind of insensible fermentation.

S E C T. XI.

COMMINATION.

COMMINUTION is the bare reduction of solid coherent bodies into small particles or powder. The methods of effecting this are various, according to the texture of the subject.

Dry friable bodies, or such as are brittle and not very hard, and mixtures of these with somewhat moist ones, are easily *pulverised* in a mortar.

For very light, dry substances, resins, and the roots of tenaceous texture, the mortar may in some cases be previously rubbed with a little sweet oil, or a few drops of oil be occasionally added: this prevents the finer powder of the first from flying off, and the other from cohering under the pestle. Camphor is commodiously powdered by rubbing it with a little rectified spirit of wine.

Tough substances, as woods, the peels of oranges and lemons, &c. are most conveniently *rased*; and soft oily bodies, as nutmegs passed through a *grater*.

The comminution of the harder minerals, as calamine, crystal, flint, &c. is greatly facilitated by *extinction*; that is, by heating them red-hot, and quenching them in water: by repeating this process a few times, most of the hard stones become easily pulverable. This process, however, is not to be applied to any of the alkaline or calcareous stones; lest, instead of an insipid powder, we produce an acrimonious calx or lime.

Some metals, as tin, though strongly cohering in their natural state, prove extremely brittle when heated, insomuch as to be easily divided into small particles by dextrous agitation. Hence the officinal method of pulverising tin, by melting it, and, at the instant of its beginning to return into a state of solidity, briskly shaking it in a wooden box. The comminution of metals, in this manner, is termed by the metallurgists *granulation*.

On a similar principle, certain salts, as nitre, may be reduced into powder in large quantity, by dissolving them in boiling water, setting the solution over a moderate fire, and keeping the salt constantly stirring during its exsiccation, so as to prevent its particles, disjoined by the fluid, from re-uniting together into larger masses.

Powders are reduced to a great degree of fineness by *trituration*, or rubbing them, for a length of time, in a mortar. Such as are not dissoluble in water, or injured by the admixture of that fluid, are moistened with it into the consistence of a paste, and *levigated* or ground on a flat smooth *marble* or *iron plate*; or where a large quantity is to be prepared at a time, in *mills* made for that use.

Comminution, though one of the most simple operations of pharmacy, has, in many cases, very considerable effects. The resinous purgatives, when finely triturated, are more easily soluble in the animal fluids, and consequently prove more cathartic, and less irritating, than in their grosser state. Crude antimony, which, when reduced to a tolerably fine powder, discovers little medicinal virtue, if levigated to a great degree of subtility, proves a powerful medicine in many chronical disorders.

By comminution, the heaviest bodies may be made to float in the lightest fluids*, for a longer or shorter time, according to their greater or less degree of tenuity. Hence we are furnished with an excellent criterion of the fineness of certain powders, and a method of separating the more subtle parts from the grosser, distinguished by the name *elutriation*, or *washing over*.

S E C T.

* Some attribute this effect to a diminution of the specific gravity of the body; and, at the same time, suppose the peculiar virtues of certain medicines, particularly mercury, to be in great measure owing to their gravity. If these hypotheses were just, it should follow, that the mercurial preparations, by being finally comminuted, would lose proportionably of their efficacy; and so indeed *mercurius dulcis*, for instance, has been supposed to do. But experience shows, that this is far from being the case; and the comminution by no means lessens, but rather increases, its power: when reduced to a great degree of subtility, it passes readily into the habit, and operates, according to its quantity, as an alternative or a sialogogue; whilst in a grosser form, it is apt to irritate the stomach and bowels, and run off by the intestines, without being conveyed into the blood.

S E C T. XII.

F U S I O N.

FUSION is the reduction of solid bodies into a state of fluidity by fire. Almost all natural substances, the pure earths and the solid parts of animals and vegetables excepted, melt in proper degrees of fire; some in a very gentle heat, whilst others require its utmost violence.

Turpentine, and other soft resinous substances, *liquefy* in a gentle warmth; wax, pitch, sulphur, and the mineral bitumens, require a heat too great for the hand to support; fixed alkaline salts, common salt, nitre, require a red, or almost white, heat to melt them; and glass, a full white heat

Among metallic substances, tin, bismuth, and lead, flow long before ignition: antimony likewise melts before it is visibly red-hot, but not before the vessel is considerably so: the regulus of antimony demands a much stronger fire. Zinc begins to melt in a red heat; gold and silver require a low white heat; copper, a bright white heat; and iron, an extreme white heat.

One body, rendered fluid by heat, becomes sometimes a menstruum for another, not fusible of itself in the same degree of fire. Thus red-hot silver melts on being thrown into melted lead less hot than itself: and thus if steel, heated to whiteness, be taken out of the furnace, and applied to a roll of sulphur, the sulphur, instantly liquefying, occasions the steel to melt with it; hence the *chalybs cum sulphure* of the shops. This concrete, nevertheless, remarkably impedes the fusion of some other metals, as lead; which when united with a certain quantity of sulphur is scarce to be perfectly melted by a very strong fire. Hence the method, described in its place, of purifying zinc; a metal upon which sulphur has no effect from the lead so frequently mixed with it.

Sulphur is the only unmetallic substance which mingles in fusion with metals. Earthy, saline, and other like matters, even the calces and glasses prepared from metals themselves, float distinct upon the surface, and form what is called *scoria* or dross. Where the quantity of this is large in proportion to the metal, it is most commodiously separated by pouring the whole into a conical mould; the pure metal or *regulus*, though small in quantity, occupies a considerable height in the lower narrow part of the cone; and when congealed, may be easily freed from the scoriæ by a hammer. The mould should be previously greased, or rather smoked, to make the metal come freely out; and thoroughly dried and heated, to prevent the explosion which sometimes happens from the sudden contact of melted metals with moist bodies.

S E C T XIII.

CALCINATION.

BY calcination is understood the reduction of solid bodies, by the means of fire, from a coherent to a powdery state, accompanied with a change of their quality; in which last respect this process differs from comminution.

To this head belong the burning of vegetable and animal matters, otherwise called *ustion*, *incineration*, or *concremation*; and the change of metals into a powder, which in the fire either does not melt, or *vitrifies*, that is, run into glass.

The metals which melt before ignition, are calcined by keeping them in fusion for some time. The free admission of air is essentially necessary to the success of this operation; and hence when the surface of the metal appears covered with calx, this must be taken off or raked to one side, otherwise the remainder excluded from the air will not undergo the change intended. If any coal, or other inflammable matter which does not contain a mineral acid, be suffered to fall into the vessel, the effect expected from this operation will not be produced, and part of what is already calcined will be *revived* or *reduced*; that is, it will return into its metallic form again.

Those metals which require a strong fire for fusion, calcine with a much less heat than is sufficient to make them flow. Hence the burning or *scorification* of such iron or copper vessels as are long exposed to a considerable fire without defence from the air. Gold and silver are not calcinable by any degree of fire.

In calcination, the metals visibly emit fumes; nevertheless the weight of the calx proves greater than that of the metal employed. The antimonial regulus gains about one-eleventh part of its weight; zinc, sometimes one-tenth; tin, above one-sixth; and lead in its conversion into minium, often one-fourth.

The calcination of metallic bodies, gold, silver, and mercury excepted, is greatly promoted by nitre. This salt exposed to the fire in conjunction with any inflammable substances, extricates their inflammable matter, and bursts with it into flame, accompanied with a hissing noise. This process is usually termed *deflagration* or *detonation*.

All the metallic calces and scorixæ are revived into their metallic state by fusion with any vegetable or animal inflammable matter. They are all more difficult of fusion than the respective metals themselves; and scarcely any of them, those of lead and bismuth excepted, can be made to melt at all without some addition, in the strongest fire that can be produced in the common furnaces. The additions called *fluxes*, employed for promoting the fusion, consist chiefly of fixed alkaline salts. A mixture of alkaline salt with inflammable matter, as powdered charcoal, is called a *reducing flux*, as contributing at the same time to bring the calx into fusion, and to revive it into metal. Such a mixture is commonly prepared from one part of nitre and two parts of tartar, by grinding them well together, setting the powders on fire with a bit of coal or a red-hot iron, then covering the vessel, and suffering them to deflagrate or burn till they are changed into a black alkaline coaly mass. This is the common reducing
flux

flux of the chemists, and is called from its colour the *black flux*. Metallic calces or scoriæ, mingled with twice their weight of this compound, and exposed to a proper fire in a close covered crucible, melt and resume their metallic form; but though they received an increase of weight in the calcination, the revived metal is always found to weigh considerably less than the quantity from which the calx was made.

PART

PART II.

MATERIA MEDICA.

UNDER the *Materia Medica*, put in contradistinction to preparations and compositions, are comprehended not only those simple substances employed as medicines which are furnished by nature, but likewise many of those articles which are the product of art. To this head have been referred most of those articles which the apothecary cannot with advantage prepare for himself, but which it will be more for his interest to purchase from those who prepare them as articles of commerce.

Much pains have been bestowed by the writers on the *materia medica*, in attempting to form useful arrangements of these articles. Some have arranged them according to their natural affinities: others according to their active constituent parts; and a third set, according to their real or supposed virtues: and it must be allowed, that some of these arrangements are not without considerable use, as throwing light upon the nature and qualities of particular articles; but no arrangement has yet been proposed which is not liable to numerous objections. Accordingly, in the *Pharmacopœias* published by the Colleges of Physicians both of London and Edinburgh, the articles of the *materia medica* are arranged in alphabetical order; and the same plan is now also adopted in almost every *Pharmacopœia* of much estimation lately published on the continent of Europe. This plan, therefore, we shall here follow; subjoining to the name of each article which we think ought to enter such a list, a short view of its natural, medical, and pharmaceutical history. But to conjoin with this the advantages of other methods to the history of the *materia medica* given in alphabetical order, we shall add some of those arrangements which seem to us to be the most useful, particularly those of Dr Murray of Göttingen, and of Drs Cullen and Duncan of Edinburgh.

ABELMOSCHUS [*Brun.*] *Semina.*

Hibiscus abelmofchus Linnæi.

Musk seed.

These seeds are the product of a plant indigenous in Egypt, and in many parts both of the East and West Indies. They are of a small size and reniform shape; they are very remarkable from possessing a peculiar and very fragrant odour; the smell which they give out may be compared to that of musk and amber conjoined: those brought from the island of Martinico are generally esteemed the most odorous, but we have seen some the product of hot-houses in Britain, which, in point of flavour, seemed not inferior to any imported from abroad.

These seeds, although introduced into some of the foreign pharmacopœias, have hitherto been used principally, if not only, as a perfume; and as their medical powers still remain to be ascertained, it is perhaps with propriety that hitherto no place has been given them in the list either of the London or Edinburgh Colleges. But their peculiar flavour, as well as other sensible qualities, point them out as a subject well deserving a particular investigation.

ABIES [*Gen.*] *Summitates, coni.*

Pinus abies & pinus picea Lin.

The common and the Scotch fir.

These are large evergreen trees, frequent in northern climates. Tho' they have now no place either in the London or Edinburgh Pharmacopœias, yet they stand in several of the foreign ones, and are employed for different purposes in medicine. They are indigenous in some parts of Britain, but are chiefly to be met with as planted in the fields, where they grow with great luxuriance. From these trees, in different parts of Germany, the Strasburgh turpentine is extracted. The branches and

the fruit, or cones, gathered about the end of autumn, abound with a resinous matter, and yield, on distillation, their essential oil, and a liquor impregnated with a peculiar acid. It has accordingly by some been styled *acidum abietis*; and when added to water, is thought to communicate to it both the taste and other properties of tar-water. The *acidum abietis* was frequently prescribed by the late Dr Hope in the Royal Infirmary of Edinburgh; and he thought that he found good effects from it in some instances of obstinate coughs, particularly in those cases of chronic catarrh, which are often benefited by diuretics. The wood and tops of the fir-tree are sometimes employed under the form of decoction or infusion, with the view of promoting urine and sweat; and these formulæ have been thought serviceable in healing internal ulcerations, particularly those of the urinary passages.

Infusions of the spruce-fir are much employed in Canada, with a view both to the prevention and cure of genuine scorbutus. And we are told, that with these intentions they were found beneficial in the British army at Boston, when the scurvy prevailed among them in an alarming degree.

ABROTONUM [*Lond.*] *Folium.*

ABROTANUM [*Ed.*] *Herba.*

Artemisia abrotanum Lin.

Southernwood.

This is a shrubby plant, clothed with very finely-divided leaves of a light-green colour. The flowers, which are very small and yellowish, hang downwards, several together, from the middle of the branches to the top. It is not like some other species of the *artemisia* indigenous in Britain; but although a native of warm climates, it readily bears vicissitudes of ours, and is easily cultivated

in gardens; from thence alone it is obtained when employed for medicinal purposes; the leaves fall off every winter, but the roots and stalks continue for many years.

Southernwood has a strong smell, which, to most people, is not disagreeable; it has a pungent, bitter, and somewhat nauseous taste. These qualities are very completely extracted by rectified spirit, and the tincture thus formed is of a beautiful green colour. They are less perfectly extracted by watery liquors, the infusion being of a light brown colour.

Southernwood, as well as some other species of the same genus, particularly the absinthium and san- tonicum, has been recommended as an anthelmintic; and it has also been sometimes used as a stimulant, detergent, and sudorific. It has likewise been employed externally in discutient and antiseptic fomentations. It has also been used under the form of lotion and ointment for cutaneous eruptions, and for preventing the hair from falling off. But although it still retains a place in the pharmacopœias both of London and Edinburgh, it does not enter any fixed formula in either of these works, and is at present very little employed in practice.

ABSINTHIUM MARITIMUM

[Lond.] *Cacumen.*

Artemisia maritima Lin.

Sea-wormwood; the tops.

The leaves of sea-wormwood are much smaller than those of the common, and hoary on the upper side as well as the lower; the stalks also are hoary all over. It grows wild about salt marshes, and in several parts about the sea-coasts.—In taste and smell it is weaker and less unpleasant than the common wormwood. The tops of sea-wormwood formerly entered some of the com-

pound distilled waters; but they are now rejected from these, and are very little employed in practice.

ABSINTHIUM VULGARE

[Lond. Ed.] *Folia.*

Summitates florentes.

Artemisia absinthium Lin.

Common wormwood; the leaves and flowering tops.

The leaves of this sort of wormwood are divided into roundish segments, of a dull green colour above, and whitish underneath. It grows wild in several parts of Britain; about London, large quantities are cultivated for medicinal use: it flowers in June and July; and after having ripened its seeds, dies down to the ground, excepting a tuft of the lower leaves, which generally abides the winter.

Wormwood is a strong bitter; and was formerly much used as such, against weakness of the stomach, and the like, in medicated wines and ales; but its use with these intentions is exceptionable, on account of the ill relish and offensive smell with which it is accompanied. These it may be in part freed from by keeping, and totally by long coction, the bitter remaining entire. An extract made by boiling the leaves in a large quantity of water, and evaporating the liquor with a strong fire, proves a bitter sufficiently grateful, without any disgustful flavour. This extract, which had formerly a place in the Edinburgh pharmacopœia, tho' rejected from thence, is still retained in some of the best foreign ones; but it is probably less active than the strong tincture now directed by the Edinburgh college.

ACACIA VERA [Brun.]

Mimosa nilotica Lin.

Acacia is the inspissated juice of the unripe fruit of a large tree, the

same which produces the gum arabic.

This juice is brought to us from Egypt, in roundish masses, wrapt up in thin bladders. It is outwardly of a deep brown colour, inclining to black; inwardly of a reddish or yellowish brown; of a firm consistence, but not very dry. It soon softens in the mouth, and discovers a rough, not disagreeable taste, which is followed by a sweetish relish. This inspissated juice entirely dissolves in watery liquors; but is scarce sensibly acted on by rectified spirit.

Acacia is a mild astringent medicine. The Egyptians give it in spitting of blood, to the quantity of a dram, dissolved in any convenient liquor; and repeat this dose occasionally: they likewise employ it in collyria for strengthening the eyes, and in gargarisms for quinsseys. Among us it is little used, and is rarely met with in the shops. What is usually sold for the Egyptian acacia, is the inspissated juice of unripe sloes: this is harder, heavier, of a darker colour, and somewhat sharper taste, than the true sort. In several pharmacopœias, as in the Suecica and Genevensis, this article has a place under the title of *Acacia Nostras*.

ACETOSA [Lond. Ed.] Folium.

Rumex Acetosa Lin.

Sorrel; the leaf.

Sorrel grows wild in fields and meadows throughout England. The leaves have astringent acid taste, without any smell or particular flavour: their medical effects are, to cool, quench thirst, and promote the urinary discharge: a decoction of them in whey affords an useful and agreeable drink in febrile or inflammatory disorders: and is recommended by Boerhaave to be used in the spring as one of the most efficacious aperients and detergents.

Some kinds of scurvies have yielded to the continued use of this medicine: the Greenlanders, who are very subject to this distemper, are said to employ, with good success, a mixture of the juices of sorrel and of scurvygrafs.

The roots of sorrel have a bitterish austere taste, without any acidity: they are said to be deobstruent and diuretic. They had formerly a place in the Edinburgh pharmacopœia, but are now rejected from it. They are still, however, retained in the pharmacopœia Suecica, and some other of the best foreign ones; but they have little other effect than that of giving a reddish colour to the articles with which they are combined.

The seeds of this plant were formerly used in diarrhœas and dysenteries; but have long been strangers to the shops, and are now justly expunged both from the London and Edinburgh pharmacopœias, and indeed from most of the foreign ones. They have no remarkable smell, and scarcely any taste.

ACETUM VINI [Ed.]

Vinegar: an acid produced from fermented vinous liquors by a second fermentation.

Wine vinegar is considerably purer than that prepared from malt liquors; the latter, however acid and fine, contains a large portion of a viscous mucilaginous substance; as is evident from the ropiness and sliminess which this kind of vinegar is very much subject to; the stronger and more spirituous the wine, the better and stronger vinegar it yields. The French vinegars are said by Geoffrey to saturate above one thirty-fifth of their weight of fixed alkaline salt, and some of them no less than one-twelfth; the best of the German vinegars little more than one-fortieth.

Vinegar is a medicine of excellent

lent use in all kinds of inflammatory and putrid disorders either internal or external; in ardent, bilious fevers, pestilential and other malignant distempers, it is recommended by Boerhaave as one of the most certain sudorifics. Weakness, fainting, vomiting, hiccup, hysterical and hypochondriacal complaints, have been frequently relieved by vinegar applied to the mouth and nose, or received into the stomach. It has been used internally in rabies canina. It is often usefully employed as a powerful menstruum for extracting the virtues of other articles.

ACIDUM VITRIOLICUM.

[*Lond. Ed.*].

Vitriolic acid.

This is inserted in the *Materia Medica* on account of its being generally made not by the apothecary, but by the trading chemist, and most commonly from sulphur. The operation is said to be performed in leaden vessels, sometimes 20 feet high and 10 broad; with an eighth-part of nitre to supply the absence of the external air, and some water to condense the steams. It is concentrated and considerably purified by evaporation. It is then colourless, without smell, extremely corrosive, very fixed, the most ponderous of all unmetallic fluids. Its specific gravity in its true state, according to the London College, should be to that of distilled water as 1.850 to 1.000. It is powerfully attractive of water from the air, and in uniting with water produces a great degree of heat. It possesses the general properties of acids in an eminent degree.

On account of its fluidity, it is not used as a corrosive. Blended with unctuous matter in the proportion of one to eight, it is applied in itch and other chronic eruptions, and likewise as a rubefacient in lo-

cal palsy and rheumatism. Diluted with water, it shews considerable action on the human calcivus out of the body; and therefore has been proposed internally in that disease, particularly where surgical operation is improper. As checking fermentation, as well as being astringent and tonic, it is much used in morbid acidity, relaxation, and weakness of the stomach. Its effects are propagated over the system; and hence its established use in passive hæmorrhagies, gicets, and fevers of the typhous kind. It is also used internally in itch and other chronical eruptions; and when given to nurses having the itch, it is said to cure both themselves and their children. As combined with ardent spirit, with different metallic substances, &c. it enters several articles afterwards to be mentioned.

ACONITUM [*Lond.*] *Herba*;
[*Ed.*] *Folia*
Aconitum napellus Lin.

Large blue Wolfsbane, or Monkshood; the herb and leaves.

This is a perennial plant, growing naturally in various mountainous parts of Europe. The juice has a disagreeable smell and an acid taste, becoming less acrid on inspissation. It has long been considered as one of the most active of the vegetable poisons, and when taken to any considerable extent, it occasions sickness at stomach, vomiting, purging, vertigo, delirium, fainting, cold sweats, convulsions, and even death. Dr Stoerk of Vienna was probably the first who employed it for medical purposes; and he recommended it to the attention of other practitioners, in a treatise published in 1762. He represents it as a very effectual remedy in glandular swellings venereal nodes, anchylosis, spina ventosa, itch, amaurosis, gouty and rheumatic pains, intermittent

fevers, and convulsive disorders. Stoerk's formula was two grains of the inspissated juice rubbed down with two drams of sugar. He began with ten grains of this powder night and morning, and increased it gradually to six grains of the inspissated juice twice a day. Others have used a tincture made of one part of the dry leaf, and six parts of spirit of wine, in the dose of forty drops. But although the aconitum has now a place in the Pharmacopœias both of the London and Edinburgh Colleges, and likewise in most of the other modern Pharmacopœias, yet it has by no means answered those expectations which might have been formed from Dr Stoerk's account. It is, however, unquestionably a very active, and, in some cases an useful article.

ACORUS, vide **CALAMUS AROMATICUS**.

ÆRUGO [*Ed.*] **Verdegris**.

This is a preparation of copper, made chiefly at Montpellier in France, by stratifying copperplates with grape stalks that have been impregnated with a fermented vegetable acid: in a few days, the plates are found covered with a pale green downy matter, which is scraped off from the copper, and the process again repeated. The appellation therefore of *Cuprum Acetatum* bestowed upon it by some, gives a proper idea of its constituent parts.

Verdegris, as it comes to us, is generally mingled with stalks of the grape; they may be separated, in pulverization, by discontinuing the operation, as soon as what remains seems to be almost entirely composed of them.

Verdegris is rarely or never used internally. Some writers highly extol it as an emetic, and say, that a grain or two being taken acts as

soon as received into the stomach; but its use has been too often followed by dangerous consequences to allow of its employment. Verdegris applied externally, proves a gentle detergent and escharotic, and serves to take down fungous flesh arising in wounds. With these intentions it is an ingredient in different officinal compositions, particularly in the *aqua. sapphar, et ung. ex ærug.*

ADEPS SUILLA [*Lond.*]
Axungia porcina [*Ed.*]
Hogs-lard.

In hogs-lard we have a very pure animal fat, almost entirely free from any peculiar impregnation, and of a soft consistence. Hence it is a very useful emolient for relaxing those parts to which it is applied; and it is also a very convenient article for giving the proper consistence to ointments, plasters, and liniments. Indeed this and the *sebum ovillum* or mutton-suet, are the only fats now retained by the London and Edinburgh Colleges, although formerly more than twenty different fats entered some lists of the *materia medica*. Each particular fat was then supposed to possess peculiar properties; but for this there is probably no foundation: even these retained are now less employed than before, as it has been imagined that a proper consistence of any kind may be more certainly obtained by determined proportions of wax and oil; but as these articles are more expensive, hogs-lard and mutton-suet are often substituted for them by the apothecaries.

AGARICUS [*Rofs.*]
Boletus pini laricis *Lin.*

Agaric: a fungus growing on old larch trees.

This fungus is an irregular spongy substance, extremely light, and

of an uniform snowy whiteness, (except the cortical part, which is usually taken off before the agaric is brought into the shops). It cuts freely with a knife, without discovering any hardness or grittiness, and readily crumbles betwixt the fingers into a powder. It has no remarkable smell; its taste is at first sweetish, but on chewing for a short time, it proves acrid, bitter and nauseous.

Agaric was formerly in great esteem as a cathartic, but the present practice has almost entirely rejected its use. It is now rejected both by the London and Edinburgh Colleges, but it still retains a place in most of the new foreign Pharmacopœias. It operates exceeding slowly, inasmuch that some have denied it to have any purgative virtue at all. Given in substance, it almost always occasions a nausea, not unfrequently vomiting, and sometimes excessive tormina of the bowels; these effects are attributed to its light farinaceous matter adhering to the coats of the intestines, and producing a constant irritation. The best preparation of agaric seems to be an extract made with water, in which fixt alkaline salt has been dissolved; or with vinegar or wine: the first is said by Boulduc, and the two latter by Newmann, to prove an effectual and safe purgative. Nevertheless, this is at best a precarious medicine, of which we stand in no manner of need.

AGARICUS CHIRURGORUM: [Ed.]

Boletus igniarius Lin.

Female agaric, or agaric of the oak, called, from its being very easily inflammable, Touchwood, or Spunk.

This fungus is frequently met with, on different kinds of trees, in England; and is said to have been

sometimes brought into the shops mixt with true agaric of the larch: from this it is easily distinguishable by its greater weight, dusky colour and mucilaginous taste void of bitterness. The medullary part of this fungus, beaten soft, and applied externally, has been much celebrated as a styptic; and said to restrain not only venal but arterial hæmorrhagies, without the use of ligatures. It does not appear, however, to have any real styptic power, or to act any otherwise than dry lint, sponge, or other soft fungous applications.

AGNUS CASTUS [Brun.] Semen.

Vitex agnus castus Lin.

The chaste tree; its seeds.

This is a small tree, or rather shrub, growing spontaneously in Italy, &c. and raised with us in gardens. Its fruit, which is about the size of a pepper-corn, contains four longish seeds, which are said to be of an aromatic smell, and an acrid bitterish taste, but which are found on examination to be almost inodorous and insipid. These seeds have been celebrated as antiprodisiacs, and were formerly much used by the monks for allaying the venereal appetite; but experience does not warrant their having any such virtues.

AGRIMONIA [Rofs.] Herba.

Agrimonia eupatoria Lin.

Agrimony; the plant.

This is a common plant in hedges and the borders of fields. The leaves have an herbaceous, somewhat acrid roughish taste, accompanied with an aromatic flavour. Agrimony was supposed to be aperient, detergent, and to strengthen the tone of the viscera: hence it has been recommended in scorbutic disorders, in debility and laxity of the intestines, &c.

Digested in whey, it affords a diet-drink, not ungrateful to the palate or stomach, which is used by some in the spring. But it is very little employed by regular practitioners, it hardly enters the shops of the apothecaries, and has no place in the list either of the London or Edinburgh Colleges.

ALCHEMILLA [*Brun.*] *Folia*.
Archemilla vulgaris Lin.

Ladies mantle; the leaves.

This grows wild in many parts of England, but is rarely met with about London: the leaves seem as if plaited or folded together, so as to have given occasion to the English name of the plant. The leaves of alchemilla discover to the taste a moderate astringency, and were formerly much esteemed in some female weaknesses and in fluxes of the belly. They are now rarely made use of; though both the leaves and roots might doubtless be of service in cases where mild astringents are required.

ALKEKENGI [*Brun.*] *Bacca*.
Physalis alkekengi Lin.

Winter cherry; the berries.

This is a low, branched shrub, bearing leaves like those of nightshade; with white flowers, which stand single at the joints. The flower-cup changes into a membranous cover, which at length bursts and discovers a fruit of a fine red colour, about the size of a common cherry. The fruit ripens in October, and continues frequently to the middle of December. This plant grows wild in some parts of France, Germany, &c. the beauty and lateness of its fruit have gained it a place in our gardens.

Winter cherries have in general been represented by most writers to be extremely bitter: but, as Haller justly observes, the cherry itself, if

carefully freed from the cover (which is very bitter and pungent), has merely a subacid taste. They were formerly highly recommended as detergent, aperient, diuretic, and for expelling gravel; four, five, or more of the cherries are directed for a dose, or an ounce of the expressed juice. Mr Ray tells us of a gouty person who was cured and kept free from returns of his disorder, by taking eight of these cherries at each change of the moon; these occasioned a copious discharge of extremely fetid urine.

They have not, however, supported this character with others; inasmuch that they have now no place either in the London or Edinburgh Pharmacopœias, and are very little employed by any British practitioner.

ALLIARIA [*Brun.*] *Herba*.
Erysimum alliaria Lin.

Sauce alone, or jack-by-the-hedge; the plant.

This is common in hedges and shady waste-places, flowering in May and June. The leaves have a bitterish acid taste; and, when rubbed between the fingers, emit a strong smell, approaching to that of garlick. They have been recommended internally as sudorifics and deobstruents, somewhat of the nature of garlick, but much milder; and externally as antiseptics in gangrenes and cancerous ulcers. Hildanus used to gather the herb for these last purposes in the spring, and expose it for a day to the action of a dry air in a shady place; being then committed to the press, it yielded a juice possessing the smell and taste of the alliaria; this, he informs us, with a little oil on the surface, keeps in perfection for years; whereas the herb in substance soon loses its virtue in keeping. At present they are very little employed either in medicine or surgery.

ALLIUM

ALLIUM [*Lond. Ed.*] *radix.*

Allium sativum Lin.

Garlick; the root.

These roots are of the bulbous kind, of an irregularly roundish shape, with several fibres at the bottom: each root is composed of a number of lesser bulbs, called cloves of garlick, inclosed in one common membranous coat, and easily separable from each other. All the parts of this plant, but more especially the roots, have a strong offensive smell, and an acrimonious almost caustic taste. The root applied to the skin inflames, and often exulcerates the part. Its smell is extremely penetrating and diffusive; when the root is applied to the feet, its scent is soon discoverable in the breath; and when taken internally, its smell is communicated to the urine, or the matter of an issue, and perspires through the pores of the skin.

This pungent root warms and stimulates the solids, and attenuates tenacious juices. Hence, in cold leucophlegmatic habits, it proves a powerful expectorant, diuretic; and, if the patient be kept warm, sudorific; it has also been by some supposed to be emmenagogue. In catarrhus disorders of the breast, flatulent colics, hysterical, and other diseases proceeding from laxity of the solids, it has generally good effects: it has likewise been found serviceable in some hydropic cases. Sydenham relates, that he has known the dropsy cured by the use of garlick alone; he recommends it chiefly as a warm strengthening medicine in the beginning of the disease.

Garlick is with some also a favourite remedy in the cure of intermittents: and it has been said to have sometimes succeeded in obstinate quartans, after the Peruvian bark had failed, particularly when taken to the extent of one or two cloves

daily in a glass of brandy or other spirits.

The liberal use of garlick is apt to occasion headachs, flatulencies, thirst, febrile heats, inflammatory distempers, and sometimes discharges of blood from the hæmorrhoidal vessels. In hot bilious constitutions, where there is already a degree of irritation, and where there is reason to suspect an unsound state of the viscera, this stimulating medicine is manifestly improper, and never fails to aggravate the distemper.

The most commodious form for taking garlick, a medicine to most people not a little unpleasant, is that of a bolus or pill. Infusions in spirit, wine, vinegar, and water, although containing the whole of its virtues, are so acrimonious, as to be unfit for general use. A syrup and oxymel of it were formerly kept in the shops; but it does not now enter any officinal preparation in our pharmacopœias; and it is proper that even the pills should always be an extemporaneous prescription, as they suffer much from keeping.

Garlick made into an ointment with oils, &c. and applied externally, is said to resolve and discuss cold tumours, and has been by some greatly esteemed in cutaneous diseases. It has likewise sometimes been employed as a repellent. When applied under the form of a poultice to the pubis, it has sometimes proved effectual in producing a discharge of urine, when retention has arisen from a want of due action of the bladder: and some have recommended, in certain cases of deafness, the introduction of a single clove, wrapt in thin muslin or gauze, into the meatus auditorius. Sydenham assures us, that among all the substances which occasion a derivation or revulsion from the head, none operates more powerfully than garlick applied to the soles of the feet: hence

he was led to make use of it in the confluent small pox; about the eighth day after the face began to swell, the root cut in pieces, and tied in a linen cloth, was applied to the soles, and renewed once a-day till all danger was over.

ALNUS [*Ross.*] *Folia.*

Betula alnus Lin.

The leaves and bark of the alder tree.

These have a bitter styptic disagreeable taste. The bark is recommended by some in intermittent fevers; and a decoction of it, in gargarisms, for inflammations of the tonsils; but it is little employed in modern practice.

ALOE [*Lond. Ed.*]

Aloe perfoliata Lin.

Aloes.

Aloe is the inspissated juice of certain plants of the same name. The ancients distinguished two sorts of aloes: the one was pure and of a yellowish colour inclining to a red, resembling the colour of a liver, and thence named hepatic; the other was full of impurities, and hence supposed to be only the dross of the better kind. At present, various sorts are met with in the shops; which are distinguished either from the places from whence they are brought, from the species of the plants, or from some differences in the juices themselves. Three different kinds may be mentioned, although two of them only have now a place in our pharmacopœias.

(1) ALOE SOCOTORINA [*Lond. Ed.*]

Socotorine aloes.

This article is brought from the island Socotora in the Indian ocean, wrapt in skins; it is obtained from the Variety ξ of *aloe perfoliata* Lin.

This sort is the purest of the three: it is of a glossy surface, clear, and in some degree pellucid; in the lump, of a yellowish red colour, with a purple cast; when reduced to powder, of a bright golden colour. It is hard and friable in the winter, somewhat pliable in summer, and grows soft betwixt the fingers. Its taste is bitter, accompanied with an aromatic flavour, but insufficient to prevent its being disagreeable; the smell is not very unpleasant, and somewhat resembles that of myrrh.

(2) ALOE BARBADENSIS [*Lond.*]
HEPATIC A [*Ed.*]

Barbadoes, or hepatic aloes.

Hepatic aloes is not so clear and bright as the foregoing sort: it is also of a darker colour, more compact texture, and for the most part drier. Its smell is much stronger and more disagreeable: the taste intensely bitter and nauseous, with little or nothing of the fine aromatic flavour of the Socotorine. The best hepatic aloes comes from Barbadoes in large gourd shells; an inferior sort of it (which is generally soft and clammy) is brought over in casks.

(3) ALOE CABALLINA.

Fetid, caballine, or horse aloes.

This sort is easily distinguished from both the foregoing, by its strong rank smell; altho' in other respects; it agrees pretty much with the hepatic, and is not unfrequently sold in its stead. Sometimes the caballine aloes is prepared so pure and bright, as not to be distinguishable by the eye even from the Socotorine; but its offensive smell, of which it cannot be divested, readily betrays it. It has not now a place in the list of almost any modern pharmacopœia, and is employed chiefly by farriers.

All the sorts of aloes dissolve in pure spirit, proof spirit, and proof spirit

spirit diluted with half its weight of water; the impurities only being left. They dissolve also by the assistance of heat in water alone; but as the liquor grows cold, the resinous part subsides, the gummy remaining united with water. The hepatic aloes is found to contain more resin and less gum than the Socotorine, and this than the caballine. The resins of all the sorts, purified by spirit of wine, have little smell: that obtained from the Socotorine has scarce any perceptible taste; that of the hepatic, a slight bitterish relish; and the resin of the caballine, a little more of the aloetic flavour. The gummy extracts of all the sorts are less disagreeable than the crude aloes: the extract of Socotorine aloes has very little smell, and is in taste not unpleasant; that of the hepatic has a somewhat stronger smell, but is rather more agreeable in taste than the extract of the Socotorine: the gum of the caballine retains a considerable share of the peculiar rank smell of this sort of aloes, but its taste is not much more unpleasant than that of the extracts made from the two other sorts.

Aloes is a stimulating cathartic bitter: if given in so large a dose as to purge effectually, it often occasions an irritation about the anus, and sometimes a discharge of blood. Small doses of it frequently repeated, not only cleanse the *primæ viæ*, but likewise warm the habit, quicken the circulation, and promote the uterine and hemorrhoidal fluxes. This medicine is particularly serviceable in habitual costiveness, to persons of a phlegmatic temperament and sedentary life, and where the stomach is oppressed and weakened: in dry bilious habits aloes prove injurious, immoderately heating the body, and inflaming the bowels.

The juice is likewise, on account of its bitterness, supposed to kill

worms, either taken internally, or applied in plasters to the umbilical region. It is also celebrated for restraining external hemorrhagies, and cleansing and healing wounds and ulcers.

The ancients gave aloes in much larger doses than is customary at present. Dioscorides orders half a dram or a dram for gently loosening the belly; and three drams when intended to have the full effect of a cathartic. But modern practice rarely exceeds a scruple, and limits the greatest dose to two scruples. For the common purposes of this medicine, ten or twelve grains suffice: taken in these or less quantities, it acts as a gentle stimulating eccoprotic, capable of removing, if duly continued, very obstinate obstructions.

Aloes are much less frequently used to operate as a purgative than merely to obviate costiveness; and indeed their purgative effect is not increased in proportion to the quantity that is taken. Perhaps the chief objection to aloes, in cases of habitual costiveness, is the tendency which they have to induce and augment hæmorrhoidal affections. And with those, liable to such complaints, they can seldom be employed. Their purgative effect seems chiefly to depend on their proving a stimulus to the rectum.

Some are of opinion, that the purgative virtue of aloes resides entirely in its resin: but experience has shown, that the pure resin has little or no purgative quality; and that the gummy part separated from the resinous, acts more powerfully than the crude aloes. If the aloes indeed be made to undergo long cossion in the preparation of the gummy extract, its cathartic power will be considerably lessened, not from the separation of the resin, but from an alteration made in the juice itself by the heat. The strongest vegetable cathar-

cathartics become mild by a like treatment, without any remarkable separation of their parts.

Socotorine aloes, as already observed, contain more gummy matter than the hepatic; and hence are likewise found to purge more, and with greater irritation. The first sort, therefore, is most proper where a stimulus is required, as for promoting or exciting the menstrual flux; whilst the latter is better calculated to act as a common purge. It is supposed that the vulnerary and balsamic virtues of this juice reside chiefly in the resin; and hence that the hepatic aloes, which is most resinous, is most serviceable in external application.

Aloes enter many of the officinal preparations and compositions, particularly different pills and tinctures. And according to the particular purposes for which these are intended, sometimes the Barbadoes, sometimes the socotorine aloes, are the most proper. But of these we shall afterwards have occasion to speak.

ALTHEA [*Lond. Ed.*] *Radix, folium.*

Althea officinalis *Lin.*

Marsh-mallows. The leaf and root.

This plant grows wild in marshes and other moist places, in several parts of England; though frequently cultivated for medicinal use in gardens. All the parts of it have a slimy taste, and abound with a soft mucilaginous substance, which is readily extracted by water; the mucilage of the roots appears to be the strongest; and hence this part is generally made use of in preference to the others.

This plant has the general virtues of an emollient medicine, and proves serviceable where the natural mucus of the intestines is abraded. It is

chiefly recommended in sharp defluxions upon the lungs, hoarseness, dysenteries, and likewise in nephritic and calculous complaints; not, as some have supposed, that this medicine has any peculiar power of dissolving or expelling the calculus; but as, by lubricating and relaxing the vessels, it procures a more free and easy passage. *Althæa* root is sometimes employed externally for softening and maturing hard tumors: chewed, it is said to give ease in difficult dentition of children.

This root gave name to an officinal syrup [*Lond. Ed.*] decoction [*Ed.*] and ointment [*Lond.*] and was likewise an ingredient in the compound powder of gum tragacanth and the oil and plaster of mucilages [*Lond.*] though it does not appear to communicate any particular virtue to the two last, its mucilaginous matter not being dissoluble in oils.

And of all these formulæ the syrup alone is now retained.

ALUMEN [*Lond. Ed.*]

Alum.

Alum is a salt artificially produced from certain minerals, by calcining and exposing them to the air; after which the alum is elixated by means of water. The largest quantities are prepared in England, Germany, and Italy.

This salt is of a white or pale red colour, of an austere styptic taste, accompanied with a nauseous sweetness. It dissolves in about twelve times its weight of water; and concretes again, upon only evaporating the solution, into semi-transparent crystals, of an octagonal figure. Exposed to the fire, it easily melts, bubbles up in blisters, emits a copious phlegm, and then turns into a light spongy white mass, considerably more acrid than the alum was at first: this urged with a stronger fire, yields

yields a small quantity of acid spirit, similar to that obtained by the same means from vitriol; the part which remains, if the heat has been sufficiently intense and long continued, is an insipid white earth, readily soluble in every kind of acid.

Solutions of alum coagulate milk, change the blue colour of vegetable juices into a red or purple, and turn an infusion of galls turbid and whitish. Upon adding fixt alkaline salts to these solutions, the earth of the alum is precipitated, its acid uniting with the alkali into a neutral saline concrete similar to vitriolated tartar.

Alum is a powerful astringent: it is reckoned particularly serviceable for restraining hæmorrhagies, and immoderate secretions from the blood; but less proper in intestinal fluxes. In violent hæmorrhagies, it may be given in doses of fifteen or twenty grains, and repeated every hour or half hour till the bleeding abates: in other cases, smaller doses are more advisable; large ones being apt to nauseate the stomach, and occasion violent constipations of the bowels. It is used also externally, in astringent and repellent lotions and collyria. Burnt alum taken internally has been highly extolled in cases of colic. In such instances, when taken to the extent of a scruple for a dose, it has been said gently to move the belly, and give very great relief from the severe pain.

Its officinal preparations are, for internal use, *pulvis stypticus*, and *aqua styptica* [Ed.] for external applications, the *aqua aluminis*, and *coagululum aluminis* [Lond.] and *alumen ustum* [Lond. Ed.] which last is no other than the alum dried by fire, or freed from the watery moisture, which, like other salts, it always retains in its crystalline form. By this loss of its water it becomes sharper, so as to act as a slight escharotic; and it is chiefly with this

intention that it is employed in medicine, being very rarely taken internally.

AMBLAGRISEA [Dan.]

Ambra ambrosiaca Lin.

Ambergris.

Ambergris is a bituminous substance of a greyish or ash colour, intermingled with yellowish and blackish specks or veins: it is usually met with in little opaque rugged masses, very light, of a loose texture, friable in a certain degree like wax; they break rough and uneven, and not unfrequently contain pieces of shells, bones of fishes, and other like matters. This concrete is found floating on the surface of the sea, or thrown out upon the shores; the greatest quantities are met with in the Indian ocean; pieces have likewise been now and then discovered in our own and other northern seas. Dr Schwediauer supposes it to be an animal product, from its being so frequently found in the belly of the *physeter macrocephalus* Lin.

Pure ambergris softens between the fingers; melts in a small degree of heat into the appearance of oil, and in a stronger heat proves almost totally volatile. Warmed a little, it emits a peculiar fragrant smell; set on fire, it smells like burning amber. It dissolves, though difficultly, in spirit of wine and essential oils; but not in expressed oils or in water.

Ambergris is in general the most agreeable of the perfumes, and rarely accompanied with the inconveniences which other substances of this class frequently occasion. It has been looked upon as an high cordial, and esteemed of great service in all disorders of the head, and in nervous complaints; a solution of it in a spirit distilled from roses, stands recommended by Hoffmann as one of the most efficacious corroborants of the nervous system. The Oriental

orientals entertain an high opinion of the aphrodisiac virtues of this concrete; and likewise suppose that the frequent use of it conduces to long life: But it is now very little employed in practice, and has no place either in the London or Edinburgh Pharmacopœias; yet its sensible qualities give reason for believing that it may be a more active medicine than some articles which are retained; although credit is by no means to be paid to all that has been said with regard to it.

AMMONIACUM GUMMI RESINA [Lond. Ed.]

Ammoniacum, the gum-resin.

Ammoniacum is a concrete gummy resinous juice, brought from the East Indies, usually in large masses, composed of little lumps or tears, of a milky colour, but soon changing, upon being exposed to the air, of a yellowish hue. We have no certain account of the plant which affords this juice; the seeds usually found among the tears resemble those of the umbelliferous class. It has been, however, alleged, and not without some degree of probability, that it is an exudation from a species of the *ferula*, another species of which produces the *assafoetida*. The plant producing it is said to grow in Nubia, Abyssinia, and the interior parts of Egypt. Such tears as are large, dry, free from little stones, seeds, or other impurities should be picked out and preferred for internal use; the coarser kind is purified by solution and colature, and then carefully inspissating it; unless this be artfully managed, the gum will lose a considerable deal of its more volatile parts. There is often vended in the shops, under the name of strained gum ammoniacum, a composition of ingredients much inferior in virtue.

Ammoniacum has a nauseous sweet taste, followed by a bitter one; and

a peculiar smell, somewhat like that of galbanum, but more grateful: it softens in the mouth, and grows of a white colour upon being chewed. Thrown upon live coals, it burns away in flame: it is in some degree soluble in water and in vinegar, with which it assumes the appearance of milk; but the resinous part, amounting to about one half, subsides on standing.

Ammoniacum is an useful deobstruent; and frequently prescribed for opening obstructions of the abdominal viscera and in hysterical disorders occasioned by a deficiency of the menstrual evacuations. It is likewise supposed to act upon the pulmonary vessels; and to prove of considerable service in some kinds of asthmas, where the lungs are oppressed by viscid phlegm: with this intention, a solution of gum ammoniacum in vinegar of squills proves a medicine of great efficacy, though not a little unpleasant. In long and obstinate colics proceeding from viscid matter lodged in the intestines, this gummy resin has produced happy effects, after purges and the common carminatives had been used in vain. Ammoniacum is most commodiously taken in the form of pills: about a scruple may be given every night, or oftener. Externally, it is supposed to soften and ripen hard tumours: a solution of it in vinegar stands recommended by some for resolving even scirrhus swellings. A plaster made of it and squill-vinegar, is recommended by some in white swellings. A dilute mixture of the same is likewise rubbed on the parts, which are also fumigated with the smoke of juniper-berries.

In the shops is prepared a solution of it in pennyroyal water, called, from its milky colour, *lac ammoniaci* [Lond.] It is an ingredient also in the *pil. scillit.* [Ed.]

AMYGDALA AMARA.
DULCIS [Lond. Ed.] Nucleus.
Amygdalus communis Lin. Var. γ . β .
Bitter and sweet almond. The kernel.

The almond is a flattish kernel, of a white colour, covered with a thin brownish skin; of a soft sweet taste, or a disagreeable bitter one. The skins of both sorts are unpleasant, and covered with an acrid powdery substance: they are very apt to become rancid on keeping, and to be preyed on by a kind of insect, which eats out the internal part, leaving the almond to appearance entire. To these circumstances regard ought to be had in the choice of them.

The fruit which affords these kernels, is the produce of a tree nearly resembling the peach. The eye distinguishes no difference betwixt the trees which produce the sweet and bitter, or betwixt the kernels themselves; it is said that the same tree has, by a difference in culture, afforded both.

Both sorts of almonds yield, on expression, a large quantity of oil, which has no smell or any particular taste: this oil separates likewise upon boiling the almonds in water, and is gradually collected on the surface: but on triturating the almonds with water, the oil and water unite together, by the mediation of the other matter of the kernel, and form an unctuous milky liquor.

Sweet almonds are of greater use in food than as medicines, but they are reckoned to afford little nourishment; and when eaten in substance are not easy of digestion, unless thoroughly comminuted. They are supposed, on account of their soft unctuous quality, to abound acrimonious juices in the primæ viæ: peeled sweet almonds, eaten six or eight at a time, sometimes give present relief in the heartburn.

Bitter almonds have been found poisonous to dogs and sundry other animals; and a water distilled from them, when made of a certain degree of strength, has had the same effects. Nevertheless, when eaten, they appear innocent to men, and have been not unfrequently used as medicines: Boerhaave recommends them, in substance, as diuretics which heat but moderately, and which may therefore be ventured upon in acute diseases.

The oils obtained by expression from both sorts of almonds are in their sensible qualities the same. The general virtues of these oils are, to blunt acrimonious humours, and to soften and relax the solids: hence their use internally, in tickling coughs, heat of urine, pains and inflammations; and externally, in tension and rigidity of particular parts.

The milky solutions of almonds in watery liquors, commonly called emulsions, contain the oil of the subject, and participate in some degree of its emollient virtue; but have this advantage above the pure oil, that they may be given in acute or inflammatory disorders, without danger of the ill effects which the oil might sometimes produce; since emulsions do not turn rancid or acrimonious by heat, as all the oils of this kind in a little time do. Several unctuous and resinous substances, of themselves not miscible with water, may by trituration with almonds be easily mixed with it into the form of an emulsion; and thus excellently fitted for medicinal use. In this form, camphor and the resinous purgatives may be commodiously taken. The only officinal preparations of almonds are, the expressed oil and emulsion. The common emulsion, or the lac amygdalæ, as it is now called by the London college, is prepared from the sweet almond alone; but in the emulsion of the Edinburgh college, a small

small proportion of bitter almonds is added, which has a much better effect in improving its taste than the sugar added by the London college. An emulsion formed entirely of bitter almonds, taken to the quantity of a pint or two daily, is said to have been given in obstinate intermittents with success.

ANCHUSA [*Ed.*] *Radix.*

Anchusa tinctoria Lin.

Alkanet root.

Alkanet is a rough hairy plant, much resembling the vipers bugloss; its chief difference from the common buglosses consists in the colour of its roots; the cortical part of which is of a dusky red, and imparts an elegant deep red to oils, wax, and all unctuous substances, but not to watery liquors. This plant is a native of the warmer parts of Europe; it is sometimes cultivated in our gardens; but the greatest quantities are raised in Germany and France, particularly about Montpellier, from whence the dried roots are usually imported to us. The alkanet root produced in England is much inferior in colour to that brought from abroad; the English being only lightly reddish, the others of a deep purplish red: this has induced some to suspect that the foreign roots owe part of their colour to art, but we think without sufficient foundation.

Alkanet root has little or no smell: when recent, it has a bitterish astringent taste; but when dried scarce any. As to its virtues, the present practice expects not any from it. Its chief use is for colouring oils, ointments, and plasters. As the colour is confined to the cortical part, the small roots are best, these having proportionably more bark than the large.

ANETHUM [*Lond. Ed.*] *semen.*

Anethum gravecolens Lin.

Dill, the seed.

Dill is an umbelliferous plant, cultivated in gardens, as well for culinary as medical use. The seeds are of a pale yellowish colour, in shape nearly oval, convex on one side, flat on the other. Their taste is moderately warm and pungent; their smell aromatic, but not of the most agreeable kind. These seeds are recommended as a carminative in flatulent colics. The most efficacious preparations of them are, the distilled oil, and a tincture or extract made with rectified spirit. A simple distilled water prepared from these seeds has a place both in the London and Edinburgh Pharmacopœias.

ANGELICA [*Lond. Ed.*] *Radix, caulis, folium, semen.*

Angelica archangelica Lin.

Angelica, the root, stalk, leaf, and seed.

Garden angelica is a large umbelliferous plant, growing spontaneously in the northern climates: for the use of the shops, it is cultivated in gardens in the different parts of Europe. Bohemia and Spain are said to produce the best. Angelica roots are apt to grow mouldy, and be preyed upon by insects, unless thoroughly dried, kept in a dry place, and frequently aired. We apprehend, that the roots which are subject to this inconvenience might be preserved, by dipping them in boiling spirit, or exposing them to its steam, after they are dried.

All the parts of angelica, especially the roots, have a fragrant aromatic smell; and a pleasant bitterish warm taste, glowing upon the lips and palate for a long time after they have been chewed. The flavour of the seeds and leaves is very perishable; particularly that of the latter, which

which, on being barely dried, lose the greatest part of their taste and smell: the roots are more tenacious of their flavour, though even these lose part of it upon keeping. The fresh root, wounded early in the spring, yields an odorous, yellow juice; which, slowly exsiccated, proves an elegant gummy resin, very rich in the virtues of the angelica. On drying the root, this juice concretes into distinct molecu $\text{\scriptsize l}\text{\scriptsize \ae}$, which on cutting it longitudinally, appear distributed in little veins; in this state, they are extracted by pure spirit, but not by watery liquors.

Angelica is one of the most elegant aromatics of European growth, though little regarded in the present practice. The root, which is the most efficacious part, is used in the aromatic tincture. The stalks make an agreeable sweetmeat.

Besides the angelica archangelica, or garden-angelica, as it is commonly called, the Edinburgh college still also give a place to the root of the angelica sylvestris, or wild angelica. But it seems to differ only from the former in being much weaker, and might we think with propriety be rejected.

ANISUM [Lond. Ed.] *Semen.*

Pimpinella anisum Lin.

Anise, the seed.

Anise is an annual umbelliferous plant, growing naturally in Crete, Syria, and other places of the east. It is cultivated in some parts of France, Germany, and Spain, and may be raised also in England: the seeds brought from Spain, which are smaller than the others, are preferred.

Aniseeds have an aromatic smell, and a pleasant warm taste, accompanied with a degree of sweetness. Water extracts very little of their flavour; rectified spirit the whole.

These seeds are in the number of

the four greater hot seeds: their principal use is in flatulent disorders, and in the gripes to which young children are subject. Frederic Hoffman strongly recommends them in weakness of the stomach, diarrh \scriptsize \oe as, and for strengthening the tone of the viscera in general; and thinks they well deserve the appellation given them by Helmont, *intestinarum solamen*.

There were formerly several officinal preparations of these seeds, but the only one now retained is an essential oil.

ANTIMONIUM [Lond. Ed.]

Stibium sive antimonium sulphuratum.

Antimony.

Antimony is a ponderous brittle mineral, composed of long shining streaks like needles, intermingled with a dark lead-coloured substance; of no manifest taste or smell. There are several mines of it in Germany, Hungary, and France: and some likewise in England. The English seems to be of all these the least proper for medicinal use, as frequently containing a portion of lead. The substances found mixed with the foreign sorts are generally of the unfusible stony kind, from which the antimony is melted out in vessels, whose bottom is perforated with small holes, and received in conical moulds; in these, the lighter and more drossy matter arises to the surface; whilst the more pure and ponderous subsides to the bottom: hence the upper broad part of the loaves is considerably less pure than the lower.

The goodness of antimony is judged of from its weight; from the loaves not being spongy or blebby; from the largeness of the stri \scriptsize \ae ; and from the antimony totally evaporating in a strong fire.

Antimony was employed by the

ancients in collyria against inflammations of the eyes; and for staining the eyebrows black. Its internal use does not seem to have been established till towards the end of the fifteenth century; and even at that time it was by many looked upon as poisonous. But experience has now fully evinced, that pure antimony, in its crude state, has no noxious quality, being often used, particularly in chronic eruptions; that some of the preparations of it are medicines of great efficacy; and that though many of them are most violently emetic and cathartic, yet even these, by a slight alteration or addition, lose their virulence, and become mild in their operation.

This mineral appears from chemical experiments to consist of a metal, united with common sulphur, and separable in its metallic form by the same means by which other metallic bodies are extracted from their ores.

The pure metal operates, in a very minute dose, with extreme vehemence, as a purgative and emetic: when combined with sulphur, as in the crude mineral, its power is restrained: divested of the inflammable principle which it has in common with all perfectly metallic bodies, it becomes an indolent calx.

Antimony is at present the basis of many officinal preparations, afterwards to be treated of. But besides those still retained, many others have been formerly in use, and are still employed by different practitioners. We shall here therefore subjoin a table drawn up by Dr Black, exhibiting a distinct view of the whole that were formerly in use. It may be proper, however, to observe, that the names used in this table refer not to the present edition of the London Pharmacopoeia, but to that of 1746.

Dr Black's TABLE of the PREPARATIONS of ANTIMONY.

The Preparations of Antimony are obtained either from the crude antimony, or from the pure metallic part of it called regulus.

FROM CRUDE ANTIMONY.

- I. By simple pulverisation.
 - Antimonium præparatum. Ed. et Lond.
- II. By the action of heat and air.
 - Flores antimonii. sine addito.
 - Vitrum antimonii. Ed. et Lond.
 - Vitrum antimonii ceratum. Ed.
- III. By the action of fixed alkalis.
 - I. Joined with it by fusion. HEADERS of antimony.
 - Hepar antim. mitissimus, vulgo
 - Regulus antim. medicinalis.
 - Hepar for the Kermes mineral of Geoffroy.
 - Hepar for the tinctura antimonii. Lon.
 2. Acting upon it in the form of watery solution.
 - Kermes mineralis.
 - Sulphur antim. præcipitatum. Ed. et Lond.
 - Vulgo sulphur auratum antimonii.
- IV. By melting or deflagrating it with nitre, which produces either *croci* or *calces* of antim.
 - Crocus antim. mitissimus, vulgo
 - Regulus antim. medicinalis.
 - Crocus antimonii mitior.
 - Crocus antimonii. Lond.
 - Crocus antimonii, vulgo crocus metallorum. Ed.
 - Crocus antimonii lotus. Lond.
 - Antimon. emeticum mitius. Boerh.
 - Calx antimonii nitrata. Ed. Vulgo James's powder.
 - Calx antimonii. Lond. Vulgo antim. diaphoreticum:
- V. By the action of acids.
 - Antimon. vitriolatum Klauwig:
 - Antimon. catharticum. Wilson:
 - Causticum antimoniale, vulgo Butyrum Antim. Ed.
 - Causticum antimoniale. Lond.
 - Mercurius vitæ, sive pulvis Algarotti.
 - Bezoardicum minerale:
 - Floris antim. cum sale ammoniaco.
 - Tartarus antimonialis, vulgo emeticus. Ed. et
 - Tartarus emeticus. Lond.
 - Vinum antimoniale. Ed. et Lond.
 - Vinum e tartaro antimoniali. Ed.

FROM THE REGULUS.

This metal separated from the sulphur by different processes, is called *Regulus antimonii simplex*, *Regulus antimonii martialis*, *Regulus jovialis*, &c. From it were prepared,

- I. By the action of heat and air,
Flores argentei, five iij antim.
- II. By the action of nitre,
Cerussa antimonii.
Stomachicum Poterii.
Antihecticum Poterii.
Cardiacum Poterii.

Preparations which have their name from antimony, but scarcely contain any of its metallic part.

- Cinnabaris antimonii. Lond.
Tinctura antimonii. Lond.

In the various preparations of antimony, the reguline part is either combined with an acid, or in a condition to be acted upon by acid in the stomach; and the general effects of antimonials are, diaphoresis, nausea, full vomiting and purging, which perhaps may be best obtained by the forms of prepared antimony and emetic tartar. Some allege that antimonials are of the most use in fevers when they do not produce any sensible evacuation, as is said to be the case sometimes with James's powder. Some therefore prefer it in typhus, and emetic tartar in synochus, in which there is the appearance at first of more activity in the system, and more apparent cause for evacuation.

APIUM [*Gen.*] *Rad. fol. semen.*
Apium graveolens Lin.

Smallage; the roots, leaves, and seeds.

This plant is larger than the garden parsley, of a darker green colour, and of a stronger and more unpleasant flavour. The roots are in the number of the five called opening roots, and have been sometimes prescribed as an ingredient in aperient apozems and diet-drinks; but are

at present disregarded. The seeds of the plant are moderately aromatic, and were formerly used as carminatives; with which intention they are, doubtless, capable of doing service, though the other warm seeds with which the shops are furnished render these unnecessary.

ARABICUM GUMMI, Vide
GUMMI ARABICUM.

ARGENTUM [*Lond.*]

Silver.

Silver is introduced to a place in the materia medica, only as being the basis of different preparations; and of these, although several were formerly in use, yet one only now retains a place either in the London or Edinburgh pharmacopœias.

Abundance of virtues have indeed been attributed to crude silver by the Arabians, and by some also of later times, but on very little foundation. This metal, taken in its crude state, has no effect in the body: combined with a small quantity of the nitrous acid, it proves a powerful, though not always a safe, hydragogue; with a larger, a strong caustic. The nitrous acid is the only one that perfectly dissolves this metal: on adding to this solution a minute portion of marine acid, or substances containing it, the liquor turns milky, and the silver falls to the bottom in form of a white calx: hence we are furnished with a method of discovering marine salt in waters.

ARISTOLOCHIA [*Ed.*] *Rad.*
Birthwort: the root.

Three roots of this name were formerly directed for medicinal use, and have still a place in some pharmacopœias.

(1) **ARISTOLOCHIA LONGA** Lin.
Long Birthwort.

This is a tuberous root, sometimes about the size of the finger, sometimes as thick as a man's arm, and a foot in length : it is nearly of an equal thickness all over, or a little thicker in the middle than at the ends : the outside is of a brownish colour ; the inside yellowish.

(2) *ARISTOLOCHIA ROTUNDA*
Lin.

Round birthwort.

This has scarce any other visible difference from the foregoing than its roundish shape.

(3) *ARISTOLOCHIA TENUIS.*
Aristolochia clematis Lin.

Slender birthwort.

This is a long and slender root, rarely exceeding the thickness of a goose-quill.

These roots are the produce of Spain, Italy, and the southern parts of France. Their smell is somewhat aromatic ; their taste warm and bitterish. Authors in general represent them as extremely hot and pungent : some say they are the hottest of all the aromatic plants ; but as usually met with in the shops they have no great pungency. The long and round sorts, on being first chewed, scarce discover any taste, but in a little time prove nauseously bitterish ; the long somewhat the least so. The other sort instantly fills the mouth with an aromatic bitterness, which is not ungrateful. Their medicinal virtues are, to heat, stimulate, and promote the fluid secretions in general ; but they are principally celebrated in suppressions of female evacuations. The dose in substance is from a scruple to two drams. The long sort is recommended externally for cleansing and drying wounds and ulcers in cutaneous diseases.—None of them, however, are now in so much esteem as formerly ; and while all of them are banished from

the pharmacopœia of the London college, the *aristolochia tenuis*, is alone retained in that of Edinburgh.

ARNICA [*Lond. Ed.*] *Herba, flos, radix.*

Arnica montana Lin.

German leopard's bane ; the herb, flowers, and roots.

This article had formerly a place in our pharmacopœias, under the title of *Doronicum Germanicum*. Then, however, it was little known or used ; and being justly considered as one of the deleterious vegetables, it was rejected : but it has again been introduced into the list both of the London and Edinburgh colleges, on the authority of fresh observations, particularly of those of Dr Collins of Vienna, who has lately published a Dissertation on the Medical Virtues of the Arnica.

This plant grows in different parts of Europe, particularly in Germany. It has an acrid bitter taste, and when bruised, emits a pungent odour, which excites sneezing. On this account, the country people in some parts of Germany use it in snuff, and smoke it like tobacco. It was formerly represented as a remedy of great efficacy against effusions and suffusions of blood, from falls, bruises, or the like ; and it was then also mentioned as a remedy in jaundice, gout, nephritis, &c. but in these affections it is now very little, if at all, employed.

Of late it has been principally recommended in paralytic affections, and in cases where a loss or diminution of sense arises from an affection of the nerves, as in instances of amaurosis. In these, it has chiefly been employed under the form of infusion. From a dram to half an ounce of the flowers has been directed to be infused in a pint of boiling water, and taken in different doses in the course of the day : sometimes

it produces vomiting, sometimes sweating, sometimes diuresis; but frequently its use is attended with no sensible operation, unless it can be considered as such, that in some cases of paralysis, the cure is said to be preceded by a peculiar prickling, and by shooting pains in the affected parts.

Besides, being employed in paralytic affections, it has also been of late represented as a very powerful antispasmodic; and it is said to have been successfully employed in fevers, particularly those of the intermittent kind, and likewise in cases of gangrene. In those diseases it has been said to prove as efficacious as the peruvian bark, when employed under the form of a pretty strong decoction, taken in small doses frequently repeated, or under the form of an electuary with honey.

But these alleged virtues of the arnica have not been confirmed by any trials made in Britain with which we are acquainted; and we are of opinion, that its real influence still remains to be determined by future observations. It is however, one of those active substances from which something may be expected.

ARSENICUM.

Arsenic.

Arsenic is contained, in greater or less quantity, in most kinds of ores, particularly in those of tin and bismuth, in the white pyrites, and in the mineral called *cobalt*. From this last, greatest part of the arsenic brought to us is extracted by a kind of sublimation: the arsenic arises at first in the form of greyish meal; which more carefully resublimed, concretes into transparent masses, the *white* arsenic of the shops.

Arsenic sublimed with one-tenth its weight of sulphur, unites therewith into a bright yellow mass, in some degree transparent; the com-

mon *yellow* arsenic. On doubling the quantity of sulphur, the compound proves more opaque and compact; of a deep red colour, resembling that of cinnabar, but with this difference, that it loses of its beauty upon being reduced into powder, whilst that of cinnabar is improved by this means: this is the common *red* arsenic. By varying the proportions of arsenic and sulphur, sublimes may be obtained of a great variety of shades of yellow and red.

Natural mixtures of arsenic and sulphur, resembling the foregoing preparations, are not unfrequently met with in the earth. The fossil red arsenic is the *sandaracha* of the Greeks, the *realgar* and *resigal* of the Arabians. Both the red and yellow, when of a smooth uniform texture, are named *zarnichs*; and when composed of small scales or leaves, *auripigmenta*, or *orpiments*: the last are the only substances to which the Greeks gave the name *αρσενικον*. That the *zarnichs* and *orpiments* really contain arsenic (contrary to the opinion of some late writers) is evident from sundry experiments, whereby a perfect arsenic, and in considerable quantity, is obtainable from them. The compilers of a former edition of the Edinburgh Dispensatory therefore very justly gave *sandaracha Græcorum* as a synonymon to *red arsenic*; and *auripigmentum* to the yellow.

The pure or white arsenic has a penetrating corrosive taste; and taken into the body to the extent even of only a few grains, it proves a most violent poison. Besides the effects which it has in common with other corrosives, it remarkably inflames the coats of the stomach, occasions a swelling and sphacelation of the whole body, and a sudden putrefaction after death, particularly, as is said, of the genitals in men. Where

the quantity is so very small as not to prove fatal, tremors, palsies, and lingering hectic's succeed. The remedies recommended for counteracting the effects of this poison are, milk and oily liquors immediately and liberally drank.

Some recommend acids, particularly vinegar, as antidotes against this poison. Others recommend a watery solution of calcareous or alkaline hepar sulphuris, which is found to combine with arsenic and destroys most of its properties. It is said to be better from a little iron in the solution. The dry hepar may also be made into pills, and warm water drank above them.

Notwithstanding, however, the very violent effects of arsenic, it has been employed in the cure of dis-eases, both as applied externally and as taken internally. Externally, white arsenic has been chiefly employed in cases of cancer; and as used in this way, it is supposed that its good effects depend on its acting as a peculiar corrosive; and it is imagined, that arsenic is the basis of a remedy long celebrated in cancer, which, however, is still kept a secret by a family of the name of Plunket in Ireland. According to the best conjectures, their application consists of the powder of some vegetables, particularly the ranunculus flammæus and cotula foetida, with a considerable proportion of arsenic and flower of sulphur intimately mixed together. This powder, made into a paste with the white of an egg, is applied to the cancerous part which it is intended to corrode; and being covered with a piece of thin bladder, smeared also with the white of an egg, it is suffered to lie on from twenty-four to forty-eight hours; and afterwards the eschar is to be treated with softening digestive, as in other cases. This application,

whether it be precisely the same with Plunket's remedy or not, and likewise arsenic in mere simple forms, have in some instances been productive of good effects. It is indeed a powerful escharotic, occasioning acute pain; but it has the peculiar excellence of not extending its operation laterally. But if in some cases it has been beneficial, in others it must be allowed it does harm. While it has occasioned very considerable pain, it has given the parts no disposition to heal, the progress of the ulceration being even more rapid than before.

White arsenic has also been recommended as a remedy for cancer when taken internally. With this intention, four grains of arsenic, of a clear white shining appearance, and in small crystals, is directed to be dissolved in a pint of distilled water: and of this solution the patient is to take a table spoonful with an equal quantity of milk and a little syrup of white poppies, every morning fasting, taking care to taste nothing for an hour after it. After this has been continued for about eight days, the quantity is to be increased, and the doses more frequently repeated, till the solution be taken by an adult to the extent of six table spoonfuls in the course of a day. Mr Le Febure, who is, we believe, the introducer of this practice, affirms that he has used it in more than two hundred instances without any bad effect, and with evident proofs of its efficacy. But when employed by others, it has by no means been found equally efficacious; and indeed it is very doubtful to what degree arsenic can be dissolved in simple water.

Arsenic, in substance, to the extent of an eighth of a grain for a dose, combined with a little of the flowers of sulphur, has been said to be employed internally in some very obstinate

stinate cafes of cutaneous diseases, and with the best effect. But of this we have no experience.

Of all the diseases in which white arsenic has been used internally, there is no one in which it has been so frequently and so successfully employed as in the cure of intermittent fevers. It has long been used in Lincolnshire, and some other of the fenny countries, under the name of the *arsenic drop*, prepared in different ways: And it is conjectured, that an article, which has had a very extensive sale, under the title of the *tasteless ague-drop*, the form of preparing which, however, is still kept a secret, is nothing else but a solution of arsenic. But whether this be the case or not, we have now the most satisfactory information concerning this article, in the Medical Reports of the effects of Arsenic in the cure of Agues, Remitting Fevers, and Periodic Headachs, by Dr Fowler of Stafford. He directs, that sixty-four grains of arsenic, reduced to a very fine powder, and mixed with as much fixed vegetable alkaline salt, should be added to half a pound of distilled water, in a Florence flask: that it should then be placed in a sand heat, and gently boiled till the arsenic be completely dissolved; that after the solution is cold, half an ounce of compound spirit of lavender be added to it, and as much distilled water as to make the whole solution amount to a pound. This solution is taken in doses, regulated according to the age, strength, and other circumstances of the patient, from two to twelve drops, once, twice, or oftener in the course of the day. And in the diseases mentioned above, particularly in intermittents, it has been found to be a safe and very efficacious remedy, both by Dr Fowler and by other practitioners: but in some instances, even when given in

very small doses, we have found it excite violent vomiting. But besides this, it has also been alleged by some, that those cured of intermittents by arsenic, are very liable to become phtisical.

If arsenic shall ever be extensively employed internally, it will probably be most certain and most safe in its operation when brought to the state of a salt readily soluble in water. Mr Morveau tells us, that it may be brought to the state of a true neutral salt in the following manner: Mix well together equal quantities of nitre and of pure white arsenic; put them into a retort, and distill at first with a gentle heat, but afterwards with so strong a heat as to redden the bottom of the retort. By this means the nitrous acid, united to the phlogiston of the arsenic, will arise into the receiver, and the alkaline basis of the nitre will unite with the acid of the arsenic, and will be found in the bottom of the retort in the form of a neutral salt, which may be obtained in the form of crystals of a prismatic figure, by dissolving the neutral in distilled water, filtering the solution through paper, evaporating and crystallizing.

We have been informed, that a very pure sal arsenici, readily soluble in water, has been prepared by Mr Milner, professor of chemistry at Cambridge; and that it has been employed with great success by several practitioners in that neighbourhood. But with the process which he follows, we are unacquainted. Upon the whole, there is reason to believe that this active article may be employed with safety and advantage: and although it does not now stand in the list either of the London or Edinburgh Colleges, yet it seems to be better intitled to a place than many articles which have been introduced and retained.

The red and yellow arsenics, both

native and factitious, have little taste and are much less virulent in their effects than the foregoing. Sulphur, which restrains the power of mercury and the antimonial metal, remarkably abates the virulence of this poisonous mineral also. Such of these substances as participate more largely of sulphur, seem to be almost innocent: the factitious red arsenic, and the native orpiments, have been given to dogs in considerable quantity, without their being productive of any apparent ill consequences.

ARTEMISIA [Ed.] *Folia.*

Artemisia vulgaris Lin.

Mugwort; the leaves.

This plant grows plentifully in fields, hedges, and waste places, throughout England; and flowers in June. In appearance it somewhat resembles the common wormwood: the difference most obvious to the eye is in the flowers, those of wormwood hanging downwards, whilst the flowers of mugwort stand erect.

The leaves of this plant have a light aromatic smell, and an herbaceous bitterish taste. They were formerly celebrated as uterine and antihysterical: an infusion of them is sometimes drunk, either alone or in conjunction with other substances, in suppression of the menstrual evacuations. This medicine is certainly a very mild one, and considerably less hot than most others to which these virtues are attributed: in some parts of this kingdom, mugwort is of common use as a pot-herb. It is now, however, very little employed in medicine; and it is probably with propriety that the London College have rejected it from their pharmacopœia.

ARTHANITA *Radix.*

Cyclamen Europæum Lin.,

Sowbread; the root.

This plant is met with in the gardens of the curious. The root has, when fresh, an extremely acrimonious burning taste, which it almost entirely loses on being dried. It is recommended as an errhine; in cataplasms for scirrhus and serophulous tumors; and internally as a cathartic, detergent, and aperient: it operates very slowly, but with great virulence, inflaming the fauces and intestines.

ARUM [Lond. Ed.] *Radix.*

Arum maculatum Lin.

Wake-robin; the root.

This plant grows wild under hedges, and by the sides of banks, in most parts of England. It sends forth in March three or four triangular leaves, which are followed by a naked stalk, bearing a purplish pistil inclosed in a long sheath: this is succeeded in July by a bunch of reddish berries. In some plants, the leaves are spotted with black, in others with white spots, and in others not spotted at all: the black spotted sort is supposed to be the most efficacious.

All the parts of arum, particularly the root, have an extremely pungent, acrimonious taste; if the root be but lightly chewed, it continues to burn and vellicate the tongue for some hours, occasioning at the same time a considerable thirst: these symptoms are alleviated by butter-milk or oily liquors. Dried and kept for some time it loses much of its acrimony, and becomes at length an almost insipid farinaceous substance.

The root is a powerful stimulant and attenuant. It is reckoned a medicine of great efficacy in some cachectic and chlorotic cases, in weakness of the stomach occasioned by

by a load of viscid phlegm. Great benefit has been obtained from it in rheumatic pains, particularly those of the fixt kind, and which were seated deep. In these cases it may be given from ten grains to a scruple of the fresh root twice or thrice a-day, made into a bolus or emulsion with unctuous and mucilaginous substances, which cover its pungency, and prevent its making any painful impression upon the tongue. It generally excites a slight tingling sensation through the whole habit, and when the patient is kept warm in bed, produces a copious sweat.

The arum was formerly an ingredient in an officinal preparation, the compound powder; but in that form its virtues are very precarious. Some recommended a tincture of it drawn with wine; but neither wine, water, nor spirits, extract its virtues.

ASAFOETIDA [*Lond. Ed.*]

Gummi resina.

Ferula asafatida Lin.

Asafoetida; the gum-resin.

This is the concrete juice of a large umbelliferous plant growing in Persia. Till very lately it was not to be met with even in our hothouses; but by the industry of the late Dr Hope, it is now growing in the botanical garden at Edinburgh, and in some other places: and it is found, that it not only bears the vicissitudes of our climate, even in the open air, but that the plant is here strongly impregnated with its peculiar juice.

This juice exudes, from wounds made in the root of the plant, liquid, and white like milk: on being exposed to the air, it turns of a brownish colour, and gradually acquires different degrees of consistency. It is brought to us in large irregular masses, composed of vari-

ous little shining lumps or grains, which are partly of a whitish colour, partly reddish, and partly of a violet hue. Those masses are accounted the best which are clear, of a pale reddish colour, and variegated with a great number of elegant white tears.

This drug has a strong fetid smell, somewhat like that of garlick; and a bitter, acrid, biting taste. It loses with age of its smell and strength, a circumstance to be particularly regarded in its exhibition. It consists of about one-third part of pure resin and two-thirds of gummy matter; the former soluble in rectified spirit, the other in water. Proof-spirit dissolves almost the whole into a turbid liquor; the tincture in rectified spirit is transparent.

Asafoetida is the strongest of the fetid gums, and of frequent use in hysteric and different kinds of nervous complaints. It is likewise of considerable efficacy in flatulent colics; and for promoting all the fluid secretions in either sex. The ancients attributed to this medicine many other virtues, which are at present not expected from it.

This gummy-resin is an ingredient in the officinal gum-pills, fetid tincture, tincture of foot, and fetid volatile spirit.

ASARUM [*Lond. Ed.*] *Folium.*

Afarum Europæum Lin.

Afarabacca; the leaves.

Afarum is a very low plant, growing naturally in France, Italy, and other warm countries. It grows readily in our gardens; and although the dried roots have been generally brought from the Levant, those of our own growth do not seem to be weaker.

Both the roots and leaves have a nauseous, bitter, acrimonious, hot taste; their smell is strong, and not very

very disagreeable. Given in substance from half a dram to a dram, they evacuate powerfully both upwards and downwards. It is said, that tinctures made in spirituous menstrua, possess both the emetic and cathartic virtues of the plant: that the extract obtained by inspissating these tinctures, acts only by vomiting, and with great mildness: that an infusion in water proves cathartic, rarely emetic: that aqueous decoctions made by long boiling, and the watery extract, have no purgative or emetic quality, but prove good diaphoretics, diuretics, emmenagogues.

The principal use of this plant among us is as a sternutatory. The root of asarum is perhaps the strongest of all the vegetable errhines, while hellebore itself not excepted. Snuffed up the nose, in the quantity of a grain or two, it occasions a large evacuation of mucus, and raises a plentiful spitting. The leaves are considerably milder, and may be used, to the quantity of three, four, or five grains. Geoffroy relates, that after snuffing up a dose of this errhine at night, he has frequently observed the discharge from the nose to continue for three days together; and that he has known a paralysis of the mouth and tongue cured by one dose. He recommends this medicine in stubborn disorders of the head, proceeding from viscid tenacious matter, in palsies, and in soporific distempers. The leaves are the principal ingredient in the *pulvis sternutatorius*, or *pulvis asari compositus*, as it is now termed, of the shops.

ASPARAGUS [Ros.] *Radix,*
turiones.

Asparagus officinalis Lin.

Asparagus; the root and top.

This plant is cultivated in gardens for culinary use. The roots

have a bitterish mucilaginous taste, inclining to sweetness, the fruit has much the same kind of taste; the young shoots are more agreeable than either. Asparagus promotes appetite, but affords little nourishment. It gives a strong ill smell to the urine in a little time after eating it, and for this reason chiefly is supposed to be diuretic: it is likewise esteemed aperient and deobstruent; the root is one of the five called opening roots. Some suppose the shoots to be most efficacious; others the root; and others the bark of the root. Asparagus appears from experience to contribute very little either to the exciting of urine when suppressed, or increasing its discharge; and in cases where aperient medicines generally do service, this has little or no effect.

ATRIPLEX FOETIDA [Ed.]

Herba.

Chenopodium vulvaria Lin.

Stinking orach; the leaves.

This is a low plant, sprinkled all over with a kind of whitish clammy meal: it grows about dunghills, and other waste places. The leaves have a strong fetid smell, with which the hand, by a light touch, becomes so impregnated as not to be easily freed from it. Its smell has gained it the character of an excellent antihysterical; and this is the only use it is applied to. Tournefort recommends a spirituous tincture, others a decoction in water, and others a conserve of the leaves, as of wonderful efficacy in uterine disorders; but in the present practice it is little employed.

AVENA [Lond.] *Semen.*

Avena sativa Lin.

The oat; its seed.

This grain is an article rather of food than of medicine. It is sufficiently nutritive and easy of digestion.

tion. The gruels made from it have likewise a kind of soft mucilaginous quality; by which they obtund acrimonious humours, and prove useful in inflammatory disorders, coughs, hoarseness, roughness, and exulcerations of the fauces. They are by no means an unpleasant, and at the same time a gently nutritive drink, in febrile diseases in general.

AURANTIUM HISPALENSE [*Lond. Ed.*] *Folium, flos, fructus succus, et cortex exterior.*

Citrus aurantium Lin.

Seville orange; the leaf, flower, juice of the fruit, and its outer rind.

The orange is a beautiful evergreen tree, or rather shrub; it is a native of the warmer climates, and does not easily bear the winters of this.

The flowers are highly odoriferous, and have been for some time past of great esteem as a perfume: their taste is somewhat warm, accompanied with a degree of bitterness. They yield their flavour by infusion to rectified spirit, and in distillation both to spirit and water: the bitter matter is dissolved by water, and, on evaporating the decoction, remains entire in the extract. An oil distilled from these flowers is brought from Italy under the name of *oleum* or *essentia neroli*.

Orange flowers were at one time said to be an useful remedy in convulsive and epileptic cases; but experience has not confirmed the virtues attributed to them. The leaves of the orange have also been recommended for the same purpose, but have by no means answered the expectations entertained by some.

The outer yellow rind of the fruit is a grateful aromatic bitter; and proves an excellent stomachic and carminative, promoting appetite, warming the habit, and strengthening the tone of the viscera. Orange

peel appears to be very considerably warmer than that of lemons, and to abound more with essential oil; to this circumstance therefore due regard ought to be had in the use of these medicines. The flavour of the first is likewise supposed to be less perishable than that of the other: hence the London college employ orange-peel in the spirituous bitter tincture which is designed for keeping; whilst in the bitter watery infusion, lemon-peel is preferred. A syrup and distilled water are for the same reason prepared from the rind of oranges in preference to that of lemons.

The outer rind of the orange is the basis of a conserve both in the Edinburgh and London pharmacopœias; and this is perhaps one of the most elegant and convenient forms for exhibiting it.

The juice of oranges is a grateful acid liquor, of considerable use in febrile or inflammatory distempers, for allaying heat, abating exorbitant commotions of the blood, quenching thirst, and promoting the salutary excretions: it is likewise of use in genuine scorbutus, or sea-scurvy.—Although the Seville, or *bitter-orange*, as it is called, has alone a place in our pharmacopœias, yet the juice of the China, or *sweet-orange*, is much more employed. It is more mild, and less acid; and it is employed in its most simple state with great advantage, both as a cooling medicine, and as an useful antiseptic in fevers of the worst kinds, as well as in many other acute diseases, being highly beneficial as alleviating thirst.

AURANTIA CURASLAVENSIS.

Curassao oranges.

These are the small young fruit of the Seville orange dried. They are moderately warm bitterish aromatics,

matics, of a flavour sufficiently agreeable.

AURUM [*Brun.*]

Gold.

This metal was introduced into medicine by the Arabians, who esteemed it one of the greatest cordials and comforters of the nerves. From them Europe received it without any diminution of its character; in foreign pharmacopœias it is still retained and even mixed with the ingredients from which simple waters are to be distilled. But no one, it is presumed, at this time, expects any singular virtues from it, since it certainly is not alterable in the human body. Mr Geoffroy, though unwilling to reject it from the cordial preparations, honestly acknowledges, that he has no other reason for retaining it, than complaisance to the Arabian schools. The chemists have endeavoured, by many elaborate processes, to extract what they call a sulphur or anima of gold: but no method is as yet known of separating the component parts of this metal; all the tinctures of it, and aurum potabile, which have hitherto appeared, are real solutions of it in aqua regia, diluted with spirit of wine or other liquors, and prove injurious to the body rather than beneficial. A place, however, is now given in some of the foreign pharmacopœias to the aurum fulminans; and it has of late been recommended as a remedy in some convulsive diseases, particularly in the chorea sancti viti.

BALSAMITA [*Gen.*] *Folia.*

Tanacetum balsamita Lin.

Costmary; the leaves.

This was formerly a very common garden plant, and of frequent use both for culinary and medicinal purposes: but it is at present very little regarded for either: though it

should seem, from its sensible qualities to be equal or superior, as a medicine, to some aromatic herbs which practice has retained. The leaves have a bitterish, warm, aromatic taste; and a very pleasant smell, approaching to that of mint or a mixture of mint and maudlin. Water elevates their flavour in distillation; and rectified spirit extracts it by infusion. It has been recommended in hysterical affections; and by some it has been supposed to be very powerful in correcting the influence of opium. The leaves should be collected in the month of July or August.

BALSAMUM CANADENSE.

[*Lond. Ed.*]

Pinus balsamea Lin.

Canada balsam.

The Canada balsam is a transparent resinous juice, of a light amber colour, and pretty firm consistence, which is brought to this country from Canada in North America. It may be considered as one of the purest of the turpentine; and like these it is also the product of a species of fir. It has a very agreeable smell, and a warm pungent taste. Hitherto it has been but little employed in medicine: but is considered by some as capable of answering every purpose for which the next article is employed.

BALSAMUM COPAIVA

[*Lond. Ed.*]

Copaifera balsamum Lin.

Balsam of Copaiva.

The tree which produces this balsam is a native of the Spanish West India islands, and of some parts of the continent of South America. It grows to a large size, and the balsamum Copaiva flows under the form of a resinous juice, from incisions made in the trunk.

The juice is clear and transparent

rent, of a whitish or pale yellowish colour, an agreeable smell, and a bitterish pungent taste. It is usually about the consistence of oil, or a little thicker: when long kept, it becomes nearly as thick as honey, retaining its clearness; but has not been observed to grow dry or solid, as most of the other resinous juices do. We sometimes meet with a thick sort of balsam of Copaiva, which is not at all transparent, or much less so than the foregoing, and generally has a portion of turbid watery liquor at the bottom. This sort is probably either adulterated by the mixture of other substances, or has been extracted by coction from the bark and branches of the tree: its smell and taste are much less pleasant than those of the genuine balsam.

Pure balsam of Copaiva dissolves entirely in rectified spirit, especially if the menstruum be previously alkalinized: the solution has a very fragrant smell. Distilled with water, it yields a large quantity of a limpid essential oil; and in a strong heat, without addition, a blue oil.

The balsam of Copaiva is an useful corroborating detergent medicine, accompanied with a degree of irritation. It strengthens the nervous system, tends to loosen the belly, in large doses proves purgative, promotes urine, and cleanses and heals exulcerations in the urinary passages, which it is supposed to perform more effectually than any of the other balsams. Fuller observes, that it gives the urine an intensely bitter taste, but not a violet smell as the turpentine do.

This balsam has been principally celebrated in glets and the fluor albus, and externally as a vulnerary. The author abovementioned, recommends it likewise in dysenteries, in scorbutic cachexies, in diseases of the breast and lungs, and in an acrimonious or putrescent state of the

juices: he says, he has known very dangerous coughs, which manifestly threatened a consumption, cured by the use of this balsam alone; and that, notwithstanding its being hot and bitter, it has good effects even in hectic cases. Most physicians seem now, however, to consider balsams and resins too stimulant to be ventured on in phtisical affections.

The dose of this medicine rarely exceedstwenty or thirty drops, tho' some direct sixty or more. It may be conveniently taken in the form of an elæosaccharum, or in that of an emulsion, into which it may be reduced by triturating it with almonds, or rather with a thick mucilage of gum-arabic, till they are well incorporated, and then gradually adding a proper quantity of water.

BALSAMUM GILEADENSE

[Ed.]

Amyris Gileadensis Lin.

Balsam of Gilead.

This article, which has also had the name of Balsamum Judaiacum, Syriacum, e Mecca Opobalsamum, &c. is a resinous juice, obtained from an ever-green tree, growing spontaneously, particularly near to Mecca, on the Asiatic side of the Red Sea. The best sort of it is a spontaneous exudation from the tree; and is held in so high esteem by the Turks, who are in possession of the country where it is produced, that it is rarely, if ever, to be met with genuine among us. From the high price set upon it, many adulterations are practised. The true opobalsamum, according to Alpinus, is at first turbid and white, of a very strong pungent smell, like that of turpentine, but much sweeter; and of a bitter, acrid, astringent taste: upon being kept for some time, it becomes thin, limpid, of a greenish hue, then of a gold yellow, and at length of the colour of honey. According to

Dr Alston, the surest mark of its being pure and unadulterated is its spreading quickly on the surface of water when dropt into it. He tells us, that if a single drop be let fall into a large saucer full of water, it will immediately spread over its surface, and seem in a short time to dissolve or disappear; but in about the space of half an hour it becomes a transparent pellicle, covering the whole surface, and may be taken up with a pin. In this state it has lost both its fluidity and colour; it has become white and cohering, and has communicated its smell and taste to the water. It is, however, he observes, rare to get it in a condition that bears this test.

This balsam is in high esteem among the eastern nations, both as a medicine and as an odoriferous unguent and cosmetic. It has been recommended in a variety of complaints; but its great scarcity has prevented it from coming into use among us; and it is now in general believed that the Canada and Copaiva balsams will answer every purpose for which it can be employed.

BALSAMUM PERUVIANUM [Lond. Ed.]

Myroxylon peruiferum Lin.

Balsam of Peru.

The common Peruvian balsam is said to be extracted by coction in water, from an odoriferous shrub growing in Peru and the warmer parts of America. This balsam, as brought to us, is nearly of the consistence of thin honey, of a reddish brown colour, inclining to black, an agreeable aromatic smell, and a very hot biting taste. Distilled with water, it yields a small quantity of a fragrant essential oil of a reddish colour; and in a strong fire, without addition, a yellowish red oil.

Balsam of Peru is a very warm aromatic medicine, considerably hot-

ter and more acrid than Copaiva. Its principal effects are, to warm the habit, to strengthen the nervous system, and attenuate viscid humours. Hence its use in some kinds of asthmas, gonorrhoeas, dysenteries, suppressions of the uterine discharges, and other disorders proceeding from a debility of the solids, or a sluggishness and inactivity of the juices. It is also employed externally, for cleansing and healing wounds and ulcers; and sometimes against palsies and rheumatic pains.

This balsam does not unite with water, milk, expressed oils, animal fats, or wax: it may be mingled in the cold with this last, and likewise with the sebaceous substance called expressed oil of mace; but if the mixture be afterwards liquefied by heat, the balsam separates and falls to the bottom. It may be mixed with water into the form of an emulsion, after the same manner as the balsam of Copaiva. Alkaline lixivia dissolve great part of it; and rectified spirit the whole.

It is an ingredient in several officinal compositions; in some of which, as we shall afterwards endeavour to show, it has rather a bad than a good effect.

There is another sort of balsam of Peru, of a white colour, and considerably more fragrant than the former. This is very rarely brought to us. It is said to be the produce of the same plant which yields the common or black balsam; and to exude from incisions made in the trunk; while the former is alleged to be obtained by boiling. Besides the white, there is also a third kind, commonly called the red or dry. This is supposed to obtain a different state from the white, merely in consequence of the treatment to which it is subjected after it is got from the tree. In its fragrance it in some degree approaches

to the balsam of Gilead, held in so high esteem among the eastern nations; but it is very rarely in use in Britain, and almost never to be met with in our shops.

BALSAMUM RAKASIRI

[*Brun.*]

With the history of this balsam we are less acquainted than with that of any others. It is the product of an American tree yet unknown to us; and it is supposed to be a spontaneous exudation. If the accounts given of it by several writers, particularly by Mr Fermin in his History of Surinam, are to be depended upon, it may be considered as one of the most powerful and useful of the balsams yet discovered. It is said to possess all those virtues which are attributed to balsamum Copaiva, but in a much higher degree. It is represented as a most useful application, both in cases of recent wounds and old ulcers; and it is held forth to be an infallible remedy, both for the gonorrhoea in men and fluor albus in women. These accounts, however, are solely founded on the representation of the Indians, who are alone in the habit of using it; for hitherto it has been very little employed in Europe, and is very rarely to be met with.

BALSAMUM TOLUTANUM

[*Lond. Ed.*]

Toluisera balsamum.

Balsam of Tolu.

This flows from a tree growing in Tolu, in the Spanish West-Indies; from whence the balsam is brought to us in little gourd shells. It is of a yellowish brown colour, inclining to red; in consistence thick and tenacious: by age it grows hard and brittle, without suffering any great loss of its more valuable parts. The smell of this balsam is extremely fra-

grant, somewhat resembling that of lemons; its taste warm and sweetish, with little of the pungency, and nothing of the nauseous relish, which accompany the other balsams. It has the same general virtues with the foregoing; but is much milder, and for some purposes, particularly as a corroborant in glects and feminal weaknesses, is supposed to be more efficacious. It is an ingredient in the *syrupus tolutanus*, *tinctura tolutana*, and *syrupus balsamicus*.

BARDANA [*Lond. Ed.*] *Radix.*

Arctium lappa Lin.

Burdock; the root.

This is a common plant about way sides, sufficiently known from its scaly heads, or burs, which stick to the clothes.—The seeds have a bitterish subacid taste: they are recommended as very efficacious diuretics, given either in the form of emulsion, or in powder, to the quantity of a dram.—The roots taste sweetish, with a slight austerity and bitterishness: they are esteemed aperient, diuretic, and sudorific; and said to act without irritation, so as to be safely ventured upon in acute disorders. Decoctions of them have of late been used in rheumatic, gouty, venereal, and other disorders; and preferred by some to those of sarsaparilla.

BARILLA [*Lond.*] *Natrum impurum.*

Natrum antiquorum Lin.

Barilla, or impure fossil alkali.

Barilla is a saline substance in a very impure state, chiefly imported into Britain from the Mediterranean. Its great constituent is the fossil alkali; and it is under that form alone that it is now employed in medicine, either by itself, or combined with other articles. Its medical virtues will therefore more properly

perly fall to be mentioned under the title of Natron præparatum, the name now given by the London college to the pure fossil alkali, the sal alkalinus fixus fossilis of the Edinburgh college, the sal soda of some of the best foreign pharmacopœias.

The barilla, or natron of the ancients, has sometimes been found native in the earth, particularly in Egypt near to Smyrna, and in other places of Asia; it has also been found in some parts of Barbary, Hungary, and Russia: But as now employed for the purposes of medicine and other arts, it is chiefly obtained by artificially separating it from those substances which contain it. Our barilla is chiefly imported from Spain, where it is obtained by the calcination of vegetables, particularly the kali, growing on the sea shore. In Britain, much of it is obtained in a very impure state, by the calcination of the different fuci, or sea-weeds, growing on the rocks, and covered by the sea-water at every tide. And there can be no doubt that all these different vegetables derive it entirely from the sea-salt. Many attempts have been made to obtain it immediately from sea-salt: And although these have not been hitherto so successful as could have been wished, yet it is to be hoped, that a process will be discovered for obtaining it in an easy manner, and at a cheaper rate, than it is either at present imported from abroad or obtained at home.

BDELLIUM [*Succ.*]

Bdellium; gummi-resina.

Bdellium is a gummy-resinous concrete juice brought from Arabia and the East-Indies, in glebes of different figures and magnitudes. It is of a dark reddish brown colour, and in appearance somewhat resembles myrrh; upon cutting a piece, it looks somewhat transpa-

rent, and, as Geoffroy justly observes, like glue. It grows soft and tenaceous in the mouth, sticks to the teeth, has a bitterish taste, and not a disagreeable smell. Bdellium is recommended as a sudorific, diuretic, and uterine; and in external applications for maturing tumours, &c. In the present practice, it is scarcely made use of. And accordingly it has now no place either in the London or Edinburgh Pharmacopœias; but it is still retained in several of the latest foreign ones, and enters some of their plasters.

BECABUNGA [*Lond.*] *Herba. Veronica becabunga Lin.*

Brooklime; the herb.

This is a low plant, common in little rivulets and ditches of standing water. The leaves remain all the winter, but are in greatest perfection in the spring. Their prevailing taste is an herbaceous one, accompanied with a very light bitterness.

Becabunga has been supposed to have a saponaceous detergent virtue, and to attenuate viscid humours without pungency or irritation: hence it has been directed in the species of scurvy called hot, where the *cochlearia*, and other acrid anti-scorbutics, were supposed to be less proper. If any virtue is expected from becabunga, it should be used as food.

BELLADONA [*Ed.*] *Folia. Atropa belladonna Lin.*

Deadly nightshade.

The deadly nightshade is a native of Britain, growing in many different places, and in considerable abundance. It has long been considered, which indeed may be inferred from the name, as one of the most deleterious of the vegetable narcotic poisons. It has, however, for a

considerable number of years been employed in the practice of medicine, both externally and internally; and it has accordingly had a place in successive editions of the Edinburgh pharmacopœia. It is perhaps surprising that the London college have not introduced into their list an article of great activity, which under prudent management may certainly be used with safety, and which at least deserves a trial in cases otherwise desperate.

The belladonna, taken internally, has been highly recommended in cancer by several writers, particularly by Dr Lambergen and Dr Munch, in treatises professedly published with the intention of recommending it. Besides a very remarkable narcotic power, this vegetable possesses considerable influence in promoting all the excretions, particularly by sweat, urine, and it is also said by saliva. It has been employed under the form of infusion formed of the dried leaves, to the extent of a scruple in a considerable quantity of water, and taken in the course of a day. But some imagine that it is much injured by the action of heat, and give it under the form of dry powder of the leaves. As thus employed, the dose is limited to a few grains.

Besides cancer, schirrhus, and other obstinate tumours, it has been said to be also employed with success in some cases of melancholia, mania, and epilepsy.

Externally, it has been applied to open cancers under the form of an infusion of the dried leaves; and to occult ones, the recent leaves have been applied in substance. And there are well authenticated cases on record of good effects being obtained from it in both these ways. While therefore a place is given to it in lists of the materia medica, it ought also, we think, to be the basis of officinal formulæ, under which

it might be employed with most safety and advantage.

BENZOË [*Lond. Ed.*] *Resina. Styrax benzoe Dryand.* [*Lond.*] *Terminalia benzoin Lin.* [*Ed.*] Benzoine; the resin.

Benzoine is a concrete resinous juice. It is brought from the East-Indies only; in large masses composed of white and light brown pieces, or yellowish specks, breaking very easily betwixt the hands: such as is whitest, and free from impurities, is most esteemed.

In most of the new foreign pharmacopœias benzoine is said to be obtained from the croton benzoe of Linnæus: but when the last edition of the Edinburgh pharmacopœia was published, it was supposed to be the product of the terminalia benzoine, a tree unknown to Linnæus, but described in the Supplement to his works, published by his son. But since that, Dr Dryander of London has described the tree producing it in the Philosophical Transactions, and gives it the name of *styrax benzoe*. It grows chiefly in the island of Sumatra.

This resin has very little taste, impressing only a light sweetness on the tongue: its smell is extremely fragrant and agreeable, especially when heated. Committed to the fire in proper vessels, it yields a considerable quantity of a white saline concrete, called *flowers*, of an acidulous taste and grateful odour, soluble in rectified spirit, and, by the assistance of heat, in water.—Of these we shall afterwards have occasion to treat.

The principal use of benzoine is in perfumes, and as a cosmetic: it is rarely met with in extemporaneous prescription, and enters in substance only one officinal composition, the *balsamum traumaticum*, or tinctura benzoes composita, as it is now more

properly styled by the London college, designed chiefly for external use. It should nevertheless seem applicable to other purposes, and to have no ill title to the virtues of storax and balsam of Tolu, at least in a subordinate degree. The flowers are recommended in disorders of the breast; and with this intention they are made an ingredient in the *paregoric elixir*, or camphorated tincture of opium.

BERBERIS [*Succ.*] *Cortex baccarum succus.*

Berberis vulgaris Lin.

Barberry; the bark and juice of the berries.

The barberry is a small tree, or rather a large bush, covered with an ash-coloured bark, under which is contained another of a deep yellow: the berries are of an elegant red colour, and contain each two hard brown seeds. It grows wild on chalky hills in several parts of England; and is frequently planted in hedges and in gardens.

The outward bark of the branches, and the leaves, has an astringent acid taste; the inner yellow bark; a bitter one; this last is said to be serviceable in the jaundice; and by some, to be an useful purgative.

The berries, which to the taste are gratefully acid, and moderately restraining, have been given with good success in bilious fluxes, and diseases proceeding from heat, acrimony, or thinness of the juices. Among the Egyptians, barberries are employed in fluxes and in malignant fevers, for abating heat, quenching thirst, raising the strength, and preventing putrefaction; the fruit is macerated for a day and night, in about twelve times its quantity of water, with the addition of a little fennel seed, or the like, to prevent offence to the stomach; the liquors strained off, and sweetened

with sugar, or syrup of citrons, is given the patient liberally to drink. Prosper Alpinus (from whose treatise *De Medicina Egyptiorum* this account is extracted) informs us, that he took this medicine himself, with happy success, in a pestilential fever accompanied with an immoderate bilious diarrhoea.

The barberry, however, is now so little used for medical purposes in Britain, that it is rejected from the list both of the London and Edinburgh colleges.

BETA [*Gen.*] *Folium, radix.*

Beta vulgaris Lin.

The white and red beet, the root and leaves.

These plants are cultivated in gardens chiefly for culinary use. The eye distinguishes little other difference betwixt them than that expressed in their titles. Decoctions of beets gently loosen the belly; hence they have been ranked among the emollient herbs; the plants remaining after the boiling are supposed to have rather a contrary effect. They afford little nourishment, and are said by some to be prejudicial to the stomach. The juice expressed from the roots is a powerful cathartic; but with this intention they are hardly employed in medicine. Of late, another species of beet, described by Dr Lettsom, under the title of *Beta hybrida*, or the root of scarcity, has been extolled, as affording a great quantity of alimentary matter on a small space of ground, both for the human species and domestic animals; but it has not been recommended for any particular purpose in medicine.

BETONICA [*Brun.*] *Folia et flores.*

Betonica officinalis Lin.

Betony; the leaves and flowers.

Betony

Betony is a low plant, growing in woods and shady places, in several parts of England; the flowers come forth in June and July; they are of a purplish colour, and stand in spikes on the tops of the stalks. The leaves and flowers have an herbaceous, roughish, somewhat bitterish taste, accompanied with a very weak aromatic flavour. This herb has long been a favourite among writers on the materia medica, who have not been wanting to attribute to it abundance of good qualities. Experience does not discover any other virtue in betony than that of a mild corroborant; as such, an infusion or light decoction of it may be drank as tea, or a saturated tincture in rectified spirit given in suitable doses, in laxity and debility of the viscera, and disorders proceeding from thence. The powder of the leaves, snuffed up the nose, provokes sneezing, and hence betony is sometimes made an ingredient in sternutatory powders: this effect does not seem to be owing, as is generally supposed, to any peculiar stimulating quality in the herb, but to the rough hairs which the leaves are covered with. The roots of this plant differ greatly in quality from the other parts: their taste is bitter and very nauseous: taken in a small dose, they vomit and purge violently, and are supposed to have somewhat in common with the roots of hellebore. It is pretty singular, if true, that betony affects those who gather any considerable quantity of it, with a disorder resembling drunkenness: as affirmed by Simon Paulli and Bartholinus.

From these sensible qualities and operative effects, although it has now no place in our pharmacopœias, yet it is perhaps to be considered as a vegetable deserving farther attention.

BETULA [Gen.] *Cortex, succus.*

Betula alba Lin.

The birch tree, the bark and sap.

This tree grows wild in most woods: its bark consists of a thick brittle substance of a brownish red colour; and of several very thin, smooth, white, transparent membranes. These last are highly inflammable, and appear to abound with resinous matter, though scarcely of any particular smell or taste: the thick brittle part is less resinous, and in taste roughish: of the medical virtues of either, little or nothing is known with certainty.

Upon deeply wounding or boring the trunk of the tree in the beginning of spring; a sweetish juice issues forth, sometimes, as it is said, in so large quantity, as to equal in weight the whole tree and root: one branch will bleed a gallon or more in a day. This juice is chiefly recommended in scorbutic disorders, and other foulnesses of the blood; its most sensible effect is to promote the urinary discharge.

BEZOAR [*Brun.*]

Calculus capræ bezoardicæ.

Bezoar stone.

The bezoar stone is a calculous concretion found in the stomach of certain animals which are said to be of the goat kind. It is composed of concentrical coats surrounding one another, with a little cavity in the middle, containing a bit of wood, straw, hair, or some similar substance.

The shops distinguish two sorts of bezoar, one brought from Persia and the East-Indies, the other from the Spanish West-Indies. The first, or best sort, called oriental bezoar, is of a shining dark green or olive colour, and an even smooth surface; on removing the outward

coat, that which lies underneath it appears likewise smooth and shining. The occidental has a rough surface, and less of a green colour than the foregoing: it is likewise much heavier, more brittle, and of a looser texture; the coats are thicker, and on breaking exhibit a number of striæ curiously interwoven. The oriental is generally less than a walnut; the occidental for the most part larger, and sometimes as big as a goose egg. The first is most esteemed; although now they are so little valued in Britain, that a place is given to neither in our pharmacopœias.

Kæmpfer (in whose *Amœnitates Exoticæ*, a full account of the bezoar animal may be seen) informs us, that this stone is in high esteem among the Persians, and even of greater value than in Europe; this, with sundry other circumstances needless to relate here, has given occasion to many to suspect, that the true bezoar is never brought to us. Some authors relate with great confidence, that all the stones commonly sold under this name are artificial compositions. That some of them are so, is evident; hence the great differences in the accounts which different persons have given of their qualities: the stones examined by Stare as oriental bezoar, did not dissolve in acids; those which Grew and Boyle made trial of did: those employed by Geoffroy (in some experiments related in the French memoirs 1710) did not seem to be acted on by rectified spirit; whilst some of those examined by Newman at Berlin almost totally dissolved therein. The common mark of the goodness of this stone, is its striking a deep green colour on white paper that has been rubbed with chalk.

Bezoar was not known to the ancient Greeks; and is first taken no-

tice of by the Arabians, who extol it in a great variety of disorders, particularly against poisons. Later writers also bestow extraordinary commendations on it as a sudorific and alexipharmac; virtues to which it certainly has no pretence. It is a morbid concretion, much of the same nature with the human calculus, of no smell or taste, not digestible in the stomach of the animal in which it is found, and scarce capable of being acted upon by any of the juices of the human body. It cannot be considered in any other light than as an absorbent; and is much the weakest of all the common substances of that class. It has been given to half a dram, and sometimes a whole dram, without any sensible effect: though the general dose is only a few grains, from which nothing can be expected.

BISMUTHUM [*Brun.*]

Visnuthum nativum.

Bismuth.

Bismuth is a ponderous brittle metal, resembling in appearance the antimonial regulus and zinc, but greatly differing from them in quality. It dissolves with vehemence in the nitrous acid, which only corrodes the regulus of antimony; and is scarce at all soluble in the marine acid, which acts strongly on zinc. A calx and flowers of this semimetal have been recommended as similar in virtue to certain antimonial preparations; but are at present of no other use than as a pigment or cosmetic: and it is now entirely rejected from the British pharmacopœias.

BISTORTA [*Lond. Ed.*] *Radix.*

Polygonum bistorta Lin.

Bistort, or snake-weed; the root.

This plant grows wild in moist meadows in several parts of England

land. The root is about the thickness of the little finger, of a blackish brown colour on the outside, and reddish within: it is writhed or bent vermicularly (whence the name of the plant) with a joint at each bending, and full of bushy fibres; the root of the species here mentioned has, for the most part, only one or two bendings; others have three or more.

All the parts of bistort have a rough austere taste, particularly the root, which is one of the strongest of the vegetable astringents. It is employed in all kinds of immoderate hæmorrhagies and other fluxes, both internally and externally, where astringency is the only indication. It is certainly a very powerful styptic, and is to be looked on simply as such; to the sudorific, antipefiential, and other virtues attributed to it, it has no other claim than in consequence of its astringency, and of the antiseptic power which it has in common with other vegetable styptics. The largest dose of the root in powder is one dram.

BOLI.

Boles are viscid clayey earths, less coherent and more friable than clay strictly so called, more readily uniting with water, and more freely subsiding from it. They are soft and unctuous to the touch, adhere to the tongue, and by degrees melt in the mouth, impressing a light sense of astringency. A great variety of these kinds of earths have been introduced into medicine; the principal of which are the following.

(1) **BOLUS ARMENA** [*Senc.*] Armenian bole, or bole-armenic.

Pure Armenian bole is of a bright red colour, with a tinge of yellow: it is one of the hardest and most compact of the bodies of this

class; and not smooth or glossy like the others, but generally of a rough dusty surface. It raises no effervescence with acids.

(2) **BOLUS GALLICA** [*Lond. Ed.*] French bole.

The common French bole is of a pale red colour, variegated with irregular specks or veins of white and yellow. It is much softer than the foregoing; and slightly effervesces with acids.

(3) **BOLUS BLESENSIS.** Bole of Blois.

This is a yellow bole, remarkably lighter than the former, and than most of the other yellow earths. It effervesces strongly with acids.

(4) **BOLUS BOHEMICA.** Bohemian bole.

This is of a yellow colour, with a cast of red, generally of a flaky texture. It is not acted on by acids.

(5) **TERRA LEMNIA.** Lemnian earth.

This is a pale red earth; slightly effervescing with acids.

(6) **TERRA SILESIACA.** Silesian earth.

This is of a brownish yellow colour: acids have no sensible effect upon it. These and other earths, made into little masses, and stamped with certain impressions, are called *terre sigillatæ*.

The boles of Armenia and Blois, and the Lemnian earth, are rarely met with genuine in the shops; the coarser boles, or white clay coloured with ochre, caput mortuum of vitriol, &c. frequently supply their place. The genuine may be distinguished by their subsiding uniformly from water, without any separation

tion of their parts; the genuine yellow boles retain their colour, or have it deepened in the fire, whilst the counterfeit forts burn red.

These earths have been recommended as astringent, sudorific, and alexipharmac; and they have been used in diarrhoeas, dysenteries, hæmorrhagies, and in malignant and pestilential distempers. In intestinal fluxes, and complaints in the first passages from thin acrimonious humours, they may doubtless be of some use; but the virtues ascribed to them in the other cases appear to have no foundation.

In the London pharmacopoeia bole was formerly an ingredient in the *pulvis e bolo, e scordio, tabellæ cardialgicæ, theriaca*, and in one composition for external use, viz. the *lapis medicamentosus*. But now these formulæ are either entirely thrown out, or much changed. Thus to the *pulvis e bolo*, the *pulvis e creta* is substituted, in which no bole is contained. The *bolus gallicus* is the only one now retained either in the London or Edinburgh pharmacopoeias. It does not enter any of their compositions, and is hardly used in the present practice.

BONUS HENRICUS [Gen.]

Herba.

Chenopodium bonus henricus.

English herb mercury.

This herb is met with by roadsides, and in uncultivated places. It is ranked among the emollient herbs, but rarely made use of in practice. The leaves are applied by the common people for healing slight wounds, cleansing old ulcers, and other like purposes.

BORRAGO [Gen.] *Herba.*

Borrigo officinalis Lin.

Borage; the herb.

This is a rough plant, clothed

with small prickly hairs; it grows wild in waste places, and upon old walls. An exhilarating virtue has been attributed to the flowers of borage, which are hence ranked among the so called cordial flowers; but they appear to have very little claim to any virtue of this kind, and seem to be altogether insignificant.

BORAX [Lond. Ed.]

Natron boracicum.

Borax, or tincal.

This is a saline substance, brought from the East-Indies in great masses, composed partly of large crystals, but chiefly of smaller ones, partly white and partly green, joined together as it were by a greasy yellow substance, intermingled with sand, small stones, and other impurities: the purer crystals, exposed to the fire, melt into a kind of glass, which is nevertheless soluble in water.

This salt, dissolved and crystallized, forms small transparent masses; the refiners have a method of shooting it into larger crystals; but these differ in several respects from the genuine salt, inasmuch that Cramer calls them not a purified, but adulterated borax. Experiments have clearly shown, that it consists of a fixt alkaline salt, the same with the basis of the sea salt, in some degree neutralized by a peculiar acid.

The medical virtues of borax have not been sufficiently ascertained by experience: it is supposed to be, in doses of half a dram or two scruples, diuretic, emmenagogue, and a promoter of delivery. Mr Bisset, in an essay on the medical constitution of Great Britain, recommends a solution of this salt in water as the most powerful dissolvent yet known of aphthous crusts in the mouth and fauces of children. And for the same purpose

also a small quantity of it is often applied in the form of powder, mixed up with sugar. There are strong reasons to believe, that the virtues of borax are much greater than they are in general supposed to be; and that it may be more extensively used with advantage.

BOTRYS [*Succ.*] *Herba, femina.*

Chenopodium botrys Lin.

Jerusalem oak; the leaves and feed.

This plant is cultivated in gardens. It has a strong not disagreeable smell, and a warm somewhat pungent taste. It is recommended as a carminative pectoral; and it has also been recommended as an emmenagogue. Infusions of it may be drank as tea: and in this form it has been recommended in cases of chronic catarrh. But the proper menstruum for the active matter, both of the leaves and seeds, is rectified spirit.

BRASSICA [*Gen.*] *Herba, femina.*

Brassica oleracea Lin.

White and red cabbages, &c.

These are cultivated in gardens rather for culinary than medicinal use. They are all supposed to be hard of digestion, to afford little nourishment, and to produce flatulencies; though probably on no very good foundation. They tend strongly to putrefaction, and run into this state sooner than almost any other vegetable; when putrefied, their smell is likewise the most offensive, greatly resembling that of putrefied animal substances. Hence it seems reasonable to conclude, that few of the oleraceous herbs are more easily soluble in the stomach, more nutritious or less remote from the nature of animal-food. It is undeniable, that in ge-

neral at least they are not unwholesome; that they do not induce or promote a putrid disposition in the body; but on the contrary prove a salubrious aliment; that when taken freely, they tend to loosen the belly; and that their laxative matter is extracted by long boiling in water. Of all these plants, cauliflower is reckoned the easiest of digestion. The white is the most fetid; and the red most emollient or laxative: a decoction of this last is recommended in some disorders of the breast, and in hoarseness.

Sliced cabbage casked up with salt, &c. becomes sour, keeps long, is used in Germany at table under the name of sauerkraut; and it has lately been introduced as an article of diet with the British forces, either in garrisons besieged, or on long voyages. It is now clearly demonstrated, that in these situations it operates as a most powerful preventative of scorbutus; and that it has even had very great influence in curing the disease after it has taken place.

Cabbage has also been used for medical purposes as externally applied. The leaves gently bruised are often applied to parts previously blistered, with the effect of promoting a considerable discharge. They excite a considerable watery discharge through the skin in cases of anasarca, particularly when applied to the ankles: And they have sometimes even the effect of inducing vesications. As thus externally applied, they have in some instances produced a complete discharge of the water in cases of anasarca.

BRASSICA MARINA
[*Brun.*]

Convolvulus soldanella Lin.

Sea coleworts, Scots scurvygrafs, or soldanella; the leaves.

This is a trailing plant, growing on the sea beach in many parts of the north of England. The roots, leaves, and stalks, yield a milky juice.

Soldanella is a strong cathartic, operating very churlishly, and hence deservedly rejected from practice. Those who recommend its use differ considerably with regard to the dose; some direct half a dram; others three drams, and others a whole handful.

BRITANNICA, vide LAPATHUM.

BRYONIA [Ed.] Radix.

Bryonia alba Lin.

White bryony, or wild vine; the roots.

This is a rough plant, growing on dry banks under hedges, and climbing upon the bushes. The roots are large, sometimes as thick as a man's thigh; the smell, when fresh, is strong and disagreeable; the taste nauseously bitter, acrid, and biting: the juice is so sharp, as in a little time to excoriate the skin: in drying, they lose great part of their acrimony, and almost the whole of their scent.

Bryony root is a strong irritating cathartic; and as such has sometimes been successfully exhibited in maniacal cases, in some kinds of dropsies, and in several chronic disorders, where a quick solution of viscid juices, and a sudden stimulus on the solids, were required. An extract prepared by water, acts more mildly and with greater safety than the root in substance; given from half a dram to a dram, it is said to prove a gentle purgative, and likewise to operate powerfully by urine.

Bryony root, applied externally, is said to be a powerful discutient.

Hence although this as well as many other drastic and active articles is now rejected by the London college, yet we think that it ought not only to be retained, but that a place should also be given in our pharmacopœias to the extract.

BUGLOSSUM [Gen.] Radix, folia.

Anchusa officinalis Lin.

Garden bugloss; the root and leaves.

This is a rough, hairy plant, resembling borage, but less prickly: a wild sort is commonly met with in hedges and among corn, which differs from the garden only in being smaller. Bugloss has a slimy sweetish taste, accompanied with a kind of coolness; the roots are the most glutinous, and the flowers the least so. The flowers are one of the four called cordial flowers: the only quality they have that can intitle them to this appellation, is, that they moderately cool and soften, without offending the palate or stomach; and thus in warm climates, or in hot diseases, may in some measure refresh the patient; but at present they are very rarely employed.

BURSA HASTORIS [Brun.] Folia.

Thlapsi bursa pastoris Lin.

Shepherds-purse; the leaves.

This plant is common in waste places, and is found in flower all the summer. Shepherds-purse has long been celebrated as an astringent, and strongly recommended in diarrhœas, dysenteries, uterine fluors and in general in all diseases where astringents of any kind can avail. Some have esteemed it so powerful a styptic, as scarce to be safely exhibited internally. Others have thought

thought it to be of a hot fiery nature, and supposed it to stop fluxes and hæmorrhagies, by coagulating the juices like alcohol, and burning or searing the orifices of the vessels. The sensible qualities of shepherds-purse discover little foundation for either of these opinions; it has no perceptible heat, acrimony, pungency, and scarcely any astringency: the taste is almost merely herbaceous, so as sufficiently to warrant the epithet given this plant by Mr Ray, *Fatum*. And although it be still retained in most of the foreign pharmacopœias, yet it is hardly in use in Britain.

BUXUS [*Brun.*] *Folia Lignum.*

Buxus sempervirens Lin.

Box tree; the leaves and wood.

The box is a small tree, growing wild in some parts of Kent and Surry. The wood is of a yellow colour, more solid, compact, and ponderous than any other of the European woods. The leaves have a strong nauseous taste, and, when fresh, a fetid smell: they are said to purge violently, in the dose of a dram. A decoction of the wood is recommended by some as powerfully sudorific, preferable even to guaiacum: but the taste readily discovers that it wants the qualities of that wood. Neither the wood nor leaves of the box tree are at present employed for any medicinal purpose in Britain; and they are now rejected by our colleges: But from their active qualities, particularly that of the leaves, they deserve some attention, and may perhaps be advantageously substituted to expensive articles imported from abroad.

CACOA [*Succ.*] *Nuclei.*

Theobroma cacao Lin.

Chocolate nuts.

These are the fruit of an American tree resembling the almond.

The tree, though small, bears a large fruit, shaped like a cucumber, which contains thirty or more of the nuts. These, by pressure, yield a considerable quantity of a fluid oil. Boiled in water, they give out a large portion of a sebaceous matter, which congeals on the surface of the liquor as it cools. The principal use of these nuts is for the preparation of the dietetic liquor chocolate. This is a mild, unctuous, nutritious fluid, capable of softening acrimonious humours, and of great service in consumptive disorders; especially if made with milk, and with only a small proportion of aromatics.

CAJEPUT [*Succ.*] *Oleum.*

Maleleuca leucadendron.

Cajeput oil.

This article has never yet had any place in our pharmacopœias; but it is introduced into some of the best foreign ones; and it is mentioned by several writers on the materia medica as an article in very high esteem among the eastern nations, particularly in India. It is said to be obtained by distillation, from the fruit of the maleleuca leucadendron. When brought into this country it is a liquid of a greenish colour, of a fragrant, but at the same time a very peculiar odour, and of a warm pungent taste. Some authors, however, represent this oil as being, when of the best quality, a white or colourless fluid; and it has been said by the authors of the *Dispensatorium Brunsvicense*, when prepared in Europe from the seeds sent from India, to be entirely of this appearance.

Hitherto the oleum cajeput has been but little employed, either in Britain or on the continent of Europe; but in India it is used both internally and externally, and is highly extolled for its medical properties.

erties. It is applied externally where a warm and peculiar stimulus is requisite; it is employed for restoring vigour after luxations and sprains, and for easing violent pain in gouty and rheumatic cases, in tooth-ach, and similar affections; but it has been chiefly celebrated as taken internally, and it is particularly said to operate as a very powerful remedy against tympanitic affections.

CALAMINARIS LAPIS

[*Lond. Ed.*]

Zincum calaminaris.

Calamy, or calamine stone.

This mineral is found plentifully in England, Germany, and other countries, either in distinct mines, or intermingled with the ores of different metals. It is usually of a greyish, brownish, yellowish, or pale reddish colour; considerably hard, though not sufficiently so to strike fire with steel. It has been looked upon by some as a simple earth, by others as an iron ore; later experiments have discovered it to be an ore of zinc. Calamine is generally roasted or calcined before it comes into the shops, in order to separate some sulphureous or arsenical matter which the crude mineral is supposed to contain, and to render it more easily reducible into a fine powder. In this state it is employed in collyria, against defluxions of thin acrid humours upon the eyes; for drying up moist, running ulcers; and healing excoriations. It is the basis of an officinal epulotic cerate, the *ceratum lapidis calaminaris*.

CALAMUS AROMATICUS

[*Lond. Ed.*] *Radix.*

Acorus calamus Lin.

Sweet flag; the roots.

This flag resembles, as to its leaves, the common *iris*; but in other

respects differs greatly from it: the stalk grows at a little distance from the leaves; the lower half, up to where the flowers come forth, is roundish; the part above this, broad, like the other leaves; the flowers are very small, whitish, and stand in a kind of head about the size of a finger. This plant grows plentifully in rivulets and marshy places about Norwich and other parts of this island, in the canals of Holland, in Switzerland, and in other countries of Europe. The shops have been usually supplied from the Levant with dried roots, which do not appear to be superior to those of our own growth.

The root of *acorus* is full of joints, crooked, somewhat flattened on the sides, internally of a white colour, and loose spongy texture; its smell is strong; the taste warm acrid, bitterish, and aromatic; both the smell and taste are improved by exsiccation. This root is generally looked upon as a carminative and stomachic medicine, and as such is sometimes made use of in practice. It is said by some to be superior in aromatic flavour to any other vegetable that is produced in these northern climates: but this assertion is by no means strictly true. It is, nevertheless, a sufficiently elegant aromatic. It was formerly an ingredient in the mithridate and theriac of the London pharmacopoeia; and in the aromatic and stomachic tinctures, and compound arum powder, of the Edinburgh; but it is now rejected from these, and it does not at present enter any official preparation. The fresh root, candied after the manner directed for candying *eryngo* root, is said to be employed at Constantinople as a preservative against epidemic diseases. The leaves of this plant have a sweet fragrant smell, more agreeable, though

though weaker, than that of the roots; but they have no place either in the British or foreign pharmacopœias.

CALENDULA [*Brun.*] *Flos.*
Calendula officinalis Lin.

Garden marigold; the flower.

This herb is common in gardens, where it is found in flower greatest part of the summer. Marigold flowers are supposed to be aperient and attenuating; and also cardiac, alexipharmac, and sudorific: they have been principally celebrated in uterine obstructions, in the jaundice, and for throwing out the small-pox. Their sensible qualities give little foundation for these virtues: they have scarcely any taste, and no considerable smell. The leaves of the plant discover a viscid sweetness, accompanied with a more durable saponaceous pungency and warmth: these seem capable of answering some useful purposes, as a stimulating and aperient medicine; but at present they are so little employed in Britain, that they have now no place in our pharmacopœias, and they are also rejected from several of the latest and best foreign ones.

CALX VIVA [*Lond. Ed.*]

Lapis calcareus purus recens ustus.

Quicklime.

Quicklime is usually prepared amongus, by calcining certain stones of the chalky kind. All chalks and marbles burn into quicklime; with this difference, that the more compact the stone, generally the stronger is the lime. In maritime countries, in defect of the proper stones, sea-shells are made use of, which afford a calx agreeing in most respects with the stone limes.

All these limes are, when fresh burnt, highly acrimonious and corrosive, being thus freed from fixt

air. In this state they are employed in some external applications as a depilatory; for rendering sulphur soluble in water, and for depriving alkalies of their fixt air, thus increasing their power, either for the purposes of a caustic, or to enable them more readily to dissolve oils for making soap. If the lime be exposed for a length of time to the air, it absorbs water; falls by degrees into a powder; and, attracting fixt air, loses greatly of its acrimony.

Water poured directly upon quicklime, takes up a portion of it: the solution has a strong taste, somewhat styptic, drying the mouth, and accompanied with a kind of sweetness. This liquor does not effervesce with acids, but is rendered by fixt air turbid and milky: as preventing the coagulation of milk, it is sometimes made use of along with milk diet; agitated with expressed oils, it unites with them into a thick compound, recommended by Dr Saire, and much used against burns and inflammations. Both the simple solution of the lime, and the solution impregnated with other materials, are directed as officinal, under the title of lime water.

Lime water, drank to the quantity of a quarter of a pint three or four times a-day, and continued for a length of time, has been found serviceable in serophulous cases, and other obstinate chronic disorders. It generally promotes urine, and not unfrequently the cuticular discharge: for the most part it binds the belly, and sometimes produces troublesome costiveness, unless this effect be occasionally provided against, by the interposition of proper medicines. It does good service in debility and laxity of the viscera in general; in those of the uterine and seminal vessels, fluor albus, chronic menorrhagia, and gleet, it is particularly

ricularly recommended. Care must be taken not to use this medicine too liberally in hot bilious constitutions, or where the patient is much emaciated, or the appetite weak, or at the time of any critical or periodical evacuations. It has been used as lithontriptic; and although incapable of dissolving calculi in the urinary organs, yet under its use calculous patients have experienced great relief. In the form of injection, it is very effectual in killing and bringing off ascarides.

CAMPHORA [Lond. Ed.]

Laurus camphora Lin.

Camphor.

Camphor is a very peculiar substance, obtained in the form of a solid concrete, chiefly extracted from the wood and roots of a tree growing in Sumatra and Japan. The former is by much the best. As it first sublimes from the wood, it appears brownish, composed of semipellucid grains mixed with dirt: in this state it is exported by the Dutch, and purified by a second sublimation; after which, it is reduced into loaves (in which it is brought to us) probably by fusion in close vessels; for it does not assume this form in sublimation. Camphor is procurable in small quantities from various other vegetables by distillation. It may be considered as a peculiar, concrete, very volatile essential oil.

Pure camphor is very white, pellucid, somewhat unctuous to the touch; of a bitterish, aromatic, acrid taste, yet accompanied with a sense of coolness; of a smell somewhat like that of rosemary, but much stronger. It is totally volatile, and inflammable; soluble in vinous spirits, oils, and the mineral acids; not in water, alkaline liquors, or the acids of the vegetable kingdom. This concrete is esteemed one of the most efficacious diaphoretics; and

has long been celebrated in fevers, malignant and epidemical distempers. In delirium, where opiates fail of procuring sleep, and aggravate the symptoms, this medicine frequently succeeds.

Dr Alexander, some time ago a practitioner in Edinburgh, made many experiments on this article, particularly by taking it himself in large doses. On taking a scruple of camphor, he found his pulse somewhat less frequent: on taking two, his pulse fell from 77 to 70, but returned to 77 in less than half an hour; at which time vertigo and a gradual abolition of consciousness came on, succeeded by violent retchings, convulsions, and mania, the pulse rising to 100. He then began to recover his recollection, felt extremely hot, with tremors of the whole body. By using warm water he threw up the camphor, the effects of which gradually wore off, only he felt his body for two days very sore and rigid.

Frederick Hoffman has written an express dissertation *De Camphoræ usu interno securissimo et præstantissimo*. The substance of his observations is, that camphor seems to penetrate very quickly through the whole body, and increase perspiration: that though given to the quantity of half a dram, dissolved in spirit of wine, and duly diluted, it does not raise the pulse, or occasion any heat but rather causes a sense of coolness about the præcordia: that on continuing its use for some time, the blood became sensibly more fluid, and the quantity of watery serum, which the habit before abounded with, was considerably diminished: that in malignant fevers, and all disorders, whether acute or chronic, proceeding from an acrid or putrescent state of the juices, camphor has excellent effects, correcting the acrimony, expelling the putrid morbid matter through the

cutaneous pores, and preventing an inflammation or sphacelus, where there is previously any disposition thereto: that, by strengthening the vessels, it restrains hæmorrhagics happening in acute fevers, and promotes critical and periodical evacuations: that it expels even the venereal virus; that he has known examples of the lues being cured by camphor alone, a purgative only being premised; and that in recent infections he has found no medicine equal to it in efficacy. In inflammatory cases, where there is a tendency to mortification, intense heat, thirst, or where the skin is dry and parched, whether before or after a delirium has come on, small doses of camphor joined with nitre produced happy effects, almost immediately relieving the symptoms, occasioning a calm sleep and plentiful sweat, without fatiguing the patient. He farther observes, that this simple, by its antiphlogistic quality, prevents the ill effects of the more irritating medicines; that cantharides, and the acrid stimulating cathartics and diuretics, by the admixture of a small proportion of camphor, become much more mild and safe in operation.

The common dose of camphor is from one grain to ten. It enters several officinal preparations, both for external and internal use; particularly the linimentum camphoræ, linimentum saponis, balsamum anodynum, oleum camphoratum, spirituosus camphoratus, mistura camphorata, tinctura opii camphorata, &c.

In modern practice, it is externally employed chiefly to diminish inflammation, to disperse tumour, to obviate gangrene, to stimulate in local palsy, and to allay rheumatic and paralytic pains. Internally, it is given in nervous affections, with a view of exciting the vis vitæ, and alleviating spasmodic complaints: with

the same view to the vis vitæ, to obviate putrescence, and to procure sleep, it is used in fevers of the typhoid kind. Some recommend it as singularly useful in cases of ardor urinæ; and others find it efficacious in what are called nervous headaches.

CANCROCORUM CHELÆ

[*Lond.*]

Cancer pagurus Lin.

Crabs claws.

These are the black tips of the claws of a particular species of sea-crab. After being broken down, and well washed in boiling water, they are reduced to powder, and employed as an absorbent. They consist of a calcareous animal earth, and of course neutralise those acids with which they come in contact in the primæ viæ. But besides an earth, they contain also a glutinous animal matter, which gives them a tendency to concrete in the stomach and bowels: hence absorbents from the mineral kingdom are perhaps preferable; but while these, as magnesia, often operate as cathartics, the chelæ cancerorum tend rather to bind the body; a circumstance which renders them preferable in some cases. They enter some officinal preparations, as the pulvis e chelis cancerorum compositus. The chelæ cancerorum have now no place in the Edinburgh pharmacopœia. They employ for the same purpose the article next to be mentioned, which is now rejected by the London college.

CANCROCORUM OCULI *dicti*

[*Ed.*]

Cancer astacus Lin.

Crabs eyes.

The Edinburgh college are, we think, in the right in retaining this article in preference to the former, as being a more pure absorbent earth; but it is with little propriety that

that they have retained the ancient name, which has often led to an absurd mistake: for the article denominated crabs eyes is a stony concretion found in the head, stomach, and other parts of a particular species of crab. Hence in the best foreign pharmacopoeias they are denominated *cancrorum calculi, lapili, &c.*

The *calculi cancrorum* are generally about the size of peas, or larger. They are of a spherical shape, but a little flattened on one side. They are of a white colour, but sometimes with a reddish or blueish cast, and internally of a laminated structure. The greatest part of them are the produce of Muscovy, particularly of the river Don, where the dead crabs are laid upon the banks in heaps, to putrify, after which the stones are picked out.

The earth of crab stones is said to differ materially from the preceding article, in not being convertible into quicklime; but their medical differences are very inconsiderable; solutions of the two articles in vinegar, or other vegetable or animal acids, being nearly alike. As well as the former article, they are employed as absorbents, and are sometimes very useful in the diarrhoeas of children, arising from acidity, where any objection occurs to the employment of magnesia.

Crabs stones are said by most writers on the materia medica to be frequently counterfeited with tobacco pipe clay, or compositions of chalk with mucilaginous substances. This piece of fraud, if really practised, may be very easily discovered; the counterfeits wanting the leafy texture which is observed upon breaking the genuine; more readily imbibing water; adhering to the tongue; and dissolving in vinegar, or the stronger acids diluted with water, either entirely, or not at all,

or by piecemeal; whilst the true crabs eyes, digested in these liquors, become soft and transparent, their original form remaining the same: this change is owing to the earthy part, on which depended their opacity and hardness, being dissolved by the gentle action of the acid, which leaves the conglutinating matter un-
hurt.

CANELLA ALBA [*Lond. Ed.*]
Cortex.

Winterania canella Lin.

Canella alba.

This bark is brought to us rolled up into long quills, thicker than cinnamon, and both outwardly and inwardly of a whitish colour, lightly inclining to yellow. It is the produce of a tall tree growing in great plenty in the low lands in Jamaica, and other American islands. Infusions of it in water are of a yellowish colour, and smell of the canella; but they are rather bitter than aromatic. Tinctures in rectified spirit have the warmth of the bark, but little of its smell. Proof-spirit dissolves the aromatic as well as the bitter matter of the canella, and is therefore the best menstruum.

The canella is the interior bark, freed from an outward thin rough one, and dried in the shade. The shops distinguish two sorts of canella, differing from each other in the length and thickness of the quills; they are both the bark of the same tree, the thicker being taken from the trunk, and the thinner from the branches. This bark is a warm pungent aromatic, not of the most agreeable kind: nor are any of the preparations of it very grateful.

Canella alba is often employed where a warm stimulant to the stomach is necessary, and as a corrigent of other articles. It is now, however, little used in composition by the London college; the
only

only officinal formula which it enters being the pulvis aloeticus: but with the Edinburgh college it is an ingredient in the tinctura amara, vinum amarum, vinum rhei, &c. It is useful as covering the taste of some other articles.

CANNABIS [*Brun.*] Semen.

Cannabis sativa Lin.

Hemp; the seed.

This plant when fresh, has a rank narcotic smell: the water in which the stalks are soaked, in order to facilitate the separation of the tough rind for mechanic uses, is said to be violently poisonous, and to produce its effects almost as soon as drank. The seeds also have some smell of the herb; their taste is unctuous and sweetish; on expression they yield a considerable quantity of insipid oil; hence they are recommended (boiled in milk, or triturated with water into an emulsion) against coughs, heat of urine, and the like. They are also said to be useful in incontinence of urine, and for restraining venereal appetites; but experience does not warrant their having any virtues of this kind. But although the seeds only have hitherto been principally in use, yet other parts of the plant seem to be more active, and may be considered as deserving farther attention.

CANTHARIS [*Lond. Ed.*]

Meloe vesicatoris Lin.

The Spanish fly.

These insects are of a shining green colour, intermingled with more or less of a blue and a gold yellow. They are found adhering to different kinds of trees and herbs, in Spain, Italy, and France; the largest come from Italy, but the smaller kind from Spain are preferred.

Cantharides are extremely acrimonious; applied to the skin, they first inflame, and afterwards exco-

riate the part, raising a more perfect blister than any of the vegetable acids, and occasioning a more plentiful discharge of serum. Even the external application of cantharides is often followed by a strangury accompanied with thirst and feverish heat; this inconvenience may be remedied by soft unctuous or mucilaginous liquors liberally drank. The strangury is probably owing to the action of the absorbed active parts on the neck of the bladder.

Cantharides taken internally, often occasion a discharge of blood by urine, with exquisite pain: if the dose be considerable, they seem to inflame and exulcerate the whole intestinal canal; the stools become mucous and purulent; the breath fetid and cadaverous; intense pains are felt in the lower belly; the patient faints, grows giddy, raving mad, and dies. All these terrible consequences have sometimes happened from a few grains. Herman relates, that he has known a quarter of a grain inflame the kidneys, and occasion bloody urine with violent pain. There are nevertheless cases in which this stimulating fly, given in larger doses, proves not only safe but of singular efficacy for the cure of diseases that yield little to medicines of a milder class. In phlegmatic habits, where the viscera are overloaded, and the kidneys and ureters obstructed with thick viscid mucous matter, cantharides have excellent effects: here the abounding mucus defends the solids from the acrimony of the fly, till it is itself expelled; when the medicine ought to be discontinued. Groenvelt employed cantharides with great success in dropsies, obstinate suppressions of urine, and ulcerations of the bladder; giving very considerable doses made into boluses with camphor; and interposing large draughts of emulsions, milk,

milk, or other emollient liquids; by this means the excessive irritation which they would otherwise have occasioned, was in a great measure prevented. The camphor did not perhaps contribute so much to this effect as is generally imagined; since it has no sensible quality that promises any considerable abatement of the acrimony of cantharides: nitre would answer all that the camphor is supposed to perform: this, with milk, or emollient mucilaginous liquors, drank in large quantity are the best correctors. Cantharides, in very small doses, may be given with safety also in other cases. Dr Mead observes, that the obstinate gleetings which frequently remain after the cure of venereal maladies, and which rarely yield to balsamic medicines, are effectually remedied by cantharides; and that no one remedy is more efficacious in leprous disorders, in which last, proper purgatives are to be occasionally taken during the use of the cantharides. The best and safest preparation of cantharides for these purposes, is a spirituous tincture; and indeed in all cases the tincture is far preferable, for internal use, to the fly in substance.

On an idea of the stimulus accumulated about the genital organs being propagated to parts in the neighbourhood, the internal use of the tincture has also been recommended in diabetes, leucorrhoea, amenorrhoea, &c. but from the dangerous, effects sometimes observed from seemingly inconsiderable doses, cantharides are now almost entirely confined to external application.

They are sometimes used as merely rubefacient, as in friction, with the tincture on indolent swellings, or in form of weak plaster, but most commonly in form of suil blister, chiefly with a view of relieving

torpor, of determining the impetus of the blood from the part affected to the part of application, of discharging serum, and of relieving spasms in certain internal parts.

The virtues of cantharides are extracted by rectified spirit of wine, proof-spirit, and water; but do not arise in distillation. The watery and spirituous extracts blister as freely as the fly in substance; whilst the fly remaining after the several menstrua have performed their office, is to the taste insipid, and does not in the least blister, or inflame the skin; hence the *unguentum ex infuso cantharidum*: But besides this, cantharides are the active basis of several other officinal preparations, as the *tinctura cantharidis*, *emplasticum cantharidis*, *unguentum cantharidis*, &c.

CAPPARIS [*Brun.*] *Radicis cortex et florum gemmæ.*

Capparis spinosa Lin.

Caper bush; the bark of the root, and buds of the flowers.

This is a low prickly bush, found wild in Italy and other countries; it is raised with us by sowing the seeds upon old walls where they take root between the bricks, and endure for many years.

The bark of the root is pretty thick, of an ash colour, with several transverse wrinkles on the surface; cut in slices and laid to dry, it rolls up into quills. This bark has a bitterish acrid taste; it is reckoned aperient and diuretic; and recommended in several chronic disorders, for opening obstructions of the viscera.

The buds, pickled with vinegar, &c. are used at table. They are supposed to excite appetite, and promote digestion: and to be particularly useful, as detergents and aperients, in obstructions of the liver and spleen. Their taste and virtues depend

depend more upon the saline matter introduced into them, than on the caper buds.

CARDAMINE [Lond. Ed.]

Flos.

Cardamine pratensis Lin.

Ladies Smock; the flower.

The cardamine is a perennial plant, which grows in meadow grounds, sends forth purplish flowers in the spring; and in its sensible qualities resembles the *nasturtium aquaticum*. Long ago it was employed as a diuretic; and of late it has been introduced in nervous diseases, as epilepsy, hysteria, choræa, asthma, &c. A dram or two of the powder is given twice or thrice a-day. It has little sensible operation, except that it sometimes sweats.

CARDAMOMUM MINUS

[Lond. Ed.] Semen.

Amomum cardamomum Lin.

Lesser cardamom.

Formerly a place was given in our pharmacopœias to different kinds of cardamom seeds, and particularly to the large as well as the small; but the latter, though scarce half the size of the former, are considerably stronger both in smell and taste. Hence this sort has long supplied the place of the other in the shops, and is the only one now directed.

Cardamom seeds are a very warm, grateful, pungent aromatic, and frequently employed as such in practice: they are said to have this advantage, that notwithstanding their pungency, they do not, like those of the pepper kind, immoderately heat or inflame the bowels. Both water and rectified spirit extract their virtues by infusion, and elevate them in distillation; with this difference, that the tincture and distilled spirit are considerably more grateful than the infusion and distil-

led water: the watery infusion appears turbid and mucilaginous; the tincture made in spirit, limpid and transparent. The husks of the seeds, which have very little smell or taste, may be commodiously separated, by committing the whole to the mortar, when the seed will readily pulverize, so as to be freed from the shell by the sieve: this should not be done till just before using them; for if kept without the husks, they soon lose considerably of their flavour.—The officinal preparations of these seeds are spirituous tinctures, simple and compound: they are employed also as a spicy ingredient in several of the officinal compositions.

CARDIACA [Gen.] Folia.

Leonurus cardiaca Lin.

Motherwort; the leaves.

This plant is common in waste places, and found in flower greatest part of the summer. The leaves have a bitter taste, and a pretty strong smell; they are supposed to be useful in hysteric disorders, to strengthen the stomach, to promote urine; and indeed it may be judged from their smell and taste, that their medicinal virtues are considerable, though they are now rejected both from the London and Edinburgh pharmacopœias.

CARDUUS BENEDICTUS

[Lond. Ed.] Herba.

Centaurea benedicta Lin.

Blessed thistle; the leaves.

This is an annual plant, cultivated in gardens: it flowers in June and July, and perfects its seeds in the autumn. The herb should be gathered when in flower, dried in the shade, and kept in a very dry airy place, to prevent its rotting or growing mouldy, which it is very apt to do. The leaves have a penetrating bitter taste, not very strong or very durable, accompanied with

an ungrateful flavour, which they are in great measure freed from by keeping. Water extracts, in a little time, even without heat, the lighter and more grateful parts of this plant; if the digestion be continued for some hours, the disagreeable parts are taken up; a strong decoction is very nauseous and offensive to the stomach. Rectified spirit gains a very pleasant bitter taste, which remains uninjured in the extract.

The virtues of this plant seem to be little known in the present practice. The nauseous decoction is sometimes used to provoke vomiting; and a strong infusion to promote the operation of other emetics. But this elegant bitter, when freed from the offensive parts of the herb, may be advantageously applied to other purposes. We have frequently experienced excellent effects from a light infusion of carduus in loss of appetite, where the stomach was injured by irregularities. A stronger infusion made in cold or warm water, if drank freely, and the patient kept warm, occasions a plentiful sweat, and promotes all the secretions in general.

The seeds of this plant are also considerably bitter, and have been sometimes used with the same intention as the leaves.

CARICA [Lond. Ed.] Fructus.
Ficus carica Lin.

The fig; the dried fruit.

The principal use of these is as a soft, emollient sweet; with this intention they enter the pectoral decoction and lenitive electuary of the shops. They are also esteemed by some as suppuratives, and hence have a place in maturing cataplasms; and they are sometimes applied by themselves as warm as they can easily be borne, to promote the suppuration of a phlegmon, par-

ticularly when so situated that other cataplasms cannot easily be kept applied.

CARLINA [Gen.] Radix.
Carlina acaulis Lin.

Carlina thistle; the root.

This is a very prickly sort of thistle, growing spontaneously in the southern parts of France, Spain, Italy, and the mountains of Switzerland; from whence the dried roots are brought to us. This root is about an inch thick, externally of a pale rusty brown colour, corroded as it were on the surface, and perforated with numerous small holes, appearing when cut as if worm-eaten. It has a strong smell, and a subacid, bitterish, weakly aromatic taste. Carlina is looked on as a warm diaphoretic and alexipharmac; and has been for some time greatly esteemed by foreign physicians, but never came much into use among us: the present practice has entirely rejected it; nor is it often to be met with in the shops. Hoffman relates, that he has observed a decoction of it in broth to occasion vomiting.

CARPOBALSAMUM [Brun.] Fructus.

Amyris Gileadensis Lin.

Carpobalsam; the fruit.

This is the fruit of the tree that yields the opobalsam or balsam of Gilead. It is about the size of a pea, of a whitish colour, inclosed in a dark brown wrinkled bark. This fruit, when in perfection, has a pleasant warm glowing taste, and a fragrant smell, resembling that of the opobalsamum itself. It is very rarely found in the shops; and such as we now and then do meet with, has almost entirely lost its smell and taste. It had formerly a place in the mithridate and theriaca formulæ, now banished from our pharmacopœias; but even then the college permitted

permitted cubebs to be employed as a substitute for the carpobalsamum, which could seldom be procured; and it is probably on this account that it has now no place in our lists.

CARTHAMUS [*Brun.*] *Semen.*
Carthamus tinctorius *Lin.*

Bastard saffron; the seeds.

The bastard saffron is a soft kind of thistle, with only a few prickles about the edges of the leaves. It is cultivated in large quantity in some places of Germany, from whence the other parts of Europe are supplied with the flowers as a colouring drug, and the seeds as a medicinal one. The flowers, well cured, are not easily distinguishable by the eye from saffron; but their want of smell readily discovers them. The seeds are white, smooth, of an oblong roundish shape, yet with four sensible corners, about a quarter of an inch in length, so heavy as to sink in water; of a viscid sweetish taste, which in a little time becomes acrid and nauseous. These seeds have been celebrated as a cathartic: they operate very slowly, and for the most part disorder the bowels, especially when given in substance; triturated with aromatic distilled waters, they form an emulsion less offensive, yet inferior in efficacy, to more common purgatives.

CARUON [*Lond. Ed.*] *Semen.*
Carum carvi *Lin.*

Caraway; the seeds.

Caraway is an umbelliferous plant, cultivated with us in gardens, both for culinary and medicinal use. The seeds have no aromatic smell, and a warm pungent taste. These are in the number of the four greater hot seeds; and frequently employed as a stomachic

and carminative in flatulent colics, and the like.

They were formerly the basis of several officinal preparations, and entered many compositions by way of a corrigent. But altho' they be now less frequently employed than before, yet a place is still given to their essential oil and distilled spirit; and they enter the compound spirit of juniper, the tincture of fenna, and some other compositions.

CARYOPHYLLUM AROMATICUM [*Lond. Ed.*]

Caryophyllus aromaticus *Lin.*

Cloves.

Cloves are the fruit of a tree growing in the East-Indies. In shape, they somewhat resemble a short thick nail.

Cloves have a very strong agreeable aromatic smell, and a bitterish pungent taste, almost burning the mouth and fauces. The Dutch, from whom we have this spice, frequently mix it with cloves which have been robbed of their oil: these, though in time they regain from the others a considerable share both of taste and smell, are easily distinguishable by their weaker flavour and lighter colour. Cloves, considered as medicines, are very hot stimulating aromatics, and possess in an eminent degree the general virtues of substances of this class. An extract made from them with rectified spirit is excessively hot and pungent; the distilled oil has no great pungency; an extract made with water is nauseous, and somewhat styptic. The only officinal preparation of them is the essential oil. Both the cloves themselves and their oil are ingredients in many officinal compositions.

CARYOPHYLLUM RUBRUM [*Lond. Ed.*] *Flos.*

Dianthus caryophyllus *Lin.*

Clove July-flowers.

A great variety of these flowers are met within our gardens: those made use of in medicine ought to be of a deep crimson colour, and a pleasant aromatic smell, somewhat like that of cloves: many sorts have scarce any smell at all. The *caryophylla rubra* are said to be cardiac and alexipharmac. Simon Paulli relates, that he has cured many malignant fevers by the use of a decoction of them: which he says powerfully promotes sweat and urine, without greatly irritating nature, and also raises the spirits and quenches thirst. At present the flowers are chiefly valued for their pleasant flavour, which is entirely lost even by light coction; hence the college direct the syrup, which is the only officinal preparation of them, to be made by infusion.

CARYOPHYLLATA [*Brun.*]

Radix.

Geum urabaranum *Lin.*

Avens; the root.

Avens is a rough plant found wild in woods and hedges. The root has a warm, bitterish, astringent, taste, and a pleasant smell, somewhat of the clove kind, especially in the spring, and when produced in dry warm soils. Parkinson observes, that such as is the growth of moist soils has nothing of this flavour. This root has been employed as a stomachic, and for strengthening the tone of the viscera in general: it is still in some esteem in foreign countries, though not taken notice of among us. It yields on distillation an elegant odoriferous essential oil, which concretes into a flaky form.

Besides the gum urbanum, another species of the geum, the rivale,

has a place in some pharmacopœias, under the title of *Caryophyllata aquatica*. The root of this species, which is larger than the other, is said to be employed by the Indians in South America for the cure of intermittents, and to be equally successful with the Peruvian bark. Dr Withering mentions, that the powder of the root is used for this purpose by the Canadians. But we do not know that with this intention it has been much employed in Britain.

CASCARILLA [*Lond. Ed.*]

Cortex.

Croton cascarilla *Lin.*

Cascarilla; the bark.

This bark is imported into Europe from the Bahama islands, and particularly from one of them of the name of Elatheria; from which circumstance it was long known by the title of Eleutheria. The cascarilla is in general brought to us either in curled pieces, or rolled up into short quills, about an inch in width, somewhat resembling in appearance the Peruvian bark. It is covered on the outside with a rough whitish matter; and in the inside it is of a brownish cast. When broken, it exhibits a smooth close dark brown surface.

This bark, when freed from the outer whitish coat, which is insipid and inodorous, has a light agreeable smell, and a moderately bitter taste, accompanied with a considerable aromatic warmth. It is easily inflammable, and yields when burning a very fragrant smell somewhat resembling that of musk, a property which distinguishes the cascarilla from all other barks. It was first introduced into Europe about the end of the last century, and seems first to have been used in Germany, where it is still in very high esteem. There it is frequently employed against

gainst common intermittent fevers, in preference to the Peruvian bark, as being less subject to some inconveniences, which the latter on account of its great astringency is apt to occasion. It is also said to have been employed with great success in some very dangerous epidemic fevers attended with petechiæ: and it is frequently attended with advantages in flatulent colics, internal hæmorrhagies, dysenteries, diarrhoeas, and similar disorders. In Britain it has been used by some practitioners, particularly by the late Dr Kier of London, who was of opinion that it was by no means employed so generally as it deserved to be.

Its virtues are partially extracted by water, and totally by rectified spirit, but it is most effectual when given in substance.

CASSIA FISTULARIS

[Lond. Ed.] *Fruktus.*

Cassia fistula Lin.

Cassia of the cane; the fruit.

This is the fruit of an oriental tree resembling the walnut.

This fruit is a cylindrical pod, scarce an inch in diameter, a foot or more in length: the outside is a hard brown bark; the inside is divided by thin transverse woody plates, covered with a soft black pulp of a sweetish taste, with some degree of acrimony. There are two sorts of this drug in the shops; one brought from the East-Indies, the other from the West: the canes or pods of the latter are generally large, rough, thick-rinded, and the pulp nauseous; those of the former are less, smoother, the pulp blacker, and of a sweeter taste; this sort is preferred to the other. Such pods should be chosen as are weighty, new, and do not make a rattling noise (from the seeds being loose within them) when shaken. The

pulp should be of a bright shining black colour, and of a sweet taste, not harsh, which happens from the fruit being gathered before it has grown fully ripe, or sourish, which it is apt to turn upon keeping: it should neither be very dry nor very moist, nor at all mouldy; which, from its being kept in damp cellars, or moistened, in order to increase its weight, it is very subject to be. Greatest part of the pulp dissolves both in water and in rectified spirit; and may be extracted from the cane by either. The shops employ water, boiling the bruised pod therein, and afterwards evaporating the solution to a due consistence.

The pulp of cassia is a gentle laxative medicine, and frequently given in a dose of some drams, in costive habits. Some direct a dose of two ounces or more as a cathartic, in inflammatory cases, where the more acrid purgatives have no place: but in these large quantities it generally nauseates the stomach, produces flatulencies, and sometimes gripings of the bowels, especially if the cassia be not of a very good kind: these effects may be prevented by the addition of aromatics, and exhibiting it in a liquid form. Geoffroy says, it does excellent service in the painful tensions of the belly, which sometimes follow the imprudent use of antimonials; and that it may be advantageously acuated with the more acrid purgatives, or antimonial emetics, or employed to abate their force. Vallisnieri relates, that the purgative virtue of this medicine is remarkably promoted by manna; that a mixture of four drams of cassia and two of manna, purges as well as twelve drams of cassia, or thirty-two of manna alone. Sennertus observes, that the urine is apt to be turned of a green colour by the use of cassia:

and sometimes, where a large quantity has been taken, blackish. This drug gives name to an officinal electuary, and is an ingredient also in another.

CASSIA LIGNEA [*Ed.*] *Cortex, flores nondum explicatæ.*

Laurus cassia Lin.

Cassia; the bark and flowers.

This bark, which is imported from different parts of the East Indies and from China, has a very exact resemblance to the cinnamon, and is obtained from a species of the same genus of tree. It is distinguishable from the cinnamon by being of a thicker and coarser appearance, and by its breaking short and smooth, while the cinnamon breaks fibrous and shivery.

This bark resembles cinnamon still more exactly in its aromatic flavour than in its external appearance, and seems only to differ from it in being somewhat weaker, in abounding more with a viscous mucilaginous matter, and in being less astringent. Accordingly, it has not only a place in the Edinburgh pharmacopœia, but is also the basis of a distilled water. It is perhaps surprising that the London college have given it no place in their lists. But although it does not enter their pharmacopœia, yet we may venture to assert, that it will not be neglected by the apothecaries. At present it is very common with many of them to substitute the cassia in every case for the more expensive article cinnamon: and indeed almost the whole of what is at present sold under the title either of simple or spirituous cinnamon-water, is entirely prepared from cassia, and not even entirely from the bark, but from a mixture of the bark and buds

CASTOREUM [*Lond. Ed.*]

Castor fiber Lin.

Castor.

Castor appears to be a peculiar fatty deposition found in cells or bags situated near the rectum in the beaver, a four-footed amphibious animal, frequent in several parts of Europe and America. The best comes from Russia: this is in large round hard cods, which appear, when cut, full of a brittle red liver-coloured substance, interspersed with membranes and fibres exquisitely interwoven. An inferior sort is brought from Dantzick; this is generally fat and moist. The worst of all is that of New-England, which is in longish thin cods. But of late, some apparently not inferior to the Russian castor, has been brought from Hudson's bay.

Castor has a strong not agreeable smell, and an acrid, biting, bitterish nauseous taste. Water extracts the nauseous part, with little of the finer bitter; rectified spirit extracts this last, without much of the nauseous: proof-spirit both: water elevates the whole of its flavour in distillation; rectified spirit brings over nothing.

Castor is looked upon as one of the capital nervine and antihysterical medicines: some celebrated practitioners have nevertheless doubted its virtues; and Newmann and Stahl declare it insignificant. Experience, however, has shown, that the virtues of castor are considerable, though they are certainly far less than they have been generally supposed to be. Its officinal preparations are a spirituous tincture, and a compound tincture of castor. It is an ingredient in some other compositions, as the compound powder of myrrh.

CASUMUNAR [*Brun.*]

This is a tuberous root, an inch

or more in thickness, marked on the surface with circles or joints like galangal, of a brownish or ash colour on the outside, and a dusky yellowish within; it is brought from the East-Indies, cut into transverse slices: what kind of plant it produces is not known.

Casumunar has a warm bitterish taste, and an aromatic smell, somewhat resembling that of ginger. It has been celebrated in hysteric cases, epilepsies, palsies, loss of memory, and other disorders: the present practice sometimes employs it as a stomachic and carminative, but it is not so much used or known as it deserves to be.

CATECHU, *Vulgo terra Japonica* [Lond Ed.]

Mimosa catechu Lin.

Catechu; the extract.

This vegetable extract, which has long had, but very improperly, the name of *terra Japonica*, is the product of a plant growing in the East-Indies. A particular account of the vegetable from whence it is obtained, as well as of the method of preparation, was some time ago published by Dr Kerr in the London Medical Observations. The only earth which it contains, consists entirely of adhering impurities from the furnaces or kilns in which it is prepared. Hence it is with great propriety, that in some of the foreign pharmacopœias a *succus japonicus depuratus*, is introduced, although not adopted either by the London or Edinburgh colleges.

The extract of catechu in its purest state is a dry and pulverable substance. Outwardly it is of a reddish colour, internally of a shining dark brown, with a slight cast of red. It is a mild, but at the same time a powerful astringent. It is more agreeable in taste than most other substances of that class. It leaves

in the mouth a kind of sweetness and mucilaginous feel. It may be usefully employed for most purposes where an astringent is indicated, provided the most powerful be not requisite. But it is particularly useful in alvine fluxes; and where these require the use of astringents, we are acquainted with no one equally beneficial. Besides this, it is employed also in uterine profluvia, in laxity and debility of the viscera in general, in catarrhal affections, and various other diseases where astringents are indicated. It is often suffered to dissolve leisurely in the mouth, as a topical astringent for laxities and exulcerations of the gums, for aphthous ulcers in the mouth, and similar affections: And it is in some other cases applied externally both under the form of solution and of ointment.

Catechu dissolves almost entirely in water excepting its impurities. But these are in general so considerable in point of quantity, that Dr Lewis computes them to constitute one-eighth part of the mass. Of the pure matter, rectified spirit dissolves about seven-eighths into a deep red liquor; the part which it leaves undissolved is an almost insipid mucilaginous substance.

Catechu is the basis of several fixed formulæ in our pharmacopœias, particularly of a tincture and an electuary: But one of the best forms under which it can be exhibited is that of simple infusion in warm water, with a proportion of cinnamon or cassia; for by this means it is at once freed from its impurities, and improved by the addition of the aromatic.

CENTAURIUM MAJOR *Radix.*

Centaurea centaurium Lin.

Greater centaury: the root.

The greater centaury is a large plant

plant, cultivated in gardens. The root has a rough somewhat acrid taste, and abounds with a red viscid juice: its rough taste has gained it some esteem as an astringent; its acrimony as an aperient; and its glutinous quality as a vulnerary: the present practice takes little notice of it with any intention.

CENTAURIUM MINUS

[*Lond. Ed.*] *Cacumen.*

Gentiana centaurium Lin.

Lesser centaury; the top.

This grows wild in many parts of England, in dry pasture grounds, and amongst corn. The tops are an useful aperient bitter.

CEPA [*Succ*] *Radix.*

Allium cepa Lin.

Onion; the root.

Onions differ from other bulbous-rooted plants, in having single roots, or such as cannot be parted so as to increase the plant. These roots are considered rather as articles of food than of medicine: they are supposed to afford little or no nourishment, and when eaten liberally produce flatulencies, occasion thirst, headaches, and turbulent dreams: in cold phlegmatic habits, where viscid mucus abounds, they doubtless have their use; as by their stimulating quality they tend to excite appetite, attenuate thick juices, and promote their expulsion: by some they are strongly recommended in suppressions of urine and in dropsies. The chief medicinal use of onions in the present practice is in external applications, as a cataplasm for suppurating tumours, &c.

CERA FLAVA [*Lond Ed.*]

Yellow bees wax.

This is a solid concrete obtained from the honeycombs after the honey is got out, by heating and pressing them betwixt iron plates. The

best sort is of a lively yellow colour, and an agreeable smell, somewhat like that of honey when new, it is toughish yet easy to break; by age it becomes harder and more brittle, it loses its fine colour, and in great measure its smell.

CERA ALBA [*Lond. Ed.*]

White wax.

White wax is prepared from the yellow, by reducing it into thin flakes, and exposing it for a length of time to the air; when sufficiently bleached, it is melted, and cast into cakes. The best sort is of a clear and almost transparent whiteness, and of a light agreeable smell like that of the yellow wax, but much weaker.

The chief medical use of wax is in cerates, plasters, unguents, &c. as an emollient for promoting suppuration, &c. It readily unites with oils and animal fats, but not with watery or spirituous liquors. It is given also internally in diarrhoeas and dysenteries, when mixed with oily substances.

CERASUS [*Succ.*] *Folia, fructus, gemmi.*

Prunus cerasus Lin.

The cherry; the leaves, fruit, and gum.

Of this fruit a considerable number of varieties are cultivated in our gardens; particularly the sweet cherry with a black juice; the pleasantly-sourish cherry, with a colourless juice; and the very sour cherry, with a blood-red, juice; commonly called black, red, and morello cherries.

These fruits, especially the acid sorts, are very useful and agreeable coolers and quenchers of thirst; and are sometimes directed with this intention, in hot bilious, or febrile distempers. Boerhaave was extremely fond of these and the other fruits called *horæi*, aperients in some

some chronic cafes; and declares himself perfuaded, that there is no kind of obftruction of the viscera capable of being removed by medicine, which will not yield to the continued ufe of these. They are rather, however, used as an article of diet or luxury, than in the way of medicine. And accordingly have no place in the London or Edinburgh pharmacopœias.

Besides the fruit of the cherry, the leaves also are now introduced into the Swedish pharmacopœia; but they do not enter any of their fixed formulæ, and we know not for what purpose they are particularly intended.

The gum of the cherry is a pretty pure vegetable mucilage, nearly approaching to gum arabic.

CEREFOLIUM [*Succ.*] *Herba.*

Sandix cerefolium Lin.

Chervil; the plant.

This is a low annual plant somewhat like parsley, commonly cultivated in gardens for culinary purposes. This plant is grateful both to the palate and stomach, gently aperient, and diuretic. Geoffroy assures us, that he has found it from experience to be of excellent service in dropsies: that, in this disorder, it promotes the discharge of urine when suppressed; renders it clear, when feculent and turbid; and when high and fiery, of a paler colour; that it acts mildly without irritation, and tends rather to allay than excite inflammation. He goes so far as to say, that dropsies which do not yield to this medicine, are scarce capable of being cured by any other. He directs the juice to be given in the dose of three or four ounces every fourth hour, and continued for some time, either alone, or in conjunction with nitre and syrup of the five opening roots.

CHALYBS, vide **FERRUM**.

CHAMÆDRYS. [*Succ.*] *Herba.*
Teucrium chamædrys.

Germander; the herb.

This is a low shrubby plant, cultivated in gardens. The leaves, tops, and seeds have a bitter taste, with some degree of astringency and aromatic flavour. They are recommended as sudorific, diuretic, and emmenagogue, and for strengthening the stomach and viscera in general. With some they have been in great esteem in intermittent fevers, and also in scrophulous and other chronic disorders; but at present they are very little in use, and have now no place either in the London or Edinburgh pharmacopœias.

CHAMÆMELUM [*Lond. Ed.*]
Flos simplex.

Anthemis nobilis Lin.

Chamomile; the single flower.

These have a strong not ungrateful aromatic smell, and a very bitter nauseous taste. They are accounted carminative, aperient, emollient, and in some degree anodyne; and stand recommended in flatulent colics, for promoting the uterine purgations, in spasmodic pains, and the pains of childbed women: sometimes they have been employed in intermittent fevers, and in nephritis. These flowers are frequently also used externally in discutient and antiseptic fomentations, and in emollient gylsters: they enter the decoctum pro enema, et decoctum pro fomento of our pharmacopœias. An essential oil was formerly directed to be prepared from them, but it is now omitted. A simple watery infusion of them taken in a tepid state is, at present frequently employed to promote the operation of emetics.

CAMÆPITHYS [*Succ.*] *Herba.*

Teucrium chamæpithys.

Ground-pine; the herb.

This is a low hairy plant, clammy to the touch, of a strong aromatic resinous smell, and a bitter roughish taste. It is recommended as an aperient and vulnerary, and also in gouty and rheumatic pains.

CHEIRI [*Brun.*] *Flos.*

Cheiranthus cheiri *Lin.*

Wall-flower.

This grows upon old walls and among rubbish, in several parts of England. The flowers have a pleasant smell, and a subacid, bitterish, not agreeable taste: they are said to be cordial, anodyne, aperient, and emmenagogue, but are wholly neglected by practice.

CHELIDONIUM MAJUS

[*Brun.*] *Herba, radix.*

Chelidonium majus *Lin.*

Celandine: the leaves and root.

This plant grows upon old walls, among rubbish, and in waste shady places. The herb is of a blueish green colour; the root of a deep red; both contain a gold-coloured juice; their smell is disagreeable; the taste somewhat bitterish, very acrid, biting and burning the mouth; the root is the most acrid. The juice of celandine has long been celebrated in disorders of the eyes; but it is too sharp, unless plentifully diluted, to be applied with safety to that tender organ. It has been sometimes used, and it is said with good success, for extirpating warts, cleansing old ulcers, and in cataplasms for the herpes miliaris. This acrimonious plant is rarely given internally; the virtues attributed to it are those of a stimulating aperient, diuretic, and sudorific: it is particularly recommend-

ed in the slow kind of jaundice, where there are no symptoms of inflammation, and in dropsies; some suppose the root to have been Helmont's specific in the hydrops ascites. Half a dram or a dram of the dry root is directed for a dose; or an infusion in wine of an ounce of fresh root.

CHELIDONIUM MINUS

[*Brun.*] *Radix.*

Ranunculus ficaria *Lin.*

Pilewort; the root.

This is a very small plant, found in most meadows and by hedgesides: the roots consist of slender fibres, with some little tubercles among them, which are supposed to resemble the hæmorrhoids; from thence it has been concluded, that this root must needs be of wonderful efficacy for the cure of that distemper: to the taste, it is little other than mucilaginous: and altho' still retained in several of the foreign pharmacopœias, it is hardly in use in this country.

CHINA [*Succ.*] *Radix.*

Smilax china *Lin.*

China root.

This root is brought from the East-Indies. But besides the oriental china root, there is also a root under the same name brought from the West-Indies, obtained from a different species of the same genus. They are both longish, full of joints, of a pale reddish colour, of no smell, and very little taste: the oriental, which is the most esteemed, is considerably harder and paler coloured than the other. Such should be chosen as is fresh, close, heavy, and upon being chewed appears full of a fat unctuous juice. China root was either unknown or disregarded by the ancient physicians. It was first introduced into Europe about the year 1535, with the character

rafter of a specific againft venereal and cutaneous diforders; and as fuch was made ufe of for fome time, but at length gave place to medicines of a more powerful kind. It is generally fuppofed to promote infenfible perfpiration and the urinary difcharge; and by its unctuous quality to obtund acrimonious juices.

CICHOREUM [*Succ.*] *Radix, herba.*

Cichoreum intybus *Lin.*

Wild succory; the roots and herb.

The root has a moderately bitter tafte, with fome degree of roughnefs; the leaves are fomewhat lefs bitter: the roots, stalks, and leaves yield, on being wounded, a milky faponaceous juice. By culture this plant lofes its green colour and its bitternefs, and in this ftate is employed in falads: the darker coloured and more deeply jagged the leaves, the bitterer is their tafte. Wild succory is an ufeful detergent, aperient, and attenuating medicine; acting without much irritation, tending rather to cool than to heat the body, and at the fame time corroborating the tone of the intefines. The juice taken in large quantities, fo as to keep up a gentle diarrhœa, and continued for fome weeks, has been found to produce excellent effects in cutaneous affections and other chronical difeafes.

CICUTA [*Lond. Ed.*] *Herba, flos, fermen.*

Conium maculatum *Lin.*

Hemlock; the leaves, flower, and feed.

This is a large umbelliferous plant, common about the fides of fields, under hedges, and in moift shady places: the leaves are winged, divided into a great number of fmall fern like fections, of a dark or blackifh green colour, and appear-

ing as it were rough; the stalk is hollow (as is likewife great part of the root after the stalk has arifen), and spotted with feveral blackifh, red, or purple fots. Hemlock is fometimes applied externally in the form of decoction, infufion, or poultice, as a difcutient. Thefe are apt to excoriate, and their vapour is to fome particularly difagreeable and hurtful. The stalks are infignificant, and the roots very virulent. With regard to its virtue when taken internally, it has been generally accounted poisonous; which it doubtlefs is, in a high degree, when ufed in any confiderable quantity. But Dr Stoerk has lately found, that in certain fmall dofes it may be taken with great fafety; and that, without at all difordering the conftitution, or even producing any fenfible operation, it fometimes proves a powerful refolvent in many obftinate diforders. In fcirrhus, the internal and external ufe of hemlock has been found ufeful, but then mercury has been generally ufed at the fame time. In open cancer, it often abates the pains, and is free from the conftipating effects of opium. It is likewife ufed in ferophulous tumours and ulcers, and in other ulcers that are only defined by the term ill-conditioned. It is alfo recommended by fome in chincough, and various other difeafes. Its common, and perhaps beft form is that of the powdered leaves, in the dofe at firft of two or three grains a-day, which in fome cafes has been gradually increafed to upwards of two ounces a-day, without producing giddinefs. An extract from the feeds is faid to produce giddinefs fooner than that from the leaves. Hence, while both the London and Edinburgh colleges have given a place to the fuccus fciffatus cicutæ, into the pharmacopœia of the latter an extract

tum feminum cicutæ is also introduced.

CINARA [*Lond. Ed.*] *Folium.*

Cynara scolymus Lin.

Artichoke; the leaves.

The artichoke is a large rough plant, with greyish leaves, which is well known in our gardens, as being very commonly cultivated for culinary purposes. The leaves are bitter; and on being pressed give out their bitterness along with their juice. This expressed juice is given in dropsies, and in some instances has proved successful after other medicines have failed. For this purpose, the expressed juice passed only through a coarse strainer, is mixed with an equal quantity of white wine, and of this mixture two or three table spoonfuls are taken every morning and evening. It operates by promoting diuresis. For this purpose, an infusion of the leaf is also used; and both the leaves and stalks enter into many of the diuretic decoctions used by the country people.

CINNABARIS NATIVA

[*Brun.*]

Native cinnabar.

This is a ponderous mineral of a red colour, found in Spain, Hungary, and several other parts of the world. The finest sort is in pretty large masses, both externally and internally of an elegant deep red colour, which is much improved upon grinding the mass into fine powder. There is another sort, of a good colour, in roundish drops, smooth without, and striated within.

This mineral appears from chemical experiments to be composed of mercury and sulphur, in such a manner, that the quantity of the former is commonly above six times greater than that of the latter: the

finer the colour of the cinnabar, the more mercury it is found to hold. Native cinnabar has been by many preferred as a medicine to that made by art: but there does not appear to be any just foundation for this preference. The native has sometimes been observed to occasion nausea, vomiting, and anxiety: these probably proceeded from an admixture of some arsenical particles which it could not be freed from by repeated ablution. When pure, it has no quality or medical virtue distinct from those of the artificial cinnabar, now styled *Hydrargyrus sulphuratus ruber*, and afterwards to be mentioned among the mercurial preparations.

CINERES CLAVELLATA

[*Lond.*]

Kali impurum.

Russia potash.

Potash is an impure alkaline salt, produced from all land plants, except the tetradynamia class, by burning with a close smothering heat. In this state they are called weed ashes, which contain, besides alkali, charcoal, sulphur, and a little vitriolated tartar. These foreign matters are partly separated, by mixing the ashes with water, and passing it through a vessel with holes at the bottom covered with straw. It is then evaporated to the consistence of honey, and afterwards burnt in an oven, from which it acquires a little stony matter. In this state, from its colour it is called pearl ashes, the *sal alcalinus fixus vegetabilis* [*Ed.*] If lime be mixed with the ashes, and passed through the vessel as before, the alkali is considerably deprived of its fixed air, is consequently caustic, has a darker colour, and gives a reddish solution, having dissolved some of the iron of the pot it is prepared

pared in, and from which it is called potash. Large quantities of it are brought to us from America, Russia, and other places. Other kinds of impure vegetable alkali appear in commerce, under the names of cashub, marcoft althes, &c.

CINNAMOMUM [Lond. Ed.]

Cortex et ejus oleum essentielle.

Laurus cinnamomum Lin.

Cinnamon; the bark and its essential oil.

This is a light thin bark, of a reddish colour, rolled up in long quills or canes; of a fragrant, delightful smell, and an aromatic, sweet, pungent taste, with some degree of astringency. It is generally mixed with the cassia bark: this last is easily distinguishable by its breaking over smooth, whilst cinnamon splinters; and by its slimy mucilaginous taste, without any thing of the roughness of the true cinnamon. Cinnamon is a very elegant and useful aromatic, more grateful both to the palate and stomach, than most other substances of this class: by its astringent quality it likewise corroborates the viscera, and proves of great service in several kinds of alvine fluxes, and immoderate discharges from the uterus. An essential oil, a distilled water, a distilled spirit, and a tincture of it, are directed to be kept in the shops; but these are much more frequently prepared from cassia than from cinnamon; and in those formulæ in which distillation is employed, the difference perhaps is not very material: but whether it be exhibited under the form of powder or infusion, astringency is only to be looked for from the genuine cinnamon; and this is often required where it is employed as a spicy ingredient in a great number of compositions.

CITRULLUS [Brun.] Semen.

Cucurbita citrullus Lin.

Citrus; the feed.

This plant is rarely met with among us, unless in botanic gardens. The seeds are in the number of the four greater cold seeds, and agree in quality with the others of that class.

CITRUS [Suec.] Corticis flavendo, oleum, succus.

Citrus medica Lin.

Citron; the yellow rind, oil, and juice.

The citron is an evergreen tree or shrub, of the same genus with the orange and lemon: it was first brought from Assyria and Media, (whence the fruit is called *mala Assyria*, *mala Medica*) into Greece, and thence into the southern parts of Europe, where it is now cultivated. Citrons are rarely made use of among us: they are of the same quality with lemons, except that their juice is somewhat less acid. They enter, however, a considerable number of formulæ in several of the foreign pharmacopœias, and with us are frequently employed as a condiment.

COCCINELLA [Lond. Ed.]

Coccus casti Lin.

Cochineal.

This is a small, irregular, roundish body, of a dark red colour on the outside, and a deep bright red within: it is brought from Mexico and New Spain. This substance was long supposed to be the seed of a plant; but it appears from chemical experiments to be an animal, and from the accounts of the more celebrated naturalists, an insect, which breeds on the American prickly-pear tree, and adheres thereto without changing its place. Cochineal has been strongly recommended as a sudorific, cardiac, and alexipharmic;

mac: but practitioners have never observed any considerable effects from it. Its greatest consumption is among the scarlet dyers; and in medicine its principal use is as a colouring drug: both watery and spirituous liquors extract its colour. In the London and Edinburgh pharmacopœias, some of the tinctures receive from this drug a fine red colour.

COCHLEARIA HORTENSIS

[*Lond. Ed.*] *Folia.*

Cochlearia officinalis Lin.

Garden scurvy-grafs; the leaves.

COCHLEARIA MARINA

Folia.

Cochlearia Anglica Lin.

Sea scurvy-grafs; the leaves.

These plants have little other difference, as to their external appearance, than that expressed in their titles; in taste and medical virtue, the first is considerably the strongest; and hence is alone retained both by the London and Edinburgh colleges; but where either is employed, the latter, collected on our sea-coasts, is perhaps most frequently used.

Scurvy-grafs is a pungent stimulating medicine; capable of dissolving viscid juices, opening obstructions of the viscera and the more distant glands, and promoting the fluid secretions: it is particularly celebrated in scurvies, and is the principal herb employed in these kinds of disorders in the northern countries.

COFFEA [*Brun.*] *Semen.*

Coffea Arabica Lin.

Coffee; the fruit.

Coffee is the fruit of an oriental shrub now cultivated in the West-Indies. This fruit is employed rather as food than as a medicine. The medical effects expected from

it are to assist digestion, promote the natural secretions, and prevent or remove a disposition to sleepiness. It has been recommended in spasmodic asthma; and in some cases it is found highly useful in alleviating severe head-ach.

COLCHICUM [*Lond. Ed.*]

Radix.

Colchicum autumnale Lin.

Meadow saffron; the root.

This plant grows wild in meadows, in the more temperate parts of Europe. The roots, freed from the outer blackish coat and fibres below, are white, and full of a white juice. In drying they become wrinkled and dark coloured. Applied to the skin, it shows some signs of acrimony; and taken internally, it is said sometimes to excite a sense of burning heat, bloody stools, and other violent symptoms. In the form of syrup, however, it has been given to the extent of two ounces a-day without any bad consequence. It is sometimes employed as a diuretic in dropsy.

From its great activity it was long ranked among the poisonous vegetables; but from this circumstance it claimed the attention of Dr Stoerk of Vienna, who made it the subject of many experiments. According to his account, the recent root taken in substance, even to a very small extent, produced alarming effects; but he found that an oxymel prepared from it might be used with safety, and proved a powerful diuretic. Since his publication it has been a good deal used by other practitioners; but it has by no means supported the character which he gave of it, even when employed in much larger doses than Dr Stoerk seems to have exhibited. On some occasions, however, it operates as a powerful diuretic; and accordingly it is not only

only introduced into most of the modern pharmacopœias, but is also the basis of different formulæ. The London college, in imitation of the original prescription of Dr Storer, have introduced into their pharmacopœia an oxymel colchici; but the Edinburgh college, from an objection to honey, which with some people is apt to excite violent colic pains, have substituted to this a syrupus colchici; in which, however, nearly the same proportions are retained, sugar being merely employed in place of honey. This syrup, in place of two or three drams merely, has been given to the extent of two or three ounces in a day, in general without any inconvenience, and sometimes with good effects: but like the other diuretics, it cannot be depended upon.

COLOCYNTHIS [Lond. Ed.]

Fructus medulla.

Cucumis colocynthis Lin.

Coloquintida, or bitter apple; the medullary part of the fruit.

This is the produce of a plant of the gourd kind, growing in Turkey. The fruit is about the size of an orange; its medullary part, freed from the rind and seeds, is alone made use of in medicine: this is very light, white, spongy, composed of membranous leaves; of an extremely bitter, nauseous, acrimonious taste. Colocynth is one of the most powerful and most violent cathartics. Many eminent physicians condemn it as dangerous, and even deleterious: others recommend it not only as an efficacious purgative, but likewise as an alternative in obstinate chronical disorders. Thus much is certain, that colocynth, in the dose of a few grains, acts with great vehemence, disorders the body and sometimes occasions a discharge of blood. Many attempts have been

made to correct its virulence by the addition of acids, astringents, and the like; these may lessen the force of the colocynth, but no otherwise than might be equally done by a reduction of the dose. The best method of abating its virulence, without diminishing its purgative virtue, seems to be by triturating it with gummy farinaceous substances, or the oily seeds, which, without making any alteration in the colocynth itself, prevent its resinous particles from cohering, and sticking upon the membranes of the intestines, so as to irritate, inflame, or corrode them. It is an ingredient in some of the purgative pills, and the cathartic extracts of the shops, particularly of the extractum colocynthis compositum, and pilulæ ex colocynthide cum aloë.

COLOMBA [Lond. Ed.] *Radix.*

Colomba; the root.

The botanical characters of the vegetable from whence this root is obtained are not yet ascertained. It is brought from Colombo in Ceylon in the form of knobs, having a rough surface, and consisting of a cortical, woody, and medullary lamina. It has a disagreeably bitter taste, an aromatic flavour; in experiment is considerably antiseptic, and particularly effectual in correcting and preventing the putridity of bile. Abroad it is much used in diseases attended with bilious symptoms, particularly in cholera; and is said to be sometimes very effectual in other cases of vomiting. Some consider it as very useful in dyspepsia. Half a dram of the powder is given repeatedly in the day. Water is not so complete a menstruum as spirits, but to their united action it yields a flavoured extract in very considerable quantity. Its use in medicine has been par-

particularly recommended to the attention of practitioners by Dr Percival of Manchester in his *Experimental Essays*; and it has in general been found to answer expectation: but it is to be regretted, that it is not so regularly imported as to admit of our shops being supplied with it of good quality. Hence when prescribed it is often exhibited in a very decayed state.

CONSOLIDA [*Succ.*] *Radix.*

Symphitum officinale Lin.

Comfrey; the root.

This is a rough hairy plant, growing wild by river-sides and in watery places. The roots are very large, black on the outside, white within, full of a viscid glutinous juice, of no particular taste. They agree in quality with the roots of althæa; with this difference, that the mucilage of *consolida* is somewhat stronger bodied. Many ridiculous histories of the *consolidating* virtues of this plant are related by authors. At present it is so little employed in practice in Britain, as to have no place in our pharmacopœias.

CONTRAYERVA [*Lond. Ed.*]

Radix.

Dorstenia contrayerva Lin.

Contrayerva; the root.

This is a knotty root, an inch or two in length, about half an inch thick, of a reddish brown colour externally, and pale within: long, rough, slender fibres shoot out from all sides of it; these are generally loaded with small round knots. This root is of a peculiar kind of aromatic smell, and a somewhat astringent, warm, bitterish taste, with a light and sweetish kind of acrimony when long chewed: the fibres have little taste or smell; the tuberous part therefore should be alone chosen. Contrayerva is one of the mildest of

those substances called alexipharmacs: it is indisputably a good and useful diaphoretic, and may be safely given in much larger doses than the common practice is accustomed to exhibit it in. Its virtues are extracted both by water and rectified spirit, and do not arise in evaporation with either: the spirituous tincture and extract taste stronger of the root than the aqueous ones.

CONVALLARIA [*Ed.*] *Radix.*

Convallaria polygonatum Lin.

Solomon's seal; the roots.

The root of this common plant contains a sweetish mucilage, and has been used in form of poultice in inflammations; but whether this or any other is better than the common poultice of bread and milk is doubtful. A decoction of this root in milk has also been mentioned in certain cases of hæmorrhagy. The flowers, berries, and leaves, are said to be poisonous.

COPAL [*Brun.*] *Resina.*

Rhus copallinum Lin.

Copal.

Copal, supposed by some a mineral substance, appears to be a resin obtained from several sorts of large trees growing in New Spain. This resin is brought to us in irregular lumps, some transparent, of a yellowish or brown colour, others semitransparent and whitish. It has never come into use as a medicine, and is rarely met with in the shops; but it is introduced into some of the foreign pharmacopœias, and may be considered as an article well deserving attention.

CORALLINA [*Brun.*]

Corallina officinalis Lin.

Coraline, or sea-moss.

This is a branched cretaceous substance

stance of a white colour, the habitation and production of polypi, growing on rocks, and sometimes on the shells of fishes. It is celebrated as a vermifuge, on what foundation is very doubtful: to the taste it is entirely insipid, and probably operates only as an absorbent earth.

CORRALLIUM RUBRUM

[*Lond.*]

Isis nobilis Lin.

Red coral.

This is also a marine production, of the same nature with the foregoing. It cannot reasonably be looked upon in any other light than as a mere absorbent; as such it enters the officinal crabs-claw powder, and is sometimes in practice directed by itself; but it is so little employed, and of so little activity, that the Edinburgh college have with justice rejected it from their list.

CORIANDRUM [*Lond. Ed.*]

Semen.

Coriandrum sativum Lin.

Coriander; the seed.

Coriander is an umbelliferous plant, differing from all the others of that class in producing *spherical* seeds. These, when fresh, have a strong disagreeable smell, which improves by drying, and becomes sufficiently grateful; they are recommended as carminative and stomachic. They were formerly an ingredient in the officinal compound lime-water and electuary of bayberries; but both these formulæ are now rejected.

CORNU CERVI [*Lond.*]

The stag or hart's horns.

Many extraordinary virtues have been attributed to these horns, and to all the parts of the animal in general: but experience gives no countenance to them; nor do they seem to have any other foundation

than the great timidity of the hart, the annual renewal of his horns, and an opinion of his extraordinary longevity. From these circumstances it was inferred, that all the parts of him must be proper for intimidating the enraged Archeus, renewing health and strength, and prolonging life. They are to be considered as of the same nature with bones; and their products by heat are those of animal substances in general. As such they were at one time so much employed for yielding the volatile alkali, that they even gave a name to that article.

The horns boiled in water, give out an emollient nutritious jelly. Burnt to whiteness, they yield an earth, employed in the officinal white decoction, or as it is now more properly styled, the *Decoctum cornu cervi*.

COTULA FOETIDA [*Brun.*]

Folia.

Anthemis cotula.

Mayweed, or wild chamomile.

This plant is common among corn, and in waste places. In appearance it resembles some of the garden chamomiles, but is easily distinguishable from them by its strong fetid scent. It is rarely or never used in the present practice.

CRETA [*Lond.*]

White chalk.

This is an earth soluble in vinegar and the lighter acids, so as to destroy every sensible mark of their acidity. This earth is one of the most useful of the absorbents, and is to be looked upon simply as such: the astringent virtues which some attribute to it, have no foundation, unless in so far as the earth is saturated with acid, with which it composes a saline concrete manifestly subastringent. It gives name to an officinal mixture, in a powder, and

M potion,

potion, and is an ingredient in the cardialgic troches. It is employed also for extricating the volatile salt of sal ammoniac.

CROCUS [*Lond.*] *Floris stig-
ma.*

Crocus sativus Lin.

Saffron; the chives.

These chives, or fleshy capillaments, growing at the end of the pistil of the flower, are carefully picked and pressed together into cakes.

There are three sorts of saffron met with in the shops, two of which are brought from abroad, the other is the produce of our own country; this last is much superior to the two former, from which it may be distinguished by its blades being broader. When in perfection it is of a fiery orange red colour, and yields a deep yellowish tincture: it should be chosen fresh, not above a year old, in close cakes, neither dry, nor yet very moist, tough and firm in tearing, of the same colour within as without, and of a strong, acrid, diffusive smell.

Saffron is a very elegant and useful aromatic; besides the virtues which it has in common with all the bodies of that class, it has been alleged that it remarkably exhilarates, raises the spirits, and is deservedly accounted one of the highest cordials; taken in large doses, it is said to occasion immoderate mirth, involuntary laughter, and the ill effects which follow from the abuse of spirituous liquors. This medicine is said to be particularly serviceable in hysteric depressions, or obstruction of the uterine secretions, where other aromatics, even those of the more generous kind, have little effect. Saffron imparts the whole of its virtue and colour to rectified spirit, proof spirit, wine, vinegar, and

water: a tincture drawn with vinegar, loses greatly of its colour in keeping; the watery and vinous tinctures are apt to grow sour, and then lose their colour also: that made in pure spirit keeps in perfection for many years. Its officinal preparations are, a spirituous tincture and syrup. It is an ingredient in the cordial confection paregoric elixir, and several of the aloetic compositions: but of late years, the estimation in which it was held as a medicine has been rather on the decline. Some experiments made by Dr Alexander serve to show that it is much less powerful than was once imagined: and it was lately given in the Edinburgh Infirmary by Dr Henry Cullen, even to the extent of half an ounce a-day, in several hysterical cases, without any sensible effect whatever.

CUBEBA [*Lond. Ed.*]

Piper cubeba Lin.

Cubeb.

Cubeb are a fruit brought from the East-Indies. This fruit has a great resemblance to pepper. The principal difference distinguishable by the eye, is that each cubeb is furnished with a long slender stalk (whence they are called by some *piper caudatum.*) In aromatic warmth and pungency, cubeb are far inferior to pepper. They were formerly an ingredient in mithridate and theriaca; but they do not now enter any of the fixed formulæ of our pharmacopœias.

CUCUMIS HORTENSIS *Se-
men.*

Cucumis sativus Lin.

Garden cucumbers; the seeds.

These are in the number of the four greater cold seeds; they are less apt to grow rancid in keeping than the others of that class.

CUCUMIS AGRESTIS [L.]

*Fruktus recens.**Momordica elaterium Lin.*

Wild cucumber; the fruit.

This plant, found wild in foreign countries, is with us cultivated in gardens. Its principal botanic difference from the former, is the smallness of its fruit, which is no bigger than a Spanish olive: when ripe, it bursts on a little touch, and sheds its seeds with violence, and hence was named by the Greeks *elaterium*. This name is applied likewise to the fecule of the juice of the fruit, the only preparation of the plant made use of in medicine. The juice, on standing, separates into the fecule, which falls to the bottom, and a watery fluid which swims above. The clear part may be decanted off, and the rest of the liquid drained off by cotton threads hung over the sides of the vessel acting like syphons. The fecule may be farther dried by the sun, or a slow heat; and in this dry state it has the name of *elaterium*. *Elaterium* is a strong cathartic, and very often operates also upwards. Two or three grains are accounted in most cases a large dose. Simon Pauli relates some instances of the good effects of this purgative in dropfies; but cautions practitioners not to have recourse to it till after milder medicines have proved ineffectual; to which caution we heartily subscribe. Medicines indeed in general, which act with violence in a small dose, require the utmost skill to manage them with any tolerable degree of safety: to which may be added, that the various manners of making these kinds of preparations, as practised by different hands, must needs vary their power. But of late, the *elaterium* has been not unfrequently employed in obstinate cases of dropfy with success; and when exhibited in doses of only half a grain, repeated

at short intervals till its operation commences, it is in general sufficiently moderate in its effects.

CUCURBITA [Suec.] Semen.

Cucurbita lagenaria Lin.

The gourd; the seeds.

These are in the number of the four greater cold seeds. They unite with water by trituration into an emulsion, and yield to the press a soft insipid oil, and possess the general virtues of unctuous substances.

CUMINUM [Lond. Ed.] Semen.

Cuminum cyminum Lin.

Cummin; the seed.

The cummin is an umbelliferous plant, in appearance resembling fennel, but much smaller. The seeds used in Britain are brought chiefly from Sicily and Malta. Cummin seeds have a bitterish warm taste, accompanied with an aromatic flavour, not of the most agreeable kind. An essential oil is obtained from them by distillation, in which their activity is concentrated; and they are not unfrequently used externally, giving name both to a plaster and cataplasm.

CUPRUM [Lond.]

Cuprum nativum Lin.

Copper.

Copper is one of the metals often used for different purposes in arts; found both in Britain, and in most other countries of Europe. It has never been used as a medicine in its proper metallic form; but it is readily acted upon by all saline substances, both by acids, alkalies, and neutrals; and it is even corroded by moisture.

Most of these preparations of copper are violently emetic, and therefore very rarely exhibited internally. Some have ventured upon

a solution of a grain or two of the metal in vegetable acids, and observe, that it acts almost as soon as received into the stomach, so as to be of great use for occasioning poisonous substances that have been swallowed, to be immediately thrown up again. Boerhaave recommends a saturated solution of this metal in volatile alkaline spirits, as a medicine of great service in disorders proceeding from an acid, weak, cold, phlegmatic cause: if three drops of this tincture be taken every morning with a glass of mead, and the dose doubled every day to twenty-four drops, it proves, he says, aperient, attenuating, warming, and diuretic: he assures us, that by this means he cured a confirmed ascites, and that the urine run out as from an open pipe; but at the same time he acknowledges, that upon trying the same medicine on others, it failed him. He likewise recommends other preparations of copper, as of wonderful efficacy in certain kinds of ill habits, weakness of the stomach, &c. but we cannot think the internal use of this metal advisable in ordinary cases, which can be combated by other means. Physicians in general seem to be agreed, that it has really a virulent quality; and too many examples are met with of fatal consequences ensuing upon eating food which has been dressed in copper vessels not well cleaned from the rust which they had contracted by lying in the air.

Great care ought to be taken that acid liquors, or even water, designed for internal use, be not suffered to stand long in vessels made of copper; otherwise they will dissolve so much of the metal as will give them disagreeable qualities. Hence in the distillation of simple waters with copper stills, the last runnings, which are manifestly acid, have frequently proved emetic. It is remarkable,

that whilst weak acid liquors are kept boiling in copper vessels, they do not seem to dissolve any of the metal; but if suffered to remain in them for the same length of time without boiling, they become notably impregnated with the copper. Hence the confectioners, by skilful management, prepare the most acid syrups in copper vessels, without giving them any ill taste from the metal. But although copper be thus dangerous, some preparations of it are in certain cases used with great advantage both externally and internally.

The chief preparations of copper are, the blue vitriol, verdegriis, and cuprum ammoniacum; but the London college have given a place only to the two former. The blue vitriol is recommended by some as an useful emetic, particularly in cases of incipient phthisis with a view of resolving tubercles. It is sometimes employed as an astringent and escharotic; and verdegriis is used in form of ointment in certain ulcerations, in cases of tinea capitis and the like. Of the cuprum ammoniacum, which although it has no place in the pharmacopoeia of the London college, we consider to be a very active and powerful medicine, we shall afterwards treat, under the head of *Preparations*, in the third part of this work: here we may only observe, that it has produced a perfect cure in some instances of epilepsy.

CURCUMA [*Lond. Ed.*] *Radix.*

Curcuma longa Lin.

Turmeric; the root.

Turmeric is a root brought from the East-Indies, where it is used not only in medicine, but for colouring and seasoning food, as rice. It is internally of a deep lively yellow or saffron colour, which it readily imparts to watery liquors. It has

an agreeable, weak smell, and a bitterish somewhat warm taste. Turmeric is esteemed aperient and emmenagogue, and of singular efficacy in the jaundice. It tinges the urine of a saffron colour.

CURSUTA [*Ed.*] *Radix.*

Gentiana purpurea Lin.

Curfuta: the root.

The foreign root sold under this name was introduced into the last edition of the Edinburgh pharmacopœia, but perhaps without sufficient ground; and accordingly it has not found a place in the list of any other college. It is now believed, that what has had the name of curfuta, is the root of the purple gentian; but what is usually sold under that title in our shops cannot, either by its appearance, taste, or other sensible qualities, be distinguished from the common gentian, the root of the *gentiana lutea*, afterwards to be mentioned. And as far as the medical properties of the curfuta have been ascertained, they are precisely the same with those of gentian.

This foreign root has a very bitter taste, and is used by some in dyspepsia.

CYANUS [*Brun.*] *Flores.*

Centaurea cyanus Lin.

Bluebottle; the flowers.

This is a common weed among corn. The flowers are of an elegant blue colour, which if carefully and hastily dried, they retain for a considerable time. As to their virtues, the present practice expects not any from them; notwithstanding they have been formerly celebrated against the bites of poisonous animals, contagious diseases, palpitations of the heart, and many other distempers.

CYDONIUM MALUM [*Lond.*

Ed.] *Fructus, semen.*

Pyrus cydonia Lin.

The quince; its fruit and seeds.

Quinces have a very austere acid taste; taken in small quantity, they are supposed to restrain vomiting and alvine fluxes; and more liberally to loosen the belly. The seeds abound with a mucilaginous substance of no particular taste, which they readily impart to watery liquors: an ounce will render three pints of water thick and ropy like the white of an egg. A mucilage of the seeds is kept in the shops. A syrup of the fruit had formerly a place, but it is now rejected.

CYNOGLOSSUS [*Brun.*] *Radix.*

Cynoglossus officinalis Lin.

Houndstongue; the root;

The leaves of this plant are in shape thought to resemble a tongue, whence its name; they are clothed with a whitish down: it grows wild in shady lanes. The roots have a rank disagreeable smell, and rough bitterish taste, covered with a glutinous sweetness. The virtues of this root are very doubtful: it is generally supposed to be narcotic, and by some to be virulently so; others declare, that it has no virtue of this kind, and look upon it as a mere glutinous astringent. The present practice takes no notice of it with any intention.

CYNOSBATUS [*Lond.*] *Fructus.*

Rosa canina Lin.

Dog-rose; the fruit called hips.

This bush grows wild in hedges throughout England. The flowers have a pleasant smell; but so weak, that Parkinson and others have named the plant *Rosa sylvestris inodora*: a water distilled from them smells agreeably. The fruit or hips contain a fourth sweetish pulp; with a rough prickly matter inclosing the seeds,

feeds, from which the pulp ought to be carefully separated before it be taken internally: the Wirtemberg college observes, that from a neglect of this caution, the pulp of hips sometimes occasions a pruritus and uneasiness about the anus; and the conserve of it has been known to excite violent vomiting. The conserve is the only officinal preparation of this fruit. And as it is not supposed to possess any particular medical virtue, but is merely used to give form to other articles, the Edinburgh college have perhaps, without any material disadvantage, entirely omitted it.

CYPERUS [Brun.] *Radix.*

Cyperus longus Lin.

Cyperus; the root.

This is a plant of the graminifolious kind; it is sometimes found wild in marshy places in England; the roots have been generally brought to us from Italy. This root is long, slender, crooked, and full of knots; outwardly of a dark brown, or blackish colour, inwardly whitish; of an aromatic smell, and an agreeable warm taste: both the taste and the smell are improved by moderate exsiccation. Cyperus is accounted a good stomachic and carminative, but at present very little regarded.

DACTYLUS [Brun.] *Fructus.*

Phoenix dactylifera Lin.

The date; the fruit.

Dates are imported into Britain in the state of a half dried fruit, about the shape of an acorn, but generally larger, consisting of a sweet pulpy part and a hard stone: the best are brought from Tunis. They were formerly used in pectoral decoctions; and supposed, besides their emollient and incrassating virtue, to have a slight astringency.

DAUCISCRETICUS [Brun.] *semen.*

Athamanta Cretensis Lin.

Candy carrot; the seeds.

This is an umbelliferous plant, growing wild in the Levant and the warmer parts of Europe. The seeds, which are brought from Crete, have a warm biting taste, and not a disagreeable aromatic smell. They are carminative, and said to be diuretic, but at present little used.

DAUCUS SYLVESTRIS [Lond. Ed.]

Daucus carota Lin.

Wild carrot; the seed.

This is common in pasture grounds and fallow fields throughout England. The seeds possess the virtues of those of the *daucus creticus*, in an inferior degree; and have often supplied their place in the shops, and been themselves supplied by the seeds of the garden carrot: these last are in warmth and flavour the weakest of the three: the seeds of the candy carrot are much the strongest.

DENS LEONIS, vide TARAXACUM.

DICTAMNUS ALBUS [Ed.]

Radix.

Dictamnus albus Lin.

White or bastard dittany; the root.

This plant grows wild in the mountainous parts of France, Italy, and Germany. From thence the cortical part of the root, in a dry state, rolled up in little quills, is sometimes brought to us. It is of a white colour, of a weak not very agreeable smell, and of a durable bitter lightly pungent taste. It has been recommended as an alexipharmac, a tonic, and an anthelmintic; but it is very seldom used, and has

no place in the London pharmacopœia.

DICTAMNUS CRETICUS

[*Succ.*] *Folia.*

Origanum dictamnus Lin.

Dittany of Crete; the leaves.

This is a kind of origanum said to grow plentifully in the island of Candy, in Dalmatia, and in the Morea: it has been found hardy enough to bear the ordinary winters of our own climate. The leaves, which are the only part in use with us come from Italy. The best sort are well covered over with a thick white down, and now and then intermixed with purplish flowers. In smell and taste they somewhat resemble lemon thyme; but have more of an aromatic flavour, as well as a greater degree of pungency; when fresh, they yield a considerable quantity of an excellent essential oil. But they have now no place either in the London or Edinburgh pharmacopœias.

DIGITALIS [*Lond. Ed.*] *Herba.*

Digitalis purpurea Lin.

Fox glove; the plant.

This grows wild in woods, and on uncultivated heaths: the elegant appearance of its purple flowers (which hang in spikes along one side of the stalk) has gained it a place in some of our gardens. The leaves have been strongly recommended, externally against scrophulous tumours; and likewise internally, in epileptic disorders: what service they may be capable of doing in these cases is not ascertained by accurate experiment. Several examples are mentioned by medical writers of their occasioning violent vomiting, hypercatharsis, and disordering the whole constitution; inasmuch that Boerhaave accounts them poison-

ous. Their taste is bitter and very nauseous.

Digitalis, however, has lately been employed with great success in other diseases. A treatise has lately been published by Dr Withering, professedly on the subject of its use in medicine; and containing many important and useful observations.

An infusion of two drams of the leaf in a pint of water, given in half-ounce doses every two hours or so, till it begin to puke or purge, is recommended in dropsy, particularly that of the breast. It is said to have produced an evacuation of water so copious and sudden, in ascites, by stool and urine, that the compression of bandages was found necessary. The plentiful use of diluents is ordered during its operation. The remedy, however, is inadmissible in very weakly patients. But besides being given in infusion, it has also been employed in substance. And when taken at bed-time to the extent of one, two, or three, grains of the dried powder, it often in a short time operates as a very powerful diuretic, without producing any other evacuation. Even this quantity, however, will sometimes excite very severe vomiting, and that too occurring unexpectedly. During its operation it has often very remarkable influence in rendering the pulse slower; and it frequently excites very considerable vertigo, and an affection of vision.

Besides dropsy, the digitalis has of late been also employed in some instances of hæmoptysis, of phthisis, and of mania, with apparent good effects. But its use in these diseases is much less common than in dropsy.

DOLICAOS [*Ed.*] *Pubes leguminis rigida.*

Dolichos pruriens Lin.

M 4

Cow-

Cowhage; the rigid down of the pod.

The dolichos is a plant growing in great abundance in warm climates, particularly in the West-India islands; and there it is very troublesome to cattle and other domestic animals. For on account of the spiculæ of the seed-bag, it excites, when touched, a very uneasy itching. These spiculæ have been long used in South America, in cases of worms; and have of late been frequently employed in Britain. The spiculæ of one pod mixed with syrup or molasses, and taken in the morning fasting, is a dose for an adult. The worms are said to appear with the second or third dose; and by means of a purge in some cases the stools are said to have consisted almost entirely of worms; and in cases of lumbrici, it is said to produce a safe and effectual cure. Those who have used it most, particularly Dr Bancroft and Dr Cochrane, affirm that they have never seen any inconvenience resulting from the internal use of it, notwithstanding the great uneasiness it occasions on the slightest touch to any part of the surface.

DORONICUM GERMANICUM, vide ARNICA.

DULCAMARA [Ed.] *Stipites*.

Solanum dulcamara Lin.

Bitter-sweet, or woody nightshade; the stalks.

This plant grows wild in moist hedges, and climbs on the bushes with woody brittle stalks. The taste of the twigs and roots, as the name of the plant expresses, is both bitter and sweet; the bitterness being first perceived, and the sweetness afterwards. The dulcamara was formerly much esteemed as a powerful medicine. It is in general said to occasion some considerable evacua-

tion by sweat, urine, or stool, particularly the latter. It has been recommended as a discutient and resolvent medicine; and it has been said to be attended with good effects in cutaneous obstinate diseases of the herpetic kind. It has also been used, and sometimes with advantage, in cases of rheumatism, jaundice, and obstructed menstruation. It has principally been employed under the form of watery infusion, sometimes under that of extract.

EBULUS [*Succ.*] *Radix, folia bacca*.

Sambucus ebulus Lin.

Dwarf-elder; the root, leaves, and berries.

This plant grows wild in some counties of England; but about London is rarely met with, unless in gardens: the eye distinguishes little difference between it and the elder tree except in the size; the elder being a pretty large tree, and the dwarf elder only an herb three or four feet high. The leaves, roots, and bark of *ebulus* have a nauseous, sharp, bitter taste, and a kind of acrid ungrateful smell: they are all strong cathartics, and as such are recommended in dropsies, and other cases where medicines of that kind are indicated. The bark of the root is said to be strongest; the leaves the weakest. But they are all too drastic medicines for general use: they sometimes evacuate violently upwards, almost always nauseate the stomach, and occasion great uneasiness of the bowels. By boiling, they become like the other drastics milder, and more safe in operation. Fernelius relates, that by long coction they entirely lose their purgative virtue. The berries of this plant are likewise purgative, but less virulent than the other parts. A rob prepared from them may be given

ven to the quantity of an ounce as a cathartic; and in smaller ones as an aperient and deobstruent in chronic disorders: with this last intention, it is said by Haller to be frequently used in Swisserland, in the dose of a dram.

ELATERIUM, vide CUCUMIS AGRESTIS.

ELEMI [Lond.] *Resina.*

Amyris elemifera Lin.

Gum elemi.

This is a resin brought from the Spanish West-Indies, and sometimes from the East-Indies, in long roundish cakes, generally wrapped up in flag leaves. The best sort is softish, somewhat transparent, of a pale whitish yellow colour, inclining a little to green, of a strong not unpleasant smell. It almost totally dissolves in pure spirit, and sends over some part of its fragrance along with this menstruum in distillation: distilled with water, it yields a considerable quantity of pale coloured, thin, fragrant essential oil. This resin gives name to one of the officinal unguents, and is at present scarce any otherwise made use of; though it is certainly preferable for internal purposes to some others which are held in greater esteem.

ELEUTHERIA, vide CASCARILLA.

ENDIVIA [Brun.] *Semen.*

Cichorium endivia Lin.

Endive; the seed.

Endive is raised in gardens for culinary use. It is a gentle cooler and aperient, nearly of the same quality with the *cichorium*. The seeds are ranked among the four lesser cold seeds.

ENULA CAMPANA [Lond.]

Radix.

Inula Helenium Lin.

Elecampane; the root.

This is a very large downy plant, sometimes found wild in moist rich soils. The root, especially when dry, has an agreeable aromatic smell: its taste, on first chewing, is glutinous, and as it were somewhat rancid: in a little time it discovers an aromatic bitterness, which by degrees becomes considerably acrid and pungent. Elecampane root possesses the general virtues of alexipharmacs: it is principally recommended for promoting expectoration in humoral asthmas and coughs: liberally taken, it is said to excite urine, and loosen the belly. In some parts of Germany, large quantities of this root are candied, and used as a stomachic, for strengthening the tone of the viscera in general, and for attenuating tenacious juices. Spirituous liquors extract its virtues in greater perfection than watery ones: the former scarce elevate any thing in distillation; with the latter an essential oil arises, which concretes into white flakes: this possesses at first the flavour of the elecampane, but is very apt to lose it in keeping. An extract made with water possesses the bitterness and pungency of the root, but in a less degree than one made with spirit.

ERUCA [Brun.] *Semen.*

Brassica eruca Lin.

Rocket; the seeds.

This was formerly much cultivated in gardens for medicinal use, and for salads; but is at present less common. In appearance, it resembles mustard; but is easily distinguishable by the smoothness of its leaves, and its disagreeable smell. The seeds have a pungent taste, of the mustard kind, but weaker: they have

have long been celebrated as aphrodisiacs; and may, probably, have in some cases a title to this virtue, in common with other acrid plants.

ERYNGIUM [*Lond.*] *Radix.*

Eryngium maritimum *Lin.*

Eryngo; the root.

This plant grows plentifully on some of our sandy and gravelly shores: the roots are slender, and very long; of a pleasant sweetish taste, which, on chewing them for some time is followed by a light degree of aromatic warmth and acrimony. They are accounted aperient and diuretic, and have also been celebrated as aphrodisiac; their virtues, however are too weak to admit them under the head of medicines.

ERYSIMUM [*Rof.*] *Herba recens.*

Erysimum officinale *Lin.*

Hedge-mustard; the recent plant.

This is a low hairy plant, common in waste places and by way-sides. The seeds are said to promote expectoration, excite urine and the other fluid secretions, and to attenuate and dissolve viscid juices, &c. This they are supposed to perform by an acrimonious stimulating quality; but the taste discovers in them only an herbaceous softness void of acrimony: the seeds indeed are considerably pungent, and the roots in some small degree.

EUPATORIUM [*Brun.*] *Herba.*

Eupatorium cannabinum *Lin.*

Hemp agrimony; the plant.

This plant is found wild by the sides of rivers and ditches. It has an acrid smell, and a very bitter taste, with a considerable share of pungency. The leaves are much recommended for strengthening the tone

of the viscera, and as an aperient; and said to have excellent effects in the dropsy, jaundice, cachexies, and scorbutic disorders. Boerhaave informs us, that this is the common medicine of the turf-diggers in Holland, against scurvies, foul ulcers, and swellings in the feet, to which they are subject. The root of this plant is said to operate as a strong cathartic: but it is hardly used in Britain, and has no place in our pharmacopoeias.

EUPHORBIIUM [*Suec.*] *Gummi resina.*

Euphorbia officinarum *Lin.*

Euphorbium.

This gummi-resinous substance is a spontaneous exudation from a large oriental tree. It is brought to us immediately from Barbary, in drops of an irregular form; some of which, upon being broken, are found to contain little thorns, small twigs, flowers, and other vegetable matters; others are hollow, without any thing in their cavity: the tears in general are of a pale yellow colour externally, somewhat white within: they easily break between the fingers. Lightly applied to the tongue, they affect it with a very sharp biting taste; and upon being held for some time in the mouth, prove vehemently acrimonious, inflaming and exulcerating the fauces, &c. Euphorbium is extremely troublesome to pulverise; the finer part of the powder, which flies off, affecting the head in a violent manner. The acrimony of this substance is so great as to render it absolutely unfit for any internal use: several correctors have been contrived to abate its virulence; but the best of them are not to be trusted to: and as there seems to be no real occasion for it, unless for some external purposes, we think, with Hoffman and others, that it ought to be expunged

punged from the catalogue of internal medicines. And accordingly it has now no place in the London or Edinburgh pharmacopœias. But it is still retained in most of the foreign ones, and is sometimes used as a sternutatory.

EUPHRASIA [*Brun.*] *Folia.*

Euphrasia officinarum *Lin.*

Eye-bright; the leaves.

This is a very low plant, growing wild in moist fields. It was formerly celebrated as an ophthalmic, both taken internally and applied externally. Hildanus says, he has known old men of seventy, who had lost their sight, recover it again by the use of this herb: later practitioners, however, have not been so happy as to observe any such good effects from it. At present it is totally, and not unjustly, disregarded.

FABA [*Ross.*] *Semen.*

Vicia faba *Lin.*

Beans; the seed.

Beans are of greater use for culinary than medical purposes; they are a strong flatulent food, sufficiently nutritious, but not easy of digestion, especially when growing old. A water distilled from the flowers has been celebrated as a cosmetic, and still retains its character among some female artists.

FERRUM et CHALYBS
[*Lond.*]

Iron and steel. Iron, cemented with animal or vegetable coal, forms steel.

Steel is accounted less proper for medicinal use than the softer iron, as being more difficultly acted upon by the animal juices, and the common menstrua: iron dissolves readily in all acids, and rusts freely in the air, especially if occasionally moistened with water; steel requires a

longer time for its solution, and does not rust so easily.

The general virtues of these metals, and the several preparations of them, are, to constrict the fibres, to quicken the circulation, to promote the deficient secretions in the remoter parts, and at the same time repress inordinate discharges into the intestinal tube. After the use of them, if they take effect, the pulse, is very sensibly raised; the colour of the face, though before pale, changes to a florid red; the alvine, urinary, and cuticular excretions, are increased. Nidorous eructations, and the fæces voided of a black colour, are marks of their taking due effect.

An aperient virtue is usually attributed to some of the preparations of iron, and an astringent to others; but in reality, they all produce the effects both of aperients and astringents, and seem to differ only in degree. Those distinguished by the name of astringent sometimes occasion a very copious discharge of urine, or a diarrhœa; whilst those called aperient frequently stop these evacuations.

While either a preternatural discharge, or suppression of natural secretions, proceed from a languor and sluggishness of the fluids, and weakness of the solids; this metal, by increasing the motion of the former, and the strength of the latter, will suppress the flux, or remove the suppression: but where the circulation is already too quick, the solids too tense and rigid, where there is any stricture or spasmodic contraction of the vessels; iron, and all the preparations of it, will aggravate equally both distempers.

Though the different preparations of iron act all in the same manner, yet they are not equally proper in all constitutions. Where acidities abound in the first passages, the

the crude filings, reduced into a fine powder prove more serviceable than the most elaborate preparation of them. On the other hand, where there is no acid in the primæ viæ, the metal requires to be previously opened by saline menstrua: hence a solution of iron in acid liquors has in many cases excellent effects, where, as Boerhaave observes, the more indegestible preparations, as the calces made by fire, have scarce any effect at all. If alkalescent juices be lodged in the stomach, this metal, though given in a liquid form, proves at least useless; for here the acid solvent is absorbed by the alkaline matters which it meets with in the body, so as to leave the iron reduced to an inactive calx.

Chalybeate medicines are likewise supposed to differ, independently of differences in the constitution, according to the nature of the acid united with the metal: vegetable acids superadd a detergency and aperient virtue; combined with the vitriolic, it acts in the first passages powerfully as an aperient; whilst the nitrous renders it extremely styptic, and the marine still more so. The different preparations of iron will be afterwards more particularly mentioned.

Iron is the only metal which seems naturally friendly to the animal body.

Its chief preparations are the prepared filings and rust, the tincture, the salt, and the martial flowers, or ferrum ammoniacale; and these are used principally in cases of weakness and relaxation, whether attended with morbid discharges or morbid suppressions.

FILIPENDULA [*Brun.*] *Ra-*
Aix.

Spirea filipendula Lin,

Dropwort; the root.

This plant grows wild in fields

and chalky grounds: the root consists of a number of tubercles, fastened together by slender strings; its taste is rough and bitterish, with a slight degree of pungency. These qualities point out its use in a flaccid state of the vessels, and a sluggishness of the juices: the natural evacuations are in some measure restrained or promoted by it, where the excess or deficiency proceed from this cause. Hence some have recommended it as an astringent in dysenteries, immoderate uterine fluxes, &c. others as a diuretic; and others as an aperient and deobstruent in scrophulous habits. At present it is wholly disregarded.

FILIX [*Lond. Ed.*] *Radix.*

Polypodium filix mas.

Common male fern; the root.

Several species of the fern root had formerly a place in the materia medica; and the present article seems to have been employed at least as early as the days of Dioscorides, for the purpose for which it is now used in medicine. But it is said to have been entirely neglected, till some years ago a remedy employed by Madame Noufer of Switzerland for the cure of the tænia, claimed the attention of the practitioners of France. Her secret, after being tried at Paris under the direction of some of the most eminent physicians, was purchased by the French King, and published by his order. Since that, the filix mas has been introduced into the pharmacopœias both of the London and Edinburgh colleges.

The filix mas is a vegetable growing in great abundance in almost every part of Britain where the ground is not cultivated. The greatest part of the root lies horizontally, and has a great number of appendages placed close to each other in a vertical direction, while a number

of small fibres strike downwards. The large root, together with its appendages, are to be reserved for use. The two ends, however, are to be cut off, the one being too old and spongy, the other too new and green.

This root, under the form of powder, is found to prove a very effectual cure for the *tænia lata* or tape-worm. It sometimes also, although not with equal certainty, succeeds in the removal of the *tænia cucurbitina* or gourd worm.

Two or three drams of the powder are taken in the morning, no supper having been taken the night before. It generally sickens a little. A brisk cathartic with calomel is given a few hours after, which sometimes brings off the *tænia* entire; if not the same course must be followed at due intervals.

For the success of this remedy, it is proper that the root should be recently gathered; for after being long kept in the shops, its activity is much diminished. And we are of opinion, that it should be used recently dug, being brought to a state fit for reduction to powder by drying it by the aid of fire.

FLAMULA JOVIS [Ed.] *Fœlia, flores.*

Clematis recta Lin.

Upright virgin's bowers; the leaves and flower.

This article is introduced into but few of the modern pharmacopœias, and has never been much employed in Britain. As well as many other active articles, supposed to be of a poisonous nature, it was some time ago recommended to the attention of practitioners by Dr Stoerk of Vienna.

Its leaves and flowers are so acrid as to blister. Dr Stoerk recommends it in venereal, cancerous, and other cutaneous affections, in those head-

achs, pains of the bones, and wastings of the habit, the consequences of lues venerea. Externally the acrid powder is sprinkled on the ulcers, and the forms for internal use are those of infusion and extract.

FENICULUM DULCE [Lon. Ed.] *Semen.*

Anethum fœniculum Lin.

Sweet fennel; the seeds.

FENICULUM VULGARE [Ed.] *Radix,*

Anethum fœniculum varia β.

Common fennel; the roots.

The sweet fennel is smaller in all its parts than the common, except the seeds, which are considerably larger. The seeds of the two sorts differ likewise in shape and colour: those of the common are roundish, oblong, flatish on one side, and protuberant on the other, of a dark almost blackish colour; those of the sweet are longer, narrower, not so flat, generally crooked, and of a whitish or pale yellowish colour. Both sorts are cultivated in our gardens: the common is a perennial plant: the sweet fennel perishes after it has given seed; nor do its seeds come to such perfection in this climate as those which we receive from Germany.

The seeds of both the fennels have an aromatic smell, and a moderately warm, pungent taste: those of the *fœniculum dulce* are in flavour most agreeable, and have also a considerable degree of sweetness; hence our colleges have directed the use of these only. They are ranked among the four greater hot seeds, and not undeservedly looked upon as good stomachics and carminatives. A simple water is prepared from them in the shops; they are ingredients also in the compound spirit of Juniper, and some other officinal compositions.

The

The roots are far less warm, but have more of a sweetish taste, than the seeds: it is one of the five roots called openers; and has sometimes been directed in aperient apozems. Boerhaave says, that this root agrees in taste, smell, and medical qualities, with the celebrated *ginseng* of the Chinese; from which, however, it appears to be very considerably different.

The leaves of fennel are weaker than either the roots or seeds, and have very rarely been employed for any medicinal use.

FENUM GRÆCUM [Lond. Ed.] *Semen.*

Trigonella fœnum græcum Lin.
Fenugreek; the seed.

This plant is cultivated chiefly in the southern parts of France, Germany and Italy; from whence the seeds are brought to us. They are of a yellow colour, a rhomboidal figure; a disagreeable strong smell, and a mucilaginous taste. Their principal use is in cataplasms, fomentations, and the like, and in emollient glysters. They entered the *oleum e mucilaginis* of the shops; to which they communicate a considerable share of their smell. But this formula is now rejected.

FORMICÆ CUM ACERVO [Suec.]

Formica rufa Lin.

Ants; their bodies and eggs.

These insects are at present not employed by us in medicine, tho' formerly much celebrated for aphrodisiac virtues. They enter the *aqua magnanimitatis*, and other like compositions of foreign dispensaries. It is remarkable, that these animals contain a truly acid juice, which they shed in small drops upon being irritated: by infusing a quantity of live and vigorous ants in water, an acid liquor is obtained nearly as

strong as good vinegar. Neumann observes, that on distilling them either with water or pure spirit, a clear limpid oil arises, which has scarce any taste, or at least is not hot or pungent like the essential oils of vegetables.

In some of the foreign pharmacopœias, they are the basis of an *oleum formicarum*, a *spiritus formicarum*, and a *spiritus formicarum acidus*; from which it may be presumed, that they are pretty frequently employed.

FRAGARIA [Suec.] *Fractus recens, folia.*

Fragaria vesca Lin.

Strawberry bush; its leaves and fruit.

The leaves are somewhat styptic and bitterish; and hence may be of service in debility and laxity of the viscera; and immoderate secretions, or a suppression of the natural evacuations, depending thereon: they are recommended in hæmorrhagies and fluxes; and likewise as aperients in suppressions of urine, obstructions of the viscera, in the jaundice, &c. The fruit is in general very grateful both to the palate and stomach: like other fruits of the dulco-acid kind, they abate heat, quench thirst, loosen the belly, and promote urine; but do not afford much nourishment. Geoffroy observes, that the urine of those who eat liberally of this fruit, becomes impregnated with its fragrant smell.

FRAXINELLA, vide **DIC-TAMNUS ALBUS**.

FRAXINUS [Suec.] *Cortex et semen.*

Fraxinus excelsior Lin.

The ash-tree; its bark and seeds.

The bark of this tree is moderately astringent, and as such has sometimes been made use of. It has also

also been proposed as a substitute for the Peruvian bark in the cure of intermittents ; but its efficacy is not confirmed by experience. The seeds, which are somewhat acrid, have been employed as aperients. There are so many other medicines more agreeable, and more efficacious for these intentions, that all the parts of the ash tree have long been neglected.

FULIGO LIGNI. [*Ed.*]

Wood foot.

This concrete is of a shining black colour, a disagreeable smell, and an acrid, bitter, nauseous taste. Its chief use is in hysteric and other nervous cases, in which it is sometimes given in conjunction with the fetid gums : it gives name to a tincture of this kind in the shops. But the efficacy of that article probably depends much more on the asafœtida it contains, than on the foot from whence it derives its name. Its virtues are extracted both by watery and spirituous liquors ; each of which, if the foot be of a good kind, dissolve about one-sixth. Soot is said to differ greatly in quality according to the wood from which it was produced : the more resinous the wood, the more the soot abounds with bitter oily matter. On chemical analysis, it yields volatile and fixed alkali, empyreumatic oil, and earth.

FUMARIA [*Ed.*] *Folia.*

Fumaria officinalis Lin.

Fumitory ; the leaves.

This is a common weed in shady cultivated grounds, producing spikes of purplish flowers in May and June. It is very juicy, of a bitter taste, without any remarkable smell. The medical effects of this herb are, to strengthen the tone of the bowels, gently loosen the belly, and promote the urinary and other natural secre-

tions. It is principally recommended in melancholic, scorbutic, and cutaneous disorders ; for opening obstructions of the viscera, attenuating and promoting the evacuation of viscid juices. Frederick Hoffman had a very high opinion of it as a purifier of the blood ; and assures us, that with this intention scarce any plant exceeds it. Both watery and spirituous menstrua extract its virtues.

GALANGA MINOR [*Brun.*]

Radix.

Maranto galanga Lin.

Galangal ; the root.

This root is brought from China, it comes to us in pieces scarce an inch long, and not half so thick, full of joints, with several circular rings on the outside ; of an aromatic smell, and a bitterish, hot, biting taste. Galangal is a warm stomachic bitter : it has been frequently prescribed in bitter infusions, but the flavour it gives is not agreeable.

GALBANUM [*Lond. Ed.*]

Gummi resina.

Bubon Galbanum Lin.

Galbanum ; the gum.

This is the concrete juice of an African plant. The juice, as brought to us, is semipellucid, soft, tenacious ; of a strong, and, to some, unpleasent smell ; and a bitterish warm taste : the better sort is in pale coloured masses, which, on being opened, appear composed of clear white tears. Geoffroy relates, that a dark greenish oil is to be obtained from this simple by distillation, which, upon repeated rectifications, becomes of an elegant sky blue colour. The purer sorts of galbanum are said by some to dissolve entirely in wine, vinegar, or water ; but these liquors are only partial menstrua with regard to this drug ; nor do spirit of wine, or oils, prove

prove more effectual in this respect : the best dissolvent is a mixture of two parts spirit of wine and one of water. Galbanum agrees in virtue with gum ammoniacum ; but is generally accounted less efficacious in asthmas, and more so in hysterical complaints. It is an ingredient in the gum pills, the gum plaster, and some other officinal compositions.

GALEGA [*Brun.*] *Herba.*

Galega officinalis Lin.

Goat's rue ; the herb.

This was celebrated as an alexipharmac ; but its sensible qualities discover no foundation for any virtues of this kind : the taste is merely leguminous ; and in Italy, where it grows wild, it is said to be used as food.

GALLA [*Lond. Ed.*]

Nidus cynipidis quercus orientalis.

Galls.

These are excrescences found in the warmer countries, upon the oak tree : they are produced by a kind of insect (the cynips), which wounds the young buds or branches, and they afterwards serve as a lodgement for its eggs : the animal within the gall eats its way through ; those which have no hole are found to have the insect remaining in them. The best galls come from Aleppo : these are not quite round and smooth like the other sorts, but have several tubercles on the surface. Galls have a very austere styptic taste, without any smell ; they are very strong astringents, and as such have been sometimes made use of both internally and externally, but are not much taken notice of by the present practice.

Some recommend an ointment of powdered galls and hogslard as very effectual in certain painful states of hæmorrhoids ; and it is alleged, that

the internal use of galls has cured intermittents after the Peruvian bark has failed. A mixture of galls with a bitter and aromatic has been proposed as a substitute for the bark.

GALLIUM LUTEUM

[*Brun.*] *Herba.*

Callium verum Lin.

Ladies bed-straw ; the herb.

This herb has a subacid taste, with a very faint, not disagreeable smell : the juice changes blue vegetable infusions of a red colour, and coagulates milk, and thus discovers marks of acidity. It stands recommended as a mild styptic, and in epilepsy ; but has never been much in use.

GAMBOGIA [*Lond. Ed.*]

Gummi resina.

Cambogia gutta Lin.

Gamboge ; the gum resin.

Gamboge ; a solid concrete juice, brought from the East-Indies in large cakes or rolls. The best sort is of a deep yellow or orange colour, breaks shining and free from dross : it has no smell, and very little taste, unless kept in the mouth for some time, when it impresses a slight sense of acrimony. It immediately communicates to spirit of wine a bright golden colour, and almost entirely dissolves in it ; Geoffroy says, except the sixth-part. Alkaline salts enable water to act upon this substance powerfully as a menstruum : the solution made by their means is somewhat transparent, of a deep blood red colour, and passes the filtre : the dulcified spirit of sal ammoniac readily and entirely dissolves it, and takes up a considerable quantity ; and what is pretty remarkable, this solution mixes either with water or spirit, without growing turbid.

Gamboge evacuates powerfully both upwards and downwards ; some

con-

condemn it as acting with too great violence, and occasioning dangerous hypercatharses; whilst others are of a contrary opinion. Geoffroy seems particularly fond of this medicine, and informs us, that he has frequently given, from two to four grains, without its proving at all emetic; that from four to eight grains, it both vomits and purges, without violence; that its operation is soon over; and that if given in a liquid form, and sufficiently diluted, it stands not in need of any corrector; that in the form of a bolus or pill, it is most apt to prove emetic, but very rarely has this effect if joined along with *mercurius dulcis*. He nevertheless cautions against its use where the patient cannot easily bear vomiting.

It has been used in dropsy with cream of tartar or jalap, or both, to quicken their operation. It is also recommended by some to the extent of fifteen grains with an equal quantity of vegetable alkali in cases of the tape-worm. This dose is ordered in the morning; and if the worm is not expelled in two or three hours, it is repeated even to the third time with safety and efficacy. It is asserted, that it has been given to this extent even in delicate habits.

This is said to be the remedy alluded to by Baron Van Swieten, which was employed by Dr Herrensward, and with him proved so successful in the removal of the *tænia lata*.

GENISTA [*Lond. Ed.*] *Cacumen, semen.*

Spartium scoparium Lin.

Broom; the top and seed.

The leaves of this shrub have a nauseous bitter taste; decoctions of them loosen the belly, promote urine, and stand recommended in hydropic cases.

The flowers are said to prove ca-

thartic in decoction, and emetic in substance; though in some places, as Lobel informs us, they are commonly used, and in large quantity, in salads, without producing any effect of this kind. The qualities of the seeds are little better determined: some report, that they purge almost as strongly as hellebore, in the dose of a dram and a half; whilst the author above mentioned relates, that he has given a decoction of two ounces of them as a gentle emetic.

An infusion of a dram of well powdered and sifted broom seed for twelve hours, in a glass and a half of rich white wine taken in the morning fasting, is recommended in an anonymous pamphlet as a sovereign remedy in dropsy. The patient is afterwards to walk or ride for an hour and an half, and then to swallow two ounces of olive oil. This method is to be repeated every second day, or once in three days, till the cure be completed.

Broom ashes have been long recommended in dropsy, and are particularly celebrated by Dr Sydenham. But the efficacy of this medicine depends entirely on the alkaline salt, and not in the smallest degree on the vegetable from which it is obtained by burning.

GENTIANA [*Lond. Ed.*] *Radix.*

Gentiana lutea Lin.

Gentian; the root.

This plant is found wild in some parts of England: but the dried roots are most commonly brought from Germany. They should be chosen fresh, and of a yellow or bright gold colour within. This root is a strong bitter; and as such, very frequently made use of in practice: in taste it is less exceptionable than most of the other substances of this class: infusions of it, flavoured with orange-peel, are sufficiently

grateful. It is the capital ingredient in the bitter wine, tincture, and infusion of the shops. An extract made from it is likewise an officinal preparation.

This useful bitter is not employed under the form of powder, as it loses considerably by the drying, which is requisite for giving it that form.

A poisonous root was some years ago discovered among some of the gentian brought to London; the use of which occasioned violent disorders, and in some instances death. This is easily distinguishable by its being interally of a white colour, and void of bitterness. This poisonous simple seems to be the root of the aconitum; a plant with which Lobel informs us the inhabitants of some parts of the Alps used formerly to empoison darts.

GEOFRŒA [Ed.] Cortex.

Geoffrœa inermis Lin.

Cabbage bark tree; the bark.

The bark of this tree, which grows in the low savannahs of Jamaica, is of a grey colour externally, but black and furrowed on the inside. It has a mucilaginous and sweetish taste, and a disagreeable smell. It is given in cases of worms, in form of powder, decoction, syrup and extract. The decoction is preferred; and is made by slowly boiling an ounce of the fresh dried bark in a quart of water, till it assume the colour of Madeira wine. This sweetened is the syrup; evaporated, it forms an extract. It commonly produces some sickness and purging; sometimes violent effects; as vomiting, delirium, and fever. These last are said to be owing to an over dose, or to drinking cold water; and are relieved by the use of warm water, castor oil, or a vegetable acid. It should always be begun in small doses. But when properly and cautiously administered,

it is said to operate as a very powerful anthelmintic, particularly for the expulsion of the lumbrici, which are a very common cause of disease in the West-India islands; and there it is very frequently employed. But it has we believe been but little used in Britain.

GINSENG [Lond. Ed.] Radix.

Panax quinquefolium Lin.

Ginseng; the root.

Ginseng is a small root, which as used in Britain is chiefly brought from North America; sometimes from China; but much more frequently the American ginseng is carried from Britain to China. Every root is an inch or two in length, taper, finely straited; of a whitish or yellowish colour. It has a very sweet taste, accompanied with a slight bitterness and warmth.

The Chinese are said to have a very extraordinary opinion of the virtues of this root, and to look upon it as an universal restorative in all decays, from age, intemperance, or disease. The great value there set upon it, has prevented it being exported from thence into other countries, and its discovery in North America is but of late date; so that among us it has hitherto been very rarely made use of; although, from what can be judged of it from the taste, it seems to deserve some regard, especially as it is now procurable in plenty.

GLADIOLUS, vide Iris PALUSTRIS.

GLYCIRRHIZA [Lond. Ed.]

Radix.

Glycyrrhiza glabra Lin.

Liquorice; the root.

This is produced plentifully in all the countries of Europe: that which is the growth of our own is preferable to such as comes from abroad; this

this last being generally mouldy, which this root is very apt to become, unless kept in a dry place. The powder of liquorice usually sold is often mingled with flower, and perhaps too often with substances not quite so wholesome: the best sort is of a brownish yellow colour, the fine pale yellow being generally sophisticated, and it is of a very rich sweet taste, much more agreeable than that of the fresh root. Liquorice is almost the only sweet that quenches thirst; whence it is called by the Greeks *adipson*. Galen takes notice, that it was employed with this intention in hydropic cases, to prevent the necessity of drinking. Mr Fuller, in his *Medicina Gymnastica*, recommends this root as a very useful pectoral, and says it excellently softens acrimonious humours, at the same time that it proves gently detergent: and this account is warranted by experience. It is an ingredient in the pectoral syrup, pectoral troches, the compound lime-waters, decoction of the woods, compound powder of gum tragacanth, lenitive electuary, and theriaca. An extract is directed to be made from it in the shops, but this preparation is brought chiefly from abroad, tho' the foreign extract is not equal to such as is made with proper care among ourselves.

GRAMEN [*Suec.*] *Radix.**Triticum repens* Lin.

Quick-grass; the roots.

Grass roots have a sweet roughish taste. They are principally recommended in aperient spring drinks, for what is called purifying and sweetening the blood.

GRANA PARADISI [*Brun.*] *Fructus.**Anomum granum Paradisi.*

Grains of paradise.

The fruit known by this name is brought from the East-Indies. It

is about the size of a fig, divided internally into three cells, in each of which are contained two rows of small seeds like cardamoms. These seeds are somewhat more grateful, and considerably more pungent, than the common cardamoms, approaching in this respect to pepper, with which they agree also in their pharmaceutical properties; their pungency residing, not in the distilled oil, as that of cardamom seeds does, but in the resin extracted by spirit of wine.

GRANATUM [*Lond. Ed.*] *Flos, cortex, fructus.**Punica granatum* Lin.

Pomegranate; the flowers called *balaustine*, and rind of the fruit. The pomegranate is a low tree, or rather shrub, growing wild in Italy and other countries in the south of Europe: it is sometimes met with in our gardens; but the fruit, for which it is chiefly valued, rarely comes to such perfection as in warmer climates. This fruit has the general qualities of the other sweet summer fruits, allaying heat, quenching thirst, and gently loosening the belly. The rind is a strong astringent, and as such is occasionally made use of. The flowers are of an elegant red colour, in appearance resembling a dried red rose. Their taste is bitterish and astringent. They are recommended in diarrhoeas, dysenteries, and other cases where astringent medicines are proper.

GRATIOLA [*Lond. Ed.*] *Herba.**Gratiola officinalis* Lin.

Hedge-hyssop; the leaves.

This is a small plant met with, among us, only in gardens. The leaves have a very bitter, disagreeable taste: an infusion of a handful of them when fresh, or a dram when dried, is said to operate strongly as a cathartic. Kramer reports, that

has found the *root* of this plant as medicine similar in virtue to ipecacuanha.

This herb has been mentioned as useful in the venereal disease: And by some it has been highly extolled in maniacal cases.

GUAIACUM [*Lond. Ed.*] *Lignum, cortex, gummi-resina.*

Guaiacum officinale Lin.

Guaiacum; its wood, bark and resin.

The guaiacum is a tree growing in the warmer parts of the Spanish West-Indies.

The wood is very ponderous, of a close compact texture; the outer part is of a yellow colour, the heart of a deep blackish green, or variegated with black, green, pale and brown colours: the bark is thin, smooth, externally of a dark greyish hue: both have a lightly aromatic, bitterish, pungent taste; the bark is somewhat the weakest. The resin which exudes from incisions made in the trunk of the tree is brought to us in irregular masses, usually friable, of a dusky greenish, and sometimes of a reddish cast, with pieces of the wood among them: its taste is more acrid and pungent than that of the wood or bark.

Their general virtues are those of a warm, stimulating medicine; they strengthen the stomach and other viscera; and remarkably promote the urinary and cuticular discharge: hence in cutaneous defecations, and other disorders proceeding from obstructions of the excretory glands, and where sluggish serous humours abound, they are eminently useful; rheumatic and other pains have often been relieved by them. They are also laxative. The resin is the most of these drugs; and the efficacy of the others depends upon the quantity of this part contained in them: the resin is extracted from

the wood in part by watery liquors, but much more perfectly by spirituous ones: the watery extract of this wood, kept in the shops, proves not only less in quantity, but considerably weaker than one made with spirit. This last extract is of the same quality with the native resin, and differs from that brought to us only in being purer. The gum, or extracts, are given from a few grains to a scruple or half a dram, which last dose proves for the most part considerably purgative. The officinal preparations of guaiacum are an extract of the wood, a solution of the gum in rectified spirit of wine, and a solution in volatile spirit, and an empyreumatic oil distilled from the wood.

Guaiac in form of decoction has been said to cure the venereal disease; and in this country it is frequently used as an adjuvant to mercury. The resin dissolved in rum, or combined with water, by means of mucilage or the yolk of egg, or in the form of the volatile tincture or elixir, is much employed in gout and chronic rheumatism. The tincture or elixir has been given to the extent of half an ounce twice a day, and is sometimes usefully combined with laudanum.

GUMMI AMMONIACUM, vide **AMMONIACUM**.

GUMMI ARABICUM [*Lond. Ed.*]

Mimosa nilotica Lin.

Gum arabic.

Gum arabic is a concrete gum, extending from a tree growing in considerable abundance in Egypt and Arabia, which has accordingly given name to this gum. It is brought to us from Turkey, in small irregular masses or strings, of a pale yellowish colour. The true gum Arabic is rarely to be met with in the shops;

shops; gum fenega or fenica, which comes from the coast of Guinea, being usually sold for it. This greatly resembles the other, and perhaps, as Dale conjectures, exudes from a tree of the same kind: it is generally in large pieces, rough on the outside; and in these circumstances possibly consists the only difference between the two; altho' the former is held to be the purer and finer gum, and therefore preferred for medicine; and the latter the strongest, most substantial and cheapest, and consequently more employed for mechanic uses. The virtues of this gum are the same with those of gummy and mucilaginous substances in general: it is given from a scruple to two drams, in hoarsenesses, a thin acrimonious state of the fluids, and where the natural mucus of the intestines is abraded. It is an ingredient in the white decoction, chalk, julep, the common emulsion, and some of the troches.

GUMMI ELEMI, vide ELEMI.

GUMMI TRAGACANTHA
[Lond. Ed.]

Astragalus tragacanthus Lin.

Gum tragacanth.

The gum tragacanth is obtained from a thorny bush growing in Crete, Asia, and Greece. This gum is of a much stronger body than either of the foregoing, and does not so perfectly dissolve in water. A dram will give to a pint of water the consistence of a syrup, which a whole ounce of gum arabic is scarce sufficient to do. Hence its use for forming troches, and the like purposes, in preference to the other gums. It gives name to an officinal powder, and is an ingredient in the compound powder of cerufs.

GUTTA CAMBA, vide GAMBOGIA.

HÆMATITES *Lapis* [Brun.]

Hæmatites, or bloodstone.

This is an elegant iron ore, extremely hard, of a dark reddish or yellowish colour: it is found either along with other ores of iron, or in distinct mines by itself. With regard to its medical virtues, we conceive they do not vary from those experienced from rust, and the common croci of iron, notwithstanding the extraordinary opinion which many have entertained of it; such as its curing ulcers of the lungs, which Geoffroy says the hæmatites dries and heals.

HEDERA ARBOREA,
[Brun.] *Folia resina.*

Hedera helix Lin.

Ivy; the leaves and resin.

This is a climbing shrubby plant, grows commonly from the trunks of trees, or on old walls. The leaves have very rarely been given internally; notwithstanding they are recommended strongly by some against the atrophy of children; their taste is nauseous, acrid, and bitter. Externally, they have sometimes been employed for drying and healing ichorous sores, and likewise for keeping issues open. The berries were supposed by the ancients to have a purgative and emetic quality; later writers have recommended them in small doses, as diaphoretics and alexipharmacs; and Mr Boyle tells us, that in the London plague the powder of them was given with vinegar, with good success, as a sudorific. It is probable the virtue of the composition was rather owing to the vinegar than to the powder. The resin was ranked by the ancients (if their *δακρυον τε κισσου* was the same with our *gummi hedera*)

ra) among the depilatories; from this clais, which it certainly had no title to, it has since been removed to that of conglutinaters of wounds, to which it has probably as little title.

HEDERA TERRESTRIS

[*Ed.*] *Herba.*

Glechoma hederacea Lin.

Ground-ivy; the leaves.

Ground-ivy is a low plant, frequent in hedges and shady places. It has an aromatic, though not very agreeable smell; and a quick, bitterish, warm taste. This herb is an useful corroborant, aperient, and detergent; and hence stands recommended against laxity, debility, and obstructions of the viscera: some have had a great opinion of it for healing and cleansing ulcers of the internal parts, even of the lungs, and for purifying the blood. It is customary to infuse the dried leaves in malt liquors; a practice not to be commended, though it readily communicates its virtues, and likewise helps to fine them down: scarce any other herb has this effect more remarkably than ground-ivy.

HELENIUM, vide ENULACAMPANA.

HELLEBORASTER [*Lond.*]

Folium.

Helleborus fatidus Lin.

Bears foot; the leaves.

The leaves of this plant taken in several different forms have been by some recommended as a very powerful anthelmintic. They are particularly extolled by Dr Bisset in his essay on the Medical Constitution of Great Britain, especially under the form of syrup, made by moistening the leaves of the fresh herb in vinegar, and then pressing out their juice, which was formed into a syrup with coarse sugar. Of this syrup, Dr Bisset gave to children

from two to six years of age, one tea spoonful at bed-time and another in the morning, for two or three days successively. The dose was increased or diminished, according to the strength of the patient. And in this way he found it very successful in the expulsion of lumbrici.

Where the Helleboraster is to be employed, this form is perhaps the best, and we doubt not that it may succeed where others have failed: but it should not, we apprehend, be employed till safer anthelmintics have been tried in vain. For we have heard of some instances where the imprudent administration of it has been attended even with fatal consequences.

HELLEBORUS ALBUS

[*Lond. Ed.*] *Radix.*

Veratrum album Lin.

White hellebore; the root.

This plant grows spontaneously in Switzerland and the mountainous parts of Germany. The root has a nauseous, bitterish, acrid taste, burning the mouth and fauces: if wounded when fresh, it emits an extremely acrimonious juice, which mixed with the blood, by a wound, is said to prove very dangerous: the powder of the dry root, applied to an issue, occasions violent purging; snuffed up the nose, it proves a strong, and not always a safe sternutatory. This root, taken internally, acts with extreme violence as an emetic; and has been observed, even in a small dose, to occasion convulsions, and other terrible disorders. The ancients sometimes employed it in very obstinate cases, and always made this their last resource. Modern practice seems to have almost entirely rejected its internal use, though it be said that some have lately ventured upon so large a dose as a scruple, in maniacal cases, and have found good effects

effects from it after the stronger antimonial preparations had been given in vain. A tincture and honey of it were formerly kept in the shops, but are now rejected from the London pharmacopœia. The former is still indeed retained by the Edinburgh college, but it is very rarely if ever used.

HELLEBORUS NIGER

[*Lond. Ed.*] *Radix.*

Helleborus niger Lin.

Black hellebore, or melampodium; the roots.

This plant grows wild in the mountainous parts of Switzerland, Austria, and Stiria: the earliness of its flowers, which sometimes appear in December, has gained it a place in our gardens.

In some parts of Germany, a species of black hellebore has been made use of, which not unfrequently produced violent, and sometimes deleterious effects: this the Wirtemberg college particularly caution against, though without mentioning any marks by which it may be distinguished, or even giving the precise name of the plant. It appears to be the fetid hellebore of Linnæus, called in England, where it grows wild, fetterwort, settlewort, or bastard hellebore: the roots of this may be distinguished from the officinal sort by their being less black. The roots of the poisonous aconites resemble in appearance those of the black hellebore; and in the Breslaw collections we find some instances of fatal effects occasioned by mistaking the former for the latter: these also are happily discoverable by their colour; the *aconitum* being lighter coloured than even the palest of the black hellebores. The faculty of Paris, by allowing the use of one of the paler hellebores (the green flowered, which grows wild in England, and is called by our farriers peg-

root), have in some degree deprived the shops of the benefit of this criterion. Since therefore the two noxious roots which the buyer is most apt to mistake for this, are distinguishable from it by their colour, but have no other external mark by which they may be with certainty known, particular regard ought to be had to this circumstance; only the deepest black being chosen, and all the paler roots rejected.

The taste of hellebore is acrid and bitter. Its acrimony, as Dr Grew observes, is first felt on the tip of the tongue, and then spreads immediately to the middle, without being much perceived on the intermediate part; on chewing it for a few minutes, the tongue seems benumbed, and affected with a kind of paralytic stupor, as when burnt by eating any thing too hot: the fibres are more acrimonious than the head of the root from which they issue. Black hellebore root, taken from fifteen grains to half a dram, proves a strong cathartic; and as such has been celebrated for the cure of maniacal, and other disorders proceeding from what the ancients called *atra bilis*: in these cases, medicines of this kind are doubtless occasionally of use, though they are by no means possessed of any specific power. It does not however appear that our black hellebore acts with so much violence as that of the ancients: whence many have supposed it to be a different plant; and indeed the descriptions which the ancients have left us of their hellebore, do not agree to any of the sorts usually taken notice of by modern botanists. Another species has been discovered in the eastern countries, which Tournefort distinguishes by the name of *helleborus niger orientalis, amplissimo folio, caule præalto, flore purpurascente*, and supposes to be the true ancient hellebore, from

its growing in plenty about mount Olympus, and in the island of Anticyra, celebrated of old for the production of this antimaniacal drug: he relates, that a scruple of this sort, given for a dose, occasioned convulsions.

Our hellebore is at present looked upon principally as an alterative; and in this light is frequently employed, in small doses, for attenuating viscid humours, promoting the uterine and urinary discharges, and opening inveterate obstructions of the remoter glands: it often proves a very powerful emmenagogue in plethoric habits, where steel is ineffectual or improper. An extract made from this root with water, is one of the mildest, and for the purposes of a cathartic the most effectual preparations of it: this operates sufficiently, without occasioning the irritation which the pure resin is accompanied with. A tincture drawn with proof spirit contains the whole virtue of the hellebore, and seems to be one of the best preparations of it when designed for an alterative: this tincture, and the extract, are kept in the shops.

The melampodium is the basis of Bacher's tonic pills for the dropsy. The root is ordered to be macerated in rectified spirit of wine, the liquor expressed is repeatedly mixed with water and duly evaporated. This is made up into pills with an extract of myrrh and powder of carduus benedictus. They are said to be cathartic and diuretic, and at the same time strengtheners of the solids.

HEPATICA NOBILIS [Brun.]

Herba.

Anemone hepatica Lin.

Noble liverwort; the herb.

This herb has a place in our gardens on account of the beauty and early appearance of its flowers.

It is a cooling, gentle restraining herb; and hence recommended in a lax state of the fibres as a corroborant.

HERMODACTYLUS [Brun.]

Radix.

Iris tuberosa Lin.

Hermodactil.

This is a root brought from Turkey. It is of the shape of a heart flattened, of a white colour, compact, yet easy to cut or powder; of a viscid sweetish taste, with a light degree of acrimony.

Hermodactils were of great repute among the ancients as a cathartic; but those we now meet with in the shops have very little purgative virtue; Neumann declares he never found them to have any effect at all.

HERNIARIA [Brun.] Folia.

Herniaria glabra Lin.

Rapturewort; the leaves.

This is a low herb, growing wild in sandy and gravelly grounds. It is a very mild restraining, and may, in some degree, be serviceable in disorders proceeding from a weak flaccid state of the viscera: but to the virtue which it has been most celebrated for, that of curing hernias, it has no title.

HIPPOCASTANUM [Ed.]

Fractus.

Æsculus hippocastanum Lin.

Horse-chestnut; the fruit.

This fruit has been used as food for sheep and poultry, and as soap for washing. It was much employed in powder as a sternutatory by an itinerant oculist, and has been recommended by some others in certain states of ophthalmia, headach, &c. in which errhines are indicated.

Its effects as a sternutatory may also be obtained by using it under the form of infusion or decoction drawn up into the nostrils. And it

is

is entirely with a view to its errhine power that it is now introduced into the pharmacopoeia of the Edinburgh college. But besides this, the bark has also been represented by some as a cure for intermittent fevers; and it is probably with this intention that this part of the hippocastanum is introduced as an officinal article in the Pharmacopoeia Rossica.

HORDEUM [Lond.] *Semen, semen perlatum.*

Hordeum distichon Lin.

Barley, and pearl-barley.

Barley is a well known farinaceous grain, cultivated in great abundance in our fields. Pearl-barley is prepared by grinding the shell barley into little round granules, which appear of a pearly whiteness.

Barley, in its several states, is more cooling, less glutinous, and less nutritious, than wheat or oats: among the ancients, decoctions of it were the principal aliment and medicine in acute diseases. Both a simple and compound decoction of barley are introduced into our pharmacopoeias.

HORMINUM SATIVUM [Brun.] *Herba.*

Horminum salvia Lin.

Garden clary; the leaves and seeds.

These have a warm, bitterish pungent taste; and a strong, not very agreeable smell: the touch discovers in the leaves a large quantity of glutinous or resinous matter. They are principally recommended in the fluxus albus, and other weaknesses, in hysteric disorders, and in flatulent colics.

HYDRAGYRUM, sive ARGENTUM VIVUM.

Mercury, or quicksilver.

Mercury is an opaque silver-colour-

ed mineral fluid; appearing to the eye like tin or lead when melted: it is heavier than any other fluid, and than most of the metallic bodies: it does not congeal in the greatest degree of natural cold hitherto known; in the fire it proves totally volatile. This mineral is either met with in its fluid form in the earth, or extracted by art from certain ores. There are considerable mines of it in Hungary and Spain; and what is employed in Britain comes chiefly from the former of these countries.

The use of mercury in medicine seems to have been little known before the sixteenth century. The ancients looked upon it as a corrosive poison, though of itself perfectly void of acrimony, taste, and smell; there are examples of its having been lodged for years in cavities both of bones and fleshy parts, without its having injured or affected them. Taken into the body in its crude state, and undivided, it passes thro' the intestines unchanged, and has not been found to produce any considerable effect. It has indeed been recommended in asthma and disorders of the lungs; but the virtues attributed to it in these cases have not been warranted by experience.

Notwithstanding the mildness and inactivity of crude quicksilver undivided; yet when resolved by fire into the form of fume, or otherwise divided into very minute particles, and prevented from re-uniting by the interposition of proper substances, or combined with mineral acids, it has very powerful effects; affording the most violent poisons, and the most excellent remedies with which we are acquainted.

The mercurial preparations, either given internally or introduced into the habit by external application,

tion, seem to forward circulation through even the minutest and most remote vessels of the body; and may be so managed as to promote excretion through all the emunctories. Hence their common use in inveterate chronic disorders, and obstinate obstructions of the excretory glands; in scrophulous and cutaneous diseases; and in the venereal lues. If their power be not restrained to certain emunctories, they tend chiefly to affect the mouth; and occasion a plentiful evacuation of the salival glands.

The salutary effects of mercurials do not depend on the quantity of sensible evacuation. This medicine may be gradually introduced into the habit, so as, without occasioning any remarkable discharge to be productive of very happy effects. To answer this purpose, it should be given in very small doses, in conjunction with such substances as determine its action to the kidneys or the pores of the skin. By this method inveterate cutaneous and venereal distempers have been cured, without any other sensible excretion than a gentle increase of perspiration or urine. Where there are ulcers in any part, they discharge for some time a very fetid matter, the quantity of which becomes gradually less, and at length the ulcer kindly heals. If the mercury should at any time, from cold, or the like, affect the mouth, it may be restrained by omitting a dose, and by warmth or suitable medicines promoting the perspiration.

Cooling purgatives are also often employed with advantage; but perhaps the most effectual means of giving with safety a sudden check to a mercurial salivation is by the application of a large blister to the back.

Mercury, as used in medicine, has been employed in a very great va-

riety of different forms. Of the particular preparations directed by the London and Edinburgh colleges, we shall afterwards have occasion to treat: but to give a full and comprehensive view of all the mercurial preparations, we shall here subjoin a table in which they are systematically arranged.

Dr Schwediauer's TABLE of the PREPARATIONS OF MERCURY, arranged according to Bergman's Table of Elective Attractions. Those marked with the asterism are chiefly in use.

I. PREPARATION where the Mercury is simply purified.

* *Hydrargyrum purificatum.*

Mercurius crudus purificatus officinarum.

Argentum vivum purificatum, Pharm. Lond.

Anglis, Quicksilver, crude purified mercury; Germanis, Reines queckfilber; Gallis, Mercure pure.

II. PREPARATIONS in which the Mercury is only divided.

i. By gums or mucilages; such as gum arabic, tragacanth, &c.

* *Hydrargyrum gummosum.*

Mercurius gummosus of Plenck, (the inventor.)

COMPOSITA.

* *Pilula ex hydrargyro gummoso.*

Pilulae ex mercurio gummoso.

Plenck. Pharm. Cbir.

Solutio mercurialis gummosa.

Ibid.

Mixtura mercurialis. Pharm.

Nescom. Sti Georgii.

Potio mercurialis. Dispensatorii

Novi Brunsvicensis.

Lac mercuriale. Plenck.

Syrupus hydrargyri. Pharmac.

Succ.

2. By resins or balsams; such as turpentine, balsamum copai-va, &c.

* *Hydrargyrum terebinthinatum, &c.*

COMPOSITA.

* *Pilula ex hydrargyro terebinthinato.*

Pilulae

Pilulæ mercuriales. *L.*
 Pilulæ mercuriales laxantes. *G.*
 Pilulæ mercuriales siagogæ.
Pharm. Danic.
 Injectio mercurialis. *Pharm.*
Edinb. Pauperum.

3. By suet or vegetable oils; such as hog's lard, goose-fat, or butter of cocoa nuts.

* *Hydrargyrum unguinosum.*

* *Unguentum hydrargyri.*

Unguentum ex hydrargyro cæruleum. *E.*

Unguentum mercuriale, seu unguentum Neapolitanum. *Pharm. mac. Austriaco. Provincialis.*

COMPOSITA.

α Unguentum cæruleum fortius. *L.*

Unguentum cæruleum mitius. *L.*

Unguentum mercuriale. *D.*

β Ceratum mercuriale. *L.*

γ Emplastrum mercuriale. *O.*

Emplastrum ex hydrargyro. *E.*

Emplastrum ex gummi ammoniacum cum mercurio. *L.*

Emplastrum commune cum mercurio. *L.*

Emplastrum de ranis cum mercurio. *A.*

4. By calcareous earth; such as chalk, chelæ cancrorum, &c. Mercurius alkalifatus.

Pulvis mercurialis. *G.*

III. PREPARATIONS where the mercury is calcined by heat and air.

* *Hydrargyrum calcinatum.*

Mercurius calcinatus. *L. S.*

Mercurius præcipitatus per se. *L.*

COMPOSITA.

* *Pilulæ ex hydrargyro calcinato.*

Pilulæ syphiliticæ. *Pharm. Nefoc. Sti Thomæ.*

Pilulæ ex mercurio calcinato. *G.*

Pilulæ ex mercurio calcinate anodynæ. *G.*

IV. PREPARATIONS where the mercury is partly divided and dissolved.

I. By sugar candy, or saccharine compositions; such as conserva rosarum, cynosbati, &c.

* *Saccharum hydrargyratum.*

COMPOSITA.

* *Bolus ex hydrargyro saccharato.*

Bolus cæruleus. *Tb.*

Bolus mercurialis. *G.*

2. Honey.

* *Mel hydrargyratum.*

COMPOSITA.

Pilulæ Æthiopicæ. *E.*

Pilulæ mercuriales purgantes.

E. Paup.

Pilulæ Bellosti.

3. Mercury combined with sulphur, (flowers of brimstone).

* *Hydrargyrum sulphuratum.*

a. By simple trituration or fusion.

* *Hydrargyrum sulphuratum nigrum.*

Æthiops mineralis. *O.*

COMPOSITA.

Pulvis Æthiopicus.

b. By sublimation.

* *Hydrargyrum sulphuratum rubrum.*

Cinnabaris factitia, seu artificialis. *O.*

COMPOSITA.

Pulvis antilyssus Sinensis. *O.*

4. Mercury combined with sulphur of antimony.

a. By simple trituration.

* *Sulphur antimonii hydrargyratum nigrum.*

Æthiops antimonialis. *O.*

COMPOSITA.

Pilulæ Æthiopicæ. *E. D.*

b. By sublimation.

Sulphur antimonii hydrargyratum rubrum.

Cinnabaris antimonii. *O.*

COMPOSITA.

Bolus Cinnabarinus. *G.*

5. Mercury combined with sulphur by precipitation.

[See below under the *Preparations with the Vitriolic Acid.*]

V. PREPARATIONS where the mercury is reduced to the form of a metallie salt or calx by acids.

I. Acid of suet. 2. Acid of common salt. 3. Acid of sugar. 4. Acid of amber. 5. Acid of arsenic. 6. Acid of wood-sorrel. 7. Acid of phosphorus. 8. Acid of vitriol. 9. Acid of sugar of milk. 10. Acid of tartar. 11. Acid of citron or lemon. 12. Acid of nitre. 13. Acid of fluor mineral. 14. Acid of vinegar. 15. Acid of borax. 16. Acid of Berlin blue. 17. Aërial acid.

I. Mercury combined with acid of suet (acidum sebi.)

Hydrargyrum sebium.

2. Mercury combined with the muriatic acid; or acid of common salt.

* a. *Hydrargyrum muriatum.*

* *Hydrargyrum muriatum fer-* } By sublimation,
tius. } or
By precipitation.

Mercurius sublimatus corrosivus. *O.*

Mercurius sublimatus albus. *O.*

Mercurius corrosivus albus. *S. L.*

Mercurius corrosivus via humida paratus. *Monnet.*

COMPOSITA.

Solutio sublimati spirituosa of *Van Swieten.*

Solutio mercurii sublimati corrosivi. *E.*

Mixtura mercurialis. *S.*

Mercurius sublimatus solutus. *G.*

* *Solutio hydrargyri saliti fortioris aquosa.*

Pilulæ e mercurio corrosivo albo. *S.*

Lotio syphilitica flava, (lotio ex hydrargyro muriato fortiori)

Aqua phagedænica. O.

Liquor mercurialis. A.

Lotio mercurialis. Tb.

Solutio sublimati balsamica.

Plenck.

* *Liquor ad condylomata.*

Aqua caustica pro condylomatibus. Plenck.

b. *Calx hydrargyri muriata; i. e.* the calx of mercury united with some muriatic acid.

By sublimation.

* *Hydrargyrum muriatum mitiæ.*

Mercurius dulcis (sublimatione paratus). *O.*

Mercurius dulcis sublimatus. *L.*

Calomel seu calomelas. *L.*

Aquila alba.

Panacea mercurialis.

Mercurius dulcis lunaris. *Schroeder.*

COMPOSITA.

Bolus mercurialis. *E.*

Bolus jalappæ cum mercurio. *Ibid.*

Bolus rhei cum mercurio. *Ibid.*

Pilulæ calomelanos. *G.*

Pilulæ plummeri. *E.*

Pilulæ alterantes Plummeri. *O.*

Pilula depurans. *Tb.*

Pulvis Plummeri. *O.*

Pilulæ mercuriales purgantes:

A:

Pilulæ catarrhales purgantes:

D.

Pilulæ laxantes cum mercurio:

Ibid.

Pulvis e scammonio cum mercuria. *Tb.*

* *Lotio syphilitica nigra, (lotio ex hydrargyro muriato mitiori.)*

Lotio mercurialis. G.

By precipitations

a. From its solution in nitrous acid by common salt.

* *Calx hydrargyri muriata Scheelii.*

Mercurius precipitatus dulcis of *Scheele*, (the inventor)

b. From its solution in muriatic acid by vegetable alkali.

Mercurius precipitatus albus. *L.*

c. From its solution in muriatic acid by mineral alkali.

Mercurius præcipitatus albus.

A.

d. From its solution in muriatic acid by volatile alkali.

Mercurius præcipitatus albus.

E.

e. From its solution in muriatic acid by copper.

Mercurius præcipitatus viridis. *E.*

COMPOSITA.

Unguentum e mercurio præcipitato. *L.*

Linimentum mercuriale. *E. Paup.*

3. With the acid of sugar.

Hydrarg. saccharatum. *Bergmah.*

4. With the acid of amber.

Hydrarg. succinatum. *Bergman.*

5. With the acid of arsenic.

Hydrarg. arsenicatum. *Bergman.*

6. With the acid of wood sorrel, (*oxalis acetosella* Linnæi).

Hydrargyrum oxalinem. *Bergman.*

7. With phosphoric acid.

Hydrargyrum phosphoratum. *Bergman.*

By precipitation from its solution in the nitrous acid by recent urine.

Rosa mineralis. O.

8. With

8. With the vitriolic acid.

* a. *Hydrargyrum vitriolatum.*

Vitriolum mercurii. O.

Oleum mercurii. O.

b. *Calx hydrargyri vitriolata (flava.)*

Turpethum minerale. O.

Mercurius emeticus flavus. L.

Mercurius flavus. E.

Mercurius præcipitatus luteus.

D

Turpethum nigrum. O.

c. Mercury precipitated from its solution in nitrous acid by hepar sulphuris or hepar calcis,

Mercurius præcipitatus niger.

O.

9. With the acid of sugar of milk

10. With the acid of tartar.

a. *Hydrargyr. tartarifarum. Bergman.*b. With purified tartar, commonly called *cream of tartar*, (*veg. alkali supersaturated with the acid of tartar*).* *Tartarus hydrargyratus.*Terre fucetee mercurielle of Dr *Preßwin*, (the inventor.)

c. Mercury precipitated from its solution in nitrous acid by the acid of tartar.

* *Calx hydrargyri tartarifata flava; vulgo, Pulvis Constantinus.*

d. Mercury precipitated from its solution in muriatic and tartarous acid by fixed vegetable alkali.

* *Calx hydrargyri tartarifata alba; vulgo, Pulvis argenteus.*

11. With the acid of citron.

Hydrargyrum citratum. Bergman.

12. With the acid of nitre.

* *Hydrargyrum nitratum.*

A. Simply dissolved.

* *Acidum nitri hydrargyratum. Solutio mercurii. E.*

COMPOSITA.

Unguentum citrinum E. A. S.

B. Evaporated and calcined by fire.

* *Hydrargyrum nitratum rubrum.*

Mercurius corrosivus ruber.

L. E.

Mercurius præcipitatus ruber.

O.

Pulvis principis. O.

Mercurius corallinus. L.

Mercurius tricolor. O.

Panacea mercurii. O.

Arcanum corallinum. O.

Panacea mercurii rubra. O.

COMPOSITA.

Balsamum mercurialis. *Plenck.*Unguentum ophthalmicum. *St. Yves.*

Baifamum ophthalmicum rubrum. D.

Unguentum præcipitatum. G.

Unguentum ad lippitudinem. *Tb.*

Unguentum mercuriale rubrum. D.

Unguentum pomatum rubrum. D.

C. Precipitated from its solution in nitrous acid.

a. By volatile alkali.

* *Hydrargyrum nitratum cinereum.*

Pulvis mercurii cinereus. E.

Turpethum album. O.

Mercurius præcipitatus dulcis. O.

COMPOSITA.

Dr Ward's white drops, (mercury precipitated by nitrous acid, and redissolved by fal ammoniac).

Vegetable syrup.

Syrup de *Bellet*.

b. By vinous volatile alkali, (spiritus falis ammoniaci vinosus).

Turpethum nigrum.

Mercurius præcipitatus niger.

c. By fixt vegetable alkali.

Mercurius præcipitatus fuscus.

Wurtz.

d. By Copper.

Mercurius præcipitatus viridis. B.

13. With the acid of spar, (fluor mineralis.)

Hydrargyrum fluoratum. Bergman.

14. With the acid of vinegar.

Hydrargyrum acetatum. Bergman.

COMPOSITA.

Troches or pills of *Keyser*.

15. With the acid of Borax.

Hydrargyr. boraxatum. Bergman.

16. With the acid of Berlin blue.

17. With the acid of Molybdæna.

18. With the acid of tungstone.

19. With the aërial acid, (fixt air).

Hy.

Hydrargyrum acratum. *Berg-*
man.

Notwithstanding this immense number of mercurial preparations, there is reason to believe, that every useful purpose to be answered by mercury may be obtained from a very few. The mercurial preparations in general, with a view to their use both externally and internally, may be divided into two great classes, the mild and the acrid. Almost every purpose to be answered by the former, may be accomplished by the unguentum hydrargyri and pilulæ ex hydrargyro of the London and Edinburgh pharmacopœias; while most of the effects to be obtained from the latter may be derived from the proper use of those preparations, hitherto generally known under the title of Calomel and Corrosive Sublimate Mercury.

The marks of pure mercury are, its globules not losing their spherical figure when poured on wood; its not communicating a tinge to water, or sweetness to vinegar, when rubbed with them; its evaporating entirely in an iron spoon over the fire; and its having a shining appearance without any pellicle on its surface. Mercury is best purified by distillation in an iron pot, with a long neck bent and immersed in vinegar.

Quicksilver has sometimes been used in its pure metallic state, with the view of removing obstruction in the alimentary canal, from an idea that it would operate by its weight. But it is seldom attended with a good effect, and sometimes it must do harm.

Whole volumes have been written respecting its operation and use in different diseases, and particularly in venereal affections. Some refer its operation to an evacuant power, others to its operating as a peculiar stimulus, and a third set to its possessing a power of destroying or

neutralizing the venereal virus. Of these opinions, the latter is the most generally received, and perhaps the best founded. But for a more full view of the controversy, we may refer our readers to late publications on the venereal disease, and on mercury, by Mr John Hunter, Dr Schwediauer, and Dr Duncan.

In virulent gonorrhœa, it is doubted whether mercury be necessary. This disease is commonly treated like any similar inflammation; and the chief things attended to are cleanliness of the parts, a regular belly, and an abstinence from every thing stimulant in food, drink, &c. An injection of oil with calomel, or white precipitate, is much used, and some prefer a watery solution of opium. The more active injections have sometimes very disagreeable consequences.

When the constitution is affected, which is known by ulcers on the glans, buboes; ulcers in the mouth or throat, copper-coloured spots and ulcers on the surface, nodes, &c. mercury is thrown into the body either by friction or by the mouth. The general rule is, to keep up a slight soreness of the gums for some short time after the symptoms disappear; at the same time it is to be remembered, that mercury sometimes continues gleans, and induces ulcers, that are difficultly distinguished from venereal ones; and that these last only yield to warm bathing, diaphoretic diluents, opiates, country air and milk diet. Corrosive sublimate is sometimes used, as more speedily arresting disagreeable, spreading, or dangerous ulcers; but the completion of the cure should always be trusted to the mild preparations alone. Mercury is also used in rabies canina, in worms, in hydrocephalus internus, in tetanus, and is by some considered as an antidote to the variolous matter.

HYDROLAPATHUM [Ed.]

*Radix.**Rumex aquaticus Lin.*

Water dock; the root.

The leaves of this dock gently loosen the belly, and have sometimes entered decoctions for removing a costive habit. The roots manifest to the taste a considerable astringency; they form an ink with iron, and are celebrated for the cure of scorbutic and cutaneous disorders, both as exhibited internally and applied externally, in ointments, cataplasms, lotions, and fermentations. Muntingius published a treatise on this plant in 1681, in which he endeavours to prove, that our great water dock is the *Herba Britannica* of the ancients: and indeed the description which Dioscorides gives of the latter corresponds much with the former. He therefore ascribes to the *hydrolapathum* all the virtues formerly attributed to the *herba Britannica*, particularly recommending it against the scurvy and all its symptoms.

Where this disorder is of long standing, so as not to yield to the *hydrolapathum* alone, Muntingius directs a composition, by the use of which, he says, that even the venereal disease will in a short time be effectually cured. The composition is formed in the following manner: Six ounces of the roots of the water dock with two of saffron; and of mace, cinnamon, gentian root, liquorice root, and black pepper, each three ounces; or where pepper is improper, six ounces of liquorice. These are to be reduced into coarse powder, and put into a mixture of two gallons of wine, with half a gallon of strong vinegar, and the yolks of three eggs. The whole is to be digested with a moderate warmth, for three days, in a glazed vessel close stopped. From three to six ounces of this liquor are to be taken every morning on an empty sto-

mach, for fourteen or twenty days, or longer; and this is represented as a most useful remedy in scorbutic and venereal affections.

HYOSCIAMUS [Ed.] *Herba, semen.**Hyosciamus niger Lin.*

Common black henbane; the herb and seeds.

This vegetable grows in great abundance in most parts of Britain: it belongs to the natural order of the *solanaceæ*, comprehending the greater part of the narcotic vegetables; and it has long been considered as one of the most deleterious of these: but notwithstanding this, there can be no doubt that it proves on many occasions a very useful medicine; and it is to us matter of great surprise, that the London college have given it no place in their list, especially as some of the London practitioners mention it as a remedy which they frequently employ with much benefit.

The smell of the *hyosciamus* is strong and peculiar; and the leaves when bruised emit somewhat of the odour of tobacco. This smell is still stronger when the leaves are burnt; and on burning they sparkle with a deflagration, somewhat resembling that of nitre: but to the taste they show no evident saline impregnation. When chewed, they are insipid, mild, and mucilaginous; yet when taken to any great extent, they produce the most alarming effects. They give the appearances of intoxication, attended with wild delirium, remarkable dilatation of the pupils of the eyes, and convulsions. It often produces sweat, and sometimes an eruption of pustules over the surface, and generally sound sleep, succeeded by serenity of mind and recruited vigour of the body: but like the other narcotics, instead of these it sometimes gives rise to vertigo, headach, and general unconsciousness.

easiness. With particular individuals it occasions vomiting, colic pains, a copious flow of urine, and sometimes purging. Upon the whole, like opium, it is a powerful anodyne; and like cicuta, it is free from any constipating effect, having rather a tendency to move the belly.

From these operative effects, it is not surprising that hyosciamus should have been introduced into the practice of medicine; and accordingly it appears to have been used for a variety of purposes, both as applied externally and as taken internally, even at the earliest periods of medicine. Several different species of the hyosciamus were than employed, as appears from the writings of Dioscorides and others. Celsus, in particular, was very fond of this medicine; he used it externally as a collyrium, in cases of ophthalmia: he employed it topically for allaying the pain of toothach; and he gave it internally, both with a view of mitigating other pains and of producing quiet sleep.

For a considerable length of time, however, the hyosciamus fell almost into disuse; but the employment of it has of late been revived by Dr Stoerk of Vienna; and it has been used both by him and by many other practitioners with the best effects, particularly in those cases where an anodyne is requisite, and where an objection occurs to the use of opium. Accordingly, it is now employed in many diseases, and in various forms. It is employed for resolving swelling, and allaying pain in cases of scirrhus, under the form of cataplasm of the leaves, or of a plaster made from the oil of the seeds and powder of the herb, with wax, turpentine, and other articles; or of ointment made of the powder of the leaves with hog's lard. In open ulcers, powder of the leaves sprinkled on the part has often a good effect.

Internally, the hyosciamus is chiefly used under the form of an extract from the leaves or from the seeds; but, contrary to what happens with cicuta, the former appears to be the most powerful. This extract has been given with advantages in a variety of nervous affections, as mania, melaucholia, epilepsy, hysteria, &c. in glandular swellings, in obstinate ulcerations; and in every case where it is necessary either to allay inordinate action or mitigate pain. In accomplishing these ends, it is often no less useful than opium; and it often succeeds where opium produces very disagreeable effects, particularly distressing confusion of head. The dose of this extract must be accommodated to the circumstances of the case and of the patient; and it has been increased from half a grain to half a dram in the day; for like opium, its influence is very much diminished by habit.

HYPERICUM [*Lond.*] *Flos.*

Hypericum perforatum *Lin.*

St John's wort; the flowers.

This plant grows wild in woods and uncultivated places through Britain. Its taste is rough and bitterish, and its smell disagreeable. It abounds with an essential oil, which is contained in small vesicles in the growing plant. These vesicles, when viewed, by holding the plant between the eye and the light, resemble perforations; and the essential oil itself may be separated to a considerable extent by distillation. Hence there can be little doubt that it possesses active principles. At one period it was much employed and highly celebrated as a corroborant, diuretic, and vulnerary; and it was particularly extolled in hysterical and maniacal disorders. It was even reckoned of such efficacy as to have received the name of *fuga demonum*; but for these extraordinary virtues there is probably not much

much foundation; and of late it has been so much neglected as even to lead to its omission in the last edition of the Edinburgh Pharmacopœia.

This plant, however, is probably not without activity; and it is remarkable that the flowery tops tinge expressed oils of a red colour, which very few vegetable substances will do, and communicate a blood red to rectified spirit. The oil tinged by them is kept in the shops.

HYPOCISTIS [*Brun.*] *Succus.*
Cytinus hypocistis *Lin.*

Hypocistis; the juice.

Hypocistis is a fleshy production, growing in the warmer climates from the roots of different kinds of cisti. Its inspissated juice is an astringent similar to acacia, but somewhat stronger. At present it is scarce otherwise made use of than as an ingredient in some of the old compositions.

HYSSOPUS [*Ed.*] *Herba.*

Hyssopus officinalis *Lin.*

Hyssop; the herb.

The leaves of hyssop have an aromatic smell, and a warm pungent taste. Besides the general virtues of aromatics, they are particularly recommended in humoral asthmas, coughs, and other disorders of the breast and lungs; and said to promote expectoration: but so little dependence is put upon any property of this kind, that hyssop has now no place in the pharmacopœia of the London college.

JALAPA [*Lond. Ed.*] *Radix.*

Convolvulus jalapa *Lin.*

Jalap; the root

Jalap is the root of an American plant, brought to us in thin transverse slices from Xalpa, a province of New Spain. The botanical character of the vegetable which furnishes it are not absolutely ascertain-

ed; hence the London college have given it no Linnæan name. But in the opinion of the best botanists it belongs to the genus of convolvulus. In the London pharmacopœia this article has the name of *jalapium*; but from the derivation of the name, from the authority of the best botanical writers, and from the example of all the other modern pharmacopœias, the term *jalapa* or *jalappa*, is, we think, to be preferred.

Such pieces should be chosen as are most compact, hard, weighty, dark coloured, and abound most with black circular striæ. Slices of bryony root are said to be sometimes mixed with those of jalap: these may be easily distinguished by their whiter colour, and less compact texture. This root has no smell, and very little taste upon the tongue: but when swallowed, it affects the throat with a sense of heat, and occasions a plentiful discharge of saliva.

Jalap in substance, taken in a dose of about half a dram (less or more, according to the circumstances of the patient) in plethoric, or cold phlegmatic habits, proves an effectual, and in general a safe, purgative, performing its office mildly, seldom occasioning nausea or gripes, which too frequently accompany the other strong cathartics. In hypochondriacal disorders, and hot bilious temperaments, it gripes violently, if the jalap be good; but rarely takes due effect as a purge. An extract made by water purges almost universally, but weakly; and at the same time has a considerable effect by urine: the root remaining after this process gripes violently. The pure resin, prepared by spirit of wine occasions most violent gripings, and other distressing symptoms, but scarce proves at all cathartic: triturated with sugar, or with
O almonds

almonds into the form of an emulsion, or dissolved in spirit and mixed with syrups, it purges plentifully in a small dose, without occasioning much disorder: the part of the jalap remaining after the separation of the resin, yields to water an extract, which has no effect as a cathartic, but operates powerfully by urine. Its officinal preparations are an extract made with water and spirit, a simple tincture, and a compound powder.

Frederick Hoffman particularly cautions against giving this medicine to children; and assures, that it will destroy appetite, weaken the body, and perhaps occasion even death. In this point, the celebrated practitioner was probably deceived: children, whose vessels are lax, and the food soft and lubricating, bear these kinds of medicines, as Geoffroy observes, better than adults; and accordingly inoculators make much use of the tincture mixed with simple syrup. The compound powder is employed in dropsy, as a hydragogue purge; and where stimulus is not contraindicated, jalap is considered as a safe cathartic.

JAPONICA TERRA. Vide CATECHU.

JASMINUM [Brun.] Flos.

Jasminum officinale Lin.

Jasmine: the flower.

This is a small tree, commonly planted in our gardens. The flowers have a strong smell, which is liked by most people, though to some disagreeable: expressed oils extract their fragrance by infusion; and water elevates somewhat of it in distillation, but no essential oil has hitherto been obtained from them: the distilled water kept for a little time, loses its odour. As to their medical virtues, the present

practice expects not any from them, although they have been recommended for promoting delivery, curing ulcerations on the uterus, &c.

ICHTHYOCOLLA [Lond.]

Ising-glass, or fish-glu

This is a solid glutinous substance obtained from a large kind of fish caught in the seas of Muscovy. The skin and some other parts of the animal are boiled in water, the decoction is inspissated to a proper consistence, and then poured out so as to form thin cakes, these are either farther exsiccated till perfectly dry, or cut while soft into slices, which are afterwards bent, or rolled up into spiral, horseshoe, and other shapes. Some allege it consists of certain membranous parts of fishes, as the air-bladder, intestines, &c. only cleaned, dried, and rolled up or twisted. This glue is more employed for mechanic purposes than in medicine. It may be given in the same manner as the vegetable gums and mucilages; regard being had to their different disposition to putrescence.

It is also sometimes employed externally with a view to its action as a glue, and is probably the principal constituent of the black sticking plaster, or court plaster, as it is commonly called.

IMPERATORIA [Ed.] Radix.

Imperatoria ostruthium Lin.

Masterwort; the root.

This is a native of the Alps and Pyrenean mountains, and some parts of Germany, from whence we are supplied with roots superior in aromatic flavour to those raised in our gardens. The smell of this root is very fragrant: its taste bitterish, warm and pungent, glowing in the mouth for a long time after it has been chewed. This root, though

undoubtedly an elegant aromatic, is not regarded in the present practice; and accordingly it has no place in the London pharmacopœia; but it is still retained by the Edinburgh college, as well as in most of the foreign pharmacopœias. Its flavour is similar to that of angelica, but stronger.

IPECACUANHA [*Lond. Ed.*]
Radix.

Psychotria emetica Lin.

Ipecacuan; the root.

The vegetable from which this root is obtained is not with certainty determined, any more than that furnishing the jalap; but on the authority of the younger Linnæus, in the supplement which he published to his father's work, the Edinburgh college consider it, and probably with justice, as being the produce of a species of the psychotria.

The root is brought from the Spanish West-Indies. It is divided into two sorts, Peruvian and Brazilian: but the eye distinguishes three, ash coloured or grey, brown, and white. The ash-coloured, or Peruvian ipecacuan of the shops, is a small wrinkled root, bent and contorted into a great variety of figures, brought over in short pieces full of wrinkles, and deep circular fissures, quite down to a small white woody fibre that runs in the middle of each piece: the cortical part is compact, brittle, looks smooth and resinous upon breaking: it has very little smell; the taste is bitterish and sub-acrid, covering the tongue as it were with a kind of mucilage. The brown is small, and somewhat more wrinkled than the foregoing; of a brown or blackish colour without, and white within; this is brought from Brazil. The white sort is woody, has no wrinkles, and no perceptible bitterness in taste. The first sort, the ash-coloured or grey

ipecacuan, is that usually preferred for medicinal use. The brown has been sometimes observed, even in a small dose, to produce violent effects. The white, though taken in a large one, has scarce any effect at all: Mr Geoffroy calls this sort bastard ipecacuan, and complains that it is an imposition upon the public. Geoffroy, Neumann, Dale, and Sir Hans Sloane, informs us, that the roots of a kind of apocynum (dogsbane) are too frequently brought over instead of it; and instances are given of ill consequences following from the use of those roots: if the marks above laid down, particularly the ash colour, brittleness, deep wrinkles, and bitterish taste, be carefully attended to, all mistakes of this kind may be prevented.

Ipecacuan was first brought into Europe about the middle of last century, and an account of it published about the same time by Piso; but it did not come into general use till about the year 1686, when Helvetius, under the patronage of Lewis XIV. introduced it into practice. This root is one of the mildest and safest emetics with which we are acquainted; and has this peculiar advantage, that if it should not operate by vomit, it passes off by the other emunctories. It was first introduced among us with the character of an almost infallible remedy in dysenteries, and other inveterate fluxes, as menorrhagia and leucorrhœa, and also in disorders proceeding from obstructions of long standing: nor has it lost much of its reputation by time. In dysenteries, it almost always produces happy effects, and often performs a cure in a very short space of time. In other fluxes of the belly, in beginning dysenteries, and such as are of a malignant kind, or where the patient breathes a tainted air, it has not been found equally successful: in these cases it

is necessary to continue the use of this medicine for several days, and to join with it opiates, diaphoretics, and the like. This root, given in substance, is as effectual, if not more so, than any of the preparations of it: the pure resin acts as a strong irritating emetic, but is of little service in dysenteries; whilst an extract prepared with water is almost of equal service in these cases with the root itself, though it has little effect as an emetic. Geoffroy concludes from hence, that the chief virtue of ipecacuan in dysenteries depends upon its gummy substance, which lining the intestines with a soft mucilage, when their own mucus has been abraded, occasions their exulcerations to heal, and defends them from the acrimony of the juices: and that the resinous part, in which the emetic quality resides, is required, where the morbid matter is lodged in the glands of the stomach and intestines. But if the virtues of this root were entirely owing to its mucilaginous or gummy part, pure gums, or mucilages, might be employed to equal advantage. Water, assisted by a boiling heat, takes up from all vegetables a considerable portion of resinous along with the gummy matter: if the ipecacuan remaining after the action of water be digested with pure spirit, it will not yield half so much resin as at first: so that the aqueous extract differs from the crude root only in degree, being proportionably less resinous, and having less effect, both as an emetic, and in the cure of dysenteries. The virtues of ipecacuan, in this disorder, depend upon its promoting perspiration, the freedom of which is here of the utmost importance, and an increase of which, even in healthful persons, is generally observed to suppress the evacuation by stool. In dysenteries, the skin is for the most part dry

and tense, and perspiration obstructed: the common diaphoretics pass off without effect through the intestinal canal: but ipecacuan, if the patient after a puke or two be covered up warm, brings on a plentiful sweat. After the removal of the dysentery, it is necessary to continue the use of the medicine for some time longer, in order to prevent a relapse; for this purpose, a few grains divided into several doses, so as not to occasion any sensible evacuation, may be exhibited every day; by this means the cure is effectually established. And indeed small doses given, even from the beginning, have been often found to have better effects in the cure of this disease than larger ones. Geoffroy informs us from his own experience, that he has observed ten grains of the powder to act as effectually as a scruple or two; and therefore confines the dose betwixt six and ten grains: it has lately been found, that even smaller doses prove sufficiently emetic. The only officinal preparation of this root is a tincture made in wine, which accordingly has now the appellation of *vinum ipecacuanhæ*, both in the London and Edinburgh pharmacopœias.

Many ingenious experiments have been made on the subject of ipecacuan by Dr Irving, for which he obtained the prize medal of the Harveian Society at Edinburgh for 1784. He has ascertained, that while this root contains a gummy resinous matter, yet that the gummy exists in a much greater proportion than the resinous part; that the gummy part is much more powerfully emetic than the resinous; that although the cortical part of the root be more active than the ligneous, yet that even the pure ligneous part possesses a considerable emetic power; and that the whole of the

root possesses considerable influence, both as an antiseptic and astringent. To determine whether the emetic power of ipecacuan was of a volatile or fixed nature, Dr Irving subjected it to distillation. The water obtained by distillation was found to have very little influence; but the decoction which remained in the still, not only operated violently as an emetic, but produced rigours, cold sweats, and other alarming symptoms. By long continued boiling, the activity of the root itself is almost totally destroyed; but Dr Irving found, that the emetic property of ipecacuan was most effectually counteracted by means of the acetous acid; inso-much that thirty grains of the powder taken in two ounces of vinegar, produced only some loose stools.

Ipecacuan, particularly in the state of powder is now advantageously employed in almost every disease in which full vomiting is indicated; and when combined with opium under the form of the pulvis sudorificus, it furnishes us with the most useful and active sweating medicine which we possess. It is also often given with advantage in very small doses, so as neither to operate by vomiting, purging, nor sweating.

The full dose of the powder is a scruple or half a dram, and double that in form of a watery infusion. The full dose is recommended in the paroxysm of spasmodic asthma, and a dose of three or four grains every morning in habitual asthmatic indispo-sition. A dose of $\frac{1}{2}$ or $\frac{1}{4}$ grain rubbed with sugar, and given every four hours or oftener, is recommended in uterine hemorrhagy, cough, pleurisy, hæmoptœ, &c. and has often been found highly serviceable.

IRIS FLORENTINA [Lond. Ed.] Radix.

Iris florentina Lin.

Florentine orris; the root.

Several varieties of iris are cultivated in our gardens on account of the elegance of their flowers; but the florentine orris is what is chiefly employed for medicinal purposes. The roots, when recent, have a bitter, acrid, nauseous taste, and taken internally, prove strongly cathartic; and hence the juice is recommended in dropsies, in the dose of three or four scruples. By drying they lose this quality, yet still retain a somewhat pungent, bitterish taste: their smell in this state is of the aromatic kind; those produced in the warmer climates have a very grateful flavour, approaching to that of March violets: hence the use of the Florentine iris in perfumes, and for flavouring liquors; the shops employ it in the white pectoral troches, or *trochisci amyli*, as they are now styled.

IRIS PALUSTRIS [Ed.] Radix.

Iris pseudacorus Lin.

Yellow water-flag; the roots.

This plant grows in great abundance by the brinks of rivers, and in other watery places: the root has an acrid taste; and when fresh, is strongly cathartic. The expressed juice, given to the quantity of sixty or eighty drops every hour or two, and occasionally increased, has been productive of very copious evacuation, after jalap, gamboge, and other strong purgatives have proved ineffectual; and it is in this form that it is alone used; for by drying it entirely loses its purgative effects. But although this article still retains a place in the Edinburgh pharmacopœia, and under proper management might probably furnish an useful medicine, yet it is at present very little employed.

JUGLANS [*Lond.*] *Fructus immaturus.*

Juglans regia Lin.

Walnut; the unripe fruit.

The kernel of the fruit is similar in quality to almonds: the shell is astringent: but neither of them is at present much employed in medicine among British practitioners, although it still retains a place in most of the foreign pharmacopoeias, as well as in that of the London college.

JUJUBA [*Brun.*] *Bacca.*

Rhamnus zizyphus Lin.

Jujubes; the fruit.

Jujubes have a pleasant sweet taste. They are recommended in an acrimonious state of the fluids; in coughs from thin sharp defluxions; and in heat of urine: but they are at present, among us, a stranger to medicinal practice, and even to the shops.

JUNIPERUS [*Lond. Ed.*] *Bacca, cacumen.*

Juniperus communis Lin.

Juniper; the berry and top.

This is an evergreen shrub growing upon heaths and hilly grounds in all the parts of Europe: the wood and resin are not at present made use of for medicinal purposes: the berries are brought from Holland and from Italy, where this shrub is very plentiful. The Italian berries are in general reckoned the best.

Juniper berries have a strong not disagreeable smell, and a warm, pungent sweet taste, which, if they are long chewed, or previously well bruised, is followed by a bitterish one. The pungency seems to reside in the bark; the sweet in the juice; the aromatic flavour in oily vesicles, spread through the substance of the pulp, and distinguishable even by the eye; and the bit-

ter in the seeds: the fresh berries yield, on expression, a rich, sweet, honey-like, aromatic juice; if previously pounded so as to break the seeds, the juice proves tart and bitter.

These berries are useful carminatives and stonachics, and are diuretic: for these purposes a compound spirit and essential oil distilled from them are kept in the shops: the liquor remaining after the distillation of the oil, passed through a strainer, and gently exhaled to the consistence of a rob, proves likewise a medicine of great utility, and in many cases is perhaps preferable to the oil or berry it self: Hoffman is expressly of this opinion, and strongly recommends it in debility of the stomach and intestines, and says it is particularly of service to old people who are subject to these disorders, or labour under a difficulty with regard to the urinary excretion. This rob is of a dark brownish yellow colour, a balsamic sweet taste, with a little of the bitter, more or less according as the seeds in the berry have been more or less bruised. But perhaps one of the best forms under which they can be used, is that of a simple watery infusion. This, either by itself, or with the addition of a small quantity of gin, is a very useful drink for hydropic patients. An infusion of the tops has also been advantageously employed in the same manner.

KERMES [*Brun.*] *Grana, succus.*

Coccus, quercus, coccifera Lin.

Kermes; the grains.

These grains appear, when fresh, full of small, reddish ovula, or animalcules, of which they are the nidus. On expression, they yield a red juice, of a bitterish, somewhat tough and pungent taste, and a not unpleasent smell: this is brought to

us from the south of France. The grains themselves are cured by sprinkling with vinegar before exsiccation: this prevents the exclusion of the ova, and kills such of the animals as are already hatched; otherwise, they change into winged insect, leaving the grain an empty husk.

Kermes, considered as a medicine, is a grateful, very mild restringent, and corroborant. In this light it was looked upon by the Greeks; the Arabians added a cordial virtue: European writers also have in general recommended it for exhilarating the spirits, and against palpitations of the heart: they have also been particularly recommended, but without any good foundation, for promoting birth, and preventing abortion. I have known, says Geoffroy, many women, who had never reached the end of pregnancy, made joyful mothers by the use of pills composed of *kermes*, *germin. ovor. exsiccat.* and *confectio de hyacintho* (a composition containing some vegetable astringents and aromatics, together with gold and silver leaf, four precious stones, and other ingredients of less value:) three of these pills must be taken for the first dose, and this repeated three times, at the interval of two or three hours; after which three pills more are to be taken every morning on the three last days of the moon in every month till delivery. Notwithstanding this assertion, we conceive our readers will with us believe, that neither the kermes nor its auxiliaries are to be much depended on.

KINO [Lond. Ed.] *Gummi-resina.*

Gummi rubrum astringens Gambiense.

Kino; the gum-resin.

Kino was first recommended to the attention of medical practition-

ers by Dr Fothergill, as being a very useful vegetable astringent; and in the hands of other practitioners it has been so far found to answer the character he gave of it, that it is now in very common use. It has a considerable resemblance to the catechu; but is much more of a resinous nature, and of a firm texture: it is also redder and more astringent; its watery solution more decomposable by acids, and its ink less permanent. Its colouring and astringent matter are more perfectly taken up by spirit than by water, though water readily enough extracts a considerable share of both. It is used as an astringent in diarrhoea hæmorrhagies, &c. In proof spirit it forms an elegant tincture; and it is a principal ingredient in the *pulvis stypticus* and some other officinal compositions.

LAC [Ross.]

Milk.

Milk is a secretion peculiar to women, the females of quadrupeds, and of the cetaceous fishes. It may be considered as a kind of emulsion, consisting of butter, cheese, and whey; the whey containing a mucilaginous sugar, which keeps the butter and cheese in union with its water; and it is from this sugary part that milk is subject to the vinous fermentation, as in the Russian koumis, a vinous liquor made of mares milk, and recommended in phthisis and cases of weakness.

New milk mixes uniformly with common water, the mineral chalybeate waters, wines, and malt liquors that are not acid, weak vinous spirits, solutions of sugar, soaps, and neutral salts; but not with oils expressed or distilled. Acids both mineral and vegetable coagulate it; as also do fixt and volatile alkalies, and highly rectified

spirit of wine: the curd made by acids is in part resolved again by alkaline liquors; as that made by alkalies likewise is by acids. Neutral salts, nitre in particular, preserve it from coagulating spontaneously; and likewise render it less easily coagulable by acids.

The human milk is the sweetest of the liquors, and that of asses next to it: this last is the most di-

lute of them all; on suffering it to coagulate spontaneously, the curd scarce amounted to two drams from twelve ounces, whilst that of cows milk was five times as much: the coagulum of asses milk, even when made by acids, forms only into fine light flakes, which swim in the serum; that of goats milk concretes into more compact masses, which sink.

Upon evaporating twelve ounces of	There remained of dry matter drams,	From which water extracted a sweet saline substance, amounting, when exsiccated, to drams,
Cows milk	13	1½
Goats milk	12¼	1¼
Human milk	8	6
Asses milk	8	6

The saline substance obtained from asses milk was white, and sweet as sugar; those of the others brown or yellow, and considerably less sweet; that of cows milk, the least sweet of all. It appears therefore, that asses milk contains more serum, and much more of a saccharine saline matter than those of cows and goats; and that the two latter abound most with unctuous gross matter: hence these are found to be most nutritious, whilst the first proves most effectual as an aperient and detergent.

The inspissated residuum of milk, digested with about as much water as was wasted in the evaporation, yields an elegant kind of whey, more agreeable in taste, and which keeps better than that made in the common manner. This liquor promotes the natural secretions in general; and, if its use is duly continued, does good service in scorbutic and other disorders.

There are considerable differences in the milk of the same animal, according to its different aliment.

Dioscorides relates, that the milk of goats, who feed on the scammony plant and sparges, proved cathartic: and examples are given in the Acta Haffniensia of bitter milk from the animal having eaten wormwood. It is a common observation, that cathartics and spirituous liquors given to a nurse, affect the child: and that the milk of animals feeding on green herbs, is much more dilute than when they are fed with dry ones. Hoffman, from whom most of the foregoing observations are taken, carries this point so far, as to direct the animal to be dieted according to the disease for which its milk is to be drank.

LACCA [*Suec.*] *Gummi resina*,
Croton lacciferum Lin.

Lac the gum resin.

This is a sort of wax of a red colour, collected in the East-Indies by certain insects, and deposited on sticks fastened for that purpose in the earth. It is brought over, either adhering to the sticks, or in small transparent grains, or in semi-transparent

transparent flat cakes : the first is called *stick lac*, the second *seed lac*, and the third *shell lac*. On breaking a piece of stick lac, it appears composed of regular cells like the honeycomb, with small corpuscles of a deep red colour lodged in them: these are the young insects, and to these the lac owes its tincture ; for when freed from them, its colour is very dilute. The shell and seed lacs, which do not exhibit any insects or cellular appearance upon breaking, are supposed to be artificial preparations of the other: the seed sort is said to be the stick lac bruised and robbed of its more soluble parts; and the shell to be the seed lac, melted and formed into cakes. The stick lac therefore is the genuine sort, and ought alone to be employed for medicinal purposes. This concrete is of great esteem in Germany, and other countries, for laxity and sponginess of the gums, proceeding from cold, or a scorbutic habit : for this use the lac is boiled in water, with the addition of a little alum, which promotes its solution : or a tincture is made from it with rectified spirit. This tincture is recommended also internally in the fluor albus, and in rheumatic and scorbutic disorders : it has a grateful smell, and a not unpleasant, bitterish, astringent taste : The principal use of lac among us is in certain mechanic arts as a colouring drug, and for making sealing wax.

LACTUCA SATIVA [Brun.]

Folia, semina.

Lactuca sativa Lin.

Garden lettuce ; the leaves and seeds.

The several sorts of garden lettuces are very wholesome, emollient, cooling salad herbs, easy of digestion, and somewhat loosening the belly. Most writers suppose that they have a narcotic quality ; and

indeed, in many cases, they contribute to procure rest ; this they effect by abating heat, and relaxing the fibres. The seeds are in the number of the four lesser cold seeds.

Lactuca virosa Lin.

Strong scented wild lettuce.

This plant, which is indigenous in Britain, and grows in some places in considerable abundance, differs very essentially in its qualities from the garden lettuce. Although it has not been introduced into any of the modern pharmacopœias, yet it has of late been highly extolled for some purposes in medicine.

It smells strongly of opium, and resembles it in some of its effects ; and its narcotic power, like that of the poppy heads, resides in its milky juice. An extract from the expressed juice is recommended in small doses in dropsy. In dropsies of long standing, proceeding from visceral obstructions, it has been given to the extent of half an ounce a-day. It is said to agree with the stomach, to quench thirst, to be gently laxative, powerfully diuretic, and somewhat diaphoretic. Plentiful dilution is allowed during its operation. Dr Collin of Vienna asserts, that out of 24 dropsical patients, all but one were cured by this medicine.

LADANUM [Lond.] *Resina.*

Gisius creticus Lin.

Ladanum, the gum resin.

This resin is said to have been formerly collected from the beards of goats who bronzed the leaves of the cistus: at present, a kind of rake, with several straps or thongs of skins fixed to it, is drawn lightly over the shrub, so as to take up the unctuous juice, which is afterwards scraped off with knives. It is rarely met with pure, even in the places which produce it ; the dust, blown upon the plant by the wind, mingling

ling with the tenacious juice : the inhabitants are also said to mix with it a certain black sand. In the shops two sorts are met with : the best (which is very rare) is in dark-coloured almost black masses, of the consistence of a soft plaster, which grows still softer upon being handled; of a very agreeable smell, and of a light pungent bitterish taste : the other sort is harder, not so dark coloured, in long rolls coiled up : this is of a much weaker smell than the first, and has a large admixture of a fine sand, which in the ladanum, examined by the French academy, made up three-fourths of the mass. Rectified spirit of wine almost entirely dissolves pure ladanum, leaving only a small portion of gummy matter which has no taste or smell : and hence this resin may be thus excellently purified for internal purposes. It is an useful ingredient in the stomachic plaster, which is now indeed styled the *emplastrum ladani*.

LAMIUM [Brun.] *Herba, flores.*
Lamium album Lin.

Dead nettle ; the leaves and flowers.

This grows wild in hedges ; and flowers in April and May. The flowers have been particularly celebrated in uterine fluors and other female weaknesses, and also in disorders of the lungs ; but they appear to be of very weak virtue ; and they are at present so little used in Britain as to have now no place in our pharmacopœias.

LAVENDULA [Lond. Ed.]
Spica florentes.
Lavendula spica Lin.

Lavender ; the flowering tops.

There are different varieties of this vegetable, particularly the narrow and broad leaved. The flowers of both have a fragrant smell, to

most people agreeable, and a warm, pungent, bitterish taste : the broad-leaved sort is the strongest in both respects, and yields in distillation thrice as much essential oil as the other ; its oil is also hotter and specifically heavier : hence in the southern parts of France, where both kinds grow wild, this is only made use of for the distillation of what is called oil of spike. The narrow-leaved is the sort commonly met with in our gardens.

Lavender is a warm stimulating aromatic. It is principally recommended in vertigoes, palsies, tremors, suppression of the menstrual evacuations ; and in general in all disorders of the head, nerves, and uterus. It is sometimes also used externally in fomentations for paralytic limbs. The distilled oil is particularly celebrated for destroying the *pediculi inguinales*, and other cutaneous insects : if soft spongy paper, dipt in this oil, either alone, or mixed with that of almonds, be applied at night to the parts infested by the insects, they will certainly, says Geoffroy, be all found dead in the morning. The officinal preparations of lavender are, the essential oil, a simple spirit, and a compound tincture.

LAURUS [Lond. Ed.] *Folium, bacca.*

Laurus nobilis Lin.

Bay ; the leaf and berry.

The berries of the bay are generally brought from the Streights, tho' the tree bears the colds of our own climate. They have a moderately strong aromatic smell, and a warm, bitterish pungent taste : the berries are stronger in both respects than the leaves, and afford in distillation a larger quantity of aromatic essential oil ; they yield also an almost insipid oil to the press, in consequence of which they prove unctuous in the mouth. These simples are warm

carminative medicines, and sometimes exhibited with this intention against flatulent colics, and likewise in hysterical disorders.

Their principal use in the present practice is in glysters, and some external applications. The leaves enter our common fomentation; and the berries, the plaster of cummin: they also gave name to an electuary, which was little otherwise used than in glysters.

LENTISCUS [*Brun.*] *Lignum.*

Pistacia lentiscus *Lin.*

The lentise tree; the wood.

This tree or shrub is a native of the warm climates, but bears the common winters of our own. The wood is brought to us in thick knotty pieces, covered with an ash-coloured bark, and white within, of a rough, somewhat pungent taste, and an agreeable, though faint smell; the smaller tough sprigs are both in taste and smell the strongest. This wood is accounted a mild balsamic restringent; a decoction of it is in the German ephemerides dignified with the title of vegetable *aurum potable*, and strongly recommended in catarrhs, nausea, and weakness of the stomach; for strengthening the tone of the viscera in general, and promoting the urinary secretion.

This is the tree which in the island Chio affords the resin called *maslich*.

LEVISTICUM [*Suec.*] *Radix, herba, semen.*

Ligusticum, levisticum *Lin.*

Lovage; the plant, root, and seed.

This is a large umbelliferous plant, cultivated with us in gardens. The root nearly agrees in quality with that of angelica: the principal difference is, that the lovage root has a stronger smell, and a somewhat less

pungent taste, accompanied with a more durable sweetness: the seeds are rather warmer than the root. These simples, though certainly capable of being applied to useful purposes, are not at present regarded: neither of them is directed in extemporaneous prescription, and they have now no place in our pharmacopoeias.

LICHEN CINEREUS TERRESTRIS [*Brun.*]

Lichen caninus *Lin.*

Ash-coloured ground liverwort.

This consists of pretty thick digitated leaves, flat above, of a reticular texture underneath, and fastened to the earth by small fibres: the leaves when in perfection are of an ash-colour; by age they become darker-coloured or reddish. It is met with on common and open heaths, where it quickly spreads on the ground. Dr Mead informs us, that this plant grows in all countries, and has been brought over from America along with the Peruvian bark: that it is found at all times, but ought to be gathered from autumn to winter, as being then in its freshest vigour.

This simple is said to be a warm diuretic; but the taste discovers in it little or no warmth. It is chiefly celebrated for its virtue in the cure of the disorders occasioned by the bite of a mad dog. An account of the remarkable effects in these cases of a powder composed of the dried leaves and pepper was communicated to the Royal Society by Mr Dampier, and published in the Philosophical Transactions. This powder was afterwards inserted in the year 1721) into the London pharmacopoeia, under the title of *pulvis antilyssus*, at the desire of an eminent physician, who had great experience of its good effects. Some years after the same gentleman published

lished and dispersed a paper containing the method of cure, which he had in a great number of instances constantly found successful. In this paper the directions were to the following effect: "Let the patient be "blooded to the extent of nine or "ten ounces: and afterwards take "a dram and a half of the powder "every morning fasting, for four "mornings successively, in half a "pint of cows milk, warm. After "these four doses are taken, the "the patient must go into the cold "bath, or a cold spring or river, e- "very morning fasting for a month; "he must be dipt all over, but not "stay in (with his head above wa- "ter) longer than half a minute, if "the water be very cold: after this "he must go in three times a-week "for a fortnight longer." In the year 1745, the world was favoured with a new edition of the Mechanical Account of Poisons, in which we find the same method of cure again recommended, as having, in a course of thirty years experience, never failed of success; where it had been followed before the hydrophobia began. It is greatly to be wished, that the efficacy of this medicine in preventing these terrible disorders, was proved by incontestible facts. Instances have been produced of its proving unsuccessful; and the many examples of the fatality of the disease which continually occur, seem arguments either of the inefficacy of the medicine, or a strange negligence in applying it. We shall only farther observe, that Boerhaave, who is in general sufficiently liberal in the commendation of remedies, ranks this among those insignificant trifles, which whoever depends upon, will find himself deceived; and indeed this opinion is now so general, that this species of the lichen has no place in the present editions of our pharmacopœias,

and is now rejected from most of the foreign ones.

LICHEN ISLANDICUS [Ed.]
Herba.

Lichen islandicus Lin.

Eryngo-leaved, or eatable liverwort.

The leaves of this species of lichen are nearly erect, stiff when dry, and pliant when moist; irregularly divided into broad distant segments, smooth and ciliated at the margins. It is a native of this country. An ounce of it boiled in a pound of water, and strained, yields about seven ounces of as thick a mucilage as one part of gum Arabic dissolved in three parts of water. The Icelanders use it in diet. It is steeped in water to deprive it of its bitterness and cathartic quality, and the powder of it is made into pottage with milk or water. This diet is recommended in phthisis and scorbutus; and is said to be very nourishing, antiseptic, and gently laxative. The Edinburgh pharmacopœia, however, is the only one into which this species of lichen seems yet to be introduced: and we believe that few practitioners in Britain have much experience of its use. If it have any effect, it is probably only as a mild article of diet.

LIGNUM CAMPECHENESE
[Lond. Ed.]

Hæmatoxylum campechianum Gin.

Logwood, or Campeachy wood.

This wood is brought chiefly from Campeachy in the bay of Honduras. It is usually in large logs, very compact and hard, of a red colour, and an astringent sweet taste. It has been for a long time used by the dyers, but not till very lately as a medicine; a decoction of it, and the extract are in use in our hospitals, and said to have proved very serviceable in diarrhœa. It frequent-

ly tinges the stools, and sometimes the urine. The extract is now received into the shops; and it is found to be a very useful astringent.

LIGNUM RHODIUM [*Rofs.*]

Genista canariensis Lin.

Rosewood.

This wood or root is chiefly brought to us from the Canary islands. The writers on botany and the materia medica are much divided about the lignum rhodium, not only with regard to the plant which affords it, but likewise in their accounts of the drug itself, and have described, under this name, simples manifestly different. This confusion seems to have arisen from an opinion that the rhodium and aspalathus (an article of considerable esteem among the ancients, but with regard to which the moderns are very much at a loss) are the same; whence different woods brought into Europe for the unknown aspalathus were sold again by the name of rhodium.

In those modern pharmacopœias which admit the lignum rhodium, different Linnæan names are at present given to it: Thus the authors of the Dispensatorium Brunsvicenne suppose it to be the rhodiola rosa of Linnæus; and they may perhaps be as near the truth as the authors of the Pharmacopœia Rossica.

As to aspalathus, the ancients themselves disagree; Dioscorides meaning by this appellation the wood of a certain shrub freed from the bark, and Galen the bark of a root. At present we have nothing under this name in the shops. What was heretofore sold among us as aspalathus, were pieces of a pale coloured wood brought from the East-Indies, and more commonly called *calambour*.

The aspalathus, calambour, and

lignum aquilæ are supposed to be woods of the nature of *agallochum*, or *lignum aloes*, but weaker in quality.

The lignum rhodium of the shops is usually in long crooked pieces, full of knots, which when cut appear of a yellow colour like box, with a reddish cast: the largest, smoothest, most compact, and deepest coloured pieces, should be chosen; and the small, thin, or pale ones rejected. The taste of this wood is lightly bitterish, and somewhat pungent; its smell very fragrant, resembling that of roses: long kept, it seems to lose its smell; but on cutting or rubbing one piece against the other, it smells as well as at first. Distilled with water, it yields an odoriferous essential oil, in very small quantity. Rhodium is at present in esteem only upon account of its oil, which is employed as an high and agreeable perfume in scenting pomarums and the like. But if we may reason from analogy, this odoriferous simple might be advantageously applied to more useful purposes; tincture of it in rectified spirit of wine, which contains in small volume the virtue of a considerable deal of the wood, bids fair to prove a serviceable cordial, not inferior perhaps to any thing of this kind.

LIGUSTICUM, vide **LEVIS-TICUM**.

LILIUM ALBUM [*Ed.*] *Radix*.

Lilium candidum Lin.

White lilly; the root.

This is cultivated in gardens, more for the beauty of its flowers than medicinal use. The mucilaginous root is used by some in form of poultice; but it possesses no advantage over the poultices formed of vegetable farinæ.

LILIUM CONVALLIUM

[*Suec.*] Flores.*Convallaria maialis* Lin.

Lilly of the valley, or May lilly ; the flowers.

This plant grows wild in great abundance in woods and shady places, flowering in May. The flowers are said to be cephalic and nervine. They have a pleasant sweet smell, which they impart by infusion to expressed oils, and give over in distillation both to water and spirit ; but no essential oil has been hitherto obtained from them. Etmuller says, that the distilled spirit is more fragrant than the water. The roots of the wild lilly are very bitter : when dried they are said to prove a gentle errhine ; as are also the flowers

LIMON [*Lond. Ed.*] Succus, cortex exterior, et oleum vulgo essentialium dictum.

Citrus medica Lin.

Lemon ; the juice, outer rind, and its oil or essence.

The juice of lemons is similar in quality to that of oranges, from which it differs little otherwise than in being more acid. The yellow peel is an elegant aromatic, and is frequently employed in stomachic tinctures and infusions : it is considerably less hot than orange-peel, and yields in distillation with water a less quantity of essential oil : its flavour is nevertheless more perishable, yet does not arise so readily with spirit of wine ; for a spirituous extract made from lemon peel possesses the aromatic taste and smell of the subject in much greater perfection than an extract prepared in the same manner from the peels of oranges. In the shops, a syrup is prepared from the juice, and the peel is candied ; the peel is an ingredient in the bitter infusions and wines ; the essential oil enters the volatile aromatic spirit, or spiritus amoniac

compositus, as it is now called, and some other formulæ.

LINARIA [*Suec.*] Folia.*Antirrhinum linare* Lin.

Toad-flax ; the leaves.

This grows wild upon banks and about the sides of fields. It is said by some to be a powerful diuretic, whence it is named by Tragus *herba urinalis* ; by others, to be a strong cathartic, insomuch that Brunfelsius has called it by a German name expressing this quality *scheifskraut*. Experience scarcely warrants either of these appellations ; nor does common practice take any notice of the plant.

LINGUA CERVINA [*Brun.*]*Asplenium scolopendrium* Lin.

Harts-tongue : the leaves.

This plant consists of a number of long narrow leaves, without any stalk : it grows upon rocks and old walls, and remains green all the year. The leaves have a roughish, somewhat mucilaginous taste, like that of the maidenhair, but more disagreeable. They are recommended in obstructions of the viscera, and for strengthening their tone ; and have sometimes been made use of for these intentions, either alone, or in conjunction with maidenhair, or the other plants called *capillary*.

LINUM CATHARTICUM

[*Rofs.*] Herba.*Linum catharticum* Lin.

Purging flax ; the leaves.

This is a very small plant, not above four or five inches high, found wild upon chalky hills and in dry pasture-grounds. Its virtue is expressed in its title : an infusion in water or whey of a handful of the fresh leaves, or a dram of them in substance when dried, are said to purge without inconvenience.

LINUM SATIVUM [Lond. Ed.] *Semen.*

Linum usitatissimum Lin.

Linseed.

Linseed yields to the press a considerable quantity of oil; and boiled in water, a strong mucilage: these are occasionally made use of for the same purposes as other substances of that class; and sometimes the seeds themselves in emollient and maturing cataplasms. They have also been employed in Asia, and, in times of scarcity, in Europe, as food; but are not agreeable, or in general wholesome. Tragus relates, that those who fed on these in Zealand, had the hypochondres much distended, and the face and other parts swelled, in a very short time; and that not a few died of these complaints. The expressed oil is an officinal preparation.

LIQUIDAMBRA [Brun.] *Resina.*

Liquidambra styraciflua Lin.

Liquidamber.

This is a resinous juice which flows from a large tree growing in Virginia, Mexico, and other provinces of America. This juice is at first about the consistence of turpentine, but by long-keeping hardens into a resin: it is of a yellow colour inclining to red, a warm taste, and a fragrant smell, not unlike that of storax heightened with a little ambergris. It was formerly of great use as a perfume, but is at present a stranger to the shops.

LITHARGYRUS [Ed.]

Litharge.

This is a preparation of lead, usually in form of soft flakes, of a yellowish reddish colour. If calcined lead be urged with a hasty fire, it melts into the appearance of oil, and on cooling concretes into litharge. Greatest part of the litharge met

with in the shops, is produced in the purification of silver from lead, and the refining of gold and silver by means of this metal: according to the degree of fire and other circumstances, it proves of a pale or deep colour; the first has been commonly called litharge of silver, the other litharge of gold.

LITHOSPERMUM [Brun.] *Semen.*

Lithospermum officinale Lin.

Gromwell; the seed.

This is found wild in dry fields and hedges. Its seeds are roundish, hard, of a whitish colour, like little pearls; and from these circumstances have been supposed peculiarly serviceable in calculous disorders. Their taste is merely farinaceous.

LOBELIA [Ed.] *Radix.*

Lobelia siphilitica Lin.

Lobelia; the root.

This plant grows in moist places in Virginia, and bears our winters. It is perennial, has an erect stalk three or four feet high, blue flowers, a milky juice, and a rank smell. The root consists of white fibres about two inches long, resembles tobacco in taste, which remains on the tongue, and is apt to excite vomiting. It is used by the North American Indians as a specific in the venereal disease. The form is that of decoction; the dose of which is ordered to be gradually increased till it bring on very considerable purging, then to be intermitted for a little, and again used in a more moderate degree till the cure be completed. The ulcers are also washed with the decoction, and the Indians are said to sprinkle them with the powder of the inner bark of the spruce tree. The same strictness of regimen is ordered as during a salivation or mercurial course. The benefit to be derived from this article

article has not, as far as we know, been confirmed either in Britain or by the practitioners in Virginia: for there, as well as in this country, recourse is almost universally had to the use of mercury; and it is probably from this reason that the London college have not received it into their list. It however seems to be an article which, in some cases at least, deserves a trial.

LUJULA [Lond.] *Folium.*

Oxalis acetosella Lin.

Wood sorrel; the leaves.

This is a small plant, growing wild in woods. In taste and medical qualities, it is similar to the common sorrel, but considerably more grateful, and hence is preferred by the London college. Boiled with milk, it forms an agreeable whey; and beaten with sugar, a very elegant conserve, which has been for some time kept in the shops and not unfrequently employed.

LUPINUS [Brun.] *Simon.*

Lupinus albus Lin.

White lupines; the seeds.

These have a leguminous taste, accompanied with a disagreeable bitter one. They are said to be anthelmintic, both internally taken and applied externally. Caspar Hoffman cautions against their external use, and tells us (from one of the Arabian writers) that they have sometimes occasioned death. Simon Pauli also says, that he saw a boy of eight or ten years of age, after taking a dram of these seeds in powder, seized with exquisite pains of the abdomen, a difficulty of respiration, and almost total loss of voice; and that he was relieved from these complaints by a glyster of milk and sugar, which brought away a vast quantity of worms. But Mr Geoffroy observes, very justly, that either these symptoms were

owing to the worms, and not to the medicine; or that these seeds, if they have any noxious quality, lose it, with their bitterness, in boiling; since they were commonly used among the Greeks as food, and recommended by Galen as very wholesome.

LUPULUS [Suec.] *Strobuli.*

Humulus lupulus Lin.

Hops; the leafy heads.

These are one of the most agreeable of the strong bitters, though rarely employed for any medicinal purposes. Their principal consumption is in malt liquors, which they render less glutinous, and dispose to pass off more freely by urine.

The odour of hops hung in a bed has been said to induce sleep after opium had failed.

Hops contain a very considerable proportion of essential oil; and in the manner in which they are commonly used in brewing, this has been hitherto almost entirely lost: but of late a proposal has been made for preserving it as it arises, and restoring it to the brewed liquor, a discovery well meriting the public attention.

LYCOPERDON [Brun.]

Lycoperdon bovista Lin.

Puff ball, or dusty mushroom.

This fungus is found in dry pasture grounds. It seems to be nearly of the same quality with the agaric of the oak; and has, like it, been employed for restraining external hæmorrhagies and other fluxions. The fine dust, with which it becomes filled by age, has been applied also with the same intentions.

MACIS [Suec.] *Involucrum nucis moschatae.*

Myristica moschata Lin.

Mace.

Mace is one of the coverings of the nutmeg. This spice, considered as the subject both of medicine and of pharmacy, agrees nearly with the nutmeg. The principal difference is, that mace is somewhat less astringent, yields to the press a more fluid oil, and in distillation a more volatile one: what is called in the shops expressed oil of mace, is prepared not from this spice, but from the nutmeg. Mace was formerly an ingredient in the officinal steel-wine; and the expressed oil is still an ingredient in the stomachic and cephalic plasters, which are now more properly styled the *Emplastrum Ladani*, and *Emplastrum picis Burgundicæ*.

MAJORANA [Lond. Ed.]
Herba.

Origanum majorana Lin.

Sweet marjoram; the leaves.

Marjoram is raised annually in our gardens for culinary as well as medicinal uses; the seeds are commonly procured from the southern parts of France, where the plant grows wild. It is a moderately warm aromatic, yielding its virtues both to aqueous and spirituous liquors by infusion, and to water in distillation. It is principally celebrated in disorders of the head and nerves, and in the humoural asthma and catarrhs of old people. An essential oil of the herb is kept in the shops. The powder of the leaves proves an agreeable errhine, and enters the officinal sternutatory powder.

MALABATHRUM [Brun.]
Folium.

Indian leaf.

This leaf is of a green colour, firm texture, very smooth on one side, less so on the other, on which run three remarkable ribs through its whole length. It is conjectured to be the leaf a tree which is a

variety of the *laurus cinnamomum* of Linnæus. Lemery and Pomet affirm, that these leaves have no perceptible smell or taste; Herman and others, that they have a very great share of both: those met with in our shops have little or no smell till they are well rubbed, when they emit an agreeable spicy odour: on chewing, they are found extremely mucilaginous. This drug was formerly used in medicine as an ingredient in the mithridate and theriaca: It is, even when in its greatest perfection, much inferior to the mace, which has been directed as a succedaneum to it.

MALVA [Lond. Ed.] *Folium, flos.*

Malva sylvestris Lin.

Mallow; the leaf and flower.

These have a somewhat mucilaginous sweetish taste. The leaves are ranked the first of the four emollient herbs: they were formerly of some esteem, in food, for loosening the belly; at present, decoctions of them are sometimes employed in dysenteries, heat, and sharpness of urine, and in general for obtunding acrimonious humours: their principal use is in emollient glysters, cataplasms, and fomentations. The leaves enter the officinal decoction for glysters, and a conserve was formerly prepared from the flowers.

MANDRAGORA [Suec.] *Radix.*

Atropa mandragora Lin.

Mandrake; the root.

The qualities of this plant are very doubtful: it has a strong disagreeable smell, resembling that of the narcotic herbs, to which class it is usually referred; and it belongs indeed to the same genus even with the deadly night shade. It has rarely been any otherwise made use of in medicine than as an ingredient in one of the old officinal unguents. Both that composition and the plant

itself are now rejected from our pharmacopoeias ; but it still retains a place in most of the foreign ones, and may perhaps be considered as deserving farther attention.

MANNA [*Lond. Ed.*] *Succus concretus.*

Fraxinus ornus Lin.

Manna.

Manna is the juice of certain trees of the ash kind, growing in Italy and Sicily. When naturally con- creted on the plants and scraped off, it is called manna in the tear ; but if allowed to exude on straws or chips of wood fastened to the tree, it is called canulated or flaky manna. The common, or fat manna, is got by incisions made after the sponta- neous exudation is over, and is in larger masses and of a redder colour. The best Calabrian manna is in ob- long, light, friable pieces or flakes, of a whitish or pale yellow colour, and somewhat transparent. The inferior kinds are moist, unctuous, and dark coloured. Manna is said to be sometimes counterfeited by a composition of sugar and honey, mixed with a little scammony : there is also a factitious manna, which is white and dry, said to be composed of sugar, manna, and some purga- tive ingredient, boiled to a proper consistence ; this may be distin- guished by its weight, solidity, un- transparent whiteness, and by its taste, which is different from that of manna.

Manna is a mild, agreeable laxa- tive, and may be given with safety to children and pregnant women : nevertheless in some particular con- stitutions, it acts very unkindly, producing flatulencies and distention of the viscera ; these inconveniences may be prevented by the addition of any grateful warm aromatic. Manna operates so weakly as not to produce the full effect of a ca- thartic, unless taken in large doses ;

and hence it is rarely given with this intention by itself. It may be com- modiously dissolved in the purging mineral waters, or joined to the ca- thartic salts, sena, rhubarb, or the like. Geoffroy recommends acua- ting it with a few grains of emetic tartar : the mixture is to be divided into several doses, each containing one grain of the emetic tartar : by this management, he says, bilious serum will be plentifully evacuated, without any nausea, gripes, or other inconvenience. It is remarkable, that the efficacy of this drug is greatly promoted (if the account of Vallisnieri is to be relied on) by a substance which is itself very slow of operation, cassia. And for this reason manna is an ingredient in the electuary of cassia.

MARRUBIUM [*Lond. Ed.*]
Herba.

Marrubium vulgare Lin.

White horehound ; the leaves.

These have a very strong, not dis- agreeable smell, and a roughish very bitter taste. Besides the virtues which they possess in common with other strong bitters, they are sup- posed to be peculiarly serviceable in humoural asthmas and coughs, the yellow jaundice proceeding from a viscosity of the bile, and other chro- nical disorders. They are doubtless an useful aperient and deobstruent, they promote the fluid secretions in general, and liberally taken loosen the belly.

MARUM SYRIACUM [*Lond.*]
Herba.

Teucrium marum Lin.

Syrian herb mastich.

This is a small shrubby plant, growing spontaneously in Syria, Candy, and other warm climates, and cultivated with us in gardens. The leaves have an aromatic bitter- ish taste ; and when rubbed betwixt the fingers, a quick pungent smell, which

which soon affects the head, and occasions sneezing: distilled with water, they yield a very acrid, penetrating essential oil, resembling one obtained by the same means from scurvy-grass. These qualities sufficiently point out the uses to which this plant might be applied; at present it is little otherwise employed than in cephalic snuffs. It is an ingredient in the *pulvis sternutatorius* of the London pharmacopoeia, or *pulvis asari compositus*.

MARS SACCHARATUS [Ed.] Steel comfits.

This article is chiefly made by the confectioner; and, though little used, has got a place, as being occasionally convenient on account of its sweet taste; and it is sometimes used with advantage where chalybeates are indicated.

A solution of two parts of fine sugar in water boiled to a candy consistence, is gradually added to one part of purified iron filings, in a vessel hung over a very gentle fire, and constantly shaken, that the filings may be crusted over with the sugar. Starch is previously added, in the proportion of a dram to a pound, to prevent the comfit from running into lumps.

MASTICHE [Lon. Ed.] Resina. *Pistacia lentiscus* Lin. Gum mastich.

Mastich is a resinous substance brought from Chio, in small, yellowish, transparent grains or tears, of an agreeable smell, especially when heated or set on fire. This resin is recommended in old coughs, dysenteries, hæmoptoës, weakness of the stomach, and in general in all debilities and laxity of the fibres. Geoffroy directs an aqueous decoction of it to be used for these purposes: but water extracts little or nothing from this resin; rectified

spirit almost entirely dissolves it: the solution tastes very warm and pungent; it is not however the basis of any fixed formula in our pharmacopoeias, and is at present but little employed.

MATRICARIA [Succ.] Herba. *Matricaria parthenium* Lin.

Common wild featherfew; the leaves.

This plant was at one time much celebrated as an antihysterical medicine; but it is now so little employed in Britain, that it has no place in our pharmacopoeias.

Simon Pauli relates, that he has experienced most happy effects from it in obstructions of the uterine evacuations: I have often seen, says he, from the use of a decoction of matricaria and chamomile flowers with a little mugwort, hysterical complaints instantly relieved, the discharge succeed plentifully, and the patient, from a lethargic state, return as it were into life again. Matricaria is likewise recommended in sundry other disorders, as a warm stimulating bitter: all that bitters and carminatives can do, says Geoffroy, may be expected from this. It is undoubtedly a medicine of some use in these cases, though not perhaps equal to chamomile flowers alone, with which the matricaria agrees in sensible qualities, excepting in being weaker.

MECHOACANNA, [Brun.] Radix.

Convolvulus mechoacanna Lin.

Mechoacan; the root.

This is the root of an American convolvulus brought from Mechoacan, a province of Mexico, in thin slices like jalap, but larger, and of a whitish colour. It was first introduced into Europe about the year 1524, as a purgative universally safe, and capable of evacuating all mor-

bific humours from the most remote parts of the body : but as soon as jalap became known, Mechoacan gradually lost its reputation, which it has never since been able to retrieve. It is nevertheless by some still deemed an useful cathartic ; it has very little smell or taste, and is not apt to offend the stomach ; its operation is slow, but effectual and safe. Geoffroy affirms, that there is scarce any purgative accompanied with fewer inconveniences. It seems to differ from jalap only in being weaker ; the resins obtained from both have nearly the same qualities, but jalap yields five or six times as much as Mechoacan ; hence it is found necessary to exhibit the latter in six times the dose of the former, to produce the same effects.

MEL [Lond.]

Honey.

Honey is a vegetable juice, obtained from the honey comb, either by separating the combs, and laying them flat upon a sieve, through which the honey spontaneously percolates ; or by including the comb in canvas bags, and forcing the honey out by a press : the first sort is the purest ; the latter is found to contain a good deal of the matter of which the comb is formed, and sundry other impurities : there is another sort still inferior to the two foregoing, obtained by heating the combs before they are put into the press. The best sort is thick, of a whitish colour, an agreeable smell, and a very pleasant taste : both the colour and flavour differ according to the plants from which the bees collect it : that of Narbonne in France, where rosemary abounds, is said to have a very manifest flavour of that plant, and to be imitable by adding to other honey an infusion of rosemary flowers. Honey, considered as a medicine, is a very useful detergent and

aperient, powerfully promoting the expectoration of tough phlegm : in some particular constitutions it has an inconvenience of griping or proving purgative ; this is said to be in some measure prevented, by previously boiling the honey : This, however, with all constitutions, is by no means effectual ; and the circumstance mentioned has had so much weight with the Edinburgh college, that they do not now employ it in any preparation, and have entirely rejected the mella medicata, substituting syrups in their place : but there can be no doubt that honey is very useful in giving form to different articles, although there be some individuals with whom it may disagree. In order, however, to obtain the good effects of the honey itself, it must be used to a considerable extent, and as an article of diet.

MELAMPodium [Ed.] vide
HELLEBORUS NIGER.

MELILOTUS [Suec.] Flores,
herba.

Trifolium melilotus officinalis Lin.

Melilot ; the leaves and flowers.

This plant grows wild in hedges and among corn ; and has likewise, for medicinal uses, been cultivated in gardens. The green herb has no remarkable smell ; when dry, a pretty strong one ; the taste is roughish, bitter, and, if long chewed, nauseous. A decoction of this herb has been recommended in inflammations of the abdomen ; and a decoction of the flowers in the fluor albus. But modern practice rarely employs it any otherwise than in emollient and carminative glysters, and in fomentations, cataplasms, and the like ; and even in these not often. It formerly gave name to one of the officinal plasters, which received from the melilot a green colour, but no particular virtue.

MELISSA [*Lond. Ed.*] *Folia.*

Melissa officinalis Lin.

Balm; the herb.

This plant, when in perfection, has a pleasant smell, somewhat of the lemon kind; and a weak roughish aromatic taste. The young shoots have the strongest flavour; the flowers, and the herb itself when old, or produced in very moist rich soils or rainy seasons, are much weaker both in smell and taste. Balm is appropriated by the writers on the *Materia Medica*, to the head, stomach, and uterus; and in all disorders of these parts is supposed to do extraordinary service. So high an opinion have some of the chemists entertained of balm, that they have expected to find in it a medicine which should prolong life beyond the usual period. The present practice however holds it in no great esteem, and ranks it, where it certainly deserves to be, among the weaker corroborants: in distillation it yields an elegant essential oil, but in very small quantity; the remaining decoction tastes roughish. Strong infusions of the herb, drank as tea, and continued for some time, have done service in a weak lax state of the viscera: these liquors, lightly acidulated with juice of lemons, turn of a fine reddish colour, and prove an useful, and to many a very grateful drink, in dry parching fevers.

MELO [*Gen.*] *Semina.*

Cucumis melo Lin.

Melon: the seeds.

These stand among the four greater cold seeds. They have been sometimes used, with the others of that class, as cooling and emollient; but are at present little taken notice of.

MENTHA PIPERITIS

[*Lond. Ed.*] *Herba.*

Mentha piperita Lin.

Peppermint; the leaves.

This species of mint grows wild in some parts of England, in moist watery places, but is much less common than the other sorts. The leaves have a more penetrating smell than any of the other mints, and a much warmer, pungent, glowing taste like pepper, sinking as it were into the tongue. The principal use of this herb is in flatulent colics, languors, and other similar disorders; it seems to act as soon as taken, and extend its effects through the whole system, instantly communicating a glowing warmth. Water extracts the whole of the pungency of this herb by infusion, and elevates it in distillation. Its official preparations are an essential oil, a simple water, and a spirit.

MENTHA SATIVA [*Lond. Ed.*] *Herba.*

Mentha spicata Hudf. LOND.

Mentha viridis Lin. ED.

Garden or spear mint; the leaves.

The leaves of this mint have a warm roughish, somewhat bitterish taste; and a strong, not unpleasant, aromatic smell. Their virtues are those of a warm stomachic and carminative: in loss of appetite, nausea, continual retching to vomit, and, as Boerhaave expresses it, almost paralytic weaknesses of the stomach, there are few simples perhaps of equal efficacy. In colic pains, the gripes to which children are subject, henteries, and other kinds of immoderate fluxes, this plant frequently does good service. It likewise proves beneficial in hysteric cases, and affords an useful cordial in languors and other weaknesses consequent upon delivery.

The best preparations for these purposes are, a strong infusion made from the dry leaves in water (which is much superior to one from the green herb), or rather a tincture or extract prepared with rectified spi-

rit. These possess the whole virtues of the mint: the essential oil and distilled water contain only the aromatic part; the expressed juice only the astringency and bitterishness, together with the mucilaginous substance common to all vegetables. The essential oil, a simple water, a spirit, and a conserve, are kept in the shops.

MENYANTHES, vide **TRIFOLIUM**.

MERCURIALIS [*Gen.*] *Herba*.

Mercurialis annua Lin.

Herb mercury; the leaves.

These stand among the five emollient herbs; and with this intention are sometimes made use of in glysters. A syrup made from the leaves, given in the dose of two ounces, is said to prove a mild and useful laxative.

There is another sort of mercurialis growing in woods and hedges, which, though recommended by some botanic writers as having the same virtues with the foregoing, and as being more palatable, has been found possessed of noxious qualities. This may be distinguished from the foregoing, by its being a perennial plant, *Mercurialis perennis* Lin. by being larger, having its leaves rough and the stalks not at all branched; it is commonly called dog's mercury.

MERCURIUS, vide **HYDRARGYRUS**.

MESPILA. *Fructus mespili vulgaris* J. B.

Mespili Germanici Lin.

The medlar tree; its fruit.

Medlars are scarce ever made use of for any medicinal purposes. They have a very austere astringent taste, insomuch as not to be eatable until mellowed by keeping.

MEUM [*Brun.*] *Radix*.

Aethusa meum Lin.

Spignel; the root.

Spignel is an umbelliferous plant, found wild in Italy and the warmer parts of Europe, and sometimes also in England. The roots have a pleasant aromatic smell, and a warm pungent bitterish taste: in virtue they are similar to the levisticum, from which this root seems to differ only in being weaker and somewhat more agreeable. It is an useful aromatic and carminative, though, at present so little regarded as to have no place in our pharmacopoeias.

MEZEREUM [*Lond. Ed.*] *Cortex radices*.

Daphne mezereum Lin.

Mezeron, or spurge olive; the bark of the root.

Mezereon, although an article of great activity, has only of late had a place in our pharmacopoeias. It is a native of different parts of Europe; it has elegant pale purplish or white flowers, sometimes appearing about the end of January. The root was long used in the Lisbon diet-drink, for venereal complaints particularly nodes and other symptoms resisting the use of mercury; but with the composition of this article we were unacquainted, till an account of it was published in the Edinburgh Physical Essays, by Dr Donald Monro of London.

On chewing it a little, it proves very pungent, and its acrimony is accumulated about the fauces, and is very durable. It is employed chiefly under the form of decoction; and it enters the decoction sarsaparillæ compositum of the London college; but it has also been used in powder combined with some inactive one, as that of liquorice root. It is apt to occasion vomiting and purging; so must be begun in grain-doses and gradually increased. It is often usefully combined with mercury.

The

The bark of the root contains most acrimony, though some prefer the woody part. Mezeoreon has also been used with good effects in tumours and cutaneous eruptions not venereal.

MILLEFOLIUM [Ed.] *Folia.*
fores.

Achillea millefolium Lin.

Milfoil; the leaves and flowers.

This grows plentifully about the sides of fields, and on dry commons, flowering greatest part of the summer. The leaves have a rough bitterish taste, and a faint aromatic smell. Their virtues are those of a very mild astringent; and as such they stand recommended in hæmorrhagies both internal and external, in diarrhœas, debility, and laxity of the fibres, and likewise in spasmodic and hysterical affections. In these cases, some of the Germans have a very high opinion of this herb, particularly Stahl, who esteemed it a very effectual astringent, and one of the most certain tonics and sedatives. Its virtues are extracted in great perfection by proof spirit; water takes up its astringency and bitterness, but little of its aromatic flavour; tinctures made in rectified spirit contain both, though they be rather weaker than those in proof spirit.

The flowers of milfoil are considerably stronger in aromatic flavour than the leaves; in distillation, they yield a small quantity of essential oil, of an elegant blue colour.

The roots, taken up in the spring, have an agreeable, warm, pungent taste. Dr Grew resembles them to contrayerva, and imagines they might in some degree supply its place: this, however, is much to be doubted, since there is such a remarkable difference between the two, that whilst one retains its taste for a length of time after it has been brought to us from America, the

taste of the other is almost lost by drying.

MILLEPEDA [Lond. Ed.]

Oniscus asellus Lin.

Slaters.

These insects are found in cellars, under stones, and in cold moist places: in the warmer countries they are rarely met with. Millepedes have a faint disagreeable smell, and somewhat pungent, sweetish, nauseous taste. They have been highly celebrated in suppressions of urine, in all kinds of obstructions of the bowels, in the jaundice, weakness of sight, and a variety of other disorders. Whether they have any just title to these virtues, is greatly to be doubted: thus much is certain, that their real effects come far short of the character usually given of them. Their officinal preparations are, the millepedes dried and powdered, and a vinous infusion, which is by some held in high esteem in cases of hooping cough.

MINIUM [Lond.] Red lead; lead calcined to redness. See the article **PLUMBUM**.

MORSUS DIABOLI [Brun.]

Radix, folia.

Scabiosa succissa Lin.

Devil's bit; the leaves and roots.

These stand recommended as alexipharmacs, but they have long given place to medicines of greater efficacy.

MORUM [Lond.] *Fructus.*

Morus nigra Lin.

Mulberry; the fruit.

This tree is commonly cultivated on account of its fruit, which is rather eaten for pleasure than used as a medicine; it has the common qualities of the other sweet fruits, abating heat, quenching thirst, and promoting the grosser secretions; an agreeable syrup made from the juice

is kept in the shops. The bark of the roots has been in considerable esteem as a vermifuge; its taste is bitter, and somewhat astringent.

MOSCHUS [*Lond. Ed.*]

Moschus moschiferus Lin.

Musk.

Musk is a grumous substance like clotted blood, found in a little bag, situated near the umbilical region of a particular kind of animal met with in China, Tartary, and the East-Indies: the best musk is brought from Tonquin, an inferior sort from Agria and Bengal, and a still worse from Russia.

Fine musk comes to us in round thin bladders; which are generally about the size of a pigeon's egg, covered with short brown hairs, well filled, and without any appearance of having been opened. The musk itself is dry, with a kind of unctuousity, of a dark reddish brown, or rusty blackish colour, in small round grains, with very few hard black clots, and perfectly free from any sandy or other visible foreign matter. If chewed, and rubbed with a knife on paper, it looks smooth, bright, yellowish, and free from grittiness. Laid on a red-hot iron, it catches flame, and burns almost entirely away, leaving only an exceeding small quantity of light greyish ashes; if any earthy substances have been mixed with the musk, the quantity of the residuum will readily discover them.

Musk has a bitterish subacid taste; a fragrant smell, agreeable at a distance, but when smelt near to, so strong as to be disagreeable, unless weakened by the admixture of other substances. If a small quantity be infused in spirit of wine in the cold for a few days, it imparts a deep, but not red tincture: this, though it discovers no great smell of the musk, is nevertheless strongly impregnated with its virtues; a single

drop of it communicates to a whole quart of wine a rich musky flavour. The degree of flavour which a tincture drawn from a known quantity of musk, communicates to vinous liquors, is perhaps one of the best criteria for judging of the goodness of this commodity. Neumann informs us, that spirit of wine dissolves ten parts out of thirty of musk, and that water takes up twelve; that water elevates its smell in distillation, whilst pure spirit brings over nothing.

Musk is a medicine of great esteem in the eastern countries: among us, it has been for some time pretty much out of use, even as a perfume. It appears, however, from late experience, to be, when properly managed, a remedy of good service even against those disorders which it has been supposed to produce. Dr Wall has communicated (in the Philosophical Transactions, n^o 474), an account of some extraordinary effects of musk in convulsive and other diseases, which have too often baffled the force of medicine. He observes, that the smell of perfumes is often of disservice, where the substance taken inwardly, and in considerable quantity, produces the happiest effects: that two persons, labouring under a subsultus tendinum, extreme anxiety, and want of sleep, from the bite of a mad dog, by taking two doses of musk, each of which was sixteen grains, were perfectly relieved from their complaints. He likewise observes, that convulsive hiccup, attended with the worst symptoms, were removed by a dose or two, of ten grains: and that in some cases, where this medicine could not, on account of strong convulsions, be administered to the patient by the mouth, it proved of service when injected as a glyster. He likewise adds, that under the quantity of six grains, he never found much effect from it; but that taken

taken to ten grains and upwards, it never fails to produce a mild diaphoresis, without at all heating or giving any uneasiness; that on the contrary, it eases pain, raises the spirits, and that after the sweat breaks out the patient usually falls into a refreshing sleep; that he never met with any hysterical person, how averse soever to perfumes, but could take it in the form of a bolus, without inconvenience. To this paper is annexed an account of some farther extraordinary effects of musk observed by another gentleman. Repeated experience has since confirmed its efficacy in these disorders. The dose has sometimes been increased, particularly in convulsive disorders, to the quantity of a scruple or half a dram every three or four hours, with two or three spoonfuls of the musk julep between. The julep is the only officinal preparation of it. It is combined with opium in tetanus, and with mercury in rabies canina.

It is not improbable, that we are often disappointed of the good effects which this medicine might produce, from the musk with which the shops are supplied being previadulterated.

MYROBALANI.

Myrobalans, dried fruits brought from the East-Indies; their outward part freed from the stone.

Five kinds of myrobalans were formerly directed as officinals: all of them are supposed to be the produce of the same tree, but its botanical description is not yet ascertained.

All the myrobalans have a low degree of purgative virtue. They have also an astringent quality, discoverable by the taste, from their use among the Indians for tanning leather, and from their striking a black colour with chalybeate solutions: in

consequence of this, they are supposed to strengthen the bowels after their operation as a cathartic is over. Nevertheless their purgative virtue is so inconsiderable, that practitioners have for a long time laid them entirely aside with that intention; and the college of Edinburgh, as well as that of London, has now rejected them from the catalogue of officinal simples.

MYRRHA [Lond. Ed.] *Gummi resina.*

Myrrh; gum resin.

Myrrh is a concrete gummy resinous juice brought from the East Indies, in glebes or drops, of various colours and magnitudes. The best sort is of a brown or reddish yellow colour, somewhat transparent; of a lightly pungent, bitter taste, with an aromatic flavour, though not sufficient to prevent its proving nauseous to the palate; and a strong, not disagreeable smell. The medical effects of this aromatic bitter are to warm and strengthen the viscera; it frequently occasions a mild diaphoresis, and promotes the fluid secretions in general.

Hence it proves serviceable in languid cases, diseases arising from a simple inactivity, those female disorders which proceed from a cold, mucous, sluggish indisposition of the humours, suppressions of the uterine discharges, cachectic disorders, and where the lungs and thorax are oppressed by viscid phlegm. Myrrh is likewise supposed in a peculiar manner to resist putrefaction in all parts of the body; and in this light stands recommended in malignant, putrid, and pestilential fevers, and in the small-pox; in which last it is said to accelerate the eruption.

The present practice does not seem to expect any peculiar virtue from myrrh; and it is now perhaps less employed than formerly. Some late writers

writers, however, and particularly Dr Simmons in his Treatise on Consumptions, have bestowed very high encomiums upon it, even in cases of tuberculous phthisis; and although it can by no means be represented as a remedy much to be depended upon, yet there is reason to believe that it has been serviceable in some cases.

Rectified spirit extracts the fine aromatic flavour and bitterness of this drug, and does not elevate any thing of either in evaporation: the gummy substance left by this menstruum has a disagreeable taste, with scarce any thing of the peculiar flavour of the myrrh: this part dissolves in water, except some impurities which remain. In distillation with water, a considerable quantity of a ponderous essential oil arises, resembling in flavour the original drug. Myrrh is the basis of an officinal tincture. It enters the *pilulæ ex aloe et myrrha*, the *pilulæ e gummi*, and *pilulæ stomachicæ*, and some other formulæ. But for obtaining its full effects, it must be given in doses of half a dram or upwards; and it is thought to be advantageously united with a proportion of nitre, cream of tartar, or some other refrigerant salt.

MYRTUS [*Brun. Baccæ.*

Myrtus communis Lin.

Myrtle; the berries.

This is an evergreen shrub, growing in Italy, and cultivated in our botanic gardens. The leaves and berries have been sometimes made use of as astringents, but not at present regarded.

NAPUS [*Brun.*] Semen.

Brassica napus Lin.

Sweet navew, or navew gentle; the seeds.

This is a sort of turnip, sown in some of our gardens for culinary use:

the roots are warmer than the common turnip. The seeds have a bitterish taste, accompanied with a faint aromatic flavour: abundance of virtues have been ascribed to them, as attenuating, detergent, alexipharmac, and others; at present they are hardly employed in medicine.

NARDUS INDICA [*Brun.*]

Radix.

Andropogon nardus Lin.

Indian nard, or spikenard.

This root, brought from the East-Indies, is a congeries of small fibres issuing from one head, and matted close together, so as to form a bunch about the size of the finger, with some small strings at the opposite end of the head. The matted fibres (which are the parts chosen for medicinal purposes) are supposed by some to be the head or spike of the plant, by others the root: they seem rather to be the remains of the withered stalks, or the ribs of the leaves: sometimes entire leaves and pieces of stalks are found among them: we likewise now and then meet with a number of these bunches issuing from one root.

Spikenard has a warm, pungent, bitterish taste; and a strong, not very agreeable, smell. It is stomachic and carminative; and said to be alexipharmac, diuretic, and emmenagogue; but at present it is very little employed.

NASTURTIIUM AQUATICUM [*Lond. Ed.*] Herba.

Sisymbrium nasturtium Lin.

Water-cresses; the fresh herb.

This plant grows wild in rivulets, and the clearer standing waters; its leaves remain green all the year, but are in greatest perfection in the spring. They have a quick pungent smell (when rubbed betwixt the fingers), and an acrid taste, similar to that of *cochlearia*, but weaker. As

to their virtues, they are among the milder aperient antiscorbutics. Hoffman has a high opinion of this plant, and recommends it as of singular efficacy for accelerating the circulation, strengthening the viscera, opening obstructions of the glands, promoting the fluid secretions, and purifying the blood and humours: for these purposes, the expressed juice, which contains the peculiar taste and pungency of the herb, may be taken in doses of an ounce or two, and continued for a considerable time. The juice is an ingredient in the *succus cochlearia compositus* of the shops.

NEPETA [*Brun.*] *Folia.*

Nepeta cataria Lin.

Catmint; the leaves.

This plant is commonly cultivated in our gardens, and is sometimes also found growing wild in hedges and on dry banks. It is a moderately aromatic plant, of a strong smell, not ill resembling a mixture of mint and pennyroyal; of the virtues of which it likewise participates.

NEPHRITICUM LIGNUM
[*Brun.*]

Guilandina moringa Lin

Nephritic wood.

This is an American wood, brought to us in large, compact, ponderous pieces, without knots, of a whitish or pale yellow colour on the outside, and dark coloured or reddish within: the bark is usually rejected. This wood imparts to water or rectified spirit a deep tincture: appearing, when placed between the eye and the light, of a golden colour; in other situations, blue; pieces of another wood are sometimes mixed with it, which give only a yellow colour to water. The nephritic wood has scarce any smell, and very little taste. It stands re-

commended in difficulty of urine, nephritic complaints, and all disorders of the kidneys and urinary passages; and it is said to have this peculiar advantage, that it does not, like the warmer diuretics, heat or offend the parts. Practitioners, however, have not found these virtues warranted by experience.

NICOTIANA [*Lond.*] *Folium.*

Nicotiana tabacum Lin.

Tobacco; the leaves.

This plant was first brought into Europe about the year 1560, from the island Tobago in America; and is now sometimes cultivated for medicinal use in our gardens; but in general imported from America in large quantities. The leaves are about two feet long, of a pale green colour whilst fresh, and when carefully dried of a lively yellowish cast. They have a strong, disagreeable smell, like that of the narcotic plants; and a very acrid burning taste. Taken internally, they prove virulently cathartic and emetic, occasioning almost intolerable cardialgic anxieties. By boiling in water, their virulence is abated, and at length destroyed: an extract made by long coction is recommended by Stahl and other German physicians, as a safe and most effectual aperient, expectorant, detergent, &c. but this medicine, which is extremely precarious and uncertain in strength, has never come into esteem among us. Of late, however, tobacco, under the form of a vinous or watery infusion, and taken in such small doses as to produce little effect from its action on the stomach, has been recommended to the attention of practitioners by Dr Fowler. He has found it to be a very useful and powerful diuretic, and has published many cases of dropsy and dysury, in which its employment has been attended with

the best effects. And these good effects have been confirmed by the observations of other practitioners.

Tobacco is sometimes used externally in unguents, for destroying cataneous insects, cleansing old ulcers, &c. Beaten into a mash with vinegar or brandy, it has sometimes proved serviceable for removing hard tumours of the hypochondres; an account is given in the Edinburgh Essays of two cases of this kind cured by it.

Injections by the anus of the smoke or decoction have been used with advantage in cases of obstinate constipation threatening ileus, of incarcerated hernia, of ascarides, of spasmodic asthma, and of persons apparently dead from drowning or other sudden causes. It has been used internally in form of syrup, conserve, and infusion, in cases of worms, epilepsy, amenorrhoea, asthma, &c. but it is certainly too active to be thus ventured on. An infusion of its ashes, recommended in dropsy, is not probably different from other such vegetable lixivium.

There is another sort of tobacco found wild on dunghills in several parts of England: *Nicotiana rustica* of Lin. It seems to agree in quality with the hyoscyamus formerly mentioned, though, as Dale informs us, often substituted in our markets for the true tobacco: from which it may be distinguished by the leaves being much smaller, and the flowers not reddish as those of the officinal sort, but of a yellowish green colour.

NIGELLA [*Brun.*] *Semen.*

Nigella Sativa Lin.

Fennel-flowers; the seeds.

This plant is sown annually in some of our gardens; the seeds most esteemed are brought from Italy. They have a strong, not unpleasant smell; and a subacid, somewhat

unctuous disagreeable taste. They stand recommended as aperient, diuretic, &c. but have long been strangers to practice, and are by some suspected to have noxious qualities.

NITRUM [*Lond. Ed.*]

Kali nitratum.

Nitre.

Nitre, or saltpetre, is a salt extracted in Persia and the East-Indies from certain earths that lie on the sides of hills; and artificially produced, in some parts of Europe from animal and vegetable matters rotted together, with the addition of lime and ashes, and exposed for a length of time to the air; without the access of which, nitre is never generated; the salt extracted from the earth, &c. by means of water, is purified by colature and crystallization.

Pure nitre dissolves in about six times its weight of water, and concretes again into colourless transparent crystals; their figure is that of a hexagonal prism, terminated by a pyramid of an equal number of sides. It readily melts in the fire; and in contact with fuel desagrates with a bright flame and considerable noise; after the detonation is over, a large quantity of alkaline salt is found remaining. The taste of nitre is sharp, penetrating, and bitterish, accompanied with a certain sensation of coldness.

Nitre is a medicine celebrated in many disorders. Besides the aperient quality of neutral salts in general, it has a manifestly cooling one, by which it quenches thirst, and abates febrile heats and commotions of the blood: it has one great advantage above the refrigerating medicines of the acid kind, that it does not coagulate the animal juices; blood, which is coagulated by all the mineral acids, and milk, &c. by acids

acids of every kind, are by nitre rendered more dilute, and preserved from coagulation: it is, however, supposed to thicken the thin, serous, acrimonious humours, and occasion an uniform mixture of them with such as are more thick and viscid; by this means preventing the ill consequences which would otherwise ensue from the former, though it has not, as Junckner supposes, any property of really obtunding acrimony. This medicine for the most part promotes urine; sometimes gently loosens the belly; but in cold phlegmatic habits, very rarely has this effect, though given in large doses: alvine fluxes, proceeding from too great acrimony of the bile or inflammation of the intestines, are suppressed by it: in choleric and febrile disorders, it generally excites sweat; but in malignant cases, where the pulse is low, and the strength lost, it retards this salutary evacuation and the eruption of the exanthemata.

Dr Stahl has written an express treatise upon the medical virtues of nitre; in which he informs us, from his own experience, that this salt added to gargarisms employed in inflammations of the fauces in acute fevers, thickens the salival moisture upon the palate and fauces into the consistence of a mucus, which keeps them moist for a considerable time; whereas, if nitre be not added, a sudden dryness of the mouth immediately ensues: that in nephritic complaints, the prudent use of nitre is of more service than any of the numerous medicines usually recommended in that disease: that nitre gives great relief in suppression and heat of urine, whether simple or occasioned by a venereal taint; that it is of great service in acute and inflammatory pains of the head, eyes, ears, teeth, &c. in all erysipelatous affections whether particular or uni-

versal, and likewise in chronic delirium; that in diarrhoea happening in petechial fevers, nitre mixed with absorbents and diaphoretics, had the best effects, always putting a stop to the flux, or rendering the evacuation salutary; that in diarrhoea happening in the small-pox, it had been employed with the like success, two doses or three at most, consisting of two, three, or four grains each, according to the age, &c. of the patient, given at the interval of two or three hours, putting a stop to the flux, after the bezoardic powders, both with and without success. The same author recommends this salt likewise as a medicine of singular service in cholera attended with great anxieties and heat of the blood: in the flatulent spasmodic heartburns familiar to hypochondriacal people; and against the loss of appetite, nausea, vomiting, &c. which gouty persons are sometimes seized with upon the pains of the feet, &c. suddenly remitting. In cases of this last kind, the use of nitre surely requires great caution, although the author assures us, that no bad consequences are to be feared from it. Nevertheless, he observes, that in a phthisis and ulcerous affection, it has been found to be of no service; and that therefore its use may be superseded in these complaints. Indeed, in disorders of the lungs in general, it is commonly reckoned to be rather hurtful than beneficial. In modern practice, it is given in form of powder or julep as a refrigerant and diuretic; and some recommend it much in hemoptysis, though in some constitutions it is alleged to have a peculiar influence on the lungs, occasioning dyspnoea even when given by the anus. It is said to dispose to cramps in the stomach, and to be particularly unfriendly to gouty stomachs.

The usual dose of this medicine among us is from two or three grains to a scruple; though it may be given with great safety, and generally to better advantage, in larger quantities: the only inconvenience is its not being apt to sit easy on the stomach. Some have affirmed, that this salt loses half its weight of aqueous moisture by fusion, and consequently that one part of melted nitre is equivalent to two of the crystals; but it did not appear, upon several careful trials, to lose so much as one-twentieth of its weight. The only officinal preparation of nitre is the troches. It is employed likewise in operations on metallic bodies, for promoting their calcination, as in the *calx antimonii nitrata*.

NUMMULARIA [*Brun.*] *Folia*.

Lysimachia nummularia Lin.

Moneywort, or herb two-pence; the leaves.

This grows spontaneously in moist watery places, and creeps on the ground with two little roundish leaves at each joint. Their taste is subastringent, and very lightly acid: hence they stand recommended by Boerhaave in the hot scurvy, and in uterine and other hemorrhagies. But their effects are so inconsiderable, that common practice takes no notice of them.

NUX MOSCHATA [*Lond. Ed.*] *Oleum essentiale, oleum expressum, oleum macis, vulgo dictum.*

Myristica moschata. Act. Holm. [*Lond.*]

Myristica officinalis Lin. *Sup.* [*Ed.*]

Nutmeg.

Nutmegs are the kernel of a roundish nut which grows in the East-Indies. The outside covering of this fruit is soft and fleshy like that

of a walnut, and spontaneously opens when the nut grows ripe: immediately under this lies the mace, (see the article *MACIS*) which forms a kind of reticular covering; thro' the fissures whereof appears a hard woody shell that includes the nutmeg. These kernels have long been made use of both for medicinal and culinary purposes, and deservedly looked upon as a warm agreeable aromatic. They are supposed likewise to have an astringent virtue; and are employed with that intention in diarrhoeas and dysenteries. Their astringency is said to be increased by torrefaction, but this does not appear to the taste: this treatment certainly deprives the spice of some of its finer oil, and therefore renders it less efficacious for any good purpose; and, if we may reason from analogy, probably abates of its astringency. Nutmegs distilled with water, afford a large quantity of essential oil, resembling in flavour the spice itself; after the distillation, an insipid sebaceous matter is found swimming on the water; the decoction, inspissated, gives an extract of an unctuous, very lightly bitterish taste, and with little or no astringency. Rectified spirit extracts the whole virtue of nutmegs by infusion, and elevates very little of it in distillation: hence the spirituous extract possesses the flavour of the spice in an eminent degree.

Nutmegs yield to the press, when heated, a considerable quantity of limpid yellow oil, which on cooling concretes into a sebaceous consistence. In the shops we meet with three sorts of unctuous substances, called oil of mace, though really expressed from the nutmeg. The best is brought from the East-Indies, in stone jars; this is of a thick consistence, of the colour of mace, and an agreeable fragrant smell: the second sort, which is paler coloured,

and

and much inferior in quality, comes from Holland in solid masses, generally flat and of a square figure: the third, which is the worst of all, and usually called common oil of mace, is an artificial composition of sebum, palm oil, and the like, flavoured with a little genuine oil of nutmeg. These oils yield all that part in which their aromatic flavour resides, on distillation to water, and to pure spirit by infusion: the distilled liquor and spirituous tincture nearly resemble in quality those prepared immediately from the nutmeg. The officinal preparations of nutmegs are, a spirit and essential oil, and the nutmegs in substance roasted. Both the nutmeg itself and its essential oil enter several compositions, as the *confectio aromatica*, *spiritus amoniæ compositus*, &c.

NUX PISTACHIA [*Gen.*]

Pistachia vera Lin.

Pistachio nut.

This is a moderately large nut, containing a kernel of a pale greenish colour, covered with a reddish skin. The tree which produces it grows spontaneously in Persia, Arabia, and several islands of the Archipelago: it bears likewise the colds of our own climate, so as to have produced fruit not inferior to that which we receive from abroad. Pistachio nuts have a pleasant, sweet, unctuous taste, resembling that of almonds. They are ranked amongst the analeptics; and are by some much esteemed in certain weaknesses, and in emaciated habits.

NUX VOMICA [*Suec.*]

Strychnos nuxvomica Lin.

Nux vomica.

This is the produce of a tree growing in the East-Indies, where it is said to be used as a specific against the bite of a species of water-

snake. It is considerably bitter and deleterious; but has been used in doses from five to ten grains twice a day or so, in intermittents, particularly obstinate quartans, and in contagious dysentery. The *strychnos Ignatii* is a tree of the same kind, producing gourd like fruit, the seeds of which are improperly called St Ignatius's beans. These, and also the woods or roots, of some of such trees, called *lignum colubrinum* or *snakewood*, are very narcotic bitters like the *nux vomica*.

NYMPHÆA ALBA [*Brun.*]

Radix flores.

Nymphæa alba Lin.

White water-lily; the root and flowers.

This grows in rivers and large lakes, flowering usually in June. The roots and flowers have a rough, bitterish, glutinous taste; (the flowers are the least rough); and when fresh, they have a disagreeable smell, which is in great measure lost by drying: they are recommended in alvine fluxes, gleet, and the like. The roots are supposed by some to be in a high degree narcotic, but on no very good foundation. *Lindstolpe* informs us, that in some parts of Sweden they were in times of scarcity used as food, and did not prove unwholesome.

OCHRA [*Brun.*]

Yellow ochre; a soft friable ore of iron, of a yellow colour, dug in several parts of England. It possesses the virtues of the calces of iron and hæmatites; but in so low a degree, that the shops have deservedly rejected it; its principal use is as a pigment.

OCULI CANCRORUM. See CANCROUM OCULI.

CENANTHE *Radix, folia.*

Oenanthe crocata Lin.

Hemlock dropwort.

This is one of three species of the genus *œnanthe*, belonging to the umbelliferous class, and natives of Great Britain. It grows in moist places, with pinnated leaves, ribbed stalks, and white thick short bunchy roots. It is known as a virulent poison; but the juice of the root, or the infusion of the leaf, has been recommended in chronic eruptions.

A case was some time ago published in the Philosophical Transactions by Dr Pultney; in which, when taken by mistake in an affection of that kind, it had nearly proved fatal, but was in the end the means of accomplishing a complete recovery. It has since that been a good deal employed in Edinburgh, and in some cases with apparent advantage. The late Dr Hope thought, that in many cases he found an infusion of leaves highly useful in promoting the menstrual discharge. It does not seem to have yet found its way into any of our modern pharmacopœias; but it may, we think, be justly considered as meriting farther attention. It proves diuretic, and is apt to occasion vertigo and sickness.

OLIBANUM [*Lond. Ed.*]

Gummi resina.

Juniperus Lycia Lin.

Olibanum.

This gummi resinous substance is brought from Turkey and the East-Indies, usually in drops or tears, like those of mastich, but larger, of a pale yellowish, and sometimes reddish colour; a moderately warm pungent taste, and a strong, not very agreeable smell. This drug has received many different appellations according to its different appearances: the single tears are called simply *olibanum* or *thus*: when two are

joined together, they have been called *thus masculum*, and when two were very large, *thus femininum*: sometimes four or five, about the bigness of filberds, are found adhering to a piece of the bark of the tree from which they exuded; these have been named *thus corticosum*, the finer powder, which rubs off from the tears in the carriage, *mica thuris*; and the coarser powder, *manna thuris*. This drug is not, however, in any of its states, what is now called *thus* or *frankincense* in the shops.

Olibanum consists of about equal parts of gummy and resinous matters; the first soluble in water, the other in rectified spirit. With regard to its virtues, abundance have been attributed to it, particularly in disorders of the head and breast, in hæmoptoes, and in alvine and uterine fluxes: but its real effects in these cases are far from answering the promises of the recommenders. Riverius is said to have had large experience of the good effects of this drug in pleuritis, especially epidemic ones: he directs a scooped apple to be filled with a dram of olibanum, then covered and roasted under the ashes; this is to be taken for a dose, three ounces of carduus water drank after it, and the patient covered up warm in bed: in a short time, he says, either a plentiful sweat, or a gentle diarrhœa, ensues, which carries off the disease. Geoffroy informs us, that he has frequently made use of this medicine, after venesection, with good success; but acknowledges that it has sometimes failed.

OLIVA [*Lond. Ed.*] *Oleum expressum.*

Olea Europea Lin.

Olive; the expressed oil of the fruit.

This tree grows in the southern parts of France, in Spain, Italy, and other

other warm countries : with us it is usually preserved in the green-houses of the curious, though it will bear our ordinary winters in the open air, and produce very good fruit. Olives have an acrid, bitter, extremely disagreeable taste : pickled, as we receive them from abroad, they prove less disagreeable ; the Lucca olives, which are smaller than the others, have the weakest taste ; the Spanish, or larger, the strongest ; the Provence, which are of a middling size, are generally the most esteemed.

The oil obtained from this fruit has no particular taste or smell, and does not greatly differ in quality from oil of almonds. Authors make mention of two sorts of this oil, one expressed from the olives when fully ripe, which is our common olive oil : the other, before it has grown ripe ; this is called *oleum immaturum*, and *omphacinum*. Nothing is met with in the shops under this name ; and Lemery affirms, that there is no such oil ; unripe olives, yielding only a viscid juice to the press. From the ripe fruit, two or three sorts are obtained, differing in degree of purity : the purest runs by light pressure : the remaining magma, heated and pressed more strongly, yields an inferior sort, with some dregs at the bottom, called *anurca*. All these oils contain a considerable portion of aqueous moisture, and a mucilaginous substance ; which subject them to run into a putrid state : to prevent this, the preparers add some sea-salt, which, imbibing the aqueous and mucilaginous parts, sinks with them to the bottom ; by this means the oil becomes more homogeneous, and consequently less susceptible of alteration. In its passage to us, some of the salt, thrown up from the bottom by the shaking of the vessel, is sometimes mixed

with and detained in the oil, which in our colder climate, becomes too thick to suffer it freely to subside ; and hence this oil is sometimes found to have a manifestly saline taste. Oil olive is used in the simple *oleum sulphuratum*, and several ointments. It is oftener employed with this last intention than the other expressed oils, but more rarely for internal medicinal purposes, although not unfrequently it is employed against coughs and hoarseness, when united with water by the intervention of alkali.

ONONIS [*Succ.*] *Radix.*

Ononis spinosa Lin.

Rest-harrow, cammock, or pretty-whin ; the root.

This plant grows wild in waste-grounds and dry fields. The root has a disagreeable smell, and a nauseous sweetish taste : it stands recommended as an aperient and diuretic ; but has never been much regarded among us.

OPIUM [*Lond. Ed.*] *Succus inspissatus.*

Paper somniferum Lin.

Opium.

This juice has not yet been collected in quantity in Europe. Egypt, Persia, and some other provinces of Asia, have hitherto supplied us with this commodity : in those countries, large quantities of poppies are cultivated for this purpose. The opium prepared about Thebes in Egypt, hence named Thebaic opium, has been usually esteemed the best ; but this is not now distinguished from that collected in other places. This juice is brought to us in cakes or loaves, covered with leaves, and other vegetable matters, to prevent their sticking together : it is of a solid consistence, yet somewhat soft and tenacious, of a dark reddish brown colour in the

mass, and when reduced into powder, yellow; of a faint disagreeable smell and a bitterish taste, accompanied with a pungent heat and acrimony:

In the province of Bahar in the East-Indies, it is said, the poppy seeds are sown in October or November at about eight inches distance; and are well watered till the plants are about half a foot high, when a compost of nitrous earth, dung, and ashes, is spread over the areas; and a little before the flowers appear, they are again watered profusely till the capsules are half grown: and then the opium is collected; for when fully ripe, they yield little juice. Two longitudinal incisions, from below upwards, without penetrating the cavity, are made at sunset for three or four successive evenings; and then they are allowed to ripen their seeds. In the morning the juice is scraped off with an iron scoop, and worked in an earthen pot in the sun's heat till it be of a consistence to be formed into thick cakes of about four pounds weight, which are covered over with the leaves of poppy or tobacco, and dried. It is said to be adulterated with various unknown substances, with the extract of the poppy plant procured by boiling, and even with cowdung. It is purified by reducing it to a pulp with hot water, and strongly pressing it while hot thro' a linen cloth from its impurities. It is then evaporated by a water-bath or other gentle heat to its original consistence. This extract is found to contain a resin, a kind of essential oil, a principle of odour, an essential salt, and a soapy extract.

Opium has a reddish brown colour; a strong peculiar smell; a taste at first nauseous and bitter, but soon becoming acrid, with a slight warmth;

and it appears to have some astringency, as a watery tincture of it forms an ink with a chalybeate solution.

The external and internal effects of opium appear to be various in different constitutions, and in the same at different times. By some, when applied to the tongue, the nose, the eye, or any part deprived of skin, it has been said to stimulate and to induce in the eye in particular a slight degree of redness. But if this effect do take place, it is at the utmost extremely inconsiderable, particularly when compared with the effect of volatile alkali, ardent spirit, or a variety of other articles applied to the same organ. And there can be no doubt, that in a very short time the sensibility of the part to which it is applied, even when there has not taken place the slightest mark of preceding stimulus or inflammation, is very considerably diminished. Some allege, that when applied to the skin, it allays pain and spasm, procures sleep, and produces all the other salutary or dangerous effects which result from its internal use; while others allege, that thus applied it has little or no effect whatever.

This variety probably arises from differences in the condition of the subcutaneous nerves, and of the sensibility of the surface as being more or less defended. But there is no doubt, that when mixed with caustic it diminishes the pain, which would otherwise ensue, probably by deadening the sensibility of the part.

It sometimes allays the pain from a carious tooth; and a watery solution of it has been used in various ulcers, certain ophthalmias, and virulent gonorrhoea, when pain and inflammation have before that given very great distress.

Opium, when taken into the stomach

mach to such an extent as to have any sensibly effect, gives rise to a pleasant serenity of mind, in general proceeding to a certain degree of languor and drowsiness. The action of the sanguiferous system is diminished, the pulse becoming for the most part softer, fuller, and slower than it was before. There often takes place swelling of the subcutaneous veins, and sweating; both probably the consequences of a diminution of resistance at the surface, from a diminution of muscular action; and accordingly opium diminishes those discharges which depend on muscular action, as is particularly exemplified in its effect of binding the belly. Opium taken into the stomach in a larger dose, gives rise to confusion of head and vertigo. The power of all stimulating causes, as making impressions on the body is diminished; and even at times, and in situations when a person would naturally be awake, sleep is irresistibly induced. In still larger doses, it acts in the same manner as the narcotic poison, giving rise not only to vertigo, headach, tremors, and delirium, but to convulsions also; and these terminating in a state of stupor, from which the person cannot be roused. This stupor is accompanied with slowness of the pulse, and with stertor in breathing, and the scene is terminated in death, attended with the same appearances as take place in apoplexy.

From these effects of opium in a state of heath, it is not wonderful that recourse should have been had to it in disease, as mitigating pain, inducing sleep, allaying inordinate action, and diminishing morbid sensibility. That these effects do result from it, is confirmed by the daily experience of every observer: And as answering one or other of

these intentions, most, if not all, of these good consequences derived from it in actual practice are to be explained. If, therefore, by a sedative medicine, we mean an article capable of allaying, assuaging, mitigating, and composing, no substance can have a better title to the appellation of sedative than opium.

As answering the purposes of mitigating pain, inducing sleep, allaying inordinate action, and diminishing sensibility, it naturally follows, that opium may be employed with advantage in a great variety of different diseases. Indeed there is hardly any affection, in which it may not, from circumstances, be proper; and in all desperate cases, it is the most powerful means of alleviating the miseries of patients.

Some practitioners are averse to its use where there takes place an active inflammation; but others have recourse to it in such cases, even at an early period, especially after blood-letting; and where such affections are attended not only with pain and spasm, but with watchfulness and cough, it is often productive of the greatest benefit. Opium combined with calomel has of late been extensively employed in every form of active inflammation, and with the greatest success. It is found also to be of very great service in allaying the pain and preventing the symptomatic fever liable to be induced by wounds, fractures, burns, or similar accidents.

In intermittents, it is said to have been used with good effect before the fit, in the cold stage, in the hot stage, and during the interval. Given even in the hot stage, it has been observed to allay the heat, thirst, head-ach, and delirium, to induce sweat and sleep, to cure the dis-

ease with the less bark, and without leaving abdominal obstructions or dropsy.

It is often of very great service in fevers of the typhoid type, when patients are distressed with watchfulness or diarrhoea. But where these or similar circumstances do not indicate its use, it is often distressing to patients by augmenting thirst and constipation.

In small-pox, when the convulsions before eruption are frequent and considerable, opium is liberally used. It is likewise given from the fifth day onwards; and is found to allay the pain of suppuration, to promote the pyalism, and to be otherwise useful.

In dysentery, after the use of gentle laxatives, or along with them, opium, independently of any effect it may have on the fever, is of consequence in allaying the tormina and tenesmus, and in obviating that laxity of bowels which is so frequently a relief of that disease.

In diarrhoea, the disease itself generally carries off any acrimony that may be a cause, and then opium is used with great effect. Even in the worst symptomatic cases, it seldom fails to alleviate.

In cholera and pyrosis, it is almost the only thing trusted to.

In cholic, it is employed with laxatives; and no doubt often prevents ileus and inflammation, by relieving the spasm. Even in ileus and in incarcerated hernia, it is often found to allay the vomiting, the spasms, the pain, and sometimes to diminish the inflammation, and prevent the gangrene of the strangulated gut.

It is given to allay the pain and favour the descent of calculi, and to relieve in jaundice and dysuria proceeding from spasm.

It is of acknowledged use in the different species of tetanus; affords

relief to the various spasmodic symptoms of dyspepsia, hysteria, hypochondriasis, asthma, rabies, canina, &c. and has been found useful in some kinds of epilepsy.

Of late, in doses gradually increased to five grains, three, four, or even six times a-day, it has been used in syphilis; and some instances are recorded, in which it would seem that by this remedy alone a complete cure had been obtained. In other instances, however, after the fairest trial for a considerable length of time, it has been found ineffectual; and upon the whole, it seems rather to be useful in combating symptoms, and in counteracting the effects resulting from the improper use of mercury, than in overcoming the venereal virus.

It is found useful in certain cases of threatened abortion and lingering delivery, in convulsions during parturition, in the after-pains and excessive flooding.

The only form perhaps necessary for opium is that of pill; and as it is so soluble in every menstruum, there seems the less occasion for the addition of either gum or soap. This form is more apt to sit on the stomach than any liquid form, but requires rather more time to produce its effects. The administration of opium to the unaccustomed, is sometimes very difficult. The requisite quantity of opium is wonderfully different in different persons, and in different states of the same person. A quarter of a grain will in one adult produce effects which ten times the quantity will not do in another; and a dose that might prove fatal in cholera or cholic, would not be perceptible in many cases of tetanus or mania. The lowest fatal dose to the unaccustomed, as mentioned by authors, seems to be four grains; but a dangerous dose is so apt to puke, that it has seldom time

to occasion death. When given in too small a dose, it is apt to produce disturbed sleep, and other disagreeable consequences; and in some cases it seems impossible to be made agree in any dose or form. Often, on the other hand, from a small dose, sound sleep, and alleviation of pain will be produced, while a larger one gives rise to vertigo and delirium. Some prefer the repetition of small doses, others the giving of a full dose at once. In some it seems not to have its proper effect till after a considerable time. The operation of a moderate dose is supposed to last in general about eight hours from the time of taking it.

Pure opium is partially soluble in water and rectified spirit, and totally in proof-spirit, wine, or vinegar. Water rubbed with opium, and decanted repeatedly till it come off colourless, yields, on gentle evaporation, an extract which some use and recommend as one of the best preparations of this substance, and which requires to be given in double the dose of common opium.

It is said, that alkalis diminish its soporific effects; that the fixed render it diuretic, the volatile determine it to the skin; and that acids destroy its activity almost entirely. But when conjoined with acids, particularly the diluted vitriolic acid, it often sits easily on the stomach, when it would not otherwise be retained, and afterwards produces all its sedative effects.

The chief officinal preparations of opium are, the opium purificatum, pilulæ ex opio, pulvis opiatus, tinctura opii, and tinctura opii camphorata. Besides this it enters a great variety of different compositions, as the pulvis sudorificus, balsamum anodynum, electuarium ja-

ponicum, pulvis e creta compositus, &c.

The occasional bad effects of opium may result from the same power by which, in other states of the system, it proves beneficial. The methods, therefore, proposed of correcting these by roasting, fermentation, long-continued digestion, repeated solutions and distillations, have not succeeded.

OPOPANAX [*Lond.*] *Gummi resina.*

Pastinacio opopanax Lin.

Opopanax.

This is a concrete gummy resinous juice, obtained from the roots of an unbelliferous plant, which grows spontaneously in the warmer countries, and bears the colds of this. The juice is brought from Turkey and the East-Indies, sometimes in round drops or tears, but more commonly in irregular lumps, of a reddish yellow colour on the outside, with specks of white, inwardly of a paler colour, and frequently variegated with large white pieces. It has a peculiar strong smell, and a bitter, acrid, somewhat nauseous taste. Its virtues are those of an attenuating and aperient medicine. Boerhaave frequently employed it, along with ammoniacum and galbanum, in hypochondriacal disorders, obstructions of the abdominal viscera, and suppressions of the menstrual evacuations from a sluggishness of mucous humours, and a want of due elasticity of the solids; with these intentions it is an useful ingredient in the pilulæ gummosæ and compound powder of myrrh of the London Pharmacopœia, but is not employed in any composition of the Edinburgh. It may be given by itself in the dose of a scruple, or half a dram: a

whole dram proves, in many constitutions, greatly purgative.

ORCHIS, vide SATYRION.

ORIGANUM [Lond.] *Herba.*
Origanum vulgare Lin.

Wild majoram; the herb.

This is met with upon dry chalky hills, and in gravelly soils, in several parts of England. It has an agreeable smell, and a pungent taste, warmer than that of the garden majoram, and much resembling thyme, which it seems to agree with in virtue. An essential oil distilled from it is kept in the shops.

There is another sort of *origanum* called *Creticum*, whose flowers, or rather flowery tops, are sometimes brought to us from Candy: these have an agreeable aromatic flavour, somewhat stronger than the common sort.

ORYZA [Brun.] *Semen.*
Oryza sativa Lin.

Rice; the grain.

Rice is the product of many different countries, particularly of the East-Indies: but as used in Britain it is brought chiefly from Carolina, where the plant is cultivated in large quantities. It is sufficiently nutritious, and affords an useful food in diarrhoeas, dysenteries, and other disorders from a thin acrimonious state of the juices.

OVUM [Lond.]
Ovum gallinaceum Lin.

The pullets egg.

Both the yolk and the white of eggs are used to give a proper form to different medicines, and are for that purpose employed in some of the officinal preparations, as in the *coagulum aluminis*. But they do not seem to possess any medical virtues unless as an article of diet; and

used with that intention, they are highly nutritious. Egg-shells when burnt become a quicklime, and as such they have sometimes been used in medicine; but they differ in no respect from the other calcareous earths.

OXALIS, vide ACETOSA.

OXYACANTHA GALENI.

Vide BERBERIS.

OXYLAPATHUM. Vide LAPATHUM.

PÆONIA [Succ.] *Radix, semen.*

Pæonia officinalis Lin.

Male and female peony; the root and seed

These plants are cultivated in our gardens on account of the beauty of their flowers; the female, which is the largest and most elegant, and for this reason the most common, is the only one with which the shops are supplied. In quality they are scarce sensibly different; and hence they may be taken promiscuously. The roots and seeds of peony have, when recent, an unpleasant scent, approaching to that of the narcotic plants, and a somewhat glutinous subacid taste, with a light degree of bitterness and astringency: the leaves also discover an astringent quality, both to the taste, and by changing chalybeate solutions of a purple colour: the flowers have little taste, and a very faint, not agreeable smell. The parts which have chiefly been used for medical purposes, are the roots and seeds. These are looked upon as emollient, corroborant, and lightly anodyne: and supposed to be of service in some kinds of obstructions, erosions of the viscera, heat of urine, pains in the kidneys, and the

the like. The virtue they are chiefly celebrated for, is that of curing spasmodic and epileptic complaints; which many have been absurd enough to believe that the root of this plant would do by being only worn about the neck.

PALMA [Ed.] *Fructus oleum expressum.*

Palma fructu pruniformi.

Palm-tree; the expressed oil of the fruit.

This oil is obtained from the kernels of the fruit of a species of palm-tree, which is a native of the coast of Guinea and Cape Verd islands: from these places it has been transplanted into Jamaica and Barbadoes. The oil, as brought to us, is about the consistence of an ointment, and of an orange colour; it has a strong, not disagreeable smell, but very little taste: by long keeping it loses its high colour, and becomes white, when it ought to be rejected as no longer fit for use. The inhabitants of the Guinea coast are said to make this oil part of their food, and to employ it for the same purposes as we do butter. With us it is rarely given inwardly, and used only in some external applications, for pains and weakness of the nerves, cramps, sprains, and the like. The common people apply it for the cure of chilblains, and, when early made use of, not without success.

PAPAVER ALBUM [Lond.]

Caput.

Papavar somniferum Lin.

The white poppy; the head.

The heads and stalks of these plants contain a milky juice; which may be collected in considerable quantity, by lightly wounding them when almost ripe: this juice, exposed for a few days to the air, thickens into a stiff tenacious mass, a-

greeing in quality with the opium brought from abroad. The juices of different poppies appear to be similar to each other; the only difference is in the quantity afforded, which is generally in proportion to the size of the plants: the larger, or white poppy, is the sort cultivated by the preparers of opium in the eastern countries, and for medicinal uses in this.

Poppy-heads, boiled in water, impart to the menstruum their narcotic juice, together with the other juices which they have in common with vegetable matters in general. The liquor strongly pressed out, suffered to settle, clarified with whites of eggs, and evaporated to a due consistence, yields about one-fifth, or one-sixth the weight of the heads, of extract. This possesses the virtues of opium; but requires to be given in double its dose to answer the same intention, which it is said to perform without occasioning a nausea and giddiness, the usual consequences of the other. A strong decoction of the heads, mixed with as much sugar as is sufficient to reduce it into the consistence of a syrup, becomes fit for keeping in a liquid form; and is the only official preparation of the poppy. Both these preparations are very useful ones, though liable to variation in point of strength: nor does this inconvenience seem avoidable by any care in the prescriber or the operator; since the poppy-heads themselves, according to the degree of maturity, and the soil and season of which they are the produce, contain different proportions of the narcotic matter to the other juices of the plant.

The seeds of the poppy are by many reckoned soporific: Juncker says, they have the same quality with those of hyoscyamus, and Herman looks upon them as a good

substitute to opium ; mislead probably by an observation which holds in many plants, that the seeds are more efficacious than the vessels in which they are contained.

The seeds of the poppy have nothing of the narcotic juice which is lodged in their covering and in the stalks ; an oil expressed from them has been used for the same purposes as oil olive ; and the seeds themselves have been taken as food : their taste is sweetish and farinaceous.

PAPAVER ERRATICUM

[*Lond.*] *Flos.*

Papaver rhæas *Lin.*

Red poppy ; the flower.

The flowers of this plant yield upon expression a deep red juice, and impart the same colour by infusion to aqueous liquors. A syrup of them is kept in the shops ; this is valued chiefly for its colour ; tho' some expect from it a lightly anodyne virtue.

PARALYSIS, five PRIMULA

[*Suec.*] *Flores.*

Primula vris *Lin.*

Cowslips ; the flowers.

This plant grows wild in marshes and moist meadows. The flowers appear in April ; they have a pleasant sweet smell, and a subacid, bitterish, somewhat astringent taste. An infusion of them, used as tea, is recommended as a mild corroborant in nervous complaints, and in some female disorders, proceeding from a deficiency of the menstrual purgations. A strong infusion of them forms, with a proper quantity of sugar, an agreeable syrup, which long maintained a place in the shops ; but by boiling, even for a little time, their fine flavour is destroyed.

PAREIRA BRAVA [*Lond.*]

Radix.

Cissampelos pareira *Lin.*

Pareira brava ; the root.

This is the root of an American plant brought to us from Brazil, in pieces of different sizes, some no bigger than one's finger, others as large as a child's arm ; it is crooked, and variously wrinkled on the surface ; outwardly of a dark colour, internally of a dull yellowish, and interwoven with woody fibres ; so that, upon a transverse section, a number of concentric circles appear, crossed with fibres, which run from the centre to the circumference : it has no smell ; the taste is a little bitterish, blended with a sweetness, like that of liquorice. This root is highly extolled by the Brazilians and Portuguese, in a great variety of diseases, particularly against suppressions of urine, nephritic pains, and the calculus. In the two first, Geoffroy says he has given it with good success ; and that the patient was almost instantly relieved by it, a copious discharge of urine succeeding. He likewise observed large quantities of gravel, and even small stones, voided after its use : this effect he attributes not to any lithontriptic power, but to its dissolving the viscid mucus by which the fabulous matter had been detained. He likewise relates, that he has had frequent experience of the good effects of this root in detaching and healing ulcers of the kidneys and bladder, where the urine came away purulent and mucous, and could not be voided at all without extreme pain : by the use of the *pareira*, the urine soon became clear, and of a due consistence, and was evacuated freely ; and by joining to this medicine balsam of Copaiba, the ulcer perfectly healed. The attenuating quality which

he

he had discovered in this root, induced him to make trial of it in other diseases proceeding from tenacious juices, and in these likewise it fully answered his expectations: in humoural asthmas, where the lungs were stuffed up, and the patient almost suffocated by thick phlegm, an infusion of *pareira*, after many other medicines had proved ineffectual, occasioned a plentiful expectoration, and soon completed a cure: in the jaundice, proceeding from thick bile, it did excellent service: but in another icterical case, where the liver was swelled and hard, this medicine did no good. His dose of the root in substance is from twelve grains to half a dram; in decoction to two or three drams.

These good effects, however, have not been confirmed by later experience; and at present it is so little used, that the Edinburgh college have given it no place in their pharmacopœia.

PARIETARIA [Lond. Ed.]
Herba.

Parietaria officinalis Lin.

Pellitory of the wall; the herb.

This is a small plant growing upon old walls; of an herbaceous subsaline taste, without any smell. It is one of the five emollient herbs, and with this intention is occasionally made use of. The expressed juice has been given in the dose of three ounces as a diuretic.

PASTINACA [Suec.] Semen.

Pastinaca sativa Lin.

Parfneps; the seeds.

The roots of the parfnep are used as food, and prove sufficiently nutritious. The seeds are lightly aromatic; and from that circumstance are sometimes, although rarely, employed in medicine.

PENTAPHYLLUM [Lond.]
Radix.

Potentilla reptans Lin.

Cinquefoil; the roots.

This grows plentifully in hedges and by road sides. The root is moderately astringent; and as such is sometimes given internally in diarrhoeas and other fluxes, and employed in gargarisms for strengthening the gums, &c. The cortical part of the root may be taken, in substance, to the quantity of a dram: the internal part is considerably weaker, and requires to be given in double the dose to produce the same effect; and as we possess many more powerful astringents, the cinquefoil is but little used.

PERSICARIA [Suec.] Herba.
Polygonum hydropiper Lin.

Water pepper; the leaves.

This species of polygonum is remarkable for its pungent, biting, pepper like taste. Its virtues are those of an acrid stimulating medicine; in phlegmatic habits, it promotes the urinary discharge, and has frequently done good service in scorbutic complaints. The fresh leaves are sometimes applied externally for cleansing old fistulous ulcers, and consuming fungous flesh: for these purposes they are said to be employed by the farriers, among whom they have been principally made use of.

PERSICA [Brun.] Flos, nuclei.
Amygdalus persica Lin.

The peach-tree; its flowers and kernels.

Peach-flowers have an agreeable smell, and a bitterish taste: distilled without any addition, by the heat of a water-bath, they yield one-sixth their weight, or more, of a whitish liquor, which, as Mr Bolduc observes, communicates to a
large

large quantity of other liquids a flavour like that of the kernels of fruits. An infusion in water of half an ounce of the fresh-gathered flowers, or a dram of them when dried, sweetened with sugar, proves for children an useful laxative and anthelmintic: the leaves of the tree are, with this intention, somewhat more efficacious, though less agreeable. The fruit has the same quality with the other sweet fruits, that of abating heat, quenching thirst, and gently loosening the belly.

PERUVIANUS CORTEX

[*Lond. Ed.*]

Cinchona officinalis Lin.

Peruvian bark.

The tree which furnishes this bark is described as being in general about fifteen feet high and six inches thick. It somewhat resembles our cherry-tree, grows promiscuously in forests, particularly in the hilly parts of Quito in Peru, and is spontaneously propagated from its seeds.

The bark has some odour, to most people not unpleasant, and very perceptible in the distilled water, in which floating globules, like essential oil, have been observed. Its taste is bitter and astringent, accompanied with a degree of pungency, and leaving a considerably lasting impression on the tongue.

Two species are mentioned, viz. the coloured and the white. The coloured includes the pale, the red, the yellow, and the knotty; their barks being coloured, having the cinchona taste and smell, and the trees having very smooth leaves and purplish flowers. The white includes four varieties, their barks being of a whitish colour, with very little taste or smell, the trees having broad hairy leaves, very fragrant

red flowers, with hairs on the inside.

The proper red bark and one of the white kind have been found in the province of Santa Fé.

A species of cinchona has also been discovered in the West-India islands, particularly in Jamaica: it is accurately described by Dr Wright, under the title of *Cinchona Jamaicensis*, in a paper published in the Philosophical Transactions. In Jamaica it is called the sea-side beech, and grows from twenty to forty feet high. The white, furrowed, thick outer bark is not used; the dark brown inner bark has the common flavour, with a mixed kind of taste, at first of horse-radish and ginger, becoming at last bitter and astringent. It seems to give out more extractive matter than the *cinchona officinalis*. Some of it was imported from St Lucia, in consequence of its having been used with advantage in the army and navy during the last war; and it has lately been treated of at considerable length by Dr Kentish, under the title of St Lucia bark. The fresh bark is found to be considerably emetic and cathartic, which properties it is said to lose on drying.

The pale and the red are chiefly in use in Britain. The pale is brought to us in pieces of different sizes, either flat or quilled, and the powder is rather of a lighter colour than that of cinnamon. The red is generally in much larger, thicker, flattish pieces, but sometimes also in the form of quills, and its powder is reddish like that of Armenian bole. It is much more resinous, and possesses the sensible qualities of the cinchona in a much higher degree than the other sorts; and the more nearly the other kinds resemble the red bark, the better they are now

considered. The red bark is heavy, firm, sound, and dry; friable between the teeth; does not separate into fibres; and breaks, not shivery, but short, close, and smooth. It has three layers: the outer is thin, rugged, of a reddish brown colour, but frequently covered with mossy matter: the milder is thicker, more compact, darker coloured, very resinous, brittle and yields first to the pestle: the inmost is more woody, fibrous, and of a brighter red.

The Peruvian bark yields its virtues both to cold and boiling water: but the decoction is thicker, gives out its taste more readily, and forms an ink with a chalybeate more suddenly than the fresh cold infusion. This infusion, however, contains at least as much extractive matter, but more in a state of solution; and its colour, on standing some time with the chalybeate, becomes darker, while that of the decoction becomes more faint. When they are of a certain age, the addition of a chalybeate renders them green; and when this is the case, they are found to be in a state of fermentation, and effete. Mild or caustic alkalis, or lime, precipitate the extractive matter, which in the case of the caustic alkali is redissolved by a farther addition of the alkali. Lime-water precipitates less from a fresh infusion than from a fresh decoction; and in the precipitate of this last some mild earth is perceptible. The infusion is by age reduced to the same state with the fresh decoction, and then they deposit nearly an equal quantity of mild earth and extractive matter; so that lime-water, as well as a chalybeate, may be used as a test of the relative strength and perishable nature of the different preparations, and of different barks. Accordingly cold infusions are found by experiments to be less perishable

than decoctions; infusions and decoctions of the red bark than those of the pale; those of the red bark, however, are found by length of time to separate more mild earth with the lime-water, and more extracted matter. Lime-water, as precipitating the extracted matter, appears an equally improper and disagreeable menstruum.

Water is found to suspend the resin by means of much less gum than has been supposed. Rectified spirit of wine extracts a bitterness, but no astringency, from a residuum of twenty affusions of cold water; and water extracts astringency, but no bitterness from the residuum of as many affusions of rectified spirit. The residua in both are insipid.

From many ingenious experiments made on the Peruvian bark by Dr Irving, which are now published in a dissertation which gained the prize-medal given by the Harveian Society of Edinburgh for 1783, the power of different menstrua, as acting upon Peruvian bark, is ascertained with greater accuracy than had before been done: and it appears, that with respect to comparative power, the fluids after mentioned act in the order in which they are placed.

Dulcified spirit of vitriol.

Caustic ley.

French brandy.

Rhenish wine.

Soft water.

Vinegar and water.

Dulcified spirit of nitre.

Mild volatile alkali.

Rectified spirit of wine.

Mild vegetable alkali.

Lime-water.

The antiseptic powers of vinegar and bark united are double the sum of those taken separately. The astringent power of the bark is increased by acid of vitriol; the bitter taste is destroyed by it.

The officinal preparations of the bark are,

1. The powder: of this, the first parcel that passes the sieve being the most resinous and brittle layer, is the strongest.

2. The extract: the watery and spirituous extracts conjoined form the most proper preparations of this kind.

3. The resin: this cannot perhaps be obtained separate from the gummy part, nor would it be desirable.

4. Spirituous tincture: this is best made with proof-spirit.

5. The decoction: this preparation, though frequently employed, is yet in many respects inferior even to a simple watery infusion.

The best form is that of powder; in which the constituent parts are in the most effectual proportion. The cold infusion, which can be made in a few minutes by agitation, the spirituous tincture, and the extract, are likewise proper in this respect. For covering the taste, different patients require different vehicles, liquorice, aromatics, acids, port-wine, small-beer, porter, milk, butter-milk, &c. are frequently employed; and those who dislike the taste of the bark itself, vary in their accounts to which the preference is due; or it may be given in form of electuary with currant-jelly, or with brandy or rum.

According to some, the Peruvians learned the use of the bark by observing certain animals affected with intermittents instinctively led to it; while others say, that a Peruvian having an ague, was cured by happening to drink of a pool which, from some trees having fallen into it, tasted of cinchona; and its use in gangrene is said to have originated from its curing one in an aguish patient. About the year 1640, the lady of the Spanish vice-

roy, the Comitissa del Cinchon, was cured by the bark, which has therefore been called Cortex or Pulvis Comitissæ, Chincona, Chinachina or Chinchina, Kinakina or Kinkina, Quinaquina; or Quinquina; and from the interest which the Cardinal de Lugo and the Jesuit fathers took in its distribution, it has been called Cortex or Pulvis Cardinalis de Lugo, Jesuiticus, Patrum, &c.

On its first introduction into Europe, it was reprobated by many eminent physicians; and at different periods long after, it was considered a dangerous remedy; but its character, in process of time, became very universally established.

Practitioners has differed much with regard to the mode of operation of the Peruvian bark. Some have ascribed its virtues entirely to a stimulant power. But while the strongest and most permanent stimuli have by no means the same effect with bark in the cure of diseases, the bark itself shows hardly any stimulant power, either from its action on the stomach or on other sensible parts to which it is applied. From its action on dead animal fibres, there can be no doubt of its being a powerful astringent; and from its good effects in certain cases of disease, there is reason to presume that it is a still more powerful tonic. To this tonic power some think that its action as an antiseptic is to be entirely attributed: but that, independently of this, it has a very powerful effect in resisting the septic process to which animal substances are naturally subjected, appears beyond all dispute, from its effects in resisting putrefaction, not only in dead animal solids, but even in animal fluids, when entirely detached from the living body.

But although it be admitted that the Peruvian bark acts powerfully

as an astringent, as a tonic, and as an antiseptic, yet these principles will by no means explain all the effects derived from it in the cure of diseases. And accordingly, from no artificial combination in which these powers are combined, or in which they exist even to higher degree, can the good consequences resulting from Peruvian bark be obtained. Many practitioners, therefore, are disposed to view it as a specific. If by a specific we mean an infallible remedy, it cannot indeed be considered as intitled to that appellation; but in as far as it is a very powerful remedy, of the operation of which no satisfactory explanation has yet been given, it may with great propriety be denominated a specific. But whatever its mode of operation may be, there can be no doubt that it is daily employed with success in a great variety of different diseases.

It was first introduced, as has already been said, for the cure of intermitting fevers; and in these, when properly exhibited, it rarely fails of success. Practitioners, however, have differed with regard to the best mode of exhibition; some prefer giving it just before the fit, some during the fit, others immediately after it. Some, again, order it in the quantity of an ounce, between the fits; the dose being the more frequent and larger according to the frequency of the fits; and this mode of exhibition, altho' it may perhaps sometimes lead to the employment of more bark than is necessary, we consider as upon the whole preferable, from being best suited to most stomachs. The requisite quantity is very different in different cases; and in many vernal intermittents it seems even hardly necessary.

It often pukes or purges, and sometimes oppresses the stomach.

These, or any other effects that may take place, are to be counteracted by remedies particularly appropriated to them. Thus, vomiting is often restrained by exhibiting it in wine; looseness by combining it with opium; and oppression at stomach, by the addition of an aromatic. But unless for obviating particular occurrences, it is more successful when exhibited in its simple state than with any addition; and there seems to be little ground for believing that its powers are increased by crude sal ammoniac, or any other additions which have frequently been made.

It is now given, from the very commencement of the disease, without previous evacuations, which, with the delay of the bark, or under doses of it, by retarding the cure, often seem to induce abdominal inflammation, scirrhus, jaundice, hectic, dropsy, &c. symptoms formerly imputed to the premature or intemperate use of the bark, but which are best obviated by its early and large use. It is to be continued not only till the paroxysms cease, but till the natural appetite, strength, and complexion return. Its use is then to be gradually left off, and repeated at proper intervals to secure against a relapse; to which, however unaccountable, independently of the recovery of vigour, there often seems to be a peculiar disposition; and especially when the wind blows from the east. Although, however, most evacuants conjoined with the Peruvian bark in intermittents are rather prejudicial than otherwise, yet it is of advantage, previous to its use, to empty the alimentary canal, particularly the stomach; and on this account good effects are often obtained from premising an emetic.

It is a medicine which seems not only suited to both formed and latent

tent intermittents, but to that state of fibre on which all rigidly periodical diseases seem to depend; as periodical pain, inflammation, hæmorrhagy, spasm, cough, loss of external sense, &c.

Bark is now used by some in all continued fevers: at the same time attention is paid to keep the bowels clean, and to promote when necessary the evacuation of redundant bile, always, however, so as to weaken as little as possible.

In confluent small-pox, it promotes languid eruption and supuration, diminishes the fever thro' the whole course of it, and prevents or corrects putrescence and gangrene.

In gangrenous sore throats it is much used, as it is externally and internally in every species of gangrene.

In contagious dysentery, after due evacuation, it has been used by the mo'ch, and by injection with and without opium.

In all those hæmorrhagies called passive, and which it is allowed all hæmorrhagies are very apt to become, and likewise in other increased discharges, it is much used; and in certain undefined cases of hæmoptysis, some allege that it is remarkably effectual when joined with an absorbent.

It is used for obviating the disposition to nervous and convulsive diseases; and some have great confidence in it joined with the acid of vitriol, in cases of phthisis, scrophula, ill-conditioned ulcers, rickets, scurvy, and in states of convalescence.

In these cases in general, notwithstanding the use of the acid, it is proper to conjoin it with a milk diet.

In dropsy, not depending on any particular local affection, it is often alternated or conjoined with diuretics, or other evacuants; and by its

early exhibition after the water is once drawn off, or even begins to be freely discharged, a fresh accumulation is prevented, and a radical cure obtained. In obstinate venereal cases, particularly those which appear under the form of pains in the bones, the Peruvian bark is often successfully subjoined to mercury, or even given in conjunction with it.

PETASITIS [*Rofs.*] *Radix.*

Tussilago petasitis Lin.

Butterbur; the root.

This grows wild by the sides of ditches and in meadows: it sends forth short scaly stalks in the spring, bearing spikes of purplish flowers; after this the leaves appear, which are very large and hollowed about the middle, so as to resemble a bonnet, or what the Greeks called *πετασος*, whence the name of the plant. The roots have a strong smell; a bitterish, aromatic, not very agreeable taste; they have been given in the dose of a dram or more as an aromatic, and likewise as an aperient and deobstruent; these virtues, however, they possess in so low a degree, as to have lost their reputation in the shops.

PETROLEUM [*Lond.*]

Bitumen petroleum.

Rock oil.

This is a general name for sundry liquid bitumens, or mineral oils, which spontaneously exude from the earth, or from clefts of rocks. These oils are found in almost all countries, but in greatest quantities in the warmer ones: some are met with in different parts of England; and many of our common bituminous minerals, as pitcoal, &c. afford, on distillation, oils not greatly different from them.

The finest sort of this commodity comes from the duchy of Modena

in Italy, where three different kinds are found; the best is almost as clear, fluid, and transparent as water, of a highly penetrating, yet not disagreeable smell, somewhat like that of rectified oil of amber: the second sort is of a clear yellow colour, not so fluid as the former, less penetrating, and partaking more of the oil of amber smell: the third, or worst, is of a blackish red colour, of a thicker consistence, and more disagreeable than the two foregoing. The first of these is very rarely met with in the shops; the second, mixed with a little of the third and some subtle oil, is usually sent us instead of it. Petroleum readily catches fire, and, if pure, burns entirely away: distilled, it becomes somewhat more pellucid than before, a small quantity of yellowish matter remaining, and it loses greatly of its natural smell: it unites with the essential oils of vegetables, not at all with vinous spirits: the finer sorts are so light as to swim upon the most highly rectified spirit of wine.

Petroleum is at present very rarely employed as a medicine, though if the finer kinds could be procured genuine, they should seem to deserve some notice: they are more agreeable than the oil of amber, milder than that of turpentine; of the virtues of both which they participate. They are principally recommended by authors for external purposes, against pains and aches, in paralytic complaints, and for preventing chilblains. For these intentions, some of the more common mineral oils have been made use of with good success; an oil extracted from a kind of stone-coal has been cried up among the common people, under the name of British oil, for rheumatic pains, &c. even this is often counterfeited by a small

portion of oil of amber added to the common expressed oils.

PETROLEUM BARBADENSE [Ed.]

Barbadoes tar.

This is thicker than the foregoing petrolea, and nearly of the consistence of common tar. It is of a reddish black colour, a disagreeable smell, less pungent than the other sorts. This bitumen is found in several of our American islands, where it is esteemed by the inhabitants of great service as a sudorific, and in disorders of the breast and lungs; though in cases of this kind, attended with inflammation, it is certainly improper: they likewise apply it externally as a discutient, and for preventing paralytic disorders. Among us it is rarely used, and not often to be met with genuine. The London college employ it as a menstruum for sulphur in the *balsamum sulphuris Barbadoense*, and directed an oil to be distilled from it. But in the present edition of their work, the oleum petrolei, and petroleum sulphuratum, as they are styled, are directed to be prepared from petroleum, without specifying that the petroleum Barbadoense in particular is to be used.

PETROSELINUM [Lond. Ed.] Radix, semen.

Apum petroselinum Lin.

Parsley; the root and seed.

This plant is commonly cultivated for culinary purposes. The seeds have an aromatic flavour, and are occasionally made use of as carminatives, &c. The root of parsley is one of the five aperient roots, and with this intention is sometimes made an ingredient in apozems and diet-drinks: if liberally used, it is apt to occasion flatulencies; and thus, by distending the viscera, produces

a contrary effect to that intended by it : the taste of this root is somewhat sweetish, with a light degree of warmth and aromatic flavour.

PEUCEDANUM [*Brun.*] *Radix.*

Peucedanum officinale Lin.

Hog's fennel, or sulphurwort ; the root.

The plant grows wild by the sea shores, and in moist shady places. The roots have a strong disagreeable smell, somewhat resembling that of sulphureous solutions ; and an unctuous, subacid, bitterish taste. They are looked upon as stimulating and attenuating, and supposed to promote expectoration and urine : the expressed juice was employed by the ancients as an errhine in lethargic disorders. The present practice pays no regard to them with any intention.

PIMENTA [*Lond. Ed.*] *Bacca.*
Myrtus pimenta Lin.

Pimento, or Jamaica pepper ; the berry.

This is the fruit of a large tree growing spontaneously in the mountainous parts of Jamaica, called by Sir Hans Sloan *myrtus arborea aromatica, foliis laurinis*. The smell of this spice resembles a mixture of cinnamon, cloves, and nutmegs : its taste approaches to that of cloves, or a mixture of the three foregoing ; whence it has received the name of *all-spice*. The shops have been for some time accustomed to employ this aromatic as a succedaneum to the more costly spices, and from them it has been introduced into our hospitals.

Pimento is now in our pharmacopœias the basis of a distilled water, a spirit, and an essential oil ; and these are not unfrequently employed where aromatics are indicated.

PIMPINELLA [*Ed.*] *Radix.*

Pimpinella saxifraga Lin.

Burnet-saxifrage ; the root.

Of this plant several varieties had formerly a place in our pharmacopœias : but all of them seem to be possessed of the same qualities, and to differ only in external appearances ; and even in this, their difference is so inconsiderable, that Linnæus has joined them into one, under the general name of *pimpinella*.

The roots of *pimpinella* have a grateful, warm, very pungent taste, which is entirely extracted by rectified spirit : in distillation, the menstruum arises, leaving all that it had taken up from the root, united into a pungent aromatic resin. This root promises, from its sensible qualities, to be a medicine of considerable utility ; though little regarded in common practice. Stahl, Hoffman, and other, German physicians, are extremely fond of it, and recommend it as an excellent stomachic, resolvent, detergent, diuretic, diaphoretic, and alexipharmac. They frequently gave it, and not without success, in scorbutic and cutaneous disorders, tumours and obstructions of the glands, and diseases proceeding from a deficiency of the fluid secretions in general. Boerhaave directs the use of this medicine in asthmatic and hydropic cases, where the strongest resolvents are indicated : the form he prefers is a watery infusion ; but the spirituous tincture possesses the virtues of the root in much greater perfection.

PIPER INDICUM [*Lon. Ed.*]
Fructus.

Capficum annuum Lin.

Guinea-pepper, or capficum ; the fruit.

This is an annual plant cultivated in our gardens ; it ripens its red pods in September or October.

The

The taste of capsicum is extremely pungent and acrimonious, setting the mouth as it were on fire. It is chiefly employed for culinary purposes, and has long been used in that way; but of late it has been employed also in the practice of medicine. And there can be little doubt but it furnishes us with one of the purest and strongest stimulants which can be introduced into the stomach; while at the same time it has nothing of the narcotic effect of ardent spirit. Dr Adair Makitrick, who was perhaps the first that employed it as a medicine, directs its being given to the extent of six or eight grains under the form of pills, or under the form of tincture made by infusing half an ounce in a pound of rectified spirit, and giving this from one to three drams diluted for a dose. He has found it useful in a variety of affections, particularly in that morbid disposition which he calls the *cachexia Africana*, and which he considers as a most frequent and fatal predisposition to disease among the slaves. This pepper has also been of late successfully employed in a species of cinanche maligna, which proved very fatal in the West-Indies, resisting the use of Peruvian bark, wine, and the other remedies commonly employed.

A species of it called in the West-Indies *bird pepper*, is the basis of a powder brought us from thence under the name of *Cayan pepper*.

PIPER LONGUM [Lond. Ed.]
Fructus.

Piper longum Lin.

Long pepper.

Long pepper is the fruit of a plant growing in the East-Indies. It is of a cylindrical figure, about an inch and a half in length; the external surface appears compo-

sed of numerous minute grains disposed round the fruit in a kind of spiral direction.

PIPER NIGRUM [Lond. Ed.]
Bacca.

Piper nigrum Lin.

Black pepper; the berry.

Black pepper is the fruit of a plant growing in Java and Malabar, gathered probably before it be fully ripe, and exsiccated in the sun. This is the only spice which we import directly from the East-Indies, all the others coming through the hands of the Dutch.

All the species of pepper have a pungent smell, and a very hot biting taste. The long sort, which is the hottest and strongest, is most frequently made use of for medicinal purposes; the black, as being more grateful, for culinary ones. The warmth and pungency of these spices reside chiefly in their resinous part; their aromatic odour in an essential oil. The genuine distilled oil smells strong of the pepper, but has very little acrimony; the remaining decoction inspissated, yields an extract considerably pungent. A tincture made in rectified spirit is extremely hot and fiery; a few drops of it set the mouth as it were in a flame.

PIX BURGUNDICA [Lond. Ed.]

Pinus abies Lin.

Burgundy pitch.

This is of a solid consistence, yet somewhat soft, of a reddish brown colour, and not disagreeable in smell. Geoffroy relates, that it is composed of galipot (a solid whitish resin which separates from some of the *terebinthinae* as they run from the tree) melted with common turpentine and a little of its distilled oil. Dale informs us, from the relation of a gentleman who saw the prepara-

ration of this commodity in Saxony, (from whence we are chiefly supplied with it), that it is no more than the common turpentine boiled a little.

It is employed only externally. It was formerly an ingredient in several ointments and plasters, but from these it is now rejected. And it is at present chiefly employed with the view of acting as an emplastrum calidum. In some cases it excites even vesications; but in general it produces only redness of the part to which it is applied, with a slight degree of moisture exuding from it. But even from this topical action it is often serviceable in cases of cough and similar affections.

PIX LIQUIDA [*Lond. Ed.*]

Pinus sylvestris Lin.

Tar.

This is a thick black mucuous substance, obtained from old pines and fir-trees, by burning them with a close smothering heat. It differs from the native resinous juice of the trees, in having received a disagreeable empyreumatic quality from the fire; and in containing a proportion of the saline and other juices united with the resinous and oily. By the mediation of these, a part of the terebinthinate oil proves dissoluble in aqueous liquors, which extract little or nothing from the purer turpentine. Water impregnated with the more soluble parts of tar, proves, in consequence of this hot, pungent oil, warm and stimulating. It has been said not only to raise the pulse and quicken circulation, but to increase the the vis vitæ; and at one time it was highly extolled as a remedy of the utmost utility, particularly in cold phlegmatic habits. It is now, however, very generally allowed, that it is by no means intitled to the high character which

was once given of it, and at present it is very little employed.

PLANTAGO [*Ed.*] *Folia.*

Plantago major Lin.

Common great plantane; the leaves.

This species of plantane is called *septinervia*, from its having seven large nerves or ribs running along each leaf; the narrow leaved sort has only five ribs, and hence it is named *quinquenervia*: they are both common in fields and by road sides. The leaves are lightly astringent, and the seeds said to be so; and hence they stand recommended in hemorrhagies and other cases where medicines of this kind are proper. The leaves bruised a little are the usual application of the common people to slight flesh wounds.

Plantane has been alleged to be a cure for the bite of the rattlesnake: but for this there is probably but little foundation, although it is one of the principal ingredients in the remedy of the Negro Cæsar, for the discovery of which he received a considerable reward from the assembly of South Carolina.

PLUMBUM [*Lond.*]

Lead.

This is the heaviest of the metals except gold: it melts in a moderate heat, and if kept in fusion, is soon converted partly into fume, and partly into an ash-coloured calx (*plumbum ustum*); this exposed to a stronger fire, in such a manner that the flame may play upon its surface, becomes first yellow, and afterwards of a deep red (*minium* or red lead): if in this process the fire be suddenly raised to a considerable height, the calx melts, assumes the appearance of oil, and on cooling forms a soft leafy substance of a yellowish or reddish colour (*litharge*). The proper men-

struum

struum of this metal is aquafortis : the vegetable acids likewise dissolve it, but in very small quantity : a quart of distilled vinegar will not take up a dram ; exposed to the steam of vinegar, it is by degrees corroded into a white powder (*cerussa*) which is considerably more easy of solution. The calces of lead dissolve by heat, in expressed oils ; these mixtures are the basis of several officinal plasters and unguents. Crystals of this metal made with distilled vinegar (called, from their sweetish taste, *sugar* of lead ; but more properly *plumbum acetatum* or *cerussa acetata*) are likewise kept in the shops.

Preparations of lead, given internally, are supposed to incrassate the fluids, abate inflammations, and restrain venereal desires. The sugar is a strong astringent, and has been used, it is said, with good success in hemorrhagies, the fluor albus, seminal gleet, &c. A tincture is recommended for the like purposes ; and for checking immoderate sweats in phtisical cases ; whence it has been usually called *tinctura antiphtisica*. The internal use of this metal is nevertheless full of danger, and ought never to be ventured upon unless in desperate cases, after other medicines have been employed without taking effect : it often occasions violent colics ; and though it should not prove immediately hurtful, its ill consequences are sure, though slow : tremors, spasms, or lingering tabes, too frequently follow.

The preparations of lead with vinegar are much used externally in inflammation.

POLYPODIUM [*Succ.*] *Radix.*
Polypodium vulgare Lin.

Polypody ; the root.

Polypody is a capillary plant, growing upon old walls, the trunks

of decayed trees, &c. That found upon the oak is generally preferred, though not sensibly different from the others. The roots are long and slender, of a reddish brown colour on the outside, greenish within, full of small tubercles, which are resembled to the feet of an insect ; whence the name of the plant : the taste of these roots is sweetish and nauseous.

Polypody has been employed in medicine for many ages ; nevertheless its virtues remain as yet to be determined. The ancients held it to be a powerful purger of melancholic humours ; by degrees, it came to be looked upon as an evacuator of all humours in general : at length it was supposed only to gently loosen the belly ; and afterwards even this quality was denied it : succeeding physicians declared it to be astringent ; of this number is Boerhaave, who esteems it moderately styptic and antiscorbutic. For our own part we have had no direct experience of it, nor is it employed in practice : it is probable that (as Juncker supposes) the fresh root may loosen the belly, and that it has not this effect when dry.

POMPHOLYX [*Succ.*]

This is an impure calx of zinc, produced in the furnaces where copper is made into brass by calamine, the ore of zinc. It is found adhering to the covers of the crucibles, &c. either in form of thin crusts, or of a light downy matter, generally of a pure white colour, tho' sometimes yellowish.

POPULUS [*Brun.*] *Gemma.*

Populus niger Lin.

The black poplar ; its buds.

The black poplar is a large tree, growing wild in watery places ; it is easily raised, and very quick of growth. The young buds or rudi-

ments of the leaves, which appear in the beginning of spring, abound with a yellow, unctuous, odorous juice. They have hitherto been employed chiefly in an ointment, which received its name from them; tho' they are certainly capable of being applied to other purposes: a tincture of them made in rectified spirit yields upon being inspissated a fragrant resin superior to many of those brought from abroad.

PORTULACA [*Brun.*] *Herba, semen.*

Portulaca oleracea Lin.

Purslane; the herb and seed.

This herb is cultivated in gardens for culinary uses. The seeds are ranked among the lesser cold seeds, and have sometimes been employed in emulsions and the like, along with the others of that class.

PRIMULA [*Succ.*] *Flores, radix.*

Primula veris Lin.

Primrose; the flower and root.

This is a low plant, growing wild in woods and hedges, and producing pale yellow flowers in the spring. The leaves have an herbaceous taste. The roots are lightly bitter, with a kind of aromatic flavour, which some resemble to that of anise-seeds; their expressed juice purified by settling, is sometimes used as a sternutatory. The flowers have an agreeable flavour, but very weak: an infusion of them in wine and a spirit distilled from them, are employed in some places as cordial and nervine.

PRUNELLA [*Brun.*] *Herba.*

Prunella vulgaris Lin.

Self-heal; the leaves.

This plant grows wild in meadows and pasture grounds, and produces thick spikes of purplish flowers during the latter part of the

summer. It has an herbaceous roag^hish taste: and hence stands recommended in hemorrhagies and alvine fluxes: it has been principally celebrated as a vulnerary, whence its name; and in gargarisms for apthæ, and inflammations of the fauces.

PRUNUM GALLICUM

[*Lond.*] *Fructus.*

Prunus domestica Lin.

The common prune.

The medical effects of the common prunes are, to abate heat, and gently loosen the belly: which they perform by lubricating the passage, and softening the excrement. They are of considerable service in costiveness, accompanied with heat or irritation, which the more stimulating cathartics would tend to aggravate: where prunes are not of themselves sufficient, their effects may be promoted by joining with them a little rhubarb or the like; to which may be added some carminative ingredient to prevent their occasioning flatulencies.

PRUNUM SYLVESTRE

[*Lond.*]

Prunus spinosa Lin.

The sloe.

These have a very rough, austere taste, especially before they have been mellowed by frosts. The juice of the unripe fruit, inspissated to a proper consistence, is called *acacia Germanica*, and usually sold in the shops for the true Egyptian acacia: it is equally astringent with the Egyptian sort; but has more of a sharp or tartish taste, without any thing of the sweetish relish of the other. A conserve of the fruit is directed by the London college.

PSYLLIUM [*Succ.*] *Semen.*

Plantago psyllium Lin.

Fleawort; the seeds.

This

This is a sort of plantane, growing wild in the warmer climates, and sometimes met with in our gardens: it differs from the common plantane in having its stalks branched, with leaves upon them; hence it is named by Ray *plantago caulifera*. The seeds have been usually brought from the south of France; they are small, but supposed to resemble in shape a flea, whence the English name of the plant. These seeds have a nauseous, mucilaginous taste: boiled in water they yield a considerable quantity of mucilage, which is sometimes made use of in emollient glysters and the like. Alpinus relates, that among the Egyptians this mucilage is given in ardent fevers, and that it generally either loosens the belly or promotes sweat.

PTARMICA [*Brun.*] *Radix.*
Achillea ptarmica Lin.

Sneeze-wort: the root.

This grows wild upon heaths and in moist shady places: the flowers, which are of a white colour, come forth in June and July. The roots have an acrid smell, and a hot biting taste: chewed they occasion a plentiful discharge of saliva; and when powdered and snuffed up the nose, provoke sneezing. These are the only intentions to which they have been usually applied.

PULEGIUM [*Lond. Ed.*] *Herba, flos.*

Mentha pulegium Lin.

Penny-royal; the flower.

This plant grows spontaneously in several parts of England upon moist commons, and in watery places; trailing upon the ground, and striking roots at the joints. Our markets have been for some time supplied with a garden sort, which is larger than the other, and grows upright.

Pennyroyal is a warm, pungent

herb, of the aromatic kind, similar to mint, but more acrid and less agreeable: it has long been held in great esteem as an aperient and deobstruent, particularly in hysteric complaints, and suppressions of the uterine purgations. For these purposes, the distilled water is generally made use of, or an infusion of the leaves. It is observable, that both water and rectified spirit extract the virtues of this herb by infusion, and likewise elevate the greatest part of them in distillation.

In the shops are kept a simple water, a spirit, and an essential oil obtained from this vegetable. But under any form it is now less frequently employed than formerly.

PULMONARIA MACULOSA [*Brun.*] *Herba.*

Pulmonaria officinalis Lin.

Spotted long-wort; the leaves.

This is met with in our gardens: the leaves are of a green colour spotted with white: of an herbaceous somewhat mucilaginous taste, without any smell. They stand recommended against ulcers of the lungs, phthisis, and other similar disorders: experience, however, gives little countenance to these virtues, nor does the present practice expect them.

PULSATILLA NIGRICANS [*Ed.*] *Herba cum flore.*

Anemone pratensis Lin

Meadow anemone.

This is the most acrid of the anemones; and is recommended by Dr Stoerk, in the quantity of half an ounce of the distilled water, or five grains of the extract, twice or thrice a-day in venereal nodes, pains, ulcers with caries, chronic eruptions, amenorrhœa, various chronic affections of the eye, particularly blindness from obscurities of the cornea. Its common effects are nau-

sea or vomiting, an augmented discharge of urine, diarrhoea, and increased pain at first in the affected part.

PYRETHRUM [*Lond. Ed.*]

Radix.

Anthemis pyrethrum Lin.

Pellitory of Spain: the root.

This plant though a native of the warm climates, bears the ordinary winters of this, and often flowers successively from Christmas to May; the roots also grow larger with us than those with which the shops are usually supplied from abroad,

Pellitory root has no sensible smell; its taste is very hot and acrid, but less so than that of arum; the juice expressed from it has scarcely any acrimony, nor is the root itself so pungent when fresh as after it has been dried. Water, assisted by heat, extracts some share of its taste; rectified spirit, the whole; neither of them elevate any thing in distillation. The principal use of pyrethrum in the present practice is as a masticatory, for promoting the salival flux, and evacuating viscid humours from the head and neighbouring parts; by this means it often relieves the toothach, some kinds of pains of the head, and lethargic complaints.

QUASIA [*Lond. Ed.*] *Lignum, cortex, radix.*

Quasia amara Lin.

Quassy: the wood, bark, and root.

This root is about the thickness of a man's arm; its wood is whitish, becoming yellowish by exposure to the air. It has a thin, grey, fissured brittle bark, which is deemed in Surinam more powerful than the wood. Quassy has no sensible odour, but is one of the most intense, durable, pure bitters known. Its infusion, de-

coction, and tincture, are almost equally bitter and yellowish, and not blackened by a chalybeate.

It was much used in a fatal fever in Surinam, and is said to be effectual in suppressing vomiting.

It is said to be less antiseptic than Peruvian bark; but, like colombo, another pure bitter, it preserves bile longer from putrefaction. The best form is that of pills of the extract.

QUERCUS [*Lond. Ed.*] *Cortex.*

Quercus robur Lin.

Oak tree, the bark.

This bark is a strong astringent; and hence stands recommended in hæmorrhagies, alvine fluxes, and other preternatural or immoderate secretions; and in these it is sometimes attended with good effects. Some have alleged, that by the use of this bark every purpose can be answered which may be obtained from Peruvian bark. But after several very fair trials, we have by no means found this to be the case.

RADIX INDICA LOPEZIANA [*Ed.*]

Radix Indica a Joanne Lopez denominata, Gaubii Adversaria.

Indian, or Lopez root.

The tree is unknown. Neither the woody nor cortical part of the root has any remarkable sensible quality. A slight bitterness is perceptible, and it is recommended, like simarouba, in diarrhoeas even of the colliquative kind, in half-dram doses four times a-day. Little of this root has been brought to Europe: but some of those who have had an opportunity of employing it, speak in very high terms of the effects obtained from it.

RAPHANUS

RAPHANUS RUSTICANUS

[Lond. Ed.] Radix.

Gochlearia armorica Lin.

Horse-radish root.

This plant is sometimes found wild about river sides, and other moist places; for medicinal and culinary uses, it is cultivated in gardens; it flowers in June, but rarely perfects its seeds in this country. Horse-radish root has a quick pungent smell, and a penetrating acrid taste; it nevertheless contains in certain vessels a sweet juice, which sometimes exudes from the surface. By drying, it loses all its acrimony, becoming first sweetish, and afterwards almost insipid: if kept in a cool place, covered with sand, it retains its qualities for a considerable time. The medical effects of this root are, to stimulate the solids, attenuate the fluids, and promote the fluid secretions: it seems to extend its action through the whole habit, and affect the minutest glands. It has frequently done service in some kinds of scurvy and other chronic disorders, proceeding from a viscosity of the juices, or obstructions of the excretory ducts. Sydenham recommends it likewise in dropsies, particularly those which sometimes follow intermittent fevers. Both water and rectified spirit extract the virtues of this root by infusion, and elevate them in distillation; along with the aqueous fluid, an essential oil arises, possessing the whole taste and pungency of the horse-radish. From this root, the spiritus raphani compositus derives its name, and no inconsiderable share of its activity.

REALGAR, a fossil composed of arsenic and sulphur. Vide ARSENICUM.

RESINA ALBA. Vide TEREBINTHINA.

RHABARBARUM [Lond.

Ed.] Radix.

Rheum palmatum Lin.

Rhubarb; the root.

This plant, which is of the dock kind, grows spontaneously in China, and endures the colds of our own climate. Two sorts of Rhubarb are met with in the shops. The first is imported from Turkey and Russia, in roundish pieces freed from the bark, with a hole through the middle of each; they are externally of a yellow colour, and on cutting appear variegated with lively reddish streaks. The other, which is less esteemed, comes principally from China in longish pieces, harder, heavier, and more compact than the foregoing. The first sort, unless kept very dry, is apt to grow mouldy and worm-eaten; the second is less subject to these inconveniences. Some of the more industrious artists are said to fill up the worm-holes with certain mixtures, and to colour the outside of the damaged pieces with powder of the finer sort of rhubarb, and sometimes with cheaper materials: this is often so nicely done, as effectually to impose upon the buyer, unless he very carefully examines each piece. The marks of good rhubarb are, that it be firm and solid, but not stinty; that it be easily pulverable, and appear, when powdered, of a fine bright yellow colour: that upon being chewed, it impart to the spittle a saffron tinge, without proving slimy or mucilaginous in the mouth. Its taste is subacid, bitterish, and somewhat astringent: the smell lightly aromatic.

Rhubarb is a mild cathartic, which operates without violence or irritation, and may be given with safety even to pregnant women and to children. In some people, however, it always occasions severe griping. Besides its purgative quality,

it is celebrated for an astringent one, by which it strengthens the tone of the stomach and intestines, and proves useful in diarrhœa and disorders proceeding from a laxity of the fibres. Rhubarb in substance operates more powerfully as a cathartic than any of the preparations of it. Watery tinctures purge more than the spirituous ones; whilst the latter contain in greater perfection the aromatic, astringent, and corroborating virtues of the rhubarb. The dose, when intended as a purgative, is from a scruple to a dram or more.

The Turkey rhubarb is, among us, universally preferred to the East-India sort, though this last is for some purposes at least equal to the other; it is manifestly more astringent but has somewhat less of an aromatic flavour. Tinctures drawn from both with rectified spirit, have nearly the same taste: on distilling off the menstruum, the extract left from the tincture of the East-India rhubarb proved considerably the strongest. They are both the produce of the same climate, and probably the roots of the same plant taken up at different seasons, or cured in a different manner.

Rhubarb is now raised in Britain equal to any that is imported.

The officinal preparations of this drug are, a watery and a vinous infusion, a simple and a compound tincture. It is also an ingredient in different compositions, such as the elixir *ex aloe et rheo*, the *pilulæ stomachicæ*, and some others.

RHAMNUS CATHARTICUS.

Vide SPINA CERVINA.

RHAPONTICUM [*Ros.*] *Ra-* *dix.*

Rheum raponticum Lin.

Rhapontic: the roots.

Rhapontic is a large roundish-

leaved plant, growing wild on the mountain Rhodope in Thrace, from whence it was brought into Europe, about the year 1610, by Alpinus: it bears the hardest winters of this climate, and is not unfrequent in our botanic gardens. The root of this plant (which appears evidently to have been the rhubarb of the ancients) is by some confounded with the modern rhubarb, though considerably different both in appearance and quality. The rhapsontic is of a dusky colour on the surface, of a loose spongy texture; considerably more astringent, but less purgative than rhubarb; with this last intention, two or three drams are required for a dose.

RHODODENDRON [*Ed.*] *Herba.*

Rhododendron chrysanthum Lin.

Rhododendron; the herb.

This plant is a native of Siberia, where a weak infusion of it is used as tea. The Siberians use a kind of decoction of it in rheumatism and gout. They put about two drams of the dried shrub into an earthen pot, with about ten ounces of boiling water, keeping it near a boiling heat for a night, and this they take in the morning. It is said to occasion heat, thirst, a degree of delirium, and a peculiar creeping-like sensation in the parts affected. The use of liquids is not allowed during its operation, as this is apt to induce vomiting. In a few hours the pain and disagreeable symptoms are relieved, and it is said two or three doses generally complete the cure. The powder has also been used in doses of a few grains.

Hitherto it has been so little employed in Britain, that it has no place in the London pharmacopœia: But in some cases in which it has been used at Edinburgh, it has been productive of good effects; and accordingly

cordingly it is now introduced into the Edinburgh pharmacopœia, as well as into the Pharmacopœia Rosica, where it had first a place.

RIBES NIGRUM [Lond.]

Fructus.

Ribes nigrum Lin.

Black currants.

RIBES RUBRUM [Lond.]

Fructus.

Ribes rubrum Lin.

Red currants; the berry.

These have a cool acidulous sweet taste, sufficiently agreeable both to the palate and stomach.

The black currants are the basis of an officinal syrup, and an inspissated juice, which are frequently employed with advantage in recent catarrhs, attended with slight sore throat.

RICINUS [Lond. Ed.] *Semen.*

Ricinus communis Lin.

Palma Christi; the seed.

These seeds are nuts about the size of small beans: and are, like the bitter almonds, deleterious. The oil, commonly called nut or castor oil, is got by expression, retains somewhat of the mawkishness and acrimony of the nut: but is, in general, a safe and mild laxative in cases where we wish to avoid irritation, as in those of colic, calculus, gonorrhœa, &c. and some likewise use it as a purgative in worm-cases. Half an ounce or an ounce commonly answers with an adult, and a dram or two with an infant.

An oil of an inferior kind, but possessing nearly the same qualities, is obtained by boiling.

With many, the aversion to oil in its pure state is so great, that this purgative cannot be taken without great reluctance; and accordingly different modes of taking it have been proposed. Some prefer taking it swimming on a glass of water or

peppermint water, or in the form of emulsion, with mucilage, or with the addition of a little rum. Sometimes it is necessary to increase its activity by the addition of some other purgative: And with this view, nothing answers better than a small quantity of tincture of jalap, or compound tincture of senna.

ROSA DAMASCÆNA [Lond. Ed.] *Petalum.*

Rosa centifolia Lin.

The damask rose; the petal.

This elegant flower is common in our gardens. Its smell is very pleasant and almost universally admired; its taste bitterish and subacid. In distillation with water, it yields a small portion of a butyraceous oil, whose flavour exactly resembles that of the roses. This oil, and the distilled water, are very useful and agreeable cordials. Hoffman strongly recommends them as of singular efficacy for raising the strength, cheering and recruiting the spirits, and allaying pain; which they perform without raising any heat in the constitution, rather abating it when inordinate. Damask roses, besides their cordial aromatic virtue, which resides in their volatile parts, have a mildly purgative one, which remains entire in the decoction left after the distillation: this, with a proper quantity of sugar, forms an agreeable laxative syrup, which has long kept its place in the shops.

ROSA RUBRA [Lond. Ed.] *Petalum.*

Rosa gallica Lin.

The red rose; the petal.

This has very little of the fragrance of the foregoing pale sort; and instead of its purgative quality, a mild gratefully astringent one, especially before the flower has opened: this is considerably improved by
hasty

hasty exsiccation; but both the astringency and colour are impaired by slow drying. In the shops are prepared a conserve, an infusion, a honey, and a syrup of this flower.

ROSMARINUS [Lond. Ed.]

Cacumen, flos.

Rosmarinus officinalis Lin.

Rosemary; the top and flower.

This is a native of Spain, Italy, and the southern parts of France, where it grows in great abundance upon dry gravelly grounds; in the like soils it thrives best with us, and likewise proves stronger in smell than when produced in moist rich ones: this observation obtains in almost all the aromatic plants.

Rosemary has a fragrant smell, and a warm pungent bitterish taste, approaching to those of lavender: the leaves and tender tops are strongest; next to these the cup of the flower; the flowers themselves are considerably the weakest, but most pleasant. Aqueous liquors extract a great share of the virtues of rosemary leaves by infusion, and elevate them in distillation; along with the water arises a considerable quantity of essential oil, of an agreeable strong penetrating smell. Pure spirit extracts in great perfection the whole aromatic flavour of the rosemary, and elevates very little of it in distillation: hence the resinous mass left upon abstracting the spirit, proves an elegant aromatic, very rich in the peculiar qualities of the plant. The flowers of rosemary give over great part of their flavour in distillation with pure spirit; by watery liquors, their fragrance is much injured; by beating, destroyed. The officinal preparations of rosemary are, an essential oil, and a spirit commonly known by the title of *Hungary water*; the tops are also an ingredient in the compound tincture of lavender, and some other formulæ.

RUBIA [Lond. Ed.] *Radix.*

Rubia tinctorum Lin.

Madder; the root.

Madder is raised in some of our gardens for medicinal purposes: it was formerly cultivated among us, in quantity, for the use of the dyers, who are at present supplied from Holland and Zealand. It has little or no smell, and a sweetish taste, mixed with a little bitterness. The virtues attributed to it are those of a detergent and aperient; whence it has been usually ranked among the opening roots, and recommended in obstructions of the viscera, particularly of the kidneys, in coagulations of the blood from falls or bruises, in the jaundice, and beginning dropsies.

It is observable, that this root, taken internally, tinges the urine of a deep red colour; and in the Philosophical Transactions, we have an account of its producing a like effect upon the bones of animals who had it mixed with their food: all the bones, particularly the more solid ones, were changed, both externally and internally, to a deep red, but neither the fleshy or cartilaginous parts suffered any alteration: some of these bones macerated in water for many weeks together, and afterwards steeped and boiled in spirit of wine, lost none of their colour, nor communicated any tinge to the liquors. The colouring part of this root appears therefore to be possessed of great subtilty of parts; whence its medical virtues seem to deserve inquiry.

Some use it in half-dram doses several times a day as an emmenagogue.

RUBUS IDÆUS [Lond.] *Fructus.*

Rubus idæus Lin.

Raspberry; the fruit.

This

This shrub is common in our gardens; and has likewise, in some parts of England, been found wild: it flowers in May; and ripens its fruit in July. Raspberries have a pleasant sweet taste, accompanied with a peculiarly grateful flavour; on account of which they are chiefly valued. As to their virtues, they moderately quench thirst, abate heat, strengthen the viscera, and promote the natural excretions. An agreeable syrup, prepared from the juice, is directed to be kept in the shops.

RUBUS NIGER [*Rosf.*] *Bacca.*

Rubus fruticosus Lin.

The bramble; the fruit.

This shrub is frequently found wild in woods and hedges. The berries have a faint taste, without any thing of the agreeable flavour of the foregoing: the leaves are somewhat astringent.

They enter no officinal composition, are rarely directed in practice, and hence have now no place in our pharmacopœias.

RUSCUS [*Brun.*] *Radix.*

Ruscus aculeatus Lin.

Butchers broom; the root.

This is a small prickly plant, sometimes found wild in woods. The root has a soft sweetish taste, which is followed by a bitterish one: it is one of the five aperient roots; and with this intention is sometimes made an ingredient in apozems and diet-drinks, for opening slight obstructions of the viscera, purifying the blood and juices, and promoting the fluid secretions.

RUTA [*Lond. Ed.*] *Radix.*

Ruta graveolens Lin.

Rue; the herb.

This is a small shrubby plant, met with in gardens, where it flowers in

June, and holds its green leaves all the winter: we frequently find in the markets a narrow-leaved sort, which is cultivated by some in preference to the other, on account of its leaves appearing variegated during the winter with white streaks.

Rue has a strong ungrateful smell, and a bitterish, penetrating taste: the leaves, when in full vigour, are extremely acrid, insomuch as to inflame and blister the skin, if much handled. With regard to their medicinal virtues, they are powerfully stimulating, attenuating, and detergent; and hence, in cold phlegmatic habits, they quicken the circulation, dissolve tenaceous juices, open obstructions of the excretory glands, and promote the fluid secretions. The writers on the materia medica in general have entertained a very high opinion of the virtues of this plant. Boerhaave is full of its praises; particularly of the essential oil, and the distilled water cohobated or redistilled several times from fresh parcels of the herb: after somewhat extravagantly commending other waters prepared in this manner, he adds, with regard to that of rue, that the greatest commendations he can bestow upon it fall short of its merit: "What medicine (says he) can be more efficacious for promoting sweat and perspiration, for the cure of the hysteric passion, and of epilepsies, and for expelling poison." Whatever service rue may be of in the two last cases, it undoubtedly has its use in the others: the cohobated water, however, is not the most efficacious preparation of it. An extract made by rectified spirit contains, in a small compass, the whole virtues of the rue; this menstruum taking up by infusion all the pungency and flavour of the plant, and elevating nothing in distillation. With water, its peculiar flavour and warmth

warmth arise; the bitterness, and a considerable share of the pungency, remaining behind.

The only officinal preparation of rue now retained in our pharmacopœias is the extract: but it is an ingredient in the compound powder of myrrh, and some other compositions.

SABINA [*Lond. Ed.*] *Folium.*

Juniperus sabina Lin.

Juniper; the leaf.

This is an evergreen shrub, clothed with small, somewhat prickly, leaves: it does not produce fruit till very old, and hence has been generally reputed barren. The leaves have a bitter, acrid, biting taste; and a strong disagreeable smell: distilled with water, they yield an essential oil, in larger quantity, as Hoffman observes, than any other known vegetable, the turpentine-tree alone excepted.

Savin is a warm irritating aperient medicine, capable of promoting sweat, urine, and all the glandular secretions. The distilled oil is one of the most powerful emmenagogues; and is found of service in obstructions of the uterus or other viscera, proceeding from a laxity and weakness of the vessels, or a sluggish indispotion of the juices.

The powder is sometimes used for consuming venereal warts.

The essential oil and a watery extract are kept in the shops; and, as well as the rue, the savin is likewise an ingredient in the compound powder of myrrh.

SACCHARUM NON PURIFICATUM [*Lond.*]

Brown sugar.

SACCHARUM PURIFICATUM, sive BIS COCTUM [*Lond.*]

Double refined sugar.

SACCHARUM CANTUM ALBUM ET RUBRUM [*Rofs.*]

Sugar-candy, white and brown.

Sugar is the essential salt of the *arundo saccharifera*, a beautiful large cane growing spontaneously in the East-Indies, and some of the warmer parts of the West, and cultivated there in great quantity. The expressed juice of the cane is clarified with the addition of lime-water, without which it does not assume the form of a true sugar, and boiled down to a due consistence; when, being removed from the fire, the saccharine part concretes from the grosser unctuous matter, called *treacle* or *melasses*. This, as yet impure or brown sugar, is farther purified, in conical moulds, by spreading moist clay on the upper broad surface: the watery moisture, slowly percolating through the mass, carries with it a considerable part of the remains of the treacle matter. This clayed sugar, imported from America, is by our refiners dissolved in water, the solution clarified by boiling with whites of eggs and despumation, and after due evaporation poured into moulds: as soon as the sugar has concentered, and the fluid part strained off, the surface is covered with moist clay as before. The sugar, thus once refined, by a repetition of the process becomes the double-refined sugar of the shops. The candy, or crystals, are prepared by boiling down solutions of sugar to a certain pitch, and then removing them into a hot room, with sticks set across the vessel for the sugar to shoot upon: these crystals prove of a white or brown colour, according as the sugar was pure or impure.

The uses of sugar as a sweet are sufficiently well known. The impure sorts contain an unctuous or oily matter,

matter; in consequence of which they prove emollient and laxative. The crystals are most difficult of solution; and hence are properest where this soft lubricating sweet is wanted to dissolve slowly in the mouth.

SAGAPENUM [Lond. Ed.]

Gummi resinae.

Sagapenum, the gum resin.

This is a concrete juice brought from Alexandria, either in distinct tears, or run together in large masses. It is outwardly of a yellowish colour; internally, somewhat paler, and clear like horn; grows soft upon being handied, and sticks to the fingers: its taste is hot and biting; the smell disagreeable, by some resembled to that of a leek, by others to a mixture of asafœtida and galbanum.

Sagapenum is an useful aperient and deobstruent; and not unfrequently prescribed either alone or in conjunction with ammoniacum or galbanum, for opening obstructions of the viscera, and in hysterical disorders arising from a deficiency of the menstrual purgations. It likewise promotes expectoration, and proves of considerable service in some kinds of asthma and chronic catarrh, where the lungs are oppressed by viscid phlegm. It is most commodiously given in the form of pills; from two or three grains to half a dram may be given every night or oftener, and continued for some time. When sagapenum is scarce, the druggists usually supply its place with the larger and darker coloured masses of bdellium, broken into pieces; which are not easily distinguished from it.

Sagapenum was an ingredient in the compound powder of myrrh, electuary of bay-berries, mithridate and theriaca of the London pharmacopœia.

But from such of these formulæ as are still retained it is now rejected. It enters the gum pills of the London college; but it has no place either in that or any other formula of the Edinburgh pharmacopœia, a preference being given to ammoniacum and galbanum.

SAGO [Gen.]

Cycas circinalis Lin.

Sago.

This is the produce of an oriental tree of the palm tribe. The medullary part of the tree is beaten with water, and made into cakes, which are used by the Indians as bread. They likewise put the powder into a funnel, and wash it with water over a hair-sieve, which allows only the finer part to pass through the water. The water, on standing, deposits the fecule; which being passed through perforated copper plates, is formed into grains called *Sago*. It furnishes agreeable jelly with water, milk, or broth, and is much used in phthisical and convalescent cases.

SAL ALKALINUS FIXUS
VEGETABILIS, *Præsertim is qui*
pearl-ashes lingua vernacula dicitur.

CINERES CANVELLATI VEL KALI IMPURUM [Lond.]

Vegetable fixed alkaline salt, particularly that named in English, pearl ashes.

The Edinburgh college having rejected the oily alkalies of broom, wormwood, &c. order the pearl-ashes to be burnt in a crucible, dissolved in water, and the liquor to be decanted and evaporated to dryness in an iron pot. If the salt be thus properly purified, it dissolves in its weight of water; the solution is free from colour and smell, supplies the place of the oleum tartari per deli-

deliquium, and in a dry state that of the salt of tartar.

The mild vegetable alkali is used in form of lotion, in some cutaneous diseases, and as a stimulant to the inactive state of the vessels in certain ulcers. It is used internally as a diaphoretic or diuretic, and of late in calculus complaints.

When the liquid alkali is deprived of its fixed air by quicklime, it forms the caustic or soap ley, which in a diluted state is injected by some for removing the mucus and poison in recent gonorrhoea. The pure salt obtained by evaporation forms the common caustic, which, on account of its deliquescent, and consequently spreading quality, is little used. The caustic ley diluted is the basis of the common quack lithontriptics.

It sometimes allays the symptoms of calculus without any evidence of its having acted on the stone, and in some cases the stone has shown marks of its action; but its continued use seldom fails to injure the constitution, or the intestinal canal.

BARILLA, five NATRON, [*Lond.*]

This does not differ much in its general properties from the vegetable alkali. It is procurable from the ashes of sea plants, particularly from kali, and it is called *soda* or *barilla*. This purified has been recommended by some in scrophula.

SAL ALKALINUS FIXUS FOSSILIS, *Vulgo sal sodæ, ex herba kali usta* [*Ed.*]

Fossil fixed alkaline salt; commonly called salt of soda, from the burnt herb kali.

SAL AMARUS [*Lond. Ed.*]
Magnesia vitriolata.

The bitter purging salt.

This salt is extracted from the

bitter liquor remaining after the crystallization of common salt from sea-water. It is the salt of the Epsom and some other purging mineral waters. We usually meet with it in minute crystals, of a snowy appearance; dissolved in water, and crystallized afresh, it concretes, if properly managed, into larger ones, of a rectangular prismatic figure, resembling those of the artificial cathartic salt of Glauber, to which they are sometimes substituted in the shops.

All these salts have a penetrating bitterish taste; they dissolve in less than an equal weight of water: in a moderate heat they melt, bubble up into blisters, and soon change into a white spongy mass, with the loss of above half their weight: this calx tastes more bitter than the salts did at first, and almost totally dissolves again in water. The acid of these salts is the vitriolic: the basis of the natural is magnesia; of the artificial, an alkaline salt, the same with the basis of sea-salt. Hence upon adding alkaline salts to a solution of the salts of Glauber, no change ensues: whilst the salts obtained from the purging waters, or the bittern of marine waters, grow milky upon this addition, and deposit their earth, the alkaline salt being taken up in its place.

The sal amarus is a mild and gentle purgative, operating with sufficient efficacy, and in general with ease and safety, rarely occasioning any gripes, sickness, or the other inconveniences which purgatives of the resinous kind are too often accompanied with. Six or eight drams may be dissolved for a dose in a proper quantity of common water; or four, five, or more, in a pint, or quart of the purging waters. These liquors may likewise be so managed as to promote evacuation, by the other emunctories: if the patient be kept warm, they increase perspiration; and by moderate

moderate exercise in a cool air, the urinary discharge. Some allege this salt has a peculiar effect in allaying pain, as in colic, even independently of evacuation.

SAL AMMONIACUS [*Lond. Ed*]

Ammonia muriata.

Sal ammoniac.

This is an artificial saline concrete, said to be prepared by sublimation from the foot of cow-dung. It is brought from Egypt in considerable quantities, but we are now principally supplied in Britain from our own manufactures, several of which are established in different parts of the country. In these, though the cheapest and most commodious process of preparing it is not generally known, yet it is with good reason conjectured to be principally formed from sea-salt and foot, the former furnishing the marine acid, the latter the volatile alkali. It is in general in large round cakes, convex on one side, and concave on the other; and sometimes in conical loaves; on breaking, they appear composed of needles, or stræ, running transversely. The best are almost transparent, colourless, and free from any visible impurities: those most commonly met with are of a grey yellowish colour on the outside, and sometimes black, according as the matter is more or less impure. The taste of this salt is very sharp and penetrating. It dissolves in twice its weight, or a little less of water; and upon evaporating a part of the menstruum, concretes again into long shining spicula, or thin fibrous plates like feathers.

Sal ammoniac appears from experiment to be composed of marine acid, united with a volatile alkali. If mingled with fixt alkalies, or absorbent earths, and exposed to a moderate fire, a large quantity of

volatile salt sublimes, the acid remaining united with the intermedium; if treated in the same manner with quicklime, an exceeding penetrating volatile spirit arises, but no solid salt is obtained. Exposed alone to a considerable heat, it sublimes entire, without any alteration of its former properties: ground with certain metallic substances, it elevates some part of them along with itself, and concretes with the remainder into a mass, which readily flows into a liquor in a moist air: this appears in most respects similar to a saturated solution of the metal made directly in spirit of salt.

Pure sal ammoniac is a perfectly neutral salt, capable of attenuating viscid humours, and promoting a diaphoresis, or the urinary discharge, according to certain circumstances in the constitution, or as the patient is managed during the operation. If a dram of the salt be taken, dissolved in water, and the patient kept warm, it generally proves sudorific: by moderate exercise, or walking in the open air, its action is determined to the kidneys; a large dose gently loosens the belly, and a still larger proves emetic. This salt is recommended by many as an excellent febrifuge, and by some has been held a great secret in the cure of intermittents. It is undoubtedly a powerful aperient, and seems to pass into the minutest vessels; and as such may in some cases be of service, either alone, or joined with bitters or bark. This salt is sometimes employed externally as an antiseptic, and in lotions and fomentations, for oedematous and scirrhus tumours; and also in gargarisms for inflammations of the tonsils, and for attenuating and dissolving thick viscid mucus. Some use it in form of lotion, in certain ulcers, and for removing common warts.

SAL MURIATICUS [Lond.]

Natron muriatum.

Sea-salt or common alimentary salt.

This is a neutral salt, differing from most others in occasioning thirst when swallowed. It dissolves in somewhat less than three times its weight in water; the solution slowly evaporated, and set to shoot, affords cubical crystals, which unites together in the form of hollow truncated pyramids. Exposed to the fire, it crackles and flies about, or decrepitates as it is called; soon after, it melts, and appears fluid as water. A small quantity of this salt added to the nitrous acid, enables it to dissolve gold, but renders it unfit for dissolving silver: if a solution of silver be poured into liquors containing even a minute portion of common salt, the whole immediately grows turbid and white; this phenomenon is owing to the precipitation of the silver.

This salt is either found in solid form in the bowels of the earth, or dissolved in the waters of the sea or saline springs.

1. *Sal gemmae*. Rock salt. This is met with in several parts of the world; but in greatest plenty in certain deep mines, of prodigious extent near Cracow in Poland; some is likewise found in England, particularly in Cheshire. It is for the most part very hard, sometimes of an opaque snowy whiteness, sometimes of a red, green, blue, and other colours. When pure, it is perfectly transparent and colourless; the other sorts are purified by solution in water and crystallization, in order to fit them for the common uses of salt.

2. *Sal marinus*. *Sal marinus Hispanus*. The salt extracted from sea-waters and saline springs. Sea waters yield from one-fiftieth to one thirtieth their weight of pure salt;

several springs afford much larger quantities; the celebrated ones of our own country at Nantwich, Northwich, and Droitwich, yield (according to Dr Brownrigg) from one-sixth to somewhat more than one-third. There are two methods of obtaining the common salt from these natural solutions of it: The one, a hasty evaporation of the aqueous fluid till the salt begins to concrete, and fall in grains to the bottom of the evaporating pan, from whence it is raked out, and set in proper vessels to drain from the brine or bittern: the other, a more slow and gradual evaporation, continued no longer than till a saline crust forms on the top of the liquor; which, upon removing the fire, soon begins to shoot, and run into crystals of a cubical figure. In the warmer climates, both these processes are effected by the heat of the sun. The salts obtained by them differ very considerably: that got by a hasty evaporation is very apt to relent in a moist air, and run per deliquium; an inconvenience which the crystallized salt is not subject to: this last is likewise found better for preserving meat, and sundry other purposes.

Common salt, in small quantities, is supposed to be warming, drying, and to promote appetite and digestion: in large doses, as half an ounce, it proves cathartic. It is sometimes used to check the operation of emetics and makes them run off by stool; and as a stimulus in gylsters.

SAL CORNU CERVI; *i. e.*

Sal alkalinus volatilis, siccus, ex ossibus vel cornibus animalium igne paratus, ab oleo purificatus.

Salt of hartshorn; *i. e.* dry volatile alkaline salt, obtained by means of fire from the bones or horns of animals, freed from its oil. [Ed.]

This

This article, to which the London college now give the name of *ammonia preparata*, will afterwards come to be mentioned under the head of *Salts*. Here, with respect to its medical properties, it is sufficient to observe, that it is a quick and powerful stimulant, and as such is employed externally to the nose in syncope; and with oil in cynanche, and some other inflammations, as a rubefacient. It is used internally in various low states of the system.

SALIX [Ed.] *Ramulorum cortex.*

Salix fragilis Lin.

The willow; the bark of the branches.

This bark possesses a considerable degree of bitterness and astringency. It has been recommended by some as a substitute for the Peruvian bark; and of the indigenous barks which have been proposed, it is perhaps one of the most effectual. But in point of efficacy it is in no degree to be compared with the Peruvian bark.

SALIVA [Lond. Ed.] *Folium Saliva officinalis* Lin.

Sage; the leaf.

Of the saliva different varieties are in use, particularly those distinguished by the titles of *major* and *minor*. These plants are common in our gardens, and flower in May and June: the green and red common sages differ no otherwise than in the colour of the leaves; the seeds of one and the same plant produce both: the small sort is a distinct species; its leaves are narrower than the others, generally of a whitish colour, and never red; most of them have at the bottom a piece standing out on each side in the form of ears. Both sorts are moderately warm aromatics, accompanied with a light degree of astringency and bitterness; the small

sort is the strongest, the large most agreeable.

The writers on the materia medica are full of the virtues of sage, and derive its name from its supposed salutary qualities.

Salvia salvatrix, natura conciliatrix.

Cur moriatur homo, cui salvia crescit in horto?

Its real effects are, to moderately warm and strengthen the vessels; and hence, in cold phlegmatic habits, it excites appetite and proves serviceable in debilities of the nervous system. The best preparation for these purposes is an infusion of the dry leaves, drank as tea; or a tincture, or extract, made with rectified spirit, taken in proper doses; these contain the whole virtues of the sage; the distilled water and essential oil, only its warmth and aromatic quality, without any thing of its roughness or bitterness. Aqueous infusions of the leaves, with the addition of a little lemon juice, prove an useful diluting drink in febrile disorders. They are of an elegant colour, and sufficiently acceptable to the palate.

SAMBUCUS [Lond. Ed.] *cortex interior, flos, bacca.*

Sambucus nigra Lin.

Black berried elder; the inner bark, flower, and berry.

This is a large shrub, frequent in hedges; it flowers in May, and ripens its fruit in September. The inner green bark of its trunk is gently cathartic; an infusion of it in wine, or the expressed juice, in the dose of half an ounce or an ounce, is said to purge moderately, and in small doses to prove an efficacious deobstruent, capable of promoting all the fluid secretions. The young buds, or rudiments of the leaves are strongly purgative, and act with so much violence as to

be deservedly accounted unsafe. The flowers are very different in quality: these have an agreeable aromatic flavour, which they give over in distillation with water, and impart by infusion to vinous and spiritous liquors. The berries have a sweetish, not unpleasant taste; nevertheless, eaten in substance, they offend the stomach: the expressed juice, inspissated to the consistence of a rob, proves an useful aperient medicine; it opens obstructions of the viscera, promotes the natural evacuations, and if continued for a length of time, does considerable service in sundry chronical disorders. It is observable, that this juice, which in its natural state is of a purplish colour, tinges vinous spirits of a deep red.

This article was formerly kept in the shops, under several different formulæ. The succus spissatus and unguentum sambuci still retain a place in the London pharmacopœia; but the sambucus does not now enter any fixed formula in that of Edinburgh.

A rob was prepared from the berries; an oil of elder by boiling the flowers in oil olive; and an ointment by boiling them in a mixture of oil and suet.

SANGUIS DRACONIS [*London Ed.*] *Gummi resina.*

Dragon's blood.

It is perhaps surprising, that while the London and Edinburgh colleges have of late made so many changes in the names of articles, they should still have retained one so absurd as that which is affixed to this article, especially as that name is not in the smallest degree derived from any of those different vegetables from whence this article is alleged to be obtained. What is called dragon's-blood is a gummi-resinous substance brought

from the East-Indies, either in oval drops, wrapped up in flag leaves; or in large masses, composed of smaller tears. It is said to be obtained from the palmijuncus draco, the calamus rotang, the dracena draco, the pterocarpus draco, and several other vegetables.

The writers on the materia medica in general, give the preference to the former, tho' the others are not unfrequently of equal goodness: the fine dragon's-blood of either sort breaks smooth, free from any visible impurities, of a dark red colour, which changes upon being powdered into an elegant bright crimson. Several artificial compositions, coloured with the true dragon's-blood, or Brazil wood, are sometimes sold in the room of this commodity: some of these dissolve like gums, in water; others crackle in the fire, without proving inflammable; whilst the genuine sanguis-draconis readily melts and catches flame, and is not acted on by watery liquors. It totally dissolves in pure spirit, and tinges a large quantity of the menstruum of a deep red colour: it is likewise soluble in expressed oils, and gives them a red hue, less beautiful than that communicated by anchusa. This drug, in substance, has no sensible smell or taste; when dissolved, it discovers some degree of warmth and pungency. It is usually, but without foundation, looked upon as a gentle astringent, and sometimes directed as such in extemporaneous prescription, against seminal gleets, the fluor albus, and other fluxes. In these cases, it is supposed to produce the general effects of resinous bodies, lightly incrassating the fluids, and somewhat strengthening the solids. But in the present practice it is very little used, either externally or internally. It is still however an ingredient in the emplastrum thuris of the London pharmacopœia.

It formerly entered the pulvis stypticus of the Edinburgh college; but from this it has with propriety been rejected, giving place to a much more active article, the gumkino: and perhaps the sanguis draconis might even with propriety be omitted from our pharmacopœias, at least till its qualities be really ascertained: For even supposing some of these red coloured resins sold under this name to possess medical properties, yet it can hardly be imagined that all resins of this colour have the same properties.

SANICULA [*Brun.*] *Folia.*

Sanicula Europæa Lin.

Sanicle; the leaves.

This plant grows wild in woods and hedges, and flowers in May. The leaves have an herbaceous roughish taste: they have long been celebrated for sanative virtues, both internally and externally. Nevertheless their effects, with any intention, are not considerable enough to gain them a place in the present practice.

SANTALUM ALBUM

[*Brun.*]

Santalum album Lin.

White faunders.

This is a wood brought from the East-Indies in billets about the thickness of a man's leg, of a pale whitish colour. This is not, as has been supposed, a different species from the following, but that part of the yellow faunders wood which lies next the bark. Greatest part of it, as met with in the shops, has no smell or taste, nor any sensible quality that can recommend it to the notice of the physician.

SANTALUM CITRINUM

[*Ed.*]

Santalum album Lin.

Yellow faunders.

This article, which is the interior part of the wood of the same tree which furnishes the former, is of a pale yellowish colour, of a pleasant smell, and a bitterish aromatic taste, accompanied with an agreeable kind of pungency. This elegant wood might undoubtedly be applied to valuable medical purposes, though at present very rarely made use of. Distilled with water it yields a fragrant essential oil, which thickens in the cold into the consistence of a balsam. Digested in a pure spirit, it imparts a rich yellow tincture; which being committed to distillation, the spirit arises without bringing over any thing considerable of the flavour of the faunders. The residuum contains the virtues of six times its weight of the wood. Hoffman looks upon this extract as a medicine of similar virtues to ambergris; and recommends it as an excellent restorative in great debilities.

SANTALUM RUBRUM

[*Lond. Ed.*]

Pterocarpus santalinus Lin.

Red faunders.

This is a wood brought from the East-Indies in large billets, of a compact texture, a dull red, almost blackish colour on the outside, and a deep brighter red within. This wood has no manifest smell, and little or no taste. It has been commended as a mild astringent, and a corroborant of the nervous system; but these are qualities that belong only to the yellow sort.

The principal use of red faunders is as a colouring drug; with which intention it is employed in some formulæ, particularly in the *tinctura lavendulæ composita*. It communicates a deep red to rectified spirit, but gives no tinge to aqueous

liquors: a small quantity of the resin, extracted by means of spirit, tinges a large one of fresh spirit, of an elegant blood red. There is scarce any oil, that of lavender excepted, to which it communicates its colour. Geoffroy and others take notice, that the Brazil woods are sometimes substituted to red saunders; and the college of Brussels are in doubt whether all that is sold among them for saunders be not really a wood of that kind. According to the account which they have given, their saunders is certainly the Brazil wood; the distinguishing character of which is, that it imparts its colour to common water.

SANTONICUM [Lond. Ed.]

Semen.

Artemisa Santonicum Lin. LON.

Artemisa austriaca Jacquin. ED.

Worm seed.

This seed is the produce of a plant of the wormwood or mugwort kind, growing in the Levant.

It is a small, light, chaffy seed, composed as it were of a number of thin membranous coats, of a yellowish colour, an unpleasent smell, and a very bitter taste. These seeds are celebrated for anthelmintic virtues, which they have in common with other bitters; and are sometimes taken with this intention, either mixed with molasses, or candied with sugar: their unpleasent taste renders the form of a powder or decoction inconvenient.

SAPO EX OLEO OLIVÆ ET NATRO CONFECTUS [Lond.]

SAPO ALBUS HISPANUS [Ed.]

White Spanish Soap.

SAPO MOLLIS.

Common soft soap.

SAPO NIGER.

Black soft soap.

Soap is composed of expressed vegetable oils or animal fats, united with alkaline lixivium. The first sort, or white hard soap, is made with the finer kinds of oil olive; the common soft sort with coarser oils, fat, tallow, or a mixture of all these; and the black (as is said) with train-oil.

The purer hard soap is the only sort intended for internal use. This, triturated with oily or resinous matters, renders them soluble in water, and hence becomes an useful ingredient in pills composed of resins, promoting their dissolution in the stomach, and union with the animal fluids, though gum is certainly preferable. Boerhaave was a great admirer of soap; and in his private practice seldom prescribed any resinous pills without it, unless where an alkalescent or putrid state of the juices forbid its use. From the same quality, soap likewise seems well fitted for dissolving such oily or unctuous matters as it may meet with in the body, attenuating viscid juices, opening obstructions of the viscera, and detarging all the vessels it passes through. It has likewise been supposed a powerful menstruum for the human calculus; and a solution of it in lime-water, as one of the strongest dissolvents that can be taken with safety into the stomach. The virtue of this composition has been thought considerably greater than the aggregate of the dissolving powers of the soap and lime water when unmixed.

The soft soaps are more penetrating and acrimonious than the hard. The principal medical use of these is for some external purposes, although by some, when dissolved in ale, they have been directed to be taken

taken to a considerable extent in the cure of jaundice.

Hard soap gives name to an official plaster, liniment, and balsam.

SAPONARIA [*Succ.*] *Folia radix.*

Saponaria officinalis Lin.

Soapwort, or bruisewort; the herb and root.

This grows wild, though not very common, in low wet places, and by the sides of running waters; a double-flowered sort is frequent in our gardens. The leaves have a bitter, not agreeable taste; agitated with water they raise a saponaceous froth, which is said to have nearly the same effects with solutions of soap itself, in taking out spots from cloaths, and the like. The roots taste sweetish and somewhat pungent, and have a light smell like those of liquorice: digested in rectified spirit, they yield a strong tincture, which loses nothing of its taste or flavour in being inspissated to the consistence of an extract. This elegant root has not come much into practice among us, though it promises from its sensible qualities to be a medicine of considerable utility. It is much esteemed by the German physicians as an aperient, corroborant, and sudorific; and preferred by the college of Wirtemberg, by Stahl, Neumann, and others, to *sarsaparilla*.

SARCOCOLLA [*Lond.*] *Gummi resina.*

This is a concrete juice, brought from Persia and Arabia in small, whitish, yellow grains, with a few of a reddish, and sometimes of a deep red colour, mixed with them; the whitest tears are preferred, as being the freshest. It is supposed to be the product of the penæ a *sarcocolla* of Linnæus. Its taste is bitter, accompanied with a dull kind of sweet-

ness. It dissolves in watery liquors, and appears to be chiefly of the gummy kind, with a small admixture of resinous matter. It is principally celebrated for conglutinating wounds and ulcers (whence its name *σαρκοκολλα*, *flesh-glu*), a quality to which neither this nor any other drug has a just title. It is an ingredient in the *pulvis e cerussa*.

SARSAPARILLA [*Lond. Ed.*] *Radix.*

Smilax sarsaparilla Lin.

Sarsaparilla; the root.

This root is brought from the Spanish West-Indies. It consists of a great number of long strings hanging from one head: the long roots, the only part made use of, are about the thickness of a goose-quill, or thicker, flexible, composed of fibres running their whole length; so that they may be stript into pieces from one end to the other. They have a glutinous, bitterish, not ungrateful taste, and no smell. It was first brought into Europe by the Spaniards, about the year 1563, with the character of a specific for the cure of the lues venerea, a disease which made its appearance a little before that time, and likewise of several obstinate chronic disorders. Whatever good effects it might have produced in the warmer climates, it proved unsuccessful in this; inasmuch, that many have denied it to have any virtue at all. It appears, however, from experience, that tho' very unequal to the character which it bore at first, it is in some cases of considerable use as a sudorific, where more acrid medicines are improper. The best preparations are, a decoction and extract made with water; a decoction of half an ounce of the root, or a dram of the extract, which is equivalent thereto, may be taken for a dose.

SASSAFRAS [*Lond. Ed.*] *Lignum, radix ejusque, cortex.*

Laurus sassafras Lin.

Sassafras; the wood, root, and its bark.

Sassafras is brought to us in long straight pieces, very light, and of a spongy texture, covered with a rough fungous bark; outwardly of an ash colour, inwardly of the colour of rusty iron. It has a fragrant smell, and a sweetish aromatic subacid taste: the bark tastes much stronger than any other part; and the small twigs stronger than the large pieces. As to the virtues of this root, it is a warm aperient and corroborant; and frequently employed with good success for purifying the blood and juices. For these purposes, infusions made from the rasped root or bark, may be drank as tea. In some constitutions, these liquors, by their fragrance, are apt, on first taking them, to affect the head: in such cases they may be advantageously freed from their flavour by boiling. A decoction of sassafras boiled down to the consistence of an extract, proves simply bitterish and subastringent. Hoffman assures us, that he has frequently given this extract to the quantity of a scruple at a time, with remarkable success for strengthening the tone of the viscera in cachexies, and also in the decline of intermittent fevers, and in hypochondriacal spasms. Sassafras yields, in distillation, an extremely fragrant oil, of a penetrating pungent taste, so ponderous, notwithstanding the lightness of the drug itself, as to sink in water. Rectified spirit extracts the whole taste and smell of sassafras, and elevates nothing in evaporation: hence the spirituous extract proves the most elegant and efficacious preparation, as containing the virtue of the root entire.

The only officinal preparation of sassafras is the essential oil. The

sassafras itself is an ingredient in the decoction of the woods; and the oil in the elixir guaiacinum.

SATUREIA [*Suec.*] *Herba.*

Satureia hortensis Lin.

Summer savory; the herb.

This herb is raised annually in gardens for culinary purposes. It is a very pungent warm aromatic; and affords in distillation with water a subtle essential oil, of a penetrating smell, and very hot acid taste. It yields little of its virtues by infusion to aqueous liquors: rectified spirit extracts the whole of its taste and smell, but elevates nothing in distillation.

SATYRIUM [*Ed.*] *Radix.*

Orchis mascula Lin.

Orchis; the root.

This plant is frequent in shady places and moist meadows: each plant has two oval roots, of a whitish colour, a viscid sweetish taste, and a faint unpleasent smell. They abound with a glutinous slimy juice. With regard to their virtues, like other mucilaginous vegetables, they thicken the serous humours, and defend the solids from their acrimony: they have also been celebrated, tho' on no very good foundation, for analeptic and aphrodisiac virtues; and frequently made use of with these intentions. Salep, a celebrated restorative among the Turks, is probably the prepared root of certain plants of the orchis kind. This drug, as sometimes brought to us, is in oval pieces, of a yellowish white colour, somewhat clear and pellucid, very hard, and almost horny, of little or no smell, and tasting like gum tragacanth. Satyrium root, boiled in water, freed from the skin, and afterwards suspended in the air to dry, gains exactly the same appearance: the roots thus prepared, dissolve in boiling water into a mucilage.

Geoffroy,

Geoffroy, who first communicated this preparation of orchis, recommends it in consumptions, in bilious dysenteries, and disorders of the breast, proceeding from an acrimony of the juices.

SCABIOSA [*Brun.*] *Herba.*

Scabiosa arvensis *Lin.*

Scabious; the herb.

This is a rough hairy plant, growing wild in pasture-grounds; of a nauseous bitterish taste. It stands recommended as an aperient, sudorific, and expectorant; but the present practice has little dependence on it.

SCAMMONIUM [*Lond. Ed.*]

Gummi-resina.

Convolvulus scammonia *Lin.*

Scammony; the gum-resin.

Scammony is a concrete juice, extracted from the roots of a large climbing plant growing in the Asiatic Turkey. The best comes from Aleppo, in light spongy masses, easily friable, of a shining ash colour verging to black; when powdered, of a light grey or whitish colour. An inferior sort is brought from Smyrna in more compact ponderous pieces, of a darker colour, and full of sand and other impurities. This juice is chiefly of the resinous kind: rectified spirit dissolves five ounces out of six; the remainder is a mucilaginous substance mixed with dross: proof spirit totally dissolves it, the impurities only being left. It has a faint unpleasent smell, and a bitterish, somewhat acrimonious taste.

Scammony is an efficacious and strong purgative. Some have condemned it as unsafe, and laid sundry ill qualities to its charge; the principal of which is, that its operation is uncertain, a full dose proving sometimes ineffectual, whilst at

others a much smaller one occasions dangerous hypercatharsis. This difference, however, is owing entirely to the different circumstances of the patient, and not to any ill quality, or irregularity of operation, of the medicine: where the intestines are lined with an excessive load of mucus, the scammony passes through, without exerting itself upon them; where the natural mucus is deficient, a small dose of this or any other resinous cathartic, irritates and inflames. Many have endeavoured to abate the force of this drug, and correct its imaginary virulence, by exposing it to the fume of sulphur, dissolving it in acid juices, and the like: but this could do no more than destroy as it were a part of the medicine, without making any alteration in the rest. Scammony in substance, judiciously managed, stands not in need of any corrector: if triturated with sugar or with almonds, as we have formerly recommended for other resinous purgatives, it becomes sufficiently safe and mild in its operation. It may likewise be conveniently dissolved, by trituration, in a strong decoction of liquorice, and then poured off from the feces; the college of Wirtemberg assure us, that by this treatment it becomes mildly purgative, without being attended with gripes, or other inconveniences; and that it likewise proves inoffensive to the palate. The common dose of scammony is from three to twelve grains.

Scammony gives name to three different compound powders, viz. the pulvis e scammonio compositus, pulvis e scammonio cum aloe, and pulvis e scammonio cum calomelane, and is an ingredient in the compound powder of fenna, the compound extract of colocynth, and the pills of colocynth and aloes.

SCILLA [*Lond. Ed.*] *Radix.*

Scilla maritima Lin.

Squill, or sea-onion; the root.

This is a sort of onion, growing spontaneously upon dry sandy shores in Spain and the Levant, from whence the root is annually brought into Europe. It should be chosen plump, sound, fresh, and full of a clammy juice: some have preferred the red sort, others the white, though neither deserves the preference to the other; the only difference perceivable between them, is that of the colour; and hence both may be used promiscuously. This root is to the taste very nauseous, intensely bitter, and acrimonious: much handled, it ulcerates the skin. With regard to its medical virtues, it powerfully stimulates the solids, and attenuates viscid juices; and by these qualities promotes expectoration, urine, and if the patient be kept warm, sweat: if the dose be considerable, it proves emetic, and sometimes purgative. The principal use of this medicine is where the primæ viæ abound with mucous matter, and the lungs are oppressed by tenacious phlegm. Dr Wagner, in his clinical observations, recommends it given along with nitre, in hydropical swellings, and in the nephritis; and mentions several cures which he performed, by giving from four to ten grains of the powder for a dose, mixed with a double quantity of nitre: he says, that thus managed, it almost always operates as a diuretic, though sometimes it vomits or purges. In dropsy, dried squills is often combined with mercury. The most commodious form for the taking of squills, unless when designed as an emetic, is that of a bolus, or pill: liquid forms are to most people too offensive, though these may be rendered less disagreeable both to the palate and stomach by the addition

of aromatic distilled waters. This root yields the whole of its virtues, both to aqueous and vinous menstrua, and likewise to vegetable acids. Its officinal preparations, are a conserve, dried squills, a syrup, and vinegar, an oxymel, and pills.

SCOLOPENDRIUM. Vide LINGUA CERVINA.

SCORDIUM [*Lond. Ed.*] *Herba.*

Teucrium scordium Lin.

• Water-germander; the herb.

This is a small, somewhat hairy plant, growing wild in some parts of England, though not very common; the shops are generally supplied from gardens. It has a bitter taste, and a strong disagreeable smell. Scordium is of no great esteem in the present practice, notwithstanding the deobstruent, diuretic, and sudorific virtues for which it was formerly celebrated. It formerly entered the mithridate, theriaca, and cataplasm of cummin seed, and gave name to two compound powders and an electuary; but it could by no means be considered as an article of any great activity; and from such of these formulæ as are still retained, the scordium is rejected.

SCORZONERA [*Succ.*] *Radix.*

Scorzonera Hispanica Lin.

Viper's grass; the root.

Scorzonera is met with only in gardens. The roots abound with a milky juice, of a bitterish subacid taste; and hence may be of some service for strengthening the tone of the viscera, and promoting the fluid secretions. They were formerly celebrated as alexipharmacs, and for throwing out the measles and small-pox; but have now almost entirely lost their character.

SCRO-

SCROPHULARIA [*Brun.*] *Fo-
lium, radix.*

Scrophularia nodosa *Lin.*

Fig-wort; the leaf and root.

This herb grows wild in woods and hedges: the roots are of a white colour, full of little knobs or protuberances on the surface: this appearance gained it formerly some repute against scrophulous disorders and the piles; and from hence it received its name: but modern practitioners expect no such virtues from it. It has a faint unpleasant smell, and a somewhat bitter disagreeable taste.

SEBESTENA [*Brun.*] *Fru-
tus.*

Cordia myxa *Lin.*

Sebestens.

These are a sort of plum, the produce of a tree growing in the East-Indies. The fruit is brought from thence in a dry state; it is of a dark or blackish brown colour, with whitish or ash-coloured cups: the flesh sticks close to the stone, which contains sometimes one and sometimes two kernels. This fruit has a sweet, very glutinous taste: and hence has been employed for softening acrimonious humours, in some kinds of hoarseness, and in coughs from thin sharp defluxions: at present it is not often met with in the shops.

SEDUM ACRE [*Succ.*] *Her-
ba recens.*

Sedum acre *Lin.*

Wall-stone crop, or pepper; the recent plant.

This species of the sedum is a small perennial, succulent, ever-green plant, growing in great abundance on the tops of walls and roofs of houses. It has a faint smell, and at first an herbaceous taste; but it afterwards shows considerable acrimony, exciting a sense of biting heat

in the mouth and fauces. In its recent state it shows very active powers, proving emetic, purgative, and diuretic. The expressed juice taken to the quantity of a table spoonful, has been said to prove a very drastic medicine: but the plant in its dried state shows little or no activity. In this country it is hardly employed, and has no place in our pharmacopœias. Its activity, however, points it out as a subject deserving attention.

SENEKA [*Lond. Ed.*] *Radix.*

Polygala Senega *Lin.*

Seneka, or rattle-snake root.

Seneka grows spontaneously in Virginia, and bears the winters of our own climate. This root is usually about the thickness of the little finger, variously bent and contorted, and appears as if composed of joints, whence it is supposed to resemble the tail of the animal whose name it bears: a kind of membranous margin runs on each side, the whole length of the root. Its taste is at first acid, afterwards very hot and pungent.

The Seneka Indians are said to prevent the fatal effects which follow from the bite of the rattle-snake, by giving it internally, and by applying it externally to the wound. It has been strongly recommended in pleurisies, peripneumonies, and other inflammatory distempers. Its more immediate effects are those of a diuretic, diaphoretic, and cathartic; sometimes it proves emetic: the two last operations may be occasionally prevented, by giving the root in small doses along with aromatic simple waters, as that of cinnamon. The usual dose of the powder is thirty grains or more.

Some have likewise employed this root in hydropic cases, and not without success. There are examples of its occasioning a plentiful evacuation

ation by stool, urine, and perspiration; and by this means removing the disease after the common diuretics and hydragogues had failed: where this medicine operates as a cathartic, it generally proves successful: if it acts by liquefying the blood and juices, without occasioning a due discharge, it should either be abated from, or assisted by proper additions.

SENNA [*Lond. Ed.*] *Folium.*

Cassia senna Lin.

Senna; the leaf.

This is a shrubby plant cultivated in Persia, Syria, and Arabia; from whence the leaves are brought, dried and picked from the stalks, to Alexandria in Egypt; and thence imported into Europe. They are of an oblong figure, sharp pointed at the ends, about a quarter of an inch broad, and not a full inch in length, of a lively yellowish green colour, a faint not very disagreeable smell, and a subacid, bitterish, nauseous taste. Some inferior sorts are brought from Tripoli and other places; these may easily be distinguished by their being either narrower, longer, and sharper pointed; or larger, broader, and round pointed, with small prominent veins; or large and obtuse, of a fresh green colour, without any yellow cast.

Senna is a very useful cathartic, operating mildly, and yet effectually: and if judiciously dosed and managed, rarely occasioning the ill consequences which too frequently follow the exhibition of the stronger purges. The only inconveniences complained of in this drug are, its being apt to gripe, and its nauseous flavour. The griping quality depends upon a resinous substance, which, like the other bodies of this class, is naturally disposed to adhere to the coats of the intestines. The more this resin is divided by

such matters as take off its tenacity, the less adhesive, and consequently the less irritating and griping it will prove; that the less it is divided, the more griping: hence senna given by itself, or infusions made in a very small quantity of fluid, gripe feverely, and purge less than when diluted by a large portion of suitable menstruum, or divided by mixing the infusion with oily emulsions. The ill flavour of this drug is said to be abated by the greater water-figwort: but we cannot conceive that this plant, whose smell is manifestly feid and its taste nauseous and bitter, can at all improve those of senna: others recommend bohea tea, tho' neither has this any considerable effect. The smell of senna resides in its more volatile parts, and may be discharged by lightly boiling infusions of it made in water: the liquor thus freed from the peculiar flavour of the senna, may be easily rendered grateful to the taste, by the addition of any proper aromatic tincture or distilled water. The colleges, both of London and Edinburgh, have given several formulæ for the exhibition of this article, such as those of infusion, powder, tincture, and electuary. The dose of senna in substance, is from a scruple to a dram; in infusion, from one to three or four drams.

It has been customary to reject the pedicles of the leaves of senna as of little or no use: Geoffroy however observes, that they are not much inferior in efficacy to the leaves themselves. The pods or seed-vessels met with among the senna brought to us, are by the college of Brussels preferred to the leaves: they are less apt to gripe, but proportionably less purgative.

SERPENTARIA VIRGINIANA [*Lond. Ed.*] *Radix.*

Aristolochia serpentaria Lin.

Vir.

Virginian snake-root; the root.

This is a small, light, bushy root, consisting of a number of strings or fibres, matted together, issuing from one common head; of a brownish colour on the outside, and paler or yellowish within. It has an aromatic smell, like that of valerian, but more agreeable: and a warm, bitterish, pungent taste. This root is a warm diaphoretic and diuretic; it has been much celebrated as an alexipharmac, and esteemed one of the principal remedies in malignant fevers and epidemic diseases. Some recommend it in cutaneous affections. It is given in substance from ten to thirty grains and in infusion to a dram or two. Both watery and spirituous menstrua extract its virtue by infusion, and elevate some share of its flavour in distillation: along with the water a small portion of essential oil arises. A spirituous tincture is directed as an officinal preparation.

SERPILLUM [Ed.] *Summitatis florentes.*

Thymus serpyllum Lin.

Mother of thyme; the flowering tops.

This is a small creeping plant, common on heaths and dry pasture grounds. Its taste, smell, and medical virtues are similar to those of thyme, but weaker.

SIMAROUBA [Lond. Ed.] *Cortex.*

Quassia simarouba Lin.

Simarouba; the bark.

This bark, with pieces of the wood adhering to it, is brought from Guiana in South America, in long tough pieces of a pale yellowish colour, and a pretty strong bitter taste. Some esteem it in dysenteric fluxes: a decoction of half a dram is given for a dose, and repeated at intervals of three or four hours.

It has also been used with advantage in some other instances of increased discharges, particularly in leucorrhœa. From its sensible qualities it may be concluded to be a gentle astringent.

SINAPI [Lond. Ed.] *Semen.*

Sinapis nigra Lin. [Lond.]

Sinapis alba Lin. [Ed.]

Mustard seed, black and white.

These seeds obtained from different species of the mustard, differ very little from each other, excepting that the black is rather more pungent than the white.

This plant is sometimes found wild, but for culinary and medicinal uses is cultivated in gardens. Mustard, by its acrimony and pungency stimulates the solids, and attenuates viscid juices; and hence stands deservedly recommended for exciting appetite, promoting digestion, increasing the fluid secretions, also in paralytic and rheumatic affections, and for the other purposes of the acrid plants called *antiscorbutic*. Some recommend it in the disease called *milreek*, to which smelters are subject. It imparts its taste and smell in perfection to aqueous liquors, whilst rectified spirit extracts extremely little of either: the whole of the pungency arises with water in distillation. Committed to the press, it yields a considerable quantity of a soft insipid oil, perfectly void of acrimony: the cake left after the expression is more pungent than the mustard was at first. The oil is directed as an officinal by the London college. These seeds are sometimes employed externally as a stimulant and sinapism.

SIUM [Lond.] *Herba.*

Sium nodiflorum Lin.

Creeping skerrit or water parsnip; the herb.

The London Pharmacopœia is the

the only modern one in which this article has at present a place. And it has probably been introduced from some observations of late date with which we are unacquainted. It is an indigenous vegetable in Britain, growing abundantly in rivers and ditches. It was formerly alleged to be not only diuretic, but also an emmenagogue and lithontriptic. With these intentions, however, it is not now employed. Dr Withering mentions that a young lady of six years old was cured of an obstinate cutaneous disease by taking three large spoonfuls of the juice twice a-day; and he adds that he has given repeatedly to adults three or four ounces every morning, in similar complaints. In such doses it neither affects the head, stomach, nor bowels. And children take it readily when mixed with milk.

SOLANUM LETHALE, vide
BELLADONNA.

SPERMA CÆTI DICTUM
[Lond. Ed.]

Physiter macrocephalus Lin.

Spermaceti.

It is perhaps surprising, that while the London and Edinburgh colleges, have with great propriety changed many of the old names of articles, particularly those which had a tendency to mislead, they should still have retained one so absurd as that which is affixed to the present article. What is denominated spermaceti is a peculiar animal fat obtained from the head of a particular species of whale. In the state to which it is brought, before it enters the shops of our apothecaries, it is an unctuous flaky substance, of a snowy whiteness, a soft butyraceous taste, and without any remarkable smell. The virtues of this conerete are those of a mild emollient: it is of considerable use in pains and ero-

sions of the intestines, in coughs proceeding from thin sharp defluxions, and in general in all cases where the solids require to be relaxed, or acrimonious humours to be softened. For external purposes, it readily dissolves in oils; and for internal ones, may be united with aqueous liquors into the form of an emulsion, by the mediation of almonds, gums, or the yolk of an egg. Sugar does not render it perfectly miscible with water; and alkalies, which change other oils and fats into soap, have little effect upon spermaceti. This drug ought to be kept very closely from the air; otherwise its white colour soon changes into a yellow, and its mild unctuous taste, into rancid and offensive one. After it has suffered this disagreeable alteration, both the colour and quality may be recovered again by steeping it in alkaline liquors, or in a sufficient quantity of spirit of wine.

SPIGELIA [Lond. Ed.] *Radix.*
Spigelia Marilandica Lin.

Indian pink; the root.

This plant grows wild in the southern parts of North America. The roots are celebrated as an anthelmintic, particularly for the expulsion of lumbrici from the alimentary canal. Some order it in doses of ten or fifteen grains; and allege it is apt to occasion nervous affections if given in large doses; while others order it in dram doses, alleging that the bad effects mentioned more readily happen from small doses, as the large ones often purge or puke; some prefer the form of infusion. An emetic is generally premised; and its purgative effect assisted by some suitable additions.

SPINÆ CERVINA [Lond.
Ed.] *Bacca.*

Rhamnus catharticus Lin.

Buck-thorn; the berries.

The

This tree, or bush, is common in hedges: it flowers in June, and ripens its fruit in September or the beginning of October. In our markets, the fruit of some other trees, as the black berry-bearing alder, and the dog-berry tree have of late been frequently mixed with or substituted for those of buckthorn. This abuse may be discovered by opening the berries: those of buckthorn have almost always four seeds, the berries of the alder two, and those of the dog-berry only one. Buckthorn berries, bruised on white paper, gives it a green tincture, which the others do not. Those who sell the juice to the apothecaries, are said to mix with it a large proportion of water.

Buckthorn berries have a faint disagreeable smell, and a nauseous bitter taste. They have long been in considerable esteem as cathartics; and celebrated in dropsies, rheumatisms, and even in the gout; though in these cases, they have no advantage above other purgatives, and are more offensive, and operate more severely, than many which the shops are furnished with: they generally occasion gripes, sickness, dry the mouth and throat, and leave a thirst of long duration. The dose is about twenty of the fresh berries in substance, and twice or thrice this number in decoction, an ounce of the expressed juice, or a dram of the dried berries. A syrup prepared from the juice is kept in the shops; in this preparation the nauseous flavour of the buckthorn is somewhat alleviated by the sugar, and the addition of aromatics.

SPIRITUS CORNU CERVI;
Hoc est, Salis alkalini volatilis ex ossibus vel cornibus animalium parati, portio volatilior liquida bene rectificata ut decolor sit [Ed.]

Spirit of hartshorn.

This is the more volatile liquid part of the volatile alkaline salt, obtained from the bones and horns of animals, well rectified so as to become colourless.

The volatile alkali, as got by distillation with a strong fire from any animal matter, from foot, &c. is, when pure, one and the same thing.

Of the mode of obtaining it we shall afterwards have occasion to speak, under the head of preparations, when we come to mention the liquor volatilis, sal et oleum cornu cervi, which, although they derive their name from hartshorn, may yet be obtained from any animal substance, excepting animal fat.

As first distilled, however, from the subject, this liquor is impregnated with its oil, rendered feid or empyreumatic by the process. The oily volatile alkali has been chiefly prepared by distillation in large iron pots, with a fire increased by degrees to a strong red heat: a watery liquor rises first, then the volatile salt, along with a yellowish, and at length a dark reddish oil; a part of the salt dissolves in the water and forms the spirit, which is considerably separated from the oil by filtration thro' wetted paper. It is rectified by repeated distillations with a very gentle heat. Greatest part of the salt always comes over before the water; a little of the salt is generally allowed to remain undissolved as a test of the strength of the spirit. However colourless the salt or spirit of hartshorn, foot, or such like, may be thus rendered; yet by keeping they become yellow and nauseous, owing to a quantity of oil which they still retain. The Edinburgh college order this article to be got from the manufacturer, rather than prepared by the apothecary himself, who cannot do it to any advantage.

The volatile alkali is got in its purest state from sal ammoniac. It is used

used externally, held to the nose on account of its pungent odour, in cases of faintness and syncope, and mixed with unctuous matter as a rubefacient. It is used internally to obviate spasm in hysteria, torpor in hypochondriasis, and with a view to excite the vis vitæ.

It has also been said, that in some instances intermittents have been successfully cured by it, even after the Peruvian bark had failed. With this view, fifteen drops of the spirit are given in a tea cupful of cold spring water, and repeated five or six times in each intermission.

SPIRITUS VINOSUS RECTIFICATUS [*Lond Ed.*] *Continet alcoholicas partes 95 et equæ distillatæ partes 5 in partibus 100; hujus pondus specificum est at pondus aquæ distillatæ ut 835 ad 100.*

Rectified spirit of wine. It contains 95 parts of alcohol and 5 parts of distilled water in 100. Its specific gravity is to that of distilled water as 835 to 1000.

According to the Edinburgh college, the pound measure of rectified spirit ought to weigh thirteen ounces; and it should be a colourless fluid free from any disagreeable smell.

This purification is effected by repeating the distillation in a very gentle heat, with certain additions to keep down the phlegm and the gross oil, in which the ill flavour resides. These spirits, whatever vegetable subjects they have been produced from, are, when perfectly pure, one and the same. They have a hot pungent taste, without any particular flavour; they readily catch flame, and burn entirely away, without leaving any marks of an aqueous moisture behind: distilled by a heat less than that of boiling water, they totally arise, the last runnings proving as flavourless and inflammable as the first: they dissolve essential vegetable oils and

resins into an uniform transparent fluid. These spirits are the lightest of almost all known liquors: expressed oils, which swim upon water, sink in these to the bottom: a measure which contains ten ounces by weight of water, will hold little more than eight and a quarter of pure spirit.

The uses of vinous spirits, as menstrua for the virtues of other medicines, will be mentioned hereafter, and in this place we shall consider only their own. Pure spirit coagulates all the fluids of animal bodies, except urine, and it also hardens the solid parts. Applied externally, it strengthens the vessels, and thus may restrain passive hemorrhagies. It instantly contracts the extremities of the nerves it touches, and deprives them of sense and motion; by this means easing them of pain, but at the same time destroying their use. Hence employing spirituous liquors in fomentations, notwithstanding the specious titles of vivifying, heating, restoring mobility, resolving, dissipating, and the like, usually attributed to them, may sometimes be attended with unhappy consequences. These liquors received undiluted into the stomach, produce the same effects, contracting all the solid parts which they touch, and destroying, at least for a time, their use and office: if the quantity be considerable, a palsy or apoplexy follows, which end in death. Taken in small quantity, and duly diluted, they brace up the fibres, raise the spirits, and promote agility: if farther continued, the senses are disordered, voluntary motion destroyed, and at length the same inconveniences brought on as before. Vinous spirits, therefore, in small doses, and properly diluted, may be applied to useful purposes in the cure of diseases; whilst in larger ones they act as a poison of a particular kind.

And they generally prove deleterious from long continued use to such a degree as frequently to intoxicate.

SPIRITUS VINOSUS TENUIOR [*Lond. Ed.*] *Continet alcoholicas partes 55, et aquæ distillatæ partes 45 in partibus 100. Hujus pondus specificum est ad pondus aquæ distillatæ ut 930 ad 1000.*

Proof spirit of wine. It contains 55 parts of alcohol and 45 of distilled water in 100. Its specific gravity is to that of distilled water as 930 to 1000.

The Edinburgh college direct proof spirit to be made by mixing equal parts of water and rectified spirits; but the spirits usually met with under the name of *proof*, are those distilled from different fermented liquors, freed from their phlegm and ill-flavour only to a certain degree. Their purity with regard to flavour, may be easily determined from the taste, especially if the spirit be first duly diluted. It were to be wished that we had a certain standard with regard to their strength or the quantity of water contained in them; a circumstance which greatly influences sundry medicinal preparations, particularly the tinctures: for as pure spirit dissolves the resin and volatile oil, and water only the gummy and saline parts of vegetables, it is evident that a variation in the proportions wherein these are mixed, will vary the dissolving power of the menstruum, and consequently the virtue of the preparation; and from this circumstance, apothecaries would do better by preparing it from rectified spirit themselves, than by purchasing it from dealers.

SPIRITUS VINOSUS TENUIOR [*Lond.*]
Spongia officinalis Lin.
Sponge.

Sponge is a soft, light, very porous and compressible substance, readily imbibing water, and distending

thereby. It is found adhering to rocks, particularly in the Mediterranean sea, about the islands of the Archipelago. It is generally supposed to be a vegetable production: nevertheless some observations, made by Jussieu, give room to suspect that it is of animal origin. Chemical experiments favour this supposition: analysed, it yields the same principles with animal-substances in general: volatile salt is obtained from it in larger quantity than from almost any animal-matter, except the bags of the silk-worm. On this salt seem to depend the virtues of the officinal *Spongia ussa*, which has by some been strongly recommended in serophulous affections; but which has been particularly celebrated for removing that large swelling of the neck, which is termed *brachiocele*, and which is probably of a serophulous nature.

Crude sponge, from its property of imbibing and distending by moisture, is sometimes made use of as a tent for dilating wounds and ulcers.

To fit it for these intentions, the sponge is immersed in melted wax, and subjected to pressure till cool: In this state it may be easily formed into proper tents, so as to be introduced where necessary. And from the gradual melting of the wax in consequence of the heat of the part, a dilatation of course takes place.

It adheres strongly to the mouths of wounded vessels; and when retained by proper compression, it has prevented considerable bleedings preterably to agarie, or pess-ball.

STANNUM [*Lond.*]
STANNI LIMATURA ET PULVIS [*Ed.*]

The filings and powder of tin.

Tin is the lightest and easiest of fusion of all metals. Heated, it becomes so brittle as to fall in pieces by a blow; and by agitation (when just ready to melt) it is formed into a powder:

powder: hence the officinal method of pulverising this metal, to be described in its place. The proper menstruum of tin is the marine acid, or aqua regia. Vegetable acids likewise dissolve it in considerable quantity, tho' it has long been supposed not to be at all so soluble in them, unless previously well calcined.

With regard to the virtues of this metal it was formerly accounted a specific in disorders of the uterus and lungs: a calx of tin and antimony is still retained in some dispensaries, under the name of an *antihætic*: but these are virtues to which it certainly has little claim. It has of late been celebrated as an anthelmintic; and said to destroy some kinds of worms which elude the force of many other medicines, particularly the *tænia*: possibly the cause of this effect may be very different from what is suspected, an admixture of a portion of arsenic.

Tin has a strong affinity with arsenic; inasmuch, that when once united therewith, the arsenic, notwithstanding its volatility in other circumstances, cannot be totally expelled, either by slow calcination or by a vehement fire. Almost all the ores of tin contain more or less of this poisonous mineral, which is not entirely separable in the common processes by which the ores are run down, or the metal farther purified. Filings of tin held in the flame of a candle, emit a thick fume, smelling of garlic; which smell is universally held in mineral substances to be a certain criterion of arsenic. Mr Henckel has discovered a method of separating actual arsenic from tin: this is effected by solution in aqua regia and crystallisation. Mr Margraff has given a farther account of this process; and relates, that from the tins usually reputed pure, he has obtained one-eighth of their weight of crystals of arsenic.

But notwithstanding these observations it is certain, that tin under the form of *stannum pulveratum*, afterwards to be mentioned, is every day taken internally with perfect impunity, even in doses so large as to the extent of an ounce, although unless in cases of *tænia*, it is in general employed in much smaller doses.

STAPHISAGRIA [Lond.]

Senen.

Delphinium staphisagria Lin.

Stavesacre; the seeds.

These are large rough seeds, of an irregularly triangular figure, of a blackish colour on the outside, and yellowish or whitish within; they are usually brought from Italy; the plant is not very common in this country, though it bears our severest colds. They have a disagreeable smell, and a very nauseous bitterish, burning taste. Stavesacre was employed by the ancients as a cathartic: but it operates with so much violence both upwards and downwards, that its internal use has been among the generality of practitioners, for some time laid aside. It is chiefly employed in external applications for some kinds of cutaneous eruptions, and for destroying lice and other insects; inasmuch, that from this virtue it has received its name, in different languages: *herba pedicularis*, *herbe aux poux*, *laufskraut*, *lousewort*, &c.

STIBIUM, vide ANTIMONIUM.

STOECHAS, [Brun.] *Flos.*

Lavendula stæchas Lin.

Arabian stæchas, or French lavender-flowers.

This is a shrubby plant, considerably smaller than the common lavender. The flowery heads are brought from Italy and the southern parts of France:

France: they are very apt to grow mouldy in the passage; and even when they escape this inconvenience, are generally much inferior to those raised in our gardens. The best stechas which we receive from abroad, has no great smell or taste: Pomet affirms, that such as the shops of Paris are supplied with is entirely destitute of both; whilst that of our own growth, either when fresh or when carefully dried, has a very fragrant smell, and a warm, aromatic, bitterish, subacid, taste; distilled with water, it yields a considerable quantity of a fragrant essential oil; to rectified spirit it imparts a strong tincture, which inspissated proves an elegant aromatic extract. This aromatic plant is rarely met with in prescription; the only officinal compositions into which it was admitted, were the mithridate and theriaca.

There is another plant called *stechas*, which from the beauty and durability of its flowers has of late years had a place in our gardens, and whose aromatic qualities render it worthy of attention; this is the *gnaphalium arenarium* Lin. the golden stechas, the goldilocks, or yellow cassidony; its flowers stand in umbels on the tops of the branches; they are of a deep shining yellow colour, which they retain in perfection many years; their smell is fragrant and agreeable, somewhat of the musky kind; their taste warm, pungent, and subastringent; they impart their flavour to water in distillation, and by infusion to rectified spirit.

STRAMONIUM [Ed.] *Herba.*

Datura stramonium Lin.

Thorn-apple; the herb.

The stramonium is one of those vegetables commonly considered as a strong narcotic poison, which was

highly recommended to the attention of practitioners by Dr Stoerk of Vienna. It grows indigenously in some parts of Britain, among rubbish and on dunghills. It has been used internally, under the form of an extract or inspissated juice from the leaves. This extract has been chiefly employed in maniacal cases; and when given in doses from one to ten grains or upwards in the course of the day, it has been alleged to be attended with surprising effects on the authority not only of Dr Stoerk, but of Dr Odhelius, Dr Wedenberg and others. Dr Odhelius in particular informs us, that of fourteen patients to whom he gave it, eight were completely cured, five were relieved, and one only received no benefit. We have not, however, heard of its being equally successful in Britain; and it is here so little employed as to have still no place in the pharmacopœia of the London college. But we cannot help thinking, that it deserves the attention of practitioners, and well merits trial, in affections often incurable by other means. The powder of the leaves or seeds promises to furnish a more certain or convenient formula than the inspissated juice. Besides maniacal cases, the stramonium has been also employed, and sometimes with advantage, in convulsive and epileptic affections. It is not only taken internally, but has also been used externally. An ointment prepared from the leaves of the stramonium has been said to give ease in external inflammations and in hæmorrhoids.

STYRAX CALAMITA [Lon. Ed.] *Resina.*

Styrax officinalis Lin.

Storax.

This is an odoriferous resinous substance, exuding from a tree growing in the warmer climates.

It has been customary to distinguish three sorts of storax, though only one is usually met with in the shops.

1. *Styrax calamita*, or *storax in the cane*, so called from its having been formerly brought inclosed in reeds from Pamphylia. It is either in small distinct tears, of a whitish or reddish colour, or in larger masses composed of such.

2. *Storax in the lump*, or *red storax*. This is in masses of an uniform texture and yellowish red or brownish colour; though sometimes likewise interspersed with a few whitish grains. Of this sort there has been some lately to be met with in the shops under the name of *storax in the tear*.

3. The *common storax* of the shops is in large masses, considerably lighter and less compact than the foregoing: it appears upon examination to be composed of a fine resinous juice, mixed with a quantity of saw-dust. For what purpose this addition is made, it is difficult to say, but it can scarce be supposed to be done with any fraudulent view, since the saw-dust appears at sight. This common storax is much less esteemed than the two first sorts; though, when freed from the woody matter, it proves superior in point of fragrance to either of them. Rectified spirit, the common menstruum of resins, dissolves the storax, leaving the wood behind: nor does this tincture lose considerably of its valuable parts in being inspissated to a solid consistence; whilst aqueous liquors elevate almost all the fragrance of the storax.

Storax is one of the most agreeable of the odoriferous resins, and may be exhibited to great advantage in languors and debilities of the nervous system; it is not, however, much used in common practice.

STYRAX LIQUIDA [Dan.]

Liquidambar styraciflua Lin.

Liquid storax.

The genuine liquid storax, according to Petiver's account, is obtained from a tree growing in the island Cobros in the Red Sea: the preparers of this commodity yearly clear off the bark of the tree, and boil it in sea-water to the consistence of bird lime; the resinous matter which floats upon the surface is taken off, liquified again in boiling water, and passed through a strainer. The purer part which passes thro', and the more impure which remains on the strainer, and contains a considerable portion of the substance of the bark, are both sent to Mocca; from whence they are sometimes, though very rarely, brought to us. The first is of the consistence of honey, tenacious, of a reddish or ash brown colour, an acrid unctuous taste, approaching in smell to the solid storax, but so strong as to be disagreeable: the other is full of woody matter, and much weaker in smell.

The genuine liquid storax is even at Mocca both a rare commodity and sold at a very high price, and it has seldom entered the shops of our apothecaries. A resinous juice, possessing somewhat of the same sensible qualities, brought from the Spanish provinces in South America; and perhaps the product of the same tree is sometimes sold in place of it: But much more frequently what we meet with under this name is an artificial compound of solid storax, common resin, wine, and oil, beat up together to a proper consistence. Concerning the real virtues of liquid storax, then, observations are altogether wanting: hence the London and Edinburgh colleges have expunged it from the catalogue of officinals.

SUCCINUM [*Lond. Ed.*]

Amber.

This is a solid, brittle, bituminous substance, dug out of the earth, or found upon the sea-shores: the largest quantities are met with along the coasts of Polish Prussia and Pomerania. It is of a white yellow, or brown colour, sometimes opaque, and sometimes very clear and transparent. The dark-coloured and opaque sorts, by digestion with certain expressed oils and animal fats, become clearer, paler coloured, more pellucid, and considerably harder. Amber boiled in water, neither softens nor undergoes any sensible alteration: exposed to a greater heat, without addition, it melts into a black mass like some of the more common bitumens: set on fire, its smell resembles that which arises from the finer kinds of pitcoal: distilled in a retort, it yields an oil and a volatile acidulous salt.

Amber in substance has very little smell or taste; and hence it has by some been reckoned a mere inactive earthy body. It was formerly accounted an absorbent, and as such had a place in the compound powder of crabs-claws: it certainly has no title to this class of medicines, as not being acted upon by any acid. It is supposed to be of service in the fluxus albus, gleet, hysteric affections, &c.; and with these intentions, is sometimes given in the form of impalpable powder, to the quantity of a dram. A tincture of amber made in rectified spirit, to which it imparts a bitterish aromatic taste and a fragrant smell, promises to be of service in these disorders. Boerhaave extols this tincture as having incredible efficacy in all those distempers which proceed from weakness and relaxation, and in hypochondriacal, hysteric, and cold languid cases. If part of the spirit be abstracted by a gentle heat, the re-

mainder proves a very elegant aromatic balsam, which is perhaps one of the most useful preparations obtainable from this concrete.

Amber in the state of powder formerly entered several officinal compositions, from all which it is now rejected: but it is the basis of an oil and salt afterwards to be mentioned among the preparations, which are sometimes used in the state in which they are at first obtained, but more frequently in a purified or rectified state; preparations which fall to be mentioned hereafter.

SULPHUR [*Lond.*]*Sulphuris flores.* [*Ed.*]

Sulphur, and flowers of sulphur.

Sulphur, or brimstone, is a yellow substance, of the mineral kingdom, fusible in a small degree of heat, totally volatile in a stronger, readily inflammable, burning with a blue flame, which is accompanied with a suffocating acid fume. It dissolves in alkaline liquors and oils; not in acids, water, or vinous spirits.

Greatest part of the sulphur met with in the shops, is obtained from certain ores by a kind of distillation, or artificially composed by uniting the vitriolic acid with inflammable matters. At some of the Saxon sulphur-works, from whence we are chiefly supplied, certain minerals abounding with vitriolic acid, but containing little or no sulphur, being stratified with wood, and the latter set on fire, a large quantity of fine sulphur is produced. It is usually brought to us in large irregular masses, which are afterwards melted and cast into cylindrical rolls with the addition of some coarse resin, flower, or the like; whence the paler colour of the rolls. Sulphur is also not unfrequently found native in the earth, sometimes in transparent pieces of greenish or bright yellow colour; but more commonly

in opaque grey ones, with only some streaks of yellow. This last is the sort which is understood by the name *sulphur vivum*; though that met with under this name in the shops, is no other than the dross remaining after the sublimation of sulphur. All the sorts of sulphur are, when perfectly pure, in no respect different from each other. Notwithstanding the preference given by some to the more uncommon fossil sorts, these last are the least proper for medicinal purposes, as being the most subject to an admixture of foreign matter both of the metallic and arsenical kind.

Pure sulphur loosens the belly, and promotes insensible perspiration: it seems to pass through the whole habit, and manifestly transpires through the pores of the skin, as appears from the sulphureous smell of persons who have taken it, and from silver being stained in their pockets of a blackish colour, which is the known effect of sulphureous fumes. It is a celebrated remedy against cutaneous diseases, both given internally and externally applied. It has likewise been recommended in coughs, asthmas, and other disorders of the breast and lungs; and particularly in catarrhs of the chronic kind. But it is probable, that the benefit derived from it in these cases, is principally, if not entirely, to be attributed to its operation as a gentle laxative. And with this intention it is frequently used with great advantage in hæmorrhoidal affections; and many other diseases in which it is proper to keep the belly gently open. Tho' sulphur be not soluble in water, yet boiling water poured upon it, and kept in a close vessel obtains some impregnation. This water has by some been highly extolled as a very effectual remedy for preventing returns of gout and rheumatism.

The common dose of sulphur rarely exceeds a scruple, tho' Geofroy goes as far as two drams.

Sulphur is the basis of two formulæ in our pharmacopœias, troches and an ointment; the former intended for internal use, the latter to be employed externally.

It is remarkable of this concrete, that though itself a medicine of considerable efficacy, it nevertheless restrains that of some others of the most powerful kind. Mercury is rendered by the admixture of sulphur, inactive; and the virulent antimonial regulus almost so. Hence, when antimonial and mercurial medicines exceed in operation, sulphur has been given for abating their violence: but it is now found that it has little effect in restraining their action; and it is probable, that the influence it has depends entirely on its operating as a gentle laxative. Even the corrosive poison arsenic, by the addition of sulphur, becomes almost innocent; and hence, if a small proportion of arsenic should be contained in sulphur, it possibly may not receive from thence any poisonous qualities.

SUMACH [*Brun.*] *Folium, semen.*

Rhus coriaria Lin.

Common sumach; the leaves and seeds.

This tree, or shrub, is cultivated in some places on account of the culinary uses of its fruits, and for the purposes of the dyers, &c. among us, it is met with only in the gardens of the curious. The seeds or berries are of a red colour, in shape round and flat. Both these and the leaves are moderately astringent, and have sometimes been exhibited with this intention, but are now become strangers to the shops.

TACAMAHACA [Brun.]

*Resina.**Populus balsamifera Lin.*

Tacamahaca; the resin.

This resinous substance is obtained from a tall tree, which grows spontaneously on the continent of America, and in a sheltered situation bears the winters of our own climate. Two sorts of this resin are sometimes to be met with. The best, called from its being collected in a kind of gourd-shells, *tacamahaca in shells*, is somewhat unctuous and softish, of a pale yellowish or greenish colour, an aromatic taste, and a fragrant delightful smell, approaching to that of lavender and ambergris. This sort is very rare: that commonly found in the shops is in semitransparent grains or glesbes, of a whitish, yellowish, brownish, or greenish colour, of a less grateful smell than the foregoing. The first is said to exude from the fruit of the tree, the other from incisions made in the trunk. This resin is said to be employed among the Indians, externally, for discussing and maturing tumours, and abating pains and aches of the limbs. The fragrance of the finer sort sufficiently points out its being applicable to different purposes.

TAMARINDUS [Lond. Ed.]

*Fructus.**Tamarindus indica Lin.*

Tamarinds; the fruit.

Tamarinds are the fruit of a tree growing in the East and West-Indies. It is a pod resembling a bean cod, including several hard seeds, together with a hard coloured viscid pulp of a pleasant acid taste: the East-India tamarinds are longer than the West-India sort; the former containing six or seven seeds each, the latter rarely above three or four. The pulp of these fruits, taken from

the quantity of two or three drams to an ounce or more, proving gently laxative or purgative; and at the same time by its acidity, quenches thirst, and allays immoderate heat. It increases the action of the purgative sweets, cassia and manna, and weakens that of the resinous cathartics. Some have supposed it capable of abating the virulence of antimonial preparations; but experience shows that it has rather a contrary effect, and that all vegetable acids augment their power. Tamarinds are an ingredient in the electuary of cassia, the lenitive electuary, and decoction of tamarinds with fenna.

TANACETUM [Lond. Ed.]

*Flos, herba.**Tanacetum vulgare Lin.*

Tanfy; the flower and herb.

Tanfy grows wild by road sides and the borders of fields, and is frequently also cultivated in gardens both for culinary and medicinal uses: it flowers in June and July. Considered as a medicine, it is a moderately warm bitter, accompanied with a strong, not very disagreeable flavour: some have had a great opinion of it in hysteric disorders, particularly those proceeding from a deficiency or suppression of the uterine purgations. The leaves and seeds have been of considerable esteem as anthelmintics; the seeds are less bitter, and more acrid and aromatic, than those of rue, to which they are reckoned similar; or of santonicum, for which they have been frequently substituted.

An infusion of tanfy, drunk in a manner similar to tea, has been by some strongly recommended as a preventative of the return of gout.

TAPSUS BARBATUS, vide
VERBASCUM.

TARAXACUM [Lond. Ed.]

*Radix, herba.**Leontodon taraxacum* Lin.

Dandelion, the leaves and root.

This plant is very common in grass fields and uncultivated places. The root, leaves, and stalk, contain a large quantity of a bitter milky juice. There is reason to believe that they possess very considerable activity; and with that intention they have sometimes been employed with success. Boerhaave esteems them capable, if duly continued, of opening very obstinate obstructions of the viscera. A spirit obtained from them by distillation, after previous fermentation, has been strongly recommended by Professor Delius of Erlang, in every disorder where saponaceous, attenuating, or resolvent medicines can be of use, particularly in asthmatic disorders, in coughs proceeding from glandular obstructions, and in hydropic affections.

TARTARUM [Ed.]

Tartar is a saline substance, consisting of the vegetable alkali supersaturated with acid. It is thrown off from wines to the sides and bottom of the cask: In this state it is mixed with earthy, oily, and colouring matter; and when it has a deep brown colour, as that from red wine, it is commonly called *red*, and when of a paler colour, *white tartar*. It is purified by dissolving it in boiling water, and separating the earthy part by filtering the boiling solution. On cooling the solution, it deposits irregular crystals, containing the oily and colouring matters, which are separated by boiling the mass with a white clay. The tartar thus purified, when crystallised, or in powder, is called *cream of tartar*. If this be exposed to a red heat, its acid flies off; and what remains is the vegetable alkali, or salt of tar-

tar. If we add lime to a boiling solution of pure tartar, the lime falls down with the acid, and the pure alkali swims in the water above. The lime is separated by any acid of a stronger attraction to it, as the vitriolic acid, which is added in a diluted state, the whole stirred for some time, and strained off; the acid of tartar passes through, and may be had by evaporation in the form of rhomboidal crystals. The solubility of tartar in water is much promoted by borax.

The virtues of tartar are those of a mild, cooling, aperient, laxative medicine. It is much used in dropsy; and some allege that it has good effect, as a deobstruent, in dropsy from schirrus. Taken from half an ounce to an ounce, it proves a gentle, though effectual purgative: Angelus Sala relates, that he was cured of an habitual colic by purging himself a few times with six drams of the crude salt, after many other medicines had been tried to no purpose.

The crystals of tartar are in daily use, merely by themselves, either taken in powder or dissolved in water; and there are perhaps few medicines more commonly employed.

This salt is an ingredient in the compound infusion of senna, compound powder of senna, of jallap, and of scammony; and it is used for dissolving or corroding some metallic bodies, particularly antimony, from which it receives a strong emetic impregnation, as in the preparation formerly called *emetic tartar*, but now more properly styled *antimonium tartarizatum*.

TEREBINTHINA [Lond. Ed.]

*Resina.**Pinus larix* Lin.

Turpentine.

The turpentines are resinous juices
ex-

extracted from trees of the pine-tribe. There are four kinds of turpentine distinguished in the shops.

TEREBINTHINA CHIA, five CYPRIA.

Chian, or Cyprus turpentine.

This juice is generally about the consistence of thick honey, very tenacious, clear, and almost transparent, of a white colour, with a cast of yellow, and frequently of blue: it has a warm, pungent, bitterish taste; and a fragrant smell, more agreeable than any of the other turpentines.

The turpentine brought to us, is extracted in the islands whose names it bears, by wounding the trunk and branches a little after the buds have come forth: the juice issues limpid, and clear as water, and by degrees thickens into the consistence in which we meet with it. A like juice exuding from this tree in the eastern countries, inspissated by a slow fire, is of frequent use, as a masticatory, among the Persian ladies, who, as Kœmpfer informs us, are continually chewing it, in order to fasten and whiten the teeth, sweeten the breath, and promote appetite.

TEREBINTHINA VENE-TA.

Venice turpentine.

This is usually thinner than any of the other sorts, of a clear, whitish, or pale yellowish colour, a hot, pungent, bitterish, disagreeable taste, and a strong smell, without any thing of the fine aromatic flavour of the Chian kind.

What is usually met with in the shops, under the name of *Venice turpentine*, comes from New England; of what tree it is the produce, we have no certain account: the finer kinds of it are in appearance and quality not considerably

different from the true sort above described.

TEREBINTHINA ARGENTORATENSIS.

Straßburgh turpentine.

This, as we generally meet with it, is of a middle consistence betwixt the two foregoing, more transparent, and less tenacious than either; its colour a yellowish brown. Its smell is very fragrant, and more agreeable than that of any of the other turpentines, except the Chian; in taste it is the bitterest, yet the least acrid.

This resin is obtained from the two sorts of fir-trees, the most plentiful, and perhaps the only ones, that grow spontaneously in Europe. There is another, whose resin is much superior to the common turpentine, and has sometimes been brought to us from abroad under the name of *balsamum canadense*. The Virginian, or Canada fir, though not a native of this climate, has been found to endure its severest colds.

TEREBINTHINA COMMUNIS.

Common turpentine.

This is the coarsest, heaviest, and in taste and smell the most disagreeable, of all the sorts: it is about the consistence of honey, of an opaque brownish white colour.

This is obtained from the wild pine, a low unhandsome tree, common in different parts of Europe. This tree is extremely resinous, and remarkably subject to a disease from a redundance and extravasation of its resin, insomuch that, without due evacuation, it swells and bursts. The juice as it issues from the tree is received in trenches made in the earth, and afterwards freed from the grosser impurities by colature through wicker baskets.

All these juices yield in distillation with water an highly penetrating essential oil, a brittle insipid resin remaining behind. With regard to their medical virtues, they promote urine, cleanse the parts concerned in the evacuation thereof, and deterge internal ulcers in general; and at the same time, like other bitter hot substances, strengthen the tone of the vessels: they have an advantage above most other acrid diuretics, that they gently loosen the belly. They are principally recommended in gleet, the flux albus, and the like; and by some in calculous complaints: where these last proceed from the sand or gravel, formed into a mass by viscid mucous matter, the turpentine, by dissolving the mucus, promote the expulsion of the sand; but where a calculus is formed, they can do no service, and only ineffectually irritate or inflame the parts. In all cases accompanied with inflammation, these juices ought to be abstained from, as this symptom is increased, and not unfrequently occasioned, by them. It is observable, that the turpentine impart, soon after taking them, a violent smell to the urine; and have this effect though applied only externally to remote parts: particularly the Venice sort. This is accounted the most powerful as a diuretic and detergent; and the Chian and Strasburgh as corroborants. The common turpentine, as being the most offensive, is rarely given internally; its principal use is in plasters and ointments among farriers, and for the distillation of the oil, or spirit, as it is called. The dose of these juices is from a scruple to a dram and a half: they are most commodiously taken in the form of a bolus, or dissolved in watery liquors by the mediation of the yolk of an egg or mucilage. Of the distilled oil, a few drops are a suffici-

ent dose: this is a most potent, stimulating, detergent diuretic, oftentimes greatly heats the constitution, and requires the utmost caution in its exhibition. Taken internally, when mixed with honey, it has been alleged to prove a powerful remedy in obstinate rheumatic cases, particularly in ischias.

TERRA JAPONICA, vide CATECHU.

TESTÆ OSTERORUM [Lond.]

Ostrea edulis Lin.

Oyster shells.

These, in their natural state, furnish us with an absorbent powder of a restringent quality, and sometimes they are employed to restrain looseness arising from acidity. When calcined, they are often employed for making lime-water.

THEA [Brun.] *Folium.*

Thea bohea et viridis Lin.

Tea; the leaf.

The several sorts of tea met with among us, are the leaves of the same plant, collected at different times, and cured in a somewhat different manner; the small young leaves very carefully dried, are the finer green: the older afford the ordinary green and bohea. The two first have a sensible flavour of violets; the other of roses: the former is the natural odour of the plant; the latter, as Neumann observes, is probably introduced by art: some of the dealers in this commodity in Europe, are not ignorant that bohea tea is imitable by the leaves of certain common plants, artificially tintured and impregnated with the rose flavour. The taste of both sorts is lightly bitterish, subastringent, and somewhat aromatic. The medical virtues attributed to these leaves are sufficiently numerous, though few
of

of them have any just foundation: little more can be expected from the common infusions than that of a diluent, acceptable to the palate and stomach: the diuretic, diaphoretic, and other virtues for which they have been celebrated depend more on the quantity of warm fluid, than any particular qualities which it gains from the tea. Nothing arises in distillation from either sort of tea with rectified spirit; water elevates the whole of their flavour.

Good tea, in a moderate quantity, seems to refresh and strengthen; but if taken in a recent highly flavoured state, and in considerable quantity, its use is apt to be succeeded by weakness and tremors, and other similar consequences resulting from the narcotic vegetables. Yet it is highly probable, that many of the bad as well as good effects said to result from it, are the consequences of the warm water.

THLAPSI [*Brun.*] *Semen.*

Thlapsi arvensis Lin.

Mithridate mustard; the seed.

Two sorts of Thlapsi are used promiscuously; they both grow wild; their seeds have an acrid biting taste like common mustard, with which they agree in medical qualities.

THUS MASCULUM, vide OLIBANUM.

THUS VULGARE [*Lond.*] *Resina.*

Common frankincense.

This is a solid, brittle resin, brought to us in little gleses or masses, of a brownish or yellowish colour on the outside, internally whitish or variegated with whitish specks; of a bitterish, acrid, not agreeable taste, without any considerable smell. It is supposed to be

the produce of the pine tree which yields the terebinthina communis; and concrete on the surface of the terebinthinate juice soon after it has issued from the plant. It gives name to one plaster, the emplastrum thuris and is a principal ingredient in another, the emplastrum ladani.

THYMUS [*Ed.*] *Herba.*

Thymus vulgaris Lin.

Common Thyme; the herb.

This plant is frequent in our gardens, and flowers in June and July. It has an agreeable aromatic smell, and a warm pungent taste; which it imparts by infusion to rectified spirit, and sends over in distillation with water; along with the water arises an essential oil, extremely hot and pungent. This oil is often sold in the shops for that of origanum. It frequently gives ease in cases of odontalgia, when topically applied to a caries tooth.

TILIA [*Suec.*] *Flores.*

Tilia Europaea Lin.

The lime, or linden tree; its flowers.

The lime tree has been much valued on account of its quick growth and pleasant shade; it flowers in July, and loses its leaves soon after. The flowers are made use of chiefly on account of their agreeable flavour, which water extracts from them by infusion, and elevates in distillation. Among the writers on the materia medica, they have the character of an antiepileptic, and a specific in all kinds of spasms and pains. Frederick Hoffman relates, that he knew a chronical epilepsy cured by the infusion of these flowers drank as tea.

TINCAR, vide BORAX.

TOR.

TORMENTILLA [Lond. Ed.]

Radix.

Tormentilla erecta Lin.

Tormentil, or septfoil; the root.

Tormentil is found wild in woods and on commons: it has long slender stalks, with usually seven long narrow leaves at a joint; the root is for the most part crooked and knotty, of a blackish colour on the outside, and a reddish within. This root has an austere styptic taste, accompanied with a slight kind of aromatic flavour; it is one of the most agreeable and efficacious of the vegetable astringents, and is employed with good effect in all cases where medicines of this class are proper. It is more used, both in extemporaneous prescription and in officinal composition, than any of the other strong vegetable astringents: it is an ingredient in the two compound powders of chalk. A tincture made from it with rectified spirit possesses the whole astringency and flavour of the root, and loses nothing of either in inspissating.

TRAGACANTHA, vide GUMMI TRAGACANTHA.

TRICHOMANES [Ed.] Herba:

Asplenium trichomanes Lin.

Maidenhair; the herb.

This is one of the herbs called, from the smallness of their stalks, capillary: it is found wild in different parts of Britain, upon old walls, and in shady places. The leaves have a mucilaginous, sweetish, sub-astringent taste, without any particular flavour; they are esteemed useful in disorders of the breast, proceeding from a thickness and acrimony of the juices; and are likewise supposed to promote the expectoration of tough phlegm, and to open obstructions of the viscera. They are usually directed in infusion or de-

coction, with the addition of a little liquorice. A syrup prepared from them, though it has now no place in our pharmacopoeias, is frequently to be met with in our shops, both as prepared at home and imported from abroad. A little of these syrups mixed with water makes a very pleasant draught. The syrup brought from abroad has an admixture of orange-flower water.

TRIFOLIUM PALUDOSUM

[Lond. Ed.] Herba.

Menyanthes trifoliata Lin.

Buck-bean, or marsh trefoil; the herb.

This plant grows wild in moist marshy places; it has three oval leaves, standing together upon one pedicle which issues from the root; their taste is very bitter and somewhat nauseous. Marsh trefoil is an efficacious aperient and deobstruent, promotes the fluid secretions, and if liberally taken, gently loosens the belly. Some recommend it in scrophulous disorders and other ill-conditioned ulcers; inveterate cutaneous diseases have been removed by an infusion of the leaves drank to the quantity of a pint a day at proper intervals, and continued for some weeks. Boerhaave relates, that he was relieved of the gout by drinking the juice mixed with whey.

TRITICUM [Lond.] Farina amyllum.

Triticum hybenum Lin.

Wheat; flour and starch.

Wheat, a common article of food, is more glutinous and nutritious than most other kinds of grain. The flour, or the starch prepared from it, form with water a soft viscid substance, which has been taken with good success in diarrhoeas and dysenteries. Starch is an ingredient in the compound powder of gum tragacanth, and the white pectoral troches,

troches, which are now more properly styled starch troches.

Bran contains, besides the husks or shells of the wheat, a portion of its farinaceous matter: This is less glutinous than the finer flour, and is supposed to have a detergent quality. Infusions of bran are not unfrequently employed with this intention externally, and sometimes likewise taken inwardly.

Bread, carefully toasted, and infused, or lightly boiled in water, imparts a deep colour, and a sufficiently agreeable restraining taste. This liquor taken as common drink, has done good service in a weak lax state of the stomach and intestines; and in bilious vomiting and purging, or the cholera morbus. Examples are related in the Edinburgh Essays of several cases of this kind cured by it, without the use of any other medicine.

It is also a very common and a very proper drink in diseases of the febrile kind.

When a farinaceous powder is steeped in cold water and strained through a cloth, a glutinous part remains in the cloth which some suppose to be the nutrient principle, as it is quite similar to animal jelly: a starch passes through with the water, settles at the bottom, and a sweet mucilage is kept dissolved in the water. It is probably the just proportion of these three ingredients in wheat which gives that grain a preference in diet over the rest. The gluten is insoluble in water; but when mixed with the other two, and seasoned with salt, in that state made to ferment by yeast or leaven, and this fermentation, checked by the heat of the oven, the ingredients become so intimately united, that they cannot be separated: the viscosity of the gluten is diminished, and the whole thus forms a very soluble and nutritious bread.

TURPETHUM [*Brun.*] *Radicis, cortex.*

Convolvulus turpethum Lin.

Turbith; the cortical part of the root.

The cortical part of this root is brought to us in oblong pieces, of a brown or ash-colour on the outside, and whitish within. The best is ponderous not wrinkled, easy to break, and discovers a large quantity of resinous matter to the eye: its taste is at first sweetish; chewed for a little time, it becomes acrid, pungent and nauseous. This root is a cathartic, not of the safest or most certain kind. The resinous matter, in which its virtue resides, appears to be very unequally distributed, in so much that some pieces, taken from a scruple to a dram, purge violently; while others, in larger doses, have scarce any effect at all. An extract, made from the root, is more uniform in strength, though not superior or equal, to purgatives more common in the shops.

TUSSILAGO [*Lond. Ed.*]

Herba, flores.

Tussilago farfara Lin.

Colt's foot; the herb and flowers.

This grows wild in watery places, producing yellow flowers in February and March; these soon fall off, and are succeeded by large roundish leaves hairy underneath: their taste is herbaceous, somewhat glutinous, and subacid. Tussilago, stands recommended in coughs, phthisis, and other disorders of the breast and lungs, and some use it in scrophula. It is chiefly directed to be taken with milk; and upon this probably, more than on the tussilago itself, any benefit derived from it in practice is to be explained.

TUTIA [*Ed.*]

Tutty.

This is an impure sublimate of

zinc, or an argillaceous substance impregnated therewith, formed into tubulous pieces like the bark of a tree. It is moderately hard and ponderous; of a brownish colour, and full of small protuberances on the outside, smooth and yellowish within; some pieces have a bluish cast, from minute globules of zinc being thrown up by the heat in its metallic form. Tutty is celebrated as an ophthalmic, and frequently employed as such in unguents and collyria: it gives name to an officinal ophthalmic ointment.

VALERIANA SYLVESTRIS [Lond. Ed.] *Radix.*

Valeriana officinalis Lin.

Wild valerian; the root.

This root consists of a number of strings or fibres matted together, issuing from one common head of a whitish or pale brownish colour; its smell is strong like a mixture of aromatics with fetids; the taste unpleasantly warm, bitterish, and subacid. There is a wild valerian, with broader leaves, of a deeper and shining green colour met with in watery places. Both sorts have hitherto been used indiscriminately; and Linnæus has joined them into one species: but the first is considerably the strongest, and loses of its quality if transplanted into such soils as the other naturally delights in. The roots, produced in low watery grounds, have a remarkably faint smell in comparison of the others, and sometimes scarce any at all. The roots taken up in autumn or winter, have also much stronger sensible qualities than those collected in spring and summer. Wild valerian is a medicine of great use in nervous disorders, and is particularly serviceable in epilepsies, proceeding from a debility of the nervous system. It was first brought into esteem in these cases by Fabius Columna; who by taking the powdered root in the dose of

half a spoonful, was cured of an inveterate epilepsy, after many other medicines had been tried in vain. Repeated experience has since confirmed its efficacy in this disorder; and the present practice lays considerable stress upon it. It can, however, by no means be represented as uniformly, or even frequently, successful, and that too although employed in very large doses. In the Edinburgh Dispensary, in cases of epilepsy in which there was no evidence of local affection, it has been given to the extent of two ounces a day without effect.

Some recommend it as useful in procuring sleep, particularly in fever, even when opium fails: But it is principally useful in affections of the hysterical kind.

The common dose is from a scruple to a dram in powder; and in infusion, from one to two drams. Its unpleasant flavour is most effectually concealed by a suitable addition of mace.

A tincture of valerian in proof spirit and in volatile spirit are kept in the shops.

VERRATRUM, Vide **HELLEBORUS ALBUS**.

VERBASCUM [Ed.] *Folium.*

Verbascum thapsus Lin.

Mullein; the leaf.

This plant is met with by road sides and under hedges. It is clothed with soft downy leaves, and produces long spikes of yellow flowers in July. To the taste it manifests a glutinous quality, and has been recommended as an emollient. Some hold it in esteem in consumptions, others have recommended it strongly in dysenteric affections; but most practitioners are disposed to put little dependence on it in either. It has sometimes, although perhaps still less frequently, been employed externally in ill conditioned ulcers.

VERONICA [*Suec.*] *Herba.*

Veronica officinalis Lin.

Male speedwell; the herb.

This is one of the veronicæ which produce their flowers in clusters at the joints of the stalks: it is a rough procumbent plant, not unfrequently met with on dry commons and in sandy grounds. In taste, smell, and medical virtues, it is similar to the betonica, though the veronica is commonly supposed to have more of an aperient and pectoral virtue, and betony to be rather nervine and cephalic. Hoffman and Joh. Francus have written express treatises on this plant, recommending infusions of it drank in the form of tea, as very salubrious in many disorders, particularly those of the breast.

VINCETOXICUM [*Suec.*] *Radix.*

Asclepias vincetoxicum Lin.

Swallow-wort, or tame poison; the root.

This is a native of the warmer climates; it is sometimes met with in our gardens, but rarely perfects its seeds. It is reckoned by botanists a species of apocynum, or dogbane; from all the poisonous sorts of which it may be distinguished, by yielding a limpid juice, whilst that of the others is a milky. The root has a strong smell, especially when fresh, approaching to that of valerian or nard; the taste is at first sweetish and aromatic, but soon becomes bitterish, subacid, and nauseous. This root is esteemed sudorific, diuretic, and emmenagogue, and frequently employed by the French and German physicians as an alexipharmac, sometimes as a succedaneum to contrayerva; whence it has received the name of *contrayerva Germanorum*. Among us it is very rarely made use of. It appears from its sensible qualities to be a medicine of much the same kind

with valerian, which is probably preferable to it.

VINUM [*Lond. Ed.*]

Wine; the fermented juice of the grape. Among the great variety of wines in common use among us, four are employed in the shops as menstrua for medicinal simples.

Vinum album Hispanicum, Mountain.

Vinum Canarium, Canary or sack.

Vinum Rhenanum, Rhenish.

Vinum rubrum, Red port.

Wines consist chiefly of water, alcohol, a peculiar acid, the ærial acid, tartar, and an astringent gummy resinous matter, in which the colour of red wines resides, and which is squeezed out from the husks of the grapes. They differ from each other in the proportion of these ingredients, and particularly in that of the alcohol which they contain.

The uses of these liquors as menstrua and vehicles of the virtues of other medicines will be given hereafter: in this place we shall consider only their effects on the human body. These are, to stimulate the stomach, cheer the spirits, warm the habit, promote perspiration, render the vessels full and turgid, raise the pulse, and quicken the circulation.

Sweet wines are stronger than they appear from the taste, because two impressions strike more feebly when combined than when separate. Red port, and most of the red wines, have an astringent quality, by which they strengthen the tone of the stomach and intestines, and thus prove serviceable for restraining immoderate secretions. Those which are of an acid nature, as Rhenish, pass freely by the kidneys, and gently loosen the belly. It is supposed that these last exasperate or

occasion gouty and calculous disorders; and that new wines of every kind have this effect.

Wine is much used in fevers of the typhous kind, and often with great success, particularly when the appetite seems to call for it, and when the stomach rejects all food. Claret, Madeira, and Port, are those commonly employed in Britain.

VIOLA [*Lond. Ed.*] *Flos recens.*

Viola odorata Lin.

The March violet; the fresh flower.

This is often found wild in hedges and shady places, and flowers in March; the shops are generally supplied from gardens. In our markets we meet with the flowers of different species; these may be distinguished from the foregoing by their being larger, of a pale colour, and of no smell. The officinal flowers have a very pleasant smell, and a deep purplish blue colour, denominated from them *violet*. They impart their colour and flavour to aqueous liquors: a syrup made from this infusion has long maintained a place in the shops, and proves an agreeable and useful laxative for children.

VIPERA [*Ed.*]

Coluber berus Lia.

The viper.

The viper is one of the viviparous reptiles, without feet, about an inch in thickness, and twenty or thirty in length. The poison of this serpent is confined to its mouth: at the basis of the fangs, or long teeth which it wounds with, is lodged a little bag containing the poisonous liquid; a very minute portion of which, mixed immediately with the blood, proves fatal. Our viper-catchers are said to prevent the mischiefs otherwise following from the

bite, by rubbing oil olive warm on the part. The flesh of the viper is perfectly innocent; and strongly recommended as a medicine of extraordinary service in scrophulous, leprons, rheumatic, and other obstinate chronic disorders. Its virtues, however, in these cases, are probably too much exaggerated. The viper is doubtless an high nutritious food; and hence in some kinds of weaknesses, and emaciated habits, is not undeservedly looked upon as a good restorative. To answer any valuable purposes, fresh vigorous vipers, not such as have been long kept alive after they are caught, should be liberally used as food. The wines and tinctures of them can scarce be supposed to receive any considerable virtue from the animal; the dry flesh brought to us from abroad is probably entirely insignificant.

VIRGA AUREA [*Brun.*]

Herba.

Solidago virga aurea Lin.

Golden rod; the herb.

This is found wild on heaths and in woods, producing spikes of yellow flowers in August. The leaves have a moderately astringent bitter taste; and hence prove serviceable in debility and laxity of the viscera, and disorders proceeding from that cause.

VISCUS [*Suec.*] *Lignum.*

Viscus albus Lin.

Mistletoe; the wood.

This is a bushy plant, growing on the trunk and branches of different trees: that met with on the oak is generally preferred, perhaps on account of its being the most rare. It may, however, be propagated by art on any trees, by rubbing the berries against the bark. This office has hitherto been performed by the thrush (who feeds on the berries in
the

the winter) in clearing his bill from the seeds that stick about it. This plant was held in veneration by the superstition of former ages: it was hung about the neck to prevent witchcraft, and taken internally to expel poisons. It has been celebrated as a specific in epilepsies, palsies, &c.; virtues, which it were greatly to be wished that experience gave any countenance to: but so little reliance is now put upon it, that it is entirely rejected, both by the London and Edinburgh colleges.

VITIS [*Lond.*]
Vitis vinifera Lin.

The vine tree.

The leaves of this tree were formerly celebrated as astringents, but have for a long time been entirely disregarded: their taste is herbaceous, with only a slight roughness. The trunk of the tree, wounded in the spring, yields a clear, limpid, watery juice: This tear of the vine has been accounted excellent for sore eyes; and by some recommended likewise in ardent and malignant fevers, and as a diuretic. The flowers have a pleasant smell, which water elevates from them in distillation; along with the water, a small portion of an elegant essential oil is said to arise, possessing in great perfection the fragrance of the flowers.—The unripe fruit is of a very harsh, rough, sour taste: its expressed juice, called verjuice, was of great esteem among the ancients, and still continues so in some places, as a cooling astringent medicine: a rob and syrup were formerly prepared from it.—The ripe fruit or grapes, of which there are several kinds, properly cured and dried, are the raisins of the shops: the juice by fermentation affords wine, vinegar, and tartar; of all which mention has already been made.

VITRIOLUM ALBUM, *five*
ZINCI. [*Ed.*]

White vitriol, or vitriol of zinc.

This is chiefly found in its native state in the mines of Goslar, sometimes in transparent pieces, but more commonly in form of white efflorescences, which are dissolved in water, and afterwards reduced by evaporation and crystallisation into large masses. We rarely meet with this sort of vitriol pure: it is ordered therefore to be prepared. After the zinc, which is its proper basis, has been revived by inflammable fluxes, there remains a substance which is attracted by the magnet, and discovers itself on other trials also to be iron. A solution of the vitriol deposits on standing an ochry sediment, which generally gives a blue tincture to volatile alkalies, and hence appears to contain copper. White vitriol is sometimes given from five or six grains to half a dram, as an emetic; it operates very quickly, and, if pure, without violence. Externally, it is employed as an ophthalmic, and often made the basis of collyria, both in extemporaneous prescription and in dispensatories; such as the aqua zinci vitriolati cum camphora of the London pharmacopœia.

VITRIOLUM CÆRULEUM
five CUPRI [*Ed.*]

Blue vitriol, or vitriol of copper, falsely called Roman Vitriol.

Greatest part of the blue vitriol at present met with in the shops, is said to be artificially prepared by uniting copper with the vitriolic acid. This salt has a highly acrid, austere, and very nauseous taste. It is a strong emetic, and is recommended as such by some in incipient phthisis, when supposed to be from tubercles. Its principal use is externally as an escharotic; and for stopping hemorrhages, which it effects
by

by coagulating the blood, and contracting the mouths of the vessels. It is the basis to an officinal water for this intention.

VITRIOLUM VIRIDE, sive FERRI [Ed.]

Green vitriol, or vitriol of iron, commonly called *copperas*.

This is prepared in large quantity at Deptford, by dissolving iron in the acid liquor which runs from certain sulphureous pyritæ, exposed for a length of time to the air. When pure, it is similar in quality to the officinal *sul martis* or *chalybis*.

The green and blue vitriols (as well as the white) are in many places found native in the earth; tho' usually, in this state, neither sort is free from an admixture of the other: hence vitriols are met with of all the intermediate colours betwixt the grass green of the one and the saphire blue of the other.

The acid of these salts has the greatest affinity with zinc, next to this with iron, and with copper the least of all. Hence solutions of white vitriol deposite, on standing, greatest part of the iron and cupreous matter which they contain; and if some fresh zinc be added, the whole. In like manner, upon adding bright polished iron to solutions of green vitriol, if it holds any cupreous matter, this will be thrown down. By this means the white and green vitriols may be purified from other metallic bodies. Green vitriol has the general medical effects of iron, but is much less frequently employed than some other chalybeates.

ULMARIA [Brun.] Radix.

Spiræa ulmaria Lin.

Meadow-sweet, or Queen of the Meadows; the root.

This herb is frequent in moist

meadows, and about the sides of rivers; it flowers in the beginning of June, and continues in flower a considerable time. The flowers have a very pleasant flavour, which water extracts from them by infusion, and elevates in distillation. The leaves are herbaceous. But neither of these at present enter any pharmacopœias. The roots are used in some plasters, in which they have probably no influence.

ULMUS [Lond. Ed.] Cortex interior.

Ulmus campestris Lin.

The elm-tree; the inner bark.

This bark has a mild astringent taste. A decoction formed from it, by boiling an ounce with a pound of water, to the consumption of one half, has been highly recommended by some, particularly by Dr Lettsome, in obstinate cutaneous eruptions.

URTICA [Lond. Ed.] Herba.

Urtica dioica Lin.

Common nettle; the herb.

The leaves of the fresh nettle stimulate, inflame, and raise blisters on those parts of the skin which they touch. Hence when a powerful rubefacient is required, stinging with nettles has been recommended. It has been alleged to have sometimes succeeded in restoring sense and motion to paralytic limbs. Both the herb and seed were formerly believed to be lithontriptic and powerfully diuretic; and many other virtues were attributed to them, to which the present practice pays no regard. The young leaves are by some used in the spring as a wholesome pot-herb.

UVA PASSA [Lond.]

Raisins of the sun; the dried grapes of the *vitis Damascena*.

UVÆ.

UVÆ PASSÆ *Minores.*

Currants; the dried grapes of *vitis Corinthiaca*.

The principal use of these is as an agreeable sweet: they impart a very pleasant flavour both to aqueous and spirituous menstrua. The seeds or stones are supposed to give a disagreeable relish, and hence are generally directed to be taken out. The raisins of the sun are an ingredient in the compound decoction of barley, the tincture of senna, and the compound tincture of cardamums.

UVA URSI [*Lond. Ed.*] *Folium.*

Arbutus uva-ursi Lin.

Bears whortleberry; the leaf.

The uva ursi is a low shrub, somewhat resembling the myrtle. It seems first to have been employed in medicine in Spain and the south of France; and it is an indigenous vegetable of these countries, but it grows also in northern climates, particularly in Sweden and on the hills of Scotland. The leaves have a bitterish astringent taste; and their quality in the latter way is so considerable, that in certain places, particularly in some of the provinces of Russia, they are used for tanning leather. A watery infusion of the leaves immediately strikes a very black colour with chalybeates.

The uva ursi seems first to have been employed in medicine with a view to its astringent power. With this intention, it was used under the form of decoction, for restraining an immoderate flow of the menses, against other hæmorrhagies, in cases of diarrhœa and dysentery, and for the cure of cutaneous eruptions. But it had fallen much into disuse till its employment was

again revived by Dr de Haen of Vienna. He bestowed very high encomiums upon it, against ulcerations of the kidneys, bladder, and urinary passages. He represents it as capable of curing almost every case of that kind; and even asserts, that in cases of calculus much benefit is derived from its use; patients after the employment of it passing their water easily and without pain. It has, however, by no means answered the expectations which on these grounds other practitioners formed of it: But in many affections of the urinary organs, it has proved to be a remedy of some use; and it has been particularly serviceable in alleviating dyspeptic symptoms in nephritic and calculous cases. It has also been serviceable in cystirrhœa or catarrhus vesicæ; and it has been thought to be sometimes productive of advantage in diabetes. It is sometimes used under the form of decoction, but most frequently in that of powder, from a scruple to a dram being taken for a dose, and repeated two or three times a day.

WINTERANUS CORTEX. [*Brun.*]

Winterania aromatica.

Winter's bark.

This is the produce of a tree growing about the southern promontory of America. It was first discovered on the coast of Magellan by Captain Winter, in the year 1567: the sailors then employed the bark as a spice, and afterwards found it serviceable in the scurvy; for which purpose it is at present also sometimes made use of in diet-drinks. The true winter's bark is not often met with in the shops, canella alba being generally substituted for it, and by many it is reckoned to be the same: There is, however, a considerable dif-

difference betwixt them in appearance, and a greater in quality. The winter's bark is in larger pieces, of a more cinnamon colour than the canella; and tastes much warmer and more pungent.

ZEDOARIA [*Lond. Ed.*] *Radix.*

Kempferia rotunda Lin.

Zedoary; the root.

Zedoary is the root of a plant growing in the East-Indies. It is brought over in oblong pieces about the thickness of the finger, or in roundish ones about an inch in diameter. Both sorts have an agreeable fragrant smell, and a warm, bitterish, aromatic taste.

In distillation with water, it yields an essential oil, possessing the smell and flavour of the zedoary in an eminent degree; the remaining decoction is almost simply bitter. Spirit likewise brings over some small share of its flavour: nevertheless the spirituous extract is considerably more grateful than the zedoary.

ZIBETHUM [*Brun.*]

Viverra zibetha Lin.

Civet.

This is a soft unctuous substance, of a white, brown, or blackish colour, brought from the Brazils, the coast of Guinea, and the East-Indies. It is met with in certain bags, situated in the lower part of the belly of an animal, said to be of the cat kind. The chief use of this drug is in perfumes; it is rarely, if ever, employed for any medicinal purposes.

ZINCUM [*Lond. Ed.*]

Zinc.

This is a femimetal, which is inflammable *per se*, sublimable into flowers, which afterwards remain fixed in the strongest fire, soluble in

every acid, not miscible in fusion with sulphur, changing copper into a yellow metal, brass. Several productions of this metal, though not generally known to be such, are kept in the shops; as its rich ore calamine, the white vitriol, the pure white flowers of zinc called *pompholyx*, and the more impure tully. Of several of these we have already had occasion to speak.

The preparations of zinc are employed principally in external applications as ophthalmics. The flowers levigated into an impalpable powder, form with oily substances an useful unguent, and with rose-water, and the like, elegant collyria, for defluctions of thin sharp humours upon the eyes. They are moderately astringent; and act, if the levigation has been duly performed, without acrimony or irritation.

Internally, they have been recommended in epilepsy and other spasmodic affections, both alone and with the cuprum ammoniacum; and some think they prove an useful addition to the Peruvian bark in intermittents.

ZINGEBER [*Lond. Ed.*] *Radix.*

Amomum zingiber Lin.

Ginger; the root.

This root is brought from China, from the East and West-Indies. It has a fragrant smell, and a hot, biting, aromatic taste. Rectified spirit extracts its virtues by infusion, in much greater perfection than aqueous liquors; the latter elevate its whole flavour in distillation, the former little or nothing. Ginger is a very useful spice in cold flatulent colics, and in laxity and debility of the intestines: it does not heat so much as those of the pepper kind, but its effects are more durable

able. It gives name to an officinal syrup, to the *zingiber conditum*, or candied ginger brought from a-
broad; enters the *electuarium cardiacum*, and some other compositions.

General TITLES including several SIMPLES.

The five opening roots:	{ Smallage, Asparagus, Fennel, Parsley, Butchers broom.
The five emollient herbs:	{ Marshmallows, Mallows, Mercury, Pellitory of the wall, Violets.
The four cordial flowers:	{ Borage, Bugloss, Roses, Violets.
The four greater hot seeds:	{ Anise, Caraway, Cummin, Fennel.
The four lesser hot seeds:	{ Bishopsweed, Stone-parsley, Smallage, Wild carrot.
The four greater cold seeds:	{ Water melons, Cucumbers, Gourds, Melons.
The four lesser cold seeds:	{ Succory, Endive, Lettuce, Purslane.

The four capillary herbs:	{ Maidenhair, English Maidenhair, Wall rue, Caterach.
The four carminative flowers:	{ Camomile, Feverfew, Dill, Melilot.

The simples of each of the above classes have been often employed together; under the respective general appellations. This practice has entirely ceased among us; and accordingly these denominations are now expunged both from the London and Edinburgh Pharmacopoeias, and they are now retained in very few of the foreign ones. But as these articles are frequently mentioned under their general titles by writers of eminence, we imagined that the above enumeration of them might be of some use.

GENERAL RULES *for the Collection and Preservation* of SIMPLES.

ROOTS.

ANNUAL roots are to be taken up before they shoot out stalks or flowers: Biennial ones, chiefly in the autumn of the same year in which the seeds were sown: The perennial, when the leaves fall off, and therefore generally in the autumn. Being washed clean from dirt, and freed from the rotten and decayed fibres, they are to be hung up in a warm, shady, airy place, till sufficiently dried. The thicker roots require to be slit longitudinally, or cut transversely into thin slices. Such roots as lose their virtues by exsiccation, or are desired to be preserved in a

fresh state, for the greater conveniency of their use in certain forms, are to be kept buried in dry sand.

THERE are two seasons in which the biennial and perennial roots are reckoned the most vigorous, the autumn and spring; or rather the time when the stalks or leaves have fallen off, and that in which the vegetation is just to begin again, or soon after it has begun; which times are found to differ considerably in different plants.

The college of Edinburgh, in the two first editions of their pharmacopoeia, directed them to be dug in the spring, after the leaves were formed: in the third edition, the

autumn was preferred. The generality of roots appear, indeed, to be most efficacious in the spring: but as at this time they are also the most juicy, and consequently shrivel much in drying, and are rather more difficultly preserved, it is commonly thought most advisable to take them up in autumn. No rule, however, can be given that shall obtain universally: arum root is taken even in the middle of summer, without suspicion of its being less active than at other seasons; while angelica root is inert during the summer, in comparison of what it was in the autumn, spring, or winter.

HERBS AND LEAVES.

HERBS are to be gathered when the leaves have come to their full growth, before the flowers unfold; but of some plants the flowery tops are preferred. They are to be dried in the same manner as roots.

For the gathering of leaves, there cannot perhaps be any universal rule, any more than for roots; for though most herbs appear to be in their greatest vigour about the time of their flowering, or a little before, there are some in which the medicinal parts are more abundant at an earlier period.

Thus mallow and marshmallow leaves are most mucilaginous when young, and by the time of flowering approach more to a woody nature. A difference of the same kind is more remarkable in the leaves of certain trees and shrubs: the young buds, or rudiments of the leaves, of the black poplar tree, have a strong fragrant smell, approaching to that of storax; but by the time that the leaves have come to their full

growth, their fragrance is exhausted.

Herbs are directed by most of the pharmaceutic writers to be dried in the shade; a rule which appears to be very just, though it has sometimes been misunderstood. They are not to be excluded from the sun's heat, but from the strong action of the solar light; by which last their colours are very liable to be altered or destroyed, much more so than those of roots. Slow drying of them in a cool place is far from being of any advantage: both their colours and virtues are preserved in greatest perfection when they are dried hastily by the heat of common fire as great as that which the sun can impart: the juicy ones, in particular, require to be dried by heat, being otherwise subject to turn black. Odoriferous herbs, dried by fire till they become friable, discover indeed, in this acrid state, very little smell; not that the odorous matter is dissipated; but on account of its not being communicated from the perfectly dry subject to dry air; for as soon as a watery vehicle is supplied, whether by infusing the plant in water, or by exposing it for a little time to a moist air, the odorous parts begin to be extracted by virtue of the aqueous moisture, and discover themselves in their full force.

Of the use of heat in the drying of plants, we have an instance in the treatment of tea among the Chinese. According to the accounts of travellers, the leaves, as soon as gathered, are brought into an apartment furnished with a number of little furnaces, or stoves, each of which is covered with a clean smooth iron plate; the leaves are spread upon the plates, and kept rolling with the hands till they begin to curl up about the edges;

they are then immediately swept off on tables, on which one person continues to roll them, while another fans them that they may cool hastily: this process is repeated two or three times, or oftener, according as the leaves are disposed to unbend on standing.

EXSICCATION of HERBS and FLOWERS.

HERBS and flowers are to be dried by the gentle heat of a stove or common fire, and only in that quantity at a time by which the exsiccation may be very soon finished. By this means their strength is best preserved; and this is indicated in proportion as they retain their native colour.

But the leaves of hemlock, and some other herbs replete with a subtile volatile matter, are to be beat immediately after the exsiccation, and preserved in glass-vessels, well shut.

FLOWERS.

FLOWERS are to be gathered when moderately expanded, on a clear dry day, before noon. Red roses are taken before they open, and the white heels clipped off and thrown away.

THE quick-drying, above recommended for the leaves of plants, is more particularly proper for flowers; in most of which both the colour and smell are more perishable than in leaves, and more subject to be impaired by slow exsiccation. Of the flowers which come fresh into the apothecaries hands, the only ones employed dry in the London Pharmacopœia are red roses; and these, in all the compositions in which they are used in a dry state,

are expressly ordered to be dried hastily. One of the most valuable aromatics of European growth, saffron, is a part of a flower, dried on paper, on a kind of kiln, with a heat sufficient to make it sweat, taking care only not to endanger the scorching of it.

It may here be observed, that the virtues of flowers are confined to different parts of the flower in different plants. Saffron is a singular production growing at the end of the stile or pistil. The active part of camomile flowers is the yellow disk, or button in the middle; that of lilies, roses, clove-julyflowers, violets, and many others, the petala or flower-leaves; while rosemary has little virtue in any of these parts, the fragrance admired in the flowers of this plant residing chiefly in the cups.

SEEDS and FRUITS.

SEEDS should be collected when ripe and beginning to grow dry, before they fall off spontaneously. Fruits are also to be gathered when ripe, unless they are ordered to be otherwise.

OF the fruits whose collection comes under the notice of the apothecary, there are few which are used in an unripe state: the principal is the sloe, whose virtue as a mild astringent is much diminished by maturation. The fruit of the orange tree, raised in our gardens or green houses, is sometimes gathered in a state of much greater immaturity, soon after it is formed on the tree, before it has acquired its acid juice; at this time it proves an elegant aromatic bitter, nearly resembling what are called *Curassao oranges*, which appear to be no other than the same fruit gathered

at the same period in a warmer climate.

The rule for collecting seeds is more general than any of the others, all the officinal seeds being in their greatest perfection at the time of their maturity. As seeds contain little watery moisture, they require no other warmth for drying them than that of the temperate air in autumn; such as abound with a gross expressible oil, as those commonly called the *cold seeds*, should never be exposed to any considerable heat; for this would hasten the rancidity, which, however carefully kept, they are very liable to contract. Seeds are best preserved in their natural husks or coverings, which should be separated only at the time of using; the husk, or cortical part, serving to defend the seed from being injured by the air.

WOODS and BARKS.

THE most proper season for the felling of woods, or shaving off their barks, is generally the winter.

No woods of our own growth are now retained by the London or Edinburgh colleges. The only two which had formerly a place in the catalogues of simples were the juniper and box; the first of which is never kept in the shops, or employed in practice; the other may be procured from the turner; and it is indifferent at what season it has

been cut down, being at all times sufficiently fit for the only use to which it was applied, the yielding an empyreumatic oil by distillation in a strong fire.

It may be doubted, whether barks are not generally more replete with medicinal matter in the summer and spring than in winter. The barks of many trees are in summer so much loaded with resin and gum, as to burst spontaneously, and discharge the redundant quantity. It is said that the bark of the oak answers best for the tanners at the time of the rising of the sap in spring; and as its use in tanning depends on the same astringent quality for which it is used in medicine, it should seem to be fittest for medicinal purposes also in the spring. It may be observed likewise, that it is in this last season that barks in general are most conveniently peeled off.

ANIMALS and MINERALS.

ANIMALS and minerals are to be chosen in their most perfect state, unless they be ordered otherwise.

Whatever virtues these bodies may have, they are supposed to be best when they have attained to their common full growth. As there are no distinctions of maturity or immaturity in the mineral kingdom, the only rule for directing our choice here must be the purity of the subjects from any mixture of other bodies: none of them are ever to be used in an impure state.

A short View of DIFFERENT ARRANGEMENTS *of*
the MATERIA MEDICA.

IN the beginning of this part, in which the different articles of the materia medica are considered, we have assigned reasons for giving the preference to the alphabetical mode of arrangement: but as other modes of arrangement also, though liable to greater objections, are not without some peculiar advantages, it may not be improper to subjoin a general view of some of those plans of arrangement, which have either been followed by the most eminent writers on the materia medica, at different periods, or which seem to us to be of considerable utility in practice; not only as conjoining together articles which have nearly the same operative effects, such as emetics, cathartics, or the like: but as subdividing these classes into such inferior associations as may lead the rational practitioner to the selection of that particular article which is best accommodated to the disease, or to the circumstances of his patient.

The Arrangement of DIOSCORIDES, *as translated into*
Latin from the original Greek, by JANUS ANTONIUS SARACENUS.

1. De aromatibus, oleis, unguentis, arboribus et nascentibus ex eis liquoribus lachrymis ac fructibus.

2. De animalibus, cerealibus, oleribus et acrimonia præditis herbis.

3. De radicibus, succis, herbis

et feminibus, tum naturæ nostræ familiaribus, tum etiam medicamentosis.

4. De iis quæ restant herbis atque radicibus.

5. De vinis et iis quæ metallica dicuntur.

The Arrangement of STEPHANUS FRANCISCUS GEOFFROY, *in his Tractatus de Materia Medica.*

1. De fossilibus.

2. De vegetabilibus exoticis.

3. De vegetabilibus indigenis.

4. De infectis.

5. De piscibus.

6. De amphibiiis.

7. De avibus.

8. De quadrupedibus.

9. De homine.

The Arrangement of JOHN FREDERICK CARTHEUSER, *in his* Fundamenta Materiæ Medicæ.

- | | |
|---|---|
| 1. De insipidis terreis et terro gelatinosis. | gantibus, tam emeticis, quam catharticis. |
| 2. De insipidis, et subdulcibus mucilagineis et gelatinosis. | 12. De vaporosis inebriantibus et narcoticis. |
| 3. De dulcibus, subdulcibus, leniter amaricantibus austeriusculis, atque balsamicis unguinoso-oleosis et pinguibus. | 13. De balsamicis et aromaticis. |
| 4. De acidis et acidulo-dulcibus. | 14. De amaricantibus, austeriusculis, blandis balsamicis, acriusculis, subdulcibus, terreo-aut mucilagineo-subadstringentibus, aliisque sapore mixto donatis. |
| 5. De salinis alcalicis, tam fixis quam volatilibus urinosis. | 15. De ficcis sulphureis, mercurialibus, sulphureo-mercurialibus, sulphureo-regulinis, et metallicis, semimetallicis ac terreis martialibus. |
| 6. De salinis explicitis mediæ naturæ. | 16. De aqua simplici, aqua marina, et aquis medicatis mineralibus. |
| 7. De austeris stypticis. | |
| 8. De dulcibus. | |
| 9. De acris alterantibus. | |
| 10. De amaris et amaricantibus. | |
| 11. De acris et amaris pur- | |

The Arrangement of DR MURRAY, *from his* Apparatus Medicaminum tam Simplicium quam Præparatorum et Compositorum, Vol. I, II, III, & IV.

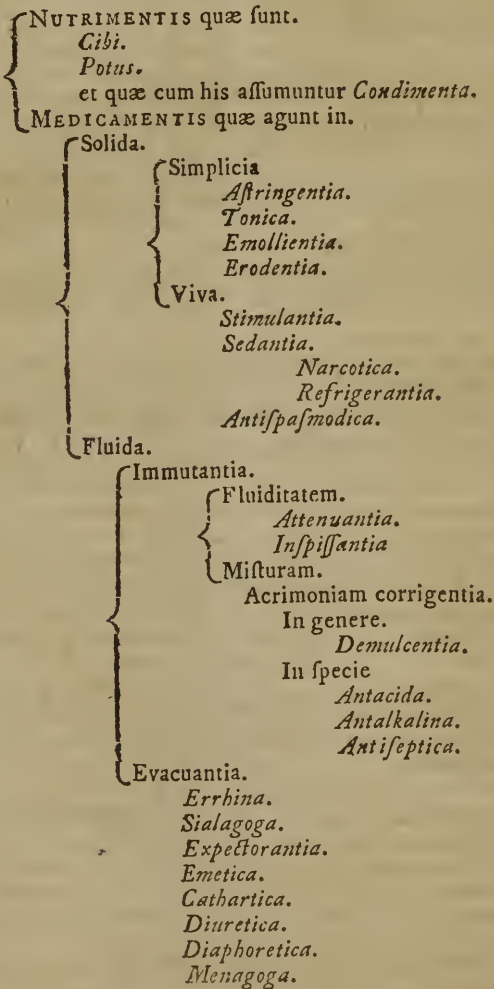
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|-------------------|-------------------|
| 1. Coniferæ. | 22. Putamineæ. |
| 2. Amentaceæ. | 23. Siliquosæ. |
| 3. Compositæ. | 24. Papilionaceæ. |
| 4. Aggregatæ. | 25. Lomentaceæ. |
| 5. Conglomeratæ. | 26. Multifiliquæ. |
| 6. Umbellatæ. | 27. Senticosæ. |
| 7. Hederaceæ. | 28. Pomaceæ. |
| 8. Sarmentaceæ. | 29. Hesperideæ. |
| 9. Stellatæ. | 30. Succulentæ. |
| 10. Cymosæ. | 31. Columniferæ. |
| 11. Cucurbitaceæ. | 32. Gruinales. |
| 12. Solanaceæ. | 33. Caryophylleæ. |
| 13. Campanaceæ. | 34. Calycanthemæ. |
| 14. Contortæ. | 35. Ascyroideæ. |
| 15. Rotaceæ. | 36. Coadunatæ. |
| 16. Sepiariæ. | 37. Dumosæ. |
| 17. Bicornes. | 38. Trihilatæ. |
| 18. Asperifoliæ. | 39. Tricocceæ. |
| 19. Verticillatæ. | 40. Oleraceæ. |
| 20. Personatæ. | 41. Scabridæ. |
| 21. Rhœades. | 42. Vepreculæ. |

The Arrangement of DR CULLEN from his *Materia Medica*.

MATERIÆ MEDICÆ TABULA GENERALIS,

In qua Medicamenta ad Capita quædam secundum indicationes morborum curatorias quibus respondent, referuntur.

MATERIA MEDICA constat ex



*The Arrangement of DR HOME, from his Methodus
Materiæ Medicæ.*

- | | |
|--|---|
| <p>Class 1. Auxilia adjicentia.
 2. ——— evacuantiæ.
 3. ——— alterantia fluida.
 4. ——— Alterantia solida.
 5. ——— permutantia motus
 solidorum et fluidorum.</p> | <p>Class 6. Auxilia afficientia sensus.
 7. ——— topica interna.
 8. ——— expellentia vel destruentia corpora extranea.</p> |
|--|---|

*The Arrangement of DR DUNCAN, from his Heads of
Lectures on the Materia Medica.*

- | | |
|---|---|
| <p>I. EMETICA.
 1. Irritantia.
 2. Calefacientia.
 3. Nauseosa.
 4. Narcotica.</p> | <p>3. Antispasmodica.
 4. Irritantia.</p> |
| <p>II. CATHARTICA.
 1. Stimulantia.
 2. Refrigerantia.
 3. Restringentia.
 4. Emollientia.
 5. Narcotica.</p> | <p>VII. ERRHINA.
 1. Sternutatoria.
 2. Evacuantiæ.</p> |
| <p>III. DIAPHORETICA.
 1. Calefacientia.
 2. Stimulantia.
 3. Pungentia.
 4. Antispasmodica.
 5. Diluentia.</p> | <p>VIII. SIALAGOGA.
 1. Topica.
 2. Interna.</p> |
| <p>IV. EPISPASTICA.
 1. Rubefacientia.
 2. Vesicantia.
 3. Suppurantia.</p> | <p>IX. EMMENAGOGA.
 1. Stimulantia.
 2. Irritantia.
 3. Tonica.
 4. Antispasmodica.</p> |
| <p>V. DIURETICA.
 1. Stimulantia.
 2. Refrigerantia.
 3. Diluentia.
 4. Narcotica.</p> | <p>X. ANTHELMINTICA.
 1. Venenosa.
 2. Lubricantia.
 3. Tonica.
 4. Cathartica.</p> |
| <p>VI. EXPECTORANTIA.
 1. Stimulantia.
 2. Nauseosa.</p> | <p>XI. LITHONTRIPTICA.
 1. Antacida.
 2. Restringentia.</p> |
| | <p>XII. ANTACIDA.
 1. Eccoprotica.
 2. Restringentia.</p> |
| | <p>XIII. ANTALKALINA.
 1. Refrigerantia.
 2. Antiseptica.</p> |

XIV. ATTENUANTIA.

1. Diluentia.
2. Solventia.

XV. INSPISSANTIA.

1. Farinosa.
2. Mucilaginososa.

XVI. ANTISEPTICA.

1. Refrigerantia.
2. Tonica.
3. Stimulantia.
4. Antispasmodica.

XVII. ADSTRINGENTIA.

1. Styptica.
2. Corrigentia.
3. Tonica.

XVIII. EMOLLIENTIA.

1. Humectantia.
2. Laxantia.
3. Lubricantia.

XIX. CORROSIVA.

1. Frodentia.
2. Caustica.

XX. DEMULCENTIA.

1. Lenientia.
2. Diluentia.

XXI. STIMULANTIA.

1. Topica.
2. Diffusibilia.
3. Calefacientia.
4. Cardiaca.
5. Tonica.
6. Carminativa.

XXII. SEDATIVA.

1. Soporifica.
2. Narcotica.
3. Refrigerantia.

XXIII. ANTISPASMODICA.

1. Stimulantia.
2. Sedativa.
3. Tonica.

XXIV. SANGUINIS MISSIONES.

1. Generales.
2. Topicæ.

P A R T III.

Preparations and Compositions.

C H A P. I.

PREPARATIONES SIMPLICIORES.

THE MORE SIMPLE PREPARATIONS.

QUORANDUM IN AQUA
NON SOLUBILIUM PRÆPARATIO. *Lond.*

The preparations of some Substances not soluble in water.

POUND these substances first in a mortar; then, pouring on a little water, levigate them upon a hard and polished, but not calcareous, stone, that they may be made as fine as possible. Dry this powder upon blotting-paper laid on chalk, and set it in a warm, or at least a dry, place, for some days.

In this manner are to be prepared,

Amber,
Antimony,
Calamine,
Chalk,
Coral,

Oyster-shells, first cleansed from their impurities,

Tutty.

Crabs claws, first broken into small pieces, must be washed with boiling water before they be levigated.

Verdegris must be prepared in the same manner.

WHERE large quantities of the foregoing powders are to be prepared, it is customary, instead of the stone and muller, to employ hand-mills made for this purpose, consisting of two stones; the uppermost of which turns horizontally upon the lower, and has an aperture in the middle for the convenience of supplying fresh matter, or of returning that which has already passed, till it be reduced to a proper degree of fineness.

For the levigation of hard bodies, particular care should be taken, whatever kind of instruments be made use of, that they be of sufficient hardness, otherwise they will be abraded by the powders. The hematites, a hard iron ore, is most conveniently levigated between two iron planes; for if the common levigating stones be made use of, the preparation, when finished, will contain almost as much of foreign

matter from the instrument as of the hematites.

It has been customary to moisten several powders in levigation, with rose, balm, and other distilled waters: these, nevertheless, have no advantage above common water, since in the subsequent exsiccation they must necessarily exhale, leaving the medicine possessed of no other virtue than what might be equally expected from it when prepared with the cheaper element.

Some few substances, indeed, are more advantageously levigated with spirit of wine than with water. Thus bezoar has the green colour usually expected in this costly preparation, considerably improved thereby. A little spirit may be added to the other animal substances, if the weather be very hot, and large quantities of them are prepared at once, to prevent their running into putrefaction; an accident which, in those circumstances, sometimes happens when they are levigated with water only. Crabs-eyes, which abound with animal gelatinous matter, are particularly liable to this inconvenience.

The caution given above for reducing antimony, calamine, and tutty, to the greatest subtilty possible, demands particular attention. The tenderness of the parts to which the two last are usually applied, requires them to be perfectly free from any admixture of gross irritating particles. The first, when not thoroughly comminuted, might not only, by its sharp needle-like spicula, wound the stomach, but likewise answers little valuable purpose as a medicine, proving either an useless load upon the viscera, or at best passing off without any other sensible effect than an increase of the grosser evacuations; whilst, if reduced to a great degree of fineness, it turns out a medicine of considerable efficacy.

The most successful method of obtaining these powders of the requisite tenuity, is, to wash off the finer parts by means of water, and continue levigating the remainder till the whole become fine enough to remain for some time suspended in the fluid; a process received in the Edinburgh pharmacopoeia, and there directed in the preparation of the following article.

ANTIMONIUM PRÆPARATUM.

Edinburgh.

Prepared Antimony.

Let the antimony be first pounded in an iron mortar, and then levigated on a porphory with a little water. After this, put it into a large vessel, and pour a quantity of water upon it. Let the vessel be repeatedly shaken, that the finer part of the powder may be diffused through the water; the liquor is then to be poured off, and set by till the powder settles. The gross part, which the water would not take up, is to be further levigated, and treated in the same manner.

By this method, which is that commonly practised in the preparation of colours for the painter, powders may be obtained of any required degree of tenuity; and without the least mixture of the gross parts, which are always found to remain in them after long continued levigation: all the coarser matter settles at first, and the finer powder continues suspended in the water, longer and longer, in proportion to the degree of its fineness. The same process may likewise be advantageously applied to other hard pulverable bodies of the mineral kingdom, or artificial preparations of them; provided they be not soluble in, or specifically lighter than water. The animal and ab-

forbent

forbent powders, crabs-claws, crabs-eyes, oyster-shells, egg-shells, chalk, pearl, coral, and bezoar, are not well adapted to this treatment; nor indeed do they require it. These substances are readily soluble in acid juices without much comminution: if no acid be contained in the first passages, they are apt to concreate, with the mucus matter usually lodged there, into hard indissoluble masses; the greater degree of fineness they are reduced to, the more they are disposed to form such concretions, and enabled to obstruct the orifices of the small vessels.

CALAMINARIS LAPIS PRÆPARATA.

Edin.

Prepared Calamine.

Calamine previously calcined for the use of those who make brassy, is to be treated in the same manner as antimony.

CRETA PRÆPARATA.

Edin.

Prepared Chalk.

Chalk first triturated and then frequently washed with water, till it imparts to it neither taste nor colour, is to be treated in the same manner as antimony.

As calamine is intended for external application, and often to parts very easily irritated, too much pains cannot be bestowed in reducing it to a fine powder: and the frequent washing of the chalk may have the effect of freeing it from the foreign matters: But with regard to this substance, the after part of the process, if not improper, is, in our opinion at least, unnecessary: and this observation may also be made with respect to the oculi, or more properly lapilli cancerorum, which the Edinburgh college direct to be treated in the same manner.

ADIPIS SUILLÆ, SEVIQUE OVILLI PRÆPARATIO.

Lond.

The preparation of hog's-lard and mutton-suet.

Cut them in pieces, and melt them over a slow fire; then separate them from the membranes by straining.

THESE articles had formerly a place also among the preparations of the Edinburgh college. But now they introduce them only into their list of the materia medica; as the apothecary will in general find it more for his interest to purchase them thus prepared, than to prepare them for himself: for the process requires to be very cautiously conducted, to prevent the fat from burning or turning black.

AMMONIACI GUMMI PURIFICATIO.

The purification of gum ammoniacum Lond.

If gum ammoniac do not seem to be pure, boil it in water till it become soft; then squeeze it through a canvas bag, by means of a press. Let it remain at rest till the resinous part subside; then evaporate the water; and towards the end of the evaporation restore the resinous part, mixing it with the gummy.

IN the same manner are purified assafoetida and such like gum-resins.

You may also purify any gum which melts easily, such as Galbanum; by putting it in an ox-bladder, and holding it in boiling water till it be so soft that it can be separated from its impurities by pressing through a hempen cloth.

In the straining of all the gums, care should be taken that the heat be neither great, nor long continued; otherwise a considerable portion.

tion of their more active volatile matter will be lost; an inconvenience which cannot, by any care, be wholly avoided. Hence the purer tears, unstrained, are in general to be preferred, for internal use, to the strained gums.

As an additional reason for this preference, we may add, that some of the gum-resins, purified in the common way, by solution in water, expression, and evaporation, are not so easily soluble in aqueous menstrua after, as before, such depuration. On these accounts this process is entirely omitted by the Edinburgh college; and in every case where a gummi-resinous substance, before it be taken, is to be dissolved in water, it may be as effectually freed from impurities at the time of the solution as by this process. And when it is to be employed in a solid state, care should be taken that the purer parts alone be selected.

CORNU CERVI USTIO.

The burning of hartshorn.

London.

Burn pieces of hartshorn till they become perfectly white; then reduce them to a very fine powder.

THE pieces of horn generally employed in this operation are those left after distillation.

In the burning of hartshorn, a strong fire and the free admission of air are necessary. The potter's furnace was formerly directed for the sake of convenience; but any common furnace or stove will do. If some lighted charcoal be spread on the bottom of the grate, and above this the pieces of the horns are laid, they will be burnt to whiteness, still retaining their original form.

Burnt hartshorn is not now con-

sidered as a pure earth, having been found to be a compound of calcareous earth and phosphoric acid. It is the weakest of the animal absorbents, or soluble in acids with most difficulty; but whether it be of equal or superior use in diarrhœas to more powerful absorbents must be left to observation.

HERBARUM et FLORUM EXSICCATIO.

London.

The drying of herbs and flowers.

Let these, spread out lightly, be dried by a gentle heat.

Edinburgh.

Herbs and flowers must be dried by gentle heat, from a stove or common fire. They must be taken in such quantities at a time, that the process will be speedily finished; for by this means their medical powers are best preserved. The most certain test of this is the perfect preservation of the natural colour: but the leaves of cicuta, and of other plants containing a volatile matter, must be immediately pounded, after being dried, and afterwards kept in a phial with a ground stopper.

THE directions given by the London college are here less explicit, and perhaps less proper than those of the Edinburgh college: for there can be no doubt of the propriety of drying these substances hastily, by the aid of artificial heat, rather than by the heat of the sun. In the application of artificial heat, the only caution requisite is to avoid burning; and of this a sufficient test is afforded by the preservation of colour. And the direction given with regard to cicuta may perhaps with advantage be

fol.

followed with most of the other flowers and herbs, afterwards to be exhibited in powder.

MELLIS DESPUMATIO.

Lond.

The purifying of honey.

Melt the honey by the heat of a water bath, and remove the scum.

THE intention of this process is to purify the honey from wax, or other drossy matters that have been united with it by the violence of the press in its separation from the comb, and from meal and such like substances, which are sometimes fraudulently mingled with it. When the honey is rendered liquid and thin by the heat, these lighter matters rise freely to the surface.

This preparation is not so necessary for honey that is to be used as an article of diet as for that which is employed in the preparation of oxymels; hence the Edinburgh college, who have rejected all the oxymels, have omitted this process.

MILLEPEDÆ PRÆPARATIO.

Lond.

The preparation of slaters.

Millepedæ præparatæ. Edin.

The millepedes are to be inclosed in a thin canvas cloth, and suspended over hot spirit of wine, in a close vessel, till they be killed by the steam, and rendered friable.

THIS is a convenient way of rendering millepedes pulverable, without endangering any loss of such virtues as they may possess.

The directions given by both colleges are here precisely the same, and delivered in almost the same words.

PULPARUM EXTRACTIO.

Lond. Ed.

The extraction of pulps.

Unripe pulpy fruits, and ripe ones, if they be dry, are to be boiled in a small quantity of water until they become soft: then press out the pulp through a strong hair sieve, and afterwards boil it down to due consistence (as to that of honey) in an earthen vessel, over a gentle fire; taking care to keep the matter continually stirring, to prevent its burning.

The pulp of cassia fistularis is in like manner to be boiled out from the bruised pod, and reduced afterwards to a proper consistence, by evaporating the water.

The pulps of fruits that are both ripe and fresh, are to be pressed out through the sieve, without any previous boiling.

IN the extraction of pulps, the directions of both colleges so nearly agree, that it is unnecessary to give a separate translation of each. We may only observe, that the London college, in place of softening the fruits by boiling in a small quantity of water, direct them to be put in a moist place. But this direction, though with some particular substances it may be preferable, is, we think, very generally the least proper.

SCILLÆ EXSICCATIO.

Lond. Ed.

The drying of squills.

Let the squill, cleared from its outer skin, be cut transversely into thin slices, and dried with a very gentle heat. When properly managed, the squill is friable, and retains its bitterness and acrimony.

By this method the squill dries much sooner than when only its several coats are separated, as has been usually directed; the internal part being here laid bare, which, in each of the entire coats, is covered with a thin skin, which impedes the exhalation of the moisture. The root loses in this process four-fifths of its original weight; the parts which exhale appear to be merely watery: hence six grains of the dry root are equivalent to half a dram of it when fresh; a circumstance to be particularly regarded in the exhibition of this medicine. In the preceding editions of our pharmacopoeias, a particular caution was given, not to use an iron knife for cutting squills, but one of wood, ivory, or other bone: the foundation of this caution is said to be, not so much that the squill would receive any ill qualities from the iron; as, that its acrid juice, adhering to the knife, might render a wound received by it extremely painful, or even dangerous. But from this, little, we imagine, is to be apprehended, and the direction appears unnecessary. Dried squills furnish us with a medicine, sometimes advantageously employed as an emetic, often as an expectorant, but still more frequently as a powerful diuretic.

SPONGIÆ USTIO.

Lond.

The burning of sponge.

Beat the sponge, after cutting it in pieces; and, when separated from its gritty matter, burn it in a close iron vessel, until it becomes black and friable; afterwards rub it to a very fine powder.

Edinb.

Put the sponge, cut into small pieces, and well freed from adhering earthy matters, into a close earthen vessel. Place it on the

fire, and let it be stirred frequently till it becomes black and friable; then reduce it to a powder in a glass or marble mortar.

THIS medicine has been in use for a considerable time, and employed against scrophulous disorders and cutaneous foulnesses, in doses of a scruple and upwards. Its virtues seem to depend upon a volatile salt, just formed, and combined with its own oil. If the sponge be distilled with a strong heat, it yields a large proportion of that salt in its proper form. The salt is in this preparation so far extricated, that if the burnt sponge be ground in a brass mortar, it corrodes the metal, so as to contract a disagreeable taint, and sometimes an emetic quality.

Bees, earthworms, and other animal substances, have by some been prepared in the same manner, and recommended in different diseases: but as these substances fall much short of sponge in the quantity of volatile salt producible from them by fire, they are probably inferior also in medicinal efficacy. Of all the animal matters that have been tried, raw silk is the only one which exceeds, or equals sponge, in the produce of salt.

A good deal of address is requisite for managing this process in perfection. The sponge should be cut small, and beaten for some time in a mortar, that all the stony matters may be got out, which compared with the weight of the sponge when prepared, will sometimes amount to a considerable quantity. The burning should be discontinued as soon as the matter is become thoroughly black. If the quantity put into the vessel at once be large, the outside will be sufficiently burnt before the inside be affected; and the volatile salt of the former will
in

in part escape, before that in the latter is begun to be formed. The best method of avoiding this inconvenience seems to be, to keep the sponge continually stirring in such a machine as is used for the roasting of coffee.

And from this circumstance, the iron vessel directed by the London college is preferable to the earthen one directed by that of Edinburgh. But the pounding in a glass or marble mortar, directed by the latter, is a necessary caution which the former college have omitted.

STYRACIS PURIFICATIO.

Lond.

The purification of storax.

Dissolve the storax in rectified spirit of wine, and strain the solution; afterwards reduce it to a proper thickness with a gentle heat.

STORAX was formerly directed to be purified by means of water; hence it was styled *styracis colatio*; but the method now adopted is much preferable, for the active parts of the storax totally dissolve in spirit of wine, the impurities alone being left. And as these active parts do not rise in distillation, the spirit may be again recovered in reducing it to a proper thickness.

FERRI LIMATURA, PURIFICATA.

Edinb.

Purified filings of iron.

Apply a magnet to a sieve placed upon filings of iron, so that the filings may be attracted upwards through the sieve.

FERRI RUBIGO, vulgo FERRI LIMATURA PREPARATA.

Rust of iron, commonly called shavings of iron, prepared.

Set purified filings of iron in a moist

place, that they may turn to rust, which is to be ground into an impalpable powder.

THE cleansing of iron filings by means of a magnet is very tedious, and does not answer so well as might be expected; for if they are rusty, they will not be attracted by it, or not sufficiently; nor will they by this means be entirely freed from brass, copper, or other metallic substances which may adhere to them. It appears from the experiments of Henckel, that if iron be mixed by fusion with even its own weight of any of the other metals, regulus of antimony alone excepted, the compound will be vigorously attracted by the loadstone.—The rust of iron is to be procured at a moderate rate from the dealers in iron, free from any impurities, except such as may be washed off by water.

The rust of iron is by some preferred as a medicine to the calces, or croci, made by a strong fire. Hoffman relates, that he has frequently given it with remarkable success in obstinate chlorotic cases, accompanied with excessive headachs and other violent symptoms; and that he usually joined with it pimpinella, arum root, and salt of tartar, with a little cinnamon and sugar. The dose is from four or five grains to twenty or thirty; some have gone as far as a dram: but all the preparations of this metal answer best in small doses, which should rather be often repeated than enlarged.

FERRI SQUAMÆ PURIFICATÆ.

Edinb.

Scales of iron purified.

Let the scales of iron, which may be had at the anvils of the workmen, be purified by the magnet; for the magnet only attracts the

smaller and purer parts, leaving the more thick and impure behind.

THIS is, perhaps, of all the forms the most eligible for obtaining the pure metal in such a divided state as to render it easily acted upon by different menstrua; and the mode of purification here proposed is not only very effectual, but also very easily put into practice.

MUCAGINUM EXTRAC- TIO.

Gen.

The extraction of mucilage.

Boil the gums or mucilaginous seeds in a sufficient quantity of water, till it becomes viscid, nearly resembling the white of an egg; and then strain it by pressure through a linen cloth.

By this means vegetable mucilage may be easily obtained from many different substances in its pure state. And although this process is not directed in our pharmacopœias, yet we think that it might with advantage be adopted.

C H A P. II.

C O N S E R V Æ.

C O N S E R V E S.

CONSERVES are compositions of recent vegetable matters and sugar beaten together into an uniform mass.

This management is introduced for preserving certain simples, undried, in an agreeable form, with as little alteration as possible in their native virtues; and to some subjects it is very advantageously applied. Vegetables, whose virtues are lost or destroyed in drying, may in this form be kept uninjured for a length of time; for, by carefully securing the mouth of the containing vessel, the alteration, as well as dissipation, of their active principles, is generally prevented; and the sugar preserves them from the corruption which juicy vegetables would otherwise undergo.

There are, however, sundry vegetables whose virtues are impaired by this treatment. Mucilaginous substances, by long lying with sugar, become less glutinous; and astringents sensibly become softer upon the palate. Many of the fragrant flowers are of so tender and delicate a texture, as almost entirely to lose their peculiar qualities on being beaten or bruised.

In general, it is obvious, that in this form, on account of the large admixture of sugar, only substances of considerable activity can be taken to advantage as medicines. And, indeed, conserves are at present considered chiefly as auxiliaries to medicines of great efficacy, or as intermediums for joining them together. They are very convenient
for

for reducing into boluses or pills the more ponderous powders, as mercurius dulcis, the calces of iron, and other mineral preparations; which, with liquid or less consistent matters, as syraps, will not cohere.

The shops were formerly encumbered with many conserves altogether insignificant; the few now retained have in general either an agreeable flavour to recommend them, or are capable of answering some useful purposes as medicines. Their common dose is the bulk of a nutmeg, or as much as can be taken up at once or twice upon the point of a knife. There is in general no great danger of exceeding in this particular.

CONSERVÆ Lond.

LUJULÆ,

Of wood sorrel;

ABSINTHII MARITIMI,

Of sea wormwood;

ROSÆ RUBRÆ,

Of the red rose;

CORTICIS EXTERIORIS

AURANTII HISPALENSIS;

Of the outer rind of the Seville orange.

Pluck the leaves from the stalks, the unblown petals from the cups, taking off the heels. Take off the outer rind of the oranges by a grater; then beat each of them with a wooden pestle in a marble mortar, first by themselves, afterwards with three times their weight of double refined sugar, until they be mixed.

CONSERVÆ Edinb.

MENTHÆ SATIVÆ FOLI-
LIIORUM RECENTIUM,

Of the fresh leaves of mint;

ROSARUM RUBRARUM

NONDUM EXPLICATA-

TARUM;

Of red roses not blown.

AURANTIORUM HIS-
PALENSIUM CORTI-
CIS EXTERIORIS RE-
CENTIS RADULA AB-
RASI,

Of the outer rind of Seville oranges rasped off by a grater.

These are directed to be prepared with triple their weight of sugar in the same manner as the conserves of the London college. The sugar should be pounded by itself, and passed through a sieve before it be mixed with the vegetable mass, for without this it cannot be properly incorporated. Rose buds, and some other vegetables, are usually prepared for mixing with sugar by a small wooden mill contrived for that purpose.

IN the same manner conserves may be prepared from many other vegetables. But besides the conserves for which general directions are given, there are others, for which, either on account of the particular mode of preparation, or of the proportion, our pharmacopœias have thought it necessary to give particular directions. But before taking notice of these, it is necessary to mention the medical properties of the conserves above enumerated

CONSERVA foliorum LUJULÆ.

Lond.

Conserve of the leaves of wood-sorrel.

THIS is a very elegant and grateful conserve; in taste it is lightly acidulous, with a peculiar flavour, which some compare to that of green-tea. It is taken occasionally for quenching thirst, and cooling the mouth and fauces, in distempers where the heat of the body is much increased.

CONSERVA summitatum ABSINTHII maritimi, *Lond.*

Conserve of the tops of sea worm-wood.

THE conserve of wormwood has been celebrated in dropsies: Matthiolus relates, that several persons were cured by it of that distemper without the assistance of any other medicine. Where the disorder indeed proceeds from a simple laxity or flaccidity of the solids, the continued use of this medicine may be of some service; as it appears to be a not inelegant mild corroborant. It is directed to be given in the dose of half an ounce about three hours before meals.

CONSERVA florum ROSARUM
rubrarum immaturarum,
Lond. Edinb.

Conserve of the buds of red roses.

THIS is a very agreeable and useful conserve. A dram or two dissolved in warm milk, are frequently given as a light restraining, in weakness of the stomach, and likewise in coughs and phthisical complaints. In the German ephemerides, examples are related of very dangerous phthisis cured by the continued use of this medicine: In one of these cases, twenty pounds of the conserve were taken in the space of a month; and in another, upwards of thirty. Riverius mentions several other instances of this kind. There is, however, much room for fallacy in such observations; as phthisis has not at all times been accurately distinguished from obstinate catarrhs, and some other affections: the antiseptic property of the sugar may perhaps have some share in the effect.

CONSERVA flavedinis CORTI-
CUM AURANTIORUM
Hispalensium,
Lond. Edinb.

Conserve of the yellow rind of Seville orange-peel.

THIS conserve is a very elegant one, containing all the virtues of the peel in a form sufficiently agreeable, both with regard to the dose and the conveniency of taking. It is a pleasant warm stomachic; and with this intention is frequently made use of.

CONSERVA foliorum MEN-
THÆ vulgaris.
Edinb.

Conserve of the leaves of spearmint.

THE conserve of mint retains the taste and virtues of the herb. It is given in weakness of the stomach and retchings to vomit; and not unfrequently does service in some cases of this kind, where the warmer and more active preparations of mint would be less proper.

CONSERVA ARI.
Conserve of arum.

Take of

The fresh root of arum bruised,
half a pound;
Double refined sugar, a pound
and a half;
Beat them together in a mortar.

THE root of arum, in its recent state, is a substance of great activity; but this activity is almost entirely lost on drying. Hence the compound powder which had formerly a place in our pharmacopoeias is now rejected. And as neither water nor spirit extract its activity, this conserve is perhaps the best form in which it can be preserved in our shops. It may be given to adults in doses of a dram

CONSERVA CYNOSBATI.

Lond.

Conserve of the hip.

Take of

Pulp of ripe hips one pound ;

Double refined sugar powdered,
twenty ounces.

Mix them into a conserve.

THE conserve of hips is of some esteem as a soft cooling restringent ; three or four drams or more are given at a time, in bilious fluxes, sharpness of urine, and hot indispositions of the stomach : A good deal of care is requisite on the part of the apothecary in making this conserve : the pulp is apt to carry with it some of the prickly fibres, with which the inside of the fruit is lined ; if these be retained in the conserve, they will irritate the stomach, so as to occasion vomiting.

CONSERVA PRUNI SYLVESTRIS.

Lond. Edin.

Conserve of the sloe.

Put the sloes in water upon the fire that they may soften, taking care that they be not broken ; then, the sloes being taken out of the water, press out the pulp, and mix it with three times its weight of double-refined sugar into a conserve.

THIS preparation is a gentle astringent, and may be given as such in the dose of two or three drams. The degree of its astringency will vary according to the maturity of the sloes, and the length of time for which the conserve has been kept.

CONSERVA SCILLÆ.

Conserve of squill.

Take of

Fresh squills, one ounce :

Double-refined sugar five ounces.

Beat them together in a mortar,
into a conserve.

THIS conserve is directed to be prepared in a small quantity, to guard against its variation in strength. It may be given, to adults, from half a dram to two scruples, especially when fresh.

But the conserve of squills is a more uncertain and less agreeable mode of exhibiting this article, than the powder of the dried root, particularly when made into pills, or given in the form of bolus with any other conserve.

CONSERVA FOLIORUM CHERVILII.

Succ.

Conserve of chervil.

Take of

Fresh leaves of chervil,

Double-refined sugar, each equal
parts.Beat them together into a con-
serve.

CHERVIL has by some been extolled as an useful diuretic ; and this is perhaps one of the most pleasant forms under which it can be exhibited.

CONSERVA MILLEPEDARUM.

Brun.

Conserve of millepedes.

Take of

Live slaters, one pound ;

Double-refined sugar, two pounds
and an half.Beat them together into a con-
serve.

IF the millepedes possess those virtues which some have alleged, this is perhaps one of the best forms under which they can be exhibited. And by children, to whom they
are

are frequently prescribed, it may be easily taken, when other forms cannot be introduced.

CONSERVA ROSARUM VITRIOLATA. *Brun.*

Vitriolated conserve of roses.

To each pound of the conserve of roses add two drams of the diluted vitriolic acid.

THIS may be in some cases an useful means of increasing somewhat the astringency of the conserve of roses: But for these purposes for which the vitriolic acid is in general employed, the quantity that can thus be introduced is too inconsiderable to be of much service.

C H A P. III.

S U C C I.

J U I C E S.

JUICES are obtained from the succulent parts of plants, by including them, after being properly cut, bruised, &c. in a hair bag, and pressing them, betwixt wooden checks, in the common screw-press, as long as any liquor drops from them.

The harder fruits require to be previously well beaten or ground; but herbs are to be only moderately bruised, for if these are over bruised, a large quantity of the herbaceous matter will be forced out along with the juice. Hempen or woollen bags are apt to communicate a disagreeable flavour; the threads of these likewise swell in proportion as they imbibe moisture, so as in a great measure to prevent the free percolation of the juice.

The fluids thus extracted from succulent fruits, both of the acid and sweet kind, from most of the acrid herbs, as scurvy-grass and water-creffes, from the acid herbs, as sorrel and wood-sorrel, from the a-

perient lactescent plants, as dandelion and hawkweed, and from sundry other vegetables, contain great part of the peculiar taste and virtues of the respective subjects. The juices, on the other hand, extracted from most of the aromatic herbs, as those of mint and the fragrant Turkey balm, commonly called *balm of Gilead*, have scarcely any thing of the flavour of the plants, and seem to differ little from decoctions of them made in water boiled till the volatile odorous parts have been dissipated. Many of the odoriferous flowers, as the lily, violet, hyacinth, not only impart nothing of their fragrance to their juice, but have it totally destroyed by the previous bruising. From want of sufficient attention to these particulars, practitioners have been frequently deceived in the effects of preparations of this class: juice of mint has often been prescribed as a stomachic, tho' it wants those qualities

ties by which mint itself and its other preparations operate.

The juices thus forcibly pressed out from plants, differ from those which flow spontaneously, or from incisions; these last consisting chiefly of such fluids as are not diffused through the whole substance of the vegetable subject, but elaborated in distinct vessels, or secreted into particular receptacles. From poppy heads, slightly wounded, there issues a thick milky liquor, which dries by a moderate warmth into opium; whilst the juice obtained from them by pressure is of a dark-green colour, and far weaker virtue.

Juices newly expressed are generally thick, viscid, and very impure: By colature, a quantity of gross matter is separated, the juice becomes thinner, limpid, and better fitted for medicinal purposes, tho' as yet not entirely pure: on standing, it becomes again turbid, and apt to run into a fermentative or putrefactive state. Clarification with whites of eggs renders the juices more perfectly fine; but there are few that will bear this treatment without a manifest injury to their flavour, taste, and virtue.

The most effectual method of purifying and preserving these liquors, is to let the strained juices stand in a cool place till they have deposited their grosser feces, and then gently pass them several times thro' a fine strainer till perfectly clear; when about one-fortieth part their weight of good spirit of wine may be added, and the whole suffered to stand as before: a fresh sediment will now be deposited, from which the liquor is to be poured off, strained again, and put into small bottles which have been washed with spirit and dried. A little oil is to be poured on the surface, so as very

nearly to fill the bottles, and the mouths closed with leather, paper, or stopped with straw, as the flasks in which florence wine is brought to us: this serves to keep out dust, and suffers the air, which in process of time arises from all vegetable liquors, to escape; which air would otherwise endanger the bursting of the glasses; or, being imbibed afresh, render their contents vapid and foul. The bottles are to be kept on the bottom of a good cellar or vault, placed up to the necks in sand. By this method some juices may be preserved for a year or two; and others for a much longer time.

It has already been observed, that there are great differences in juices, in regard to their being accompanied in the expression with the virtues of the subjects. There are equal differences in regard to their preserving those virtues, and this independently of the volatility of the active matter, or its disposition to exhale. Even the volatile virtue of scurvy-grass may by the above method be preserved almost entire in its juice for a considerable time; while the active parts of the juice of the wild cucumber quickly separate and settle to the bottom, leaving the fluid part inert. Juices of arum root, iris root, bryony root, and sundry other vegetables, throw off in like manner their medicinal parts to the bottom.

SUCCUS COCHLEARIÆ COMPOSITUS.

Lond.

Compound juice of scurvy-grass.

Take of

Juice of garden scurvy-grass two pints;

Brook lime and

Water cresses, of each one pint;

Seville oranges twenty ounces by measure.

Mix

Mix them ; and, after the feces have subsided, pour off the liquor, or strain it.

SUCCI AD SCORBUTICOS.

Edinb.

Take of

Juice of garden scurvy-grass,
Water-creffes, both expressed
from the fresh herbs ;
Seville oranges, of each two
pounds ;
Spirituos nutmeg-water ; half a
pound.

Mix them, and let them stand till the feces have subsided, then pour out the clear liquor.

By this formula the Edinburgh college have rejected the brooklime and the sugar of their former editions. The sugar was certainly a very improper addition ; for tho' it may preserve dry vegetable matters, yet when added to juices largely impregnated with watery and mucilaginous matter, it would no doubt furnish that very principle most favourable to the production of the vinous fermentation. To the compound horse-radish water they have substituted the spirituos water of nutmegs : Besides that, this water has the same property of preserving the juices from fermentation ; it is also much more agreeable to the palate, and will make the juices sit easier on the stomach.

The London college have retained nearly their former formula, giving it only a more proper name.

BOTH these compositions are of considerable use for the purposes expressed in the title : the orange juice is an excellent assistant to the scurvy-grass and other acrid antiscorbutics ; which, when thus mixed, have been found from experience to produce much better ef-

fects than when employed by themselves. These juices may be taken from an ounce or two to a quarter of a pint, two or three times a-day : they generally increase the urinary secretion, and sometimes introduce a laxative habit. Preserved with the cautions abovementioned, they will keep good for a considerable time ; though, whatever care be taken, they are found to answer better when fresh ; and from the difficulty of preserving them so, they have of late been very much laid aside, especially since we have been provided with more convenient and useful remedies.

INSPISSATED JUICES.

When vegetable juices, or watery or spirituos decoctions or infusions, are exposed to a continued heat ; the fluid gradually evaporating, carries off with it such volatile matters as it was impregnated with, and leaves the more fixed united together into one mass. The mass which remains from the evaporation of the expressed juice of a plant is called *inspissated juice* ; from watery decoctions or infusions, an *extract* ; from spirituos tinctures, a *resin*, or *essential extract*. The term *extract* is frequently used also as a general appellation of all the three kinds. Inspissated juices and watery decoctions, particularly the former, when evaporated no further than to the consistence of oil or honey, are called *rob* or *sapa* ; and spirituos tinctures, reduced to a like consistence, are called *balsam*.

What relates to the expression of juices, has already been delivered with the most effectual means of preserving them in their liquid state, and a general account of what substances do or do not give out their virtues with their juices. In the inspissation

spissation of juices there is further to be considered the volatility or fixity of their medicinal parts: if a plant loses its virtue, or part of its virtue, in being dried, it is obvious that the juice must lose as much in being inspissated to dryness; how gentle soever the heat be with which the inspissation is performed, It is likewise to be observed, that the medicinal part of some juices are kept in a state of perfect solution by the watery fluid, so as to be completely retained by it after the liquor has been made fine by settling, straining, or other means; while the medicinal parts of others, not dissoluble by watery menstrua, are only diffused thro' the liquor in the same manner as the feculencies are, and separate along with these on standing.

SUCCUS BACCÆ SAMBUCI
SPISSATUS.

Lond.

Inspissated juice of the elder-berry.

Take of

Expressed and depurated juice of elder-berries two pints.

Inspissate it in a water-bath, saturated with sea-salt.

SUCCUS SPISSATUS BACCARUM SAMBUCI, vulgo ROB SAMBUCI.

Edinb.

Inspissated juice, commonly called rob, of elder-berries.

Take of

Juice of ripe elder-berries, five pounds;

Purest sugar, one pound.

Evaporate with a gentle heat to the consistence of pretty thick honey.

THIS preparation, made with or without sugar, keeps well, and proves a medicine of considerable importance as an aperient, gene-

rally promoting the natural excretions by stool, urine, or sweat. The dose is from a dram or two to an ounce or more. A spoonful, diluted with water, is usually taken in common colds at bed time.

SUCCUS SPISSATUS ACONITI.

Edinb.

Inspissated juice of wolfsbane.

Bruise the fresh leaves of aconitum; and including them in a hempen bag, strongly compress them in a press, so that they may give out their juice: let the juice be forthwith exhaled, in open vessels exposed to the vapour of boiling water, to the consistence of pretty thick honey: An empyreuma is to be avoided by constantly stirring towards the end of the process.

After the matter has become cold, let it be put up in glazed earthen vessels, and moistened with rectified spirit of wine.

IN the same manner are prepared inspissated juices of Belladonna, or deadly nightshade, and Hyosciamus, or henbane.

IN these inspissated juices, the active parts of the plant are obtained in a concentrated state, and in a condition which admits of preparation for a considerable length of time. They furnish therefore a convenient form for exhibiting these articles which, in the practice of medicine, are perhaps more frequently used in the state of inspissated juice than any other. This is particularly the case with the hyosciamus, which may often be advantageously employed when opium is indicated, but disagrees with the patient. But the acconite and belladonna may in

in general, with greater advantage, be exhibited under the form of powder made from the dried leaves.

We have already, in the history of the materia medica, expressed our surprize, that the London college have given no place to these articles. And we cannot help thinking, that their pharmacopœias would be enriched by introducing not only the articles themselves, but likewise these preparations, especially as they are not unfrequently prescribed by British practitioners.

SUCCUS SPISSATUS CICUTÆ.

Edinb.

Inspissated juice of hemlock.

Having expressed the juice of the leaves and stalks of hemlock when flowering, in the same manner as directed for that of the aconitum, evaporate it to the consistence of pretty thin honey; when it is cooled, add of the powder of the dried leaves of the plant as much as to make it into a mass fit for forming pills. Care, however, is to be taken, that the evaporation proceed only to such length, that as much of the powder can be mixed with the inspissated juice as shall make up about a fifth part of the whole mass.

A preparation similar to this was published at Vienna by Dr Stoerk, who recommends it as an efficacious resolvent in many obstinate disorders, where the common remedies avail nothing. He observes, that small doses should always be begun with, as two grains, made into a pill twice a day; and that by gradually increasing the dose, it may be given to two, three, or even four drams a day, and continued in such quantities for several weeks: that it may be used with safety in infancy, old age, and pregnancy: that it nei-

ther accelerates nor disturbs the circulation; neither heats, nor cools, nor affects the animal functions: that it increases the secretions, and renders the mouth moist; seldom purges; very rarely vomits; sometimes augments perspiration; often produces a copious discharge of viscid urine; but in many patients does not increase any of the sensible evacuations; that it removes obstructions and their consequences; relieves rheumatic pains, tho' of long continuance; dissolves scirrhous tumours, both internal and external; and cures dropsies and consumptions proceeding from scirrhosities: that it often dissolves cataracts, or stops their progress, and has sometimes removed the gutta serena: that inveterate cutaneous eruptions, scald heads, malignant ulcers, cancers, the malignant fluor albus and gonorrhœa of long standing, obstinate remains of the venereal disease, and caries of the bones, generally yield to it: that for the most part it is necessary to continue this medicine for a considerable time before the cure be effected, or much benefit perceived from it: that in some cases it failed of giving any relief; that he met with some persons who could not bear its effects: and that consequently there must be some latent difference in the habit, the diagnostic signs of which are at present unknown; that though it is by no means infallible any more than other medicine, yet the great number of deplorable cases that have been happily cured by it, is sufficient to recommend it to further trials. The efficacy of this medicine is confirmed by many eminent practitioners abroad; though the trials hitherto made of it in this country have not been attended with much success. Somewhat, perhaps, may depend upon the time of the plants being gathered, and the man-

manner of the preparation of the extract. Dr Stoerk himself takes notice of some mistakes committed in this respect: some have left the herb in a heap for several days, whence part of it withered, part rotted, and the juice became thick and mucilaginous: others have taken a very large quantity of the juice, and boiled it down in copper vessels with a great heat; by which means a strong fetor was diffused to a considerable distance, and the most efficacious parts dissipated: others, with officious care, have clarified the juice, and thus obtained a black tenacious extract, retaining but a small degree of the specific smell of the plant. The extract, duly prepared, according to the above prescription is of a greenish brown colour, and a very disagreeable smell, like that of mice. But though there be reason to believe that much of the extract used here had been ill prepared, we can by no means admit that its general inefficacy was owing to this cause; for though there are not many instances of its discovering any valuable medicinal powders, there are several of its having activity enough, even in small doses, to produce alarming symptoms.

Modern practice, however, seems to hold a middle place; being neither influenced by the extravagant encomiums of Dr Stoerk, nor frightened by the wary suspicions of Dr Lewis. The inspissated juice of the hemlock is accordingly given with freedom in a great variety of

complaints, without our experiencing the wonderful effects ascribed to it by the former, or the baneful consequences dreaded by the latter. Like other preparations of this valuable herb, it is no doubt a very useful addition to our pharmacopœia; nor does its use seem to be more hazardous than that of opium and some other narcotics.

The London college direct the inspissated juices of cicuta to be prepared in the same manner as that of the elder-berry, and without the addition of any of the powder. This is the most pure extract, and the powder may easily be occasionally added. They direct the cicuta to be collected as soon as the flowers appear: And at that time the leaves are most fully impregnated with their active powers.

SUCCUS SPISSATUS RIBIS
NIGRI.

Lond.

Inspissated juice of black currants.

SUCCUS SPISSATUS LIMO-
NIS.

Lond.

Inspissated juice of lemons.

THESE two also the London college direct to be prepared in the same manner with the elder-berry juice. And under this form the agreeable and useful acid of these vegetables, in a concentrated state, may be preserved for a considerable length of time.

C H A P. IV.

E X T R A C T A E T R E S I N Æ.

EXTRACTS AND RESINS.

Observations on Extracts with Water.

THESE extracts are prepared by boiling the subject in water, and evaporating the strained decoction to a thick consistence.

This process affords us some of the more active parts of the plants, free from the useless indissoluble earthy matter, which makes the largest share of their bulk. There is a great difference in vegetable substances, with regard to their fitness for this operation; some yielding to it all their virtues, and others scarce any. Those parts in which the sweet, glutinous, emollient, cooling, bitter, austere, astringent virtues reside, are for the most part totally extracted by the boiling water, and remain almost entire upon evaporating it: whilst those which contain the peculiar odour,

flavour, and aromatic quality, are either not extracted at all, or exhale along with the menstruum. Thus gentian root, which is almost simply bitter, yields an extract possessing in a small volume the whole taste and virtues of the root. Wormwood, which has a degree of warmth and strong flavour joined to the bitter, loses the two first in the evaporation, and gives an extract not greatly different from the foregoing: the aromatic quality of cinnamon is dissipated by this treatment, its astringency remaining; whilst an extract made from the flowers of lavender and rosemary, discovers nothing either of the taste, smell, or virtues of the flowers.

General Rules for making Extracts with Water.

1. It is indifferent, with regard to the medicine, whether the subject be used fresh or dry; since nothing that can be preserved in this process will be lost by drying. With regard to the facility of extraction, there is a very considerable difference; vegetables in general

giving out their virtues more readily when moderately dried than when fresh.

2. Very compact dry substances should be reduced into exceeding small parts, previous to the affusion of the menstruum.

3. The quantity of water ought

to be no greater than is necessary for extracting the virtues of the subject. A difference herein will sometimes occasion a variation in the quality of the product: the larger the quantity of liquor, the longer the fire will be requisite for evaporating it, and consequently the more of the volatile parts of the subject will be dissipated. A long-continued heat likewise makes a considerable alteration in the matter which is not volatile. Sweet substances, by long boiling with water, become nauseous; and the drastic purgatives lose their virulence, though without any remarkable separation of their parts.

4. The decoctions are to be separated by colature; and afterwards suffered to stand for a day or two, when a considerable quantity of sediment is usually found at the bottom. If the liquor poured off clear be boiled down a little, and afterwards suffered to cool again, it will deposite a fresh sediment, from which it may be decanted before you proceed to finish the evaporation. The decoctions of very resinous substances do not require this treatment, and are rather injured

by it; the resin subsiding along with the inactive dregs.

5. The evaporation is most conveniently performed in broad shallow vessels; the larger the surface of the liquor, the sooner will the aqueous parts exhale: This effect may likewise be promoted by agitation.

6. When the matter begins to grow thick, great care is necessary to prevent its burning. This accident, almost unavoidable if the quantity be large, and the fire applied as usual under the evaporating pan, may be effectually secured against, by carrying on the inspissation after the common manner, no farther than to the consistence of a syrup, when the matter is to be poured into shallow tin or earthen pans; and placed in an oven, with its door open, moderately heated; which acting uniformly on every part of the liquid, will soon reduce it to any degree of consistence required. This may likewise be done, and more securely, in *balneo-mariæ*, by setting the evaporating vessel in boiling water, but the evaporation is in this way very tedious.

Observations on Extracts with Rectified Spirit.

RECTIFIED spirit of wine dissolves the essential oils and resins of vegetables, and does not readily carry off the oil in its exhalation; the heat sufficient to exhale pure spirit being much less than that in which water evaporates to any considerable degree, or most essential oils distil. Hence, a resinous or spirituous extract of wormwood, contrary to that made with water, contains the warmth and flavour, as well as bitterness of the herb; one made from cinnamon possesses its aromatic virtue, as well as its astringency; and

one from lavender and rosemary flowers, retains great part of their flavour and virtues; the volatile parts, which are carried off by water in its evaporation being left behind by the spirit.

The spirit employed for this purpose should be perfectly free from any ill flavour, which would be communicated in part to the preparation; and from any admixture of phlegm or water, which would not only vary its dissolving power, but likewise, evaporating towards the end of the inspissation, would promote

mote the dissipation of the volatile parts of the subject. Hence, also, the subject itself ought always to be dry: those substances which lose their virtue by drying, lose it equally on being submitted to this treatment with the purest spirit.

The inspissation should be performed from the beginning, in the gentle heat of a warm bath. It is not needful to suffer the spirit to evaporate in the air: greatest part of it may be recovered by collecting the vapour in the common distilling vessels. If the distilled spirit be found to have brought over any flavour from the subject, it may be advantageously reserved for the same purposes again.

It is observable, that tho' rectified spirit be the proper menstruum of the pure volatile oils, and of the grosser resinous matter of vegetables, and water of the mucilaginous and saline; yet these principles are, in almost all plants, so intimately combined together, that whichever of these liquors is applied at first, it will take up a portion of what is directly soluble on-

ly in the other. Hence sundry vegetables, extremely resinous, and whose virtues consist chiefly in their resin, afford nevertheless very useful extracts with water, though not equal to those which may be obtained by a prudent application of spirit. Hence, also, the extracts made from most vegetables by pure spirit, are not mere resins; a part of the gummy matter, if the subject contained any such, is taken up along with the resin, an admixture of great advantage to it in a medicinal view. The spirituous extracts of several vegetable substances, as mint leaves, rhubarb, saffron, dissolve in water as well as in spirit.

Pure resins are prepared by mixing with spirituous tincture of very resinous vegetables, a quantity of water. The resin, incapable of remaining dissolved in the watery liquor, separates and falls to the bottom; leaving in the menstruum such other principles of the plant as the spirit might have extracted at first along with it.

Observations on Extracts with Spirit and Water.

THERE are sundry vegetables, particularly those of a resinous nature, which are treated, to better advantage with a mixture of water and spirit, than with either of them singly. The virtues of resinous woods, barks, and roots may indeed be in a great part extracted by long boiling in fresh portions of water; but at the same time they suffer a considerable injury from the continued heat necessary for the extraction, and for the subsequent evaporation of so large a quantity of the fluid. Rectified spirit of wine is not liable to this inconvenience; but the extracts obtained by it from

the substances here intended, being almost purely resinous, are less adapted to general use than those in which the resin is divided by an admixture of the gummy matter, of which water is the direct menstruum.

There are two ways of obtaining these compounds, or gummy-resinous extracts: one, by using proof-spirit, that is a mixture of about equal part of spirit and water, for the menstruum; the other, by digesting the subject first in pure spirit and then in water, and afterwards uniting into one mass the parts which the two menstrua have separately

separately extracted. In some cases, where a sufficiency of gummy matter is wanting in the subject, it may be artificially supplied, by inspissating the spirituous tincture to the consistence of a balsam, then thoroughly mixing with it a thick so-

lution of any simple gum, as mucilage of gum arabic, and exsiccating the compound with a gentle heat. By this method are obtained elegant gummy resins, extemporaneously miscible with water into milky liquors.

Observations on Extracts by Long Digestion.

It has been observed, that the virtues of vegetable decoctions are altered by long boiling. Decoctions or infusions of drastic vegetables, by long continued boiling or digestion, lose more and more of their virulence; and at the same time deposit more and more of a gross sediment, resulting probably from the decomposition of their active parts. On this foundation it has been attempted to obtain safe and mild preparations from sundry virulent drugs; and some of the chemists have strongly recommended the process,

tho' without specifying, or giving any intimation of, the continuance of boiling requisite for producing the due mildness in different subjects. M. Baumé, in his *Elemens de Pharmacie*, lately published, has given a particular account of an extract of opium prepared on this principle; of which extract, as it is alleged to be very useful in practice, it may not be improper to give a short description: And this we shall accordingly subjoin to our account of the opium purification of the London college.

Observations on particular Extracts.

EXTRACTUM CHAMÆMELI.

Extract of chamomile.

CACUMINIS GENISTÆ.

Broom tops.

GEN TIANÆ.

Gentian.

GLYCYRHIZÆ.

Liquorice.

HELLEBORI NIGRI.

Black hellebore.

RUTÆ.

Of Rue.

SABINÆ.

Savin.

Lond.

Boil the article in distilled water, press out the decoction, strain it, and set it apart that the feces may subside; then boil it again in a water bath saturated with sea salt to a consistence proper for making pills.

THE same kind of bath is to be

used in the preparation of all the extracts, that the evaporation may be properly performed.

EXTRACTUM GENTIANÆ.

Edinb.

Extract of gentian.

Take of

Gentian root, as much as you please.

Having cut and bruised it, pour upon it four times its quantity of water. Boil to the consumption of one half of the liquor; and strongly expressing it, strain. Evaporate the decoction to the consistence of pretty thick honey, in vessels exposed to the vapour of hot water.

IN preparing this and every other extract, it is necessary to keep up a constant stirring towards the end of the process, in order to prevent an empyreuma, and that the extract

may be of an uniform consistence, and free of clots.

In the same manner are prepared

Extract of the

roots of black hellebore ;
leaves of the pulsatilla nigricans ;
leaves of rue ;
heads of white poppies ;
seeds of hemlock, whilst not perfectly ripe.

ALL the above extracts contain the virtues of the vegetables in a state of tolerable perfection.

The extract of chamomile loses in its formation the specific flavour of the plant ; but it is said to furnish a bitter remarkably antiseptic, and to be given with advantage in different stomach ailments to the extent of a scruple or two, either by itself, or in conjunction with other remedies. The extract of broom tops is chiefly employed in hydropic cases ; and when taken to the quantity of a dram or so, it is said to operate as a powerful diuretic.

The mode of preparing these extracts directed by the London and Edinburgh colleges is not essentially different : But some advantage will arise from employing the distilled water directed by the former ; and the directions given by the latter with regard to the quantity of water to be used, and the degree of boiling to be employed before expression, are not without some use.

The extract is the only preparation of the pulsatilla nigricans, and it seems sufficiently well suited to be brought into this form. The extract of the white poppy-heads is not perhaps superior in any respect to opium ; but to those who may think otherwise, it is convenient to

preserve them in this form for preparing the syrup occasionally. The seeds of hemlock have by some been thought stronger, or at least that they produce giddiness sooner, than the leaves ; but this extract has not hitherto come into general use.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

- Lond.

Compound extract of coloquintida.

Take of

Pith of coloquintida, cut small, six drams ;
Socotorine aloes, powdered, an ounce and a half ;
Scammony, powdered, half an ounce ;
Smaller cardamon seeds, husked and powdered, one dram ;
Proof spirit, one pint.

Digest the coloquintida in the spirit, with a gentle heat, during four days. To the expressed tincture add the aloes and scammony : when these are dissolved, draw off the spirit, so that what remains may be of a consistence proper for making pills, adding the seeds towards the end of the process.

THIS composition answers very effectually as a cathartic, so as to be relied on in cases where the patient's life depends on that effect taking place : the dose is from fifteen grains to half a dram. The proof-spirit is a very proper menstruum for the purgative materials ; dissolving nearly the whole substance of the aloes and scammony, except the impurities : and extracting from the colocynth, not only the irritating resin, but great part of the gummy matter. In our former pharmacopœias three spices were employed in this composition, cinnamon, mace, and cloves : the cardamom seeds, now introduced, are preferable, on account of their aroma-

tic matter being of a less volatile nature; though a considerable part of the flavour, even of these, is dissipated during the evaporation of the phlegmatic part of the proof-spirit.

ELATERIUM.

Elaterium.

Slit ripe wild cucumbers, and pass the juice, very lightly pressed, through a very fine sieve, into a glass vessel; then set it by for some hours until the thicker part has subsided. Pour off the thinner part swimming at the top, and separate the rest by filtering: cover the thicker part, which remains after filtration, with a linen cloth, and dry it with a gentle heat.

WHAT happens in part in preparing the extract of hemlock, happens in this preparation completely, viz. the spontaneous separation of the medicinal matter of the juice on standing for a little time: and the case is the same with the juices of several other vegetables, as those of arum root, iris root, and bryony root. Preparations of this kind have been commonly called *faculae*. The filtration above directed, for draining off such part of the watery fluid as cannot be separated by decantation, is not the common filtration thro' paper, for this does not succeed here: The grosser parts of the juice, falling to the bottom, form a viscid cake upon the paper, which the liquid cannot pass thro'. The separation is to be attempted in another manner, so as to drain the fluid from the top: This is effected by placing one end of some moistened strips of woollen cloth, skains of cotton, or the like, in the juice, and laying the other end over the edge of the vessel, so as to hang down lower than the surface of the liquor:

by this management the separation succeeds in perfection.

Elaterium is a very violent hydragogue cathartic. In general, previous to its operation, it excites considerable sickness at stomach, and not unfrequently it produces severe vomiting. Hence it is seldom employed till other remedies have been tried in vain. But in some instances of stagnant ascites it will produce a complete evacuation of water where other cathartics have had no effect. Two or three grains are in general a sufficient dose. And perhaps the best mode of exhibiting it is by giving it only to the extent of half a grain at a time, and repeating that dose every hour till it begins to operate.

EXTRACTUM LIGNI CAMPECHENSIS.

Lond.

Extract of Logwood.

Take of

Shavings of logwood, one pound.
Boil it four times, or oftener, in a gallon of distilled water, to one half; then, all the liquors being mixed and strained, boil them down to a proper consistence.

THE extract of logwood has been used for a considerable time in some of our hospitals. It has an agreeable sweet taste, with some degree of astringency; and hence becomes serviceable in diarrhoeas, for moderately constringing the intestines and orifices of the smaller vessels: It may be given from a scruple to half a dram, and repeated five or six times a-day with advantage. During the use of this medicine, the stools are frequently tinged red by it, which has occasioned some to be alarmed as if the colour proceeded from blood: the practitioner therefore ought to caution the patient against any surprise of this kind.

The active parts of the logwood are difficultly extracted by means of water alone : Hence the Edinburgh college call in the acid of spirit of wine, directing this extract to be prepared in the same manner as that of jalap, afterwards to be mentioned. And of the two modes, we are inclined to consider the latter as intitled to the preference.

EXTRACTUM CORTICIS PERUVIANI.

Lond.

Extract of Peruvian bark.

Take of

Peruvian bark, coarsely powdered, one pound :

Distilled water, twelve pints.

Boil it for one or two hours, and pour off the liquor, which, while hot, will be red and pellucid ; but, as it grows cold, will become yellow and turbid. The same quantity of water being again poured on, boil the bark as before, and repeat this boiling until the liquor, being cold, remains clear. Then reduce all these liquors, mixed together and strained, to a proper thickness, by evaporation.

This extract must be prepared under two forms ; one *soft*, and fit for making pills ; the other *hard*, that it may be reducible to a powder.

EXTRACTUM CORTICIS PERUVIANI CUM RESINA.

Lond.

Extract of Peruvian bark with the resin.

Take of

Peruvian bark, reduced to coarse powder, one pound ;

Rectified spirit of wine, four pints.

Digest it for four days, and pour off the tincture ; boil the residuum in ten pints of distilled water to two ;

then strain the tincture and decoction separately, evaporating the water from the decoction, and distilling off the spirit from the tincture, until each begins to be thickened. Lastly, mix the resinous with the aqueous extract, and make the mass fit for forming into pills.

EXTRACTUM CORTICIS PERUVIANI.

Edind.

Extract of Peruvian bark.

THE Edinburgh college, who have not given a place to any pure watery extracts of the bark, direct their extracts of this medicine to be prepared in the same manner as their extract of jalap, that is, almost precisely in the same manner as the extract with resin of the London college. It is, however, we think with propriety, that the London college have given a place to both extracts ; for each is not without its use.

Peruvian bark is a resinous drug : the resin melts out by the heat, but is not perfectly dissolved by the water ; hence, in cooling, it separates, renders the liquor turbid, and in part falls to the bottom, as appears manifestly upon examining the sediment by spirit of wine. This extract might be made to better advantage by the assistance of spirit of wine, after the same manner as that of jalap ; and this method the Edinburgh college have directed. But all the spirits which can be expected to be employed for this process among us, are accompanied with some degree of a bad flavour : this adheres most strongly to the phlegmatic part of the spirit, which evaporating last, must communicate this ill flavour to the extract ; a circumstance of very great consequence, as this medicine is designed for those whose stomachs are too weak to bear a due quantity

of bark in substance. Ten or twelve grains of the hard extract are reckoned equivalent to about half a dram of the bark itself.

In the Peruvian bark, however, we may readily distinguish two different kinds of tastes, an astringent and a bitter one; the former seems to reside principally in the resinous matter, and the latter chiefly in the gummy. The watery extract is moderately strong in point of bitterness; but of the astringency it has only a small degree. The pure resin on the other hand, is strong in astringency, and weak in bitterness. Both qualities are united in the extract with resin; which appears to be the best preparation of this kind that can be obtained from this valuable drug.

EXTRACTUM CASCARIL- LÆ.

Lond.

Extract of cascarilla.

THIS extract, which is now for the first time introduced into the pharmacopœia of the London college, and which has not yet obtained a place in that of Edinburgh, is directed to be prepared by spirit and water in the same manner as the extract of bark with the resin. It possesses in a concentrated state the active constituent parts of the cascarilla, and has accordingly been already received into several of the best foreign pharmacopœias. In some of these, as the Pharmacopœia Sæcica, it is a mere watery extract: but in others, as the pharmacopœia Rossica, the aid both of spirits and water are conjoined; and this we consider as the best preparation.

EXTRACTUM JALAPPÆ.

Edinb.

Extract of jalap.

Take of

Jalap root, one pound;

Rectified spirit of wine, four pounds.

Digest four days, and pour out the tincture. Boil the remaining magma in ten pounds of water to two pounds; then strain the decoction, and evaporate it to the consistence of pretty thin honey. Draw off the spirit from the tincture by distillation till it becomes thick in like manner. Then mix the liquor thus inspissated; and keeping them constantly stirring, evaporate to a proper consistence.

THE extract of jalap is directed to be prepared by the London college in the same manner as their extract of Peruvian bark with the resin, which differ in nothing from the mode of preparation above directed.

This extract is an useful purgative; by some thought preferable to the crude root, as being of more uniform strength, and as the dose, by the rejection of the woody parts, is rendered smaller: the mean dose is twelve grains. If the spirituous tincture were inspissated by itself, it would afford a resinous mass, which, unless thoroughly divided by proper admixtures, occasions violent gripping, and yet does not prove sufficiently cathartic; the watery decoctions yield an extract which operates exceedingly weakly: both joined together, as in this preparation, compose an effectual and safe purge. This method of making extracts might be advantageously applied to several other resinous substances, as the dry woods, roots, barks, &c. A small quantity of spirit takes up the resin; and much less water than would otherwise be necessary,

cessary, extracts all the other soluble parts.

In a former edition of the Edinburgh Pharmacopœia, a little fixed alkaline salt was ordered to be added to the water in which the jalap is boiled after the action of spirit, on a supposition that this would enable the water to extract more from the root than it could by itself. But, so far as the quantity of the alkaline salt could go, it had the opposite effect, impeding the action of the water. The resinous parts of the jalap are dissolved by the spirit; and little other than the gummy matter remains for water to extract. Now, if pure gum arabic be put into water along with any alkaline salt, the salt will render the water incapable of dissolving the gum: if the gum be dissolved first, the addition of any alkaline salt will precipitate it.

EXTRACTUM SENNÆ.

Lond.

Extract of senna.

Take of

Senna, one pound;

Distilled water, one gallon;

Boil the senna in the distilled water, adding after its decoction a little rectified spirit of wine. Evaporate the strained liquor to a proper thickness.

THIS extract had no place in our former pharmacopœias, but may be considered as an useful addition.

The resinous parts of senna are in so small a proportion to the gummy, that they are readily boiled out together. The spirit may be added when the decoction is reduced to one half or to three pints.

This extract is given as a gentle purgative from ten grains to a scruple; or, in less quantity, as

an assitant to the milder laxatives.

OPIUM PURIFICATUM.

Purified opium.

Take of

Opium cut into small pieces, one pound;

Proof spirit of wine, twelve pints.

Digest the opium with a gentle heat, stirring now and then till it be dissolved, and filter through paper. Distil the tincture, so prepared, to a proper thickness.

PURIFIED opium must be kept in two forms; one *soft*, proper for forming into pills; the other *hard*, which may be reduced into powder.

Opium was formerly purified by means of water, and in this state it had the name in our pharmacopœia of *extractum thebaicum*. But proof spirit has been found by experiments to be the best menstruum for opium, having dissolved nine-twelfths of dried opium, which was much more than was taken up either by rectified spirit or water. Hence we thus obtained most entirely the constituents of opium free from any adhering impurities: But it has been imagined that some particular advantages arise from obtaining those parts which are extracted by water, especially after long digestion; and accordingly the following extract of opium has been recommended by Baumé.

Extract of opium prepared by long digestion.

Let five pounds of good opium, cut in pieces, be boiled about half an hour in twelve or fifteen quarts of water: strain the decoction, and boil the remainder once or twice in fresh water, that so much of the opium as is dissoluble in water may be got out.

Evaporate the strained decoctions to about six quarts; which being put into a tin cucurbit, placed in a sand-bath keep up such a fire as may make the liquor nearly boil, for three months together, if the fire is continued day and night, and for six months if it is intermitted in the night; filling up the vessel with water in proportion to the evaporation, and scraping the bottom with a wooden spatula from time to time, to get off the sediment which begins to precipitate after some days digestion. The sediment needs not to be taken out till the boiling is finished; at which time the liquor is to be strained when cold, and evaporated to an extract of a due consistence for being formed into pills.

THE author observes, that by keeping the liquor strongly boiling, the tedious process may be considerably expedited, and the six months digestion reduced to four months: that in the beginning of the digestion, a thick, viscous, oily matter rises to the top, and forms a tenacious skin as the liquor cools; this is supposed to be analagous to essential oils, though wanting their volatility: that the oil begins to disappear about the end of the first month, but still continues sensible till the end of the third, forming oily clouds as often as the liquor cools: that the resin at the same time settles to the bottom in cooling, preserving for a long while its resinous form, but by degrees becoming powdery, and incapable of being any longer softened, or made to cohere by the heat: that when the process is finished, part of it still continues a perfect resin, dissoluble in spirit of wine, and part an indissoluble powder: that when the digested liquor is evaporated to about a quart, and

set in the cold till next day, it yields a brownish earthy-saline matter, called the essential salt of opium, in figure nearly like the sedative salt obtained from borax, intermingled with small needled crystals. He gives an account of his having made this preparation six or seven times. The vessel he made use of was about two inches and a half diameter in the mouth; the quantity of water evaporated was about twenty-four ounces a-day, and from a hundred and thirty to a hundred and forty quarts during the whole digestion. Out of sixty-four ounces of opium, seventeen ounces remained undissolved in the water: the quantity of resinous matter precipitated during the digestion, was twelve ounces: from the liquor, evaporated to a quart, he obtained a dram of essential salt, and might, he says, have separated more; the liquor being then further evaporated to a pilular consistence, the weight of the extract was thirty-one ounces.

It is supposed that the narcotic virtue of opium resides in the oily and resinous parts: and that the gummy extract prepared by the above process is endowed with the calming, sedative, or anodyne powers of the opium, divested of the narcotic quality as it is of the smell, and no longer productive of the disorders which opium itself, and the other preparations of it, frequently occasion. A case is mentioned, from which the innocence and mildness of the medicine are apparent; fifty grains having been taken in a day, and found to agree well, where the common opiate preparations could not be borne. But what share it possesses of the proper virtues of opium is not so clear; for the cure of convulsive motions of the stomach and vomitings, which at length happened after the extract had been continued daily in the above doses for

se-

several years (*plusieurs années*) cannot perhaps be ascribed fairly to the medicine.

If the theory of the process, and of the alteration produced by it in the opium, be just, a preparation equivalent to the above may be obtained in a much shorter time. If the intention is to separate the resinous and oily parts of opium, they may be separated by means of pure spirit of wine, in as many hours as the digestion requires months. The separation will also be as complete, in regard to the remaining gum, though some part of the gum will in this method be lost, a little of it being taken up by the spirit along with the other principles.

In what particular part of opium its particular virtues reside, has not perhaps been incontestably ascertained; but this much seems clear from experiment, that the pure gum, freed from all that spirit can dissolve, does not differ essentially in its soporific power from the resinous part.

There are grounds also to presume, that by whatever means we destroy or diminish what is called the narcotic, soporific, virulent quality of opium, we shall destroy or diminish likewise its salutary operation. For the ill effects which it produces in certain cases, seem to be no other than the necessary consequences of the same power, by which it proves so beneficial in others.

EXTRACTUM ABSINTHII.

Succ.

Extracts of wormwood.

Take any quantity of the tops of wormwood, and pour upon it double its weight of water. Boil it for a little over a gentle fire, then press out the liquor. Boil the residuum again in a fresh quantity of water, and after expression, strain it. Let the strain-

ed liquor be evaporated in a water-bath to a proper consistence.

In this extract we have one of the strongest vegetable bitters in its most concentrated state: and altho' it is not perhaps to be considered as superior to the extract of gentian, yet it furnishes a good variety, and is a more agreeable form for exhibiting the wormwood than that of strong tincture.

EXTRACTUM TARAXACI.

Succ.

Extract of dandelion

This is directed to be prepared from the roots of the dandelion, collected early in the spring, or late in the autumn, in the same manner as the extractum absinthii. And as far as the dandelion really possesses a resolvent, aperient, or diuretic power, it furnishes a convenient form for obtaining these effects from it. But as the dandelion is well known to abound with a milky juice, it is probable that the activity of the medicine would be increased from employing spirit also in the extraction of its medical virtues.

EXTRACTUM ALOES AQUOSUM.

Succ.

Watery extract of aloes.

Take of
cold spring-water, four pounds,
juice of citrons, one pound,
Macerate them in a glass vessel for one or two days, shaking the vessel from time to time. When the resinous and scæculent parts have subsided, pour off the liquor; and to the residuum add fresh water, till by this treatment it obtains little impregnation. Let the strained liquors be then evaporated in a warm bath to the consistence of honey.

ALTHOUGH aloes are perhaps upon the whole a better medicine, in their crude state, where the gummy and resinous matters are united, than in those preparations where either is retained separately, yet the gummy extract which is thus obtained is at least less disagreeable, having little smell or taste, while at the same time it is a very powerful purgative; hence it may be usefully employed at least on some occasions.

EXTRACTUM MYRRHÆ
GUMMOSUM.

Brun.

Gummy extracts of myrrh.

Take of

myrrh, half a pound;
spring-water, four pounds.

Let the myrrh be dissolved by gentle digestion and repeated agitation of the vessel for four or five days: let the water swimming above the myrrh be then poured off, strained, and evaporated to the consistence of an extract.

THIS watery extract of the gum-myrrh may be useful in some cases, as being much deprived of the heating qualities which it has in its crude state: and if it furnishes us in phthisis pulmonalis with that useful remedy which some imagine, it may probably be most advantageously exhibited under this form.

SUCCUS LIQUORITIÆ DE-
PURATUS.

Dan.

Refined liquorice.

Take any quantity of Spanish liquorice, cut it into small fragments, dissolve it in tepid water, and strain the solution. Let the liquor be poured off from the feculent part after it has subsided, and inspissated by a gentle heat.

THE extract of liquorice already mentioned, when it is prepared with due skill and attention, is unquestionably an article superior to this; but it is very rarely met with in the shops of our druggists or apothecaries, as prepared by themselves. In its place they very commonly employ either the extract brought from Spain, or that prepared by the makers of liquorice at home; and both these very commonly abound with impurities. It has even been said, that a portion of sand is not unfrequently mixed with it, to increase the weight: but whether the impurities arise from this cause, or from the slovenly mode of preparing it, considerable advantage must arise from freeing it from all these, before it be employed for any purpose in medicine. And in modern practice, it is frequently used, not only in troches and pills, but also for suspending powders in water; such as the powder of Peruvian bark: and the powder of bark, when thus suspended, is in general taken more readily by children than in any other form. Hence considerable advantage must arise from a proper and easy mode of purifying it, which the above process affords. We are of opinion, therefore, that although a place be with propriety given to the extract of liquorice prepared by the apothecaries themselves, refined liquorice ought also to be introduced into our pharmacopœias: and it would be very convenient to keep it in the shops in a soft consistence, fit for making pills; as it would not only answer that purpose, but admit of a ready solution in water when requisite. To this consistence indeed, an objection occurs, from its being apt to grow mouldy: but this may be effectually prevented by the addition of a small proportion of spirit.

Besides

Besides the extracts which we have here selected from the foreign pharmacopœias, many others also still retain a place in several of these; such, for example, as the extractum arnicæ, artemisiæ, bryoniæ, cardui, centaurei, cochleariæ, croci, &c. Several of these had formerly a place in our pharmacopœias, but are now with propriety rejected; because where these substances are to be employed, they may with much more advantage be exhibited under other forms. And indeed, although under the form of extract we have a condensation of some active principles, yet by the action of fire others are very apt to be lost. Hence, where any article can be conveniently exhibited in substance, that form is in general preferable; and recourse should be had to extracts only with a view to some particular intention. Our colleges,

therefore, have, with propriety, diminished the number of them; and even those which they have adopted are but seldom to be had recourse to in preference to other forms. In the formation of many of those extracts retained by the foreign colleges, the most valuable principles are either entirely dissipated or destroyed by the fire. We think, however, that advantage may sometimes be obtained from adopting these which are here selected.

The chapter on extracts and resins in the London pharmacopœia is concluded with the two following general directions:

1. All the extracts, during the time of inspissation, must be gently agitated.

2. On all the softer watery extracts, a small quantity of spirit of wine must be sprinkled.

C H A P. V.

EXPRESSED OILS.

EXPRESSED oils are obtained chiefly from certain seeds and kernels of fruits, by thoroughly pounding them in a stone mortar, or, where the quantities are large, grinding them in mills, and then including them in a canvas bag, which is wrapt in a hair cloth, and strongly pressed between iron plates. The canvas, if employed alone, would be squeezed so close to the plates of the press, as to prevent the oil from running down: by the interposition of the hair-cloth a free passage is allowed it.

Sundry machines have been contrived, both for grinding the subject and pressing out the oil, in the way of business. To facilitate the expression, it is customary to warm either the plates of the press, or the subject itself after the grinding, by keeping it stirring in a proper vessel over the fire; the oil, liquefied by the heat, separates more freely and more plentifully. When the oil is designed for medicinal purposes, this practice is not to be allowed; for heat, especially if its degree be sufficient to be of any considerable

siderable advantage for promoting the separation, renders the oil less soft and palatable, impresses a disagreeable flavour, and increases its disposition to grow rancid: hence the colleges both of London and Edinburgh expressly require the operation to be performed without heat.

Nor are the oils to be kept in a warm place after their expression. Exposed but for a few days to a heat no greater than that of the human body, they lose their emollient quality, and become highly rancid and acrimonious. Too much care cannot be taken for preventing any tendency to this acrid irritating state in medicines, so often used for abating immoderate irritation.

So much are these oils disposed to this injurious alteration, that they frequently contract an acrimony and rancidity while contained in the original subjects. Hence great care is requisite in the choice of the unctuous seeds and kernels, which are often met with very rancid; almonds are particularly liable to inconveniences of this kind.

Expressed oils are prepared for mechanic uses from sundry different subjects, as nuts, poppy-seed, hemp-seed, rape-seed, and others. Those directed for medicinal purposes in the London and Edinburgh pharmacopoeias are the following:

OLEUM AMYGDALÆ.

London. Ed.

Almond oil.

Pound fresh almonds, either sweet or bitter, in a mortar, then press out the oil in a cold press.

In the same manner is to be expressed,

Oil of flax-seed.

Oil of flax-seed.

Oil of flax-seed.

Mustard-seed.

THE oil of almonds is prepared from the sweet and bitter almonds indifferently; the oils obtained from both sorts being altogether the same. Nor are the differences of the other oils very considerable, the discriminating qualities of the subjects not residing in the oils that are thus obtained by expression. The oil of linseed acquires indeed some peculiarities from containing a proportion of vegetable mucilage; but the oil of mustard-seed is as soft, insipid, and void of pungency, as that of sweet almonds, the pungency of the mustard remaining entire in the cake left after the expression. The several oils differ in some of their properties from each other; but in medicinal qualities they appear to be all nearly alike, and agree in one common emollient virtue. They soften and relax the solids, and obtund acrimonious humours; and thus become serviceable internally in pains, inflammations, heat of urine, hoarseness, tickling coughs, &c. in glysters, for lubricating the intestines, and promoting the ejection of indurated feces; and in external applications, for tension and rigidity of particular parts. Their common dose is half an ounce: in some cases, they are given to the quantity of three or four ounces. The most commodious forms for their exhibition, we shall see hereafter in the chapter of Emulsions.

OLEUM E SEMINIBUS RICINI DEMTO PRIUS COR-TICE.

London.

Castor oil.

This oil is directed by the London college to be prepared in the same manner as that of almonds, the seeds or nuts being taken from the husks before putting them into the mortar. Palma Christi, or castor oil, as has been already observed, in
the

the *Materia Medica*, under the article *Ricinus*, is a gentle and useful purgative: it in general produces its effects without griping, and may be given with safety where acrid purgatives are improper. With adults, from half an ounce to an ounce is in general requisite for a dose. This article, however, is very seldom prepared by our apothecaries, being in general imported under the form of oil from the *West-Indies*: hence the *Edinburgh college* have not mentioned it among their preparations, but merely given it a place in their list of the *materia medica*. But when our apothecaries prepare it for themselves, they are more certain of obtaining a pure oil, and one too obtained without the aid of heat, which is often employed, and gives a much inferior oil. It is therefore with propriety that the *London college* have given directions for the preparation of it by the apothecary himself. But even the *London college* have not thought it necessary to give directions for the preparation of the following expressed oils, which, as well as the *oleum ricini*, are also introduced into the list of the *materia medica* by the *Edinburgh college*.

<i>Oleum expressum</i>	Expressed oil of
<i>Baccarum lauri</i> ;	bay berries.
<i>Nucis moschatae</i> ;	mace.
<i>Olivarum</i> ;	olives.
<i>Palmae</i> ;	palm oil.

These also are principally considered as possessing only an emollient virtue; but as far as they have been supposed to exert any peculiar qualities, these we have already had occasion to mention in the *materia medica*, when treating of the articles from which they are obtained.

OLEUM CACAO.

Succ.

Oil of chocolate nuts.

Express the oil from the nuts slightly toasted, and freed from their coverings.

IN this oil we have the nutritious part of chocolate, free from those aromatics with which it is united in the state in which it is kept in our shops. And although under the form of chocolate it fits perhaps more easily on the stomach than in most other forms; yet where, from any particular circumstance, aromatics are contraindicated, the oil in its pure state gives us an opportunity of employing in different ways this mild nutritious article.

OLEUM E SEMINIBUS HYOSCIAMI.

Succ.

Oil of hyosciamus.

This oil is directed to be obtained by expression from the seeds of the *hyosciamus*, in the same manner as that of almonds.

OF the narcotic powers of the *hyosciamus* some observations have already been offered. This oil, although an expressed one, is said to retain these virtues; and accordingly it has entered the composition of some anodyne ointments and plasters. We are however inclined to think, that when the sedative power of *hyosciamus* is wanted under the form of oil, it may be best obtained from impregnating olive oil by the leaves of the plant.

OLEUM OVI.

Succ.

Egg oil.

Take any quantity of fresh eggs, boil them till they be quite hard, then take out the yolks, break them in pieces, and roast them gently in a frying-pan, till, when pressed between the fingers, they give out a certain fatness; put them

them, while warm, into a hair bag, and exprefs the oil.

THE yolk of the egg is well known to be a mild nutritious substance: but notwithstanding the many virtues at one time attributed to it, of being paregoric and styptic, as externally applied; and of being useful in stomach complaints, dysentery, and different affections of the alimentary canal, when taken internally; it is much to be doubted whether it be in any other way useful in medicine than as an article of diet: and we are very uncertain whether any particular purpose in medicine will be answered by this expressed oil: but as it holds a place in most of the foreign pharmacopœias of modern date, it may justly be considered as deserving some attention.

Notwithstanding the justice of the observation made respecting the great similarity of expressed oils in general, yet there can be no doubt, that in some instances they obtain a peculiar impregnation. This manifestly appears in the *oleum ricini*, *oleum nucis moschatæ*, and some of the others mentioned above. Indeed oils expressed from aromatic substances, in general retain some admixture of the essential oil of the subject from which they are expressed. Nor is this surprising, when we consider that in some cases the essential oil exists in a separate state even in the growing plant.

The rinds of the several varieties of oranges, lemons, and citrons, yield, by a kind of expression, their essential oils almost pure, and nearly similar to those which are obtained from them by distillation. The es-

sential oils, in which the fragrance and aromatic warmth these fruits reside, are contained in numerous little vesicles, which may be distinguished by the naked eye, spread all over the surface of the peel. If the rind be cut in slices, and the slices separately doubled or bent in different parts, and squeezed between the fingers, the vesicles burst at the bending, and discharge the oil in a number of fine slender jets. A glass plate being set upright in a glass or porcelaine vessel, and the slices squeezed against the plates, the little jets unite into drops upon the plate, and trickle down into the vessel beneath. But though this process affords the true native oil, in the same state wherein it existed in the subject, unaltered by fire or other agents, it is not practicable to advantage, unless where the fruit is very plentiful; as only a small part of the oil it contains can thus be extracted or collected.

The oil is more perfectly separated by rubbing the rind upon a lump of sugar. The sugar, by the inequality of its surface, produces the effect of a rasp, in tearing upon the oily vesicles; and in proportion as the vesicles are opened, the sugar imbibes the oil. When the outward part of the lump is sufficiently moistened, it is scraped off, and the operation continued on the fresh surface. The oil thus combined with the sugar, is fit for most of the uses to which it is applied in a fluid state. Indeed the pure essential oils, obtained by distillation, are often purposely mixed with sugar, to render their use the more commodious.

C H A P. VI.

OLEA DISTILLATA.

ESSENTIAL OILS.

ESSENTIAL oils are obtained only from odoriferous substances; but not equally from all of this class, nor in quantity proportionable to their degree of odour. Some, which, if we were to reason from analogy, should seem very well fitted for this process, yield extremely little oil, and others none at all. Roses and camomile flowers, whose strong and lasting smell promises abundance, are found upon experiment to contain but a small quantity: the violet and jessamine flower, which perfume the air with their odour, lose their smell upon the gentlest coction, and do not afford the least perceptible mark of oil upon being distilled, unless immense quantities are submitted to the operation at once; whilst favin, whose disagreeable scent extends to no great distance, gives out the largest proportion of oil of almost any vegetable known.

Nor are the same plants equally fit for this operation, when produced in different soils or seasons, or at different times of their growth. Some yield more oil if gathered when the flowers begin to fall off than at any other time. Of this we have examples in lavender and rue; others, as sage, afford the largest quantity when young, before

they have sent forth any flowers; and others, as thyme, when the flowers have just appeared. All fragrant herbs yield a greater proportion of oil when produced in dry soils and warm summers, than in the opposite circumstances. On the other hand, some of the disagreeable strong-scented ones, as wormwood, are said to contain most in rainy seasons and when growing in moist rich grounds.

SEVERAL of the chemists have been of opinion, that herbs and flowers, moderately dried, yield a greater quantity of essential oil, than if they were distilled when fresh. It is supposed, that the oil being already blended, in fresh plants, with a watery fluid, great part of it remains diffused through the water after the distillation, divided into particles too minute to unite and be collected; whereas in drying, the oily parts, on the exhalation of the moisture which kept them divided and dispersed, run together into globules, which have little disposition to mingle with watery fluids, and easily separate from the water employed in the distillation.

This theory, however, does not appear to be altogether satisfactory: for though the oil be collected in the subject into distinct globules, it does not

not rise in that form, but is resolved into vapour, and blended and coagulated by the heat with the vapour of the water; and if the oil in a dry plant was less disposed to unite with aqueous fluids than in a fresh one, the dry ought to yield a weaker infusion than the fresh; the contrary of which is generally found to obtain. As the oil of the dry plant is most perfectly extracted, and kept dissolved by the water before the distillation, it is difficult to conceive any reason why it should have a greater tendency to separate from the water afterwards.

The opinion of dry plants yielding most oil, seems to have arisen from an observation of Hoffman, which has probably been misunderstood: "A pound (he says) of dry spike flowers yields an ounce of oil; but if they were distilled fresh, they would scarcely yield above half an ounce; and the case is the same in balm, sage, &c. The reason is, that in drying, the watery humidity exhales; and as from two pounds of a fresh plant we do not obtain above one pound of dry, and little of the subtil oil evaporates in the drying, it follows, that more oil ought to be afforded by the dry than by the fresh." The meaning of which seems to be no more than this, that if two pounds of a fresh plant are by drying reduced to one, without any loss of the oil, then the one pound dry ought to be equivalent to the two fresh. A late writer quotes an experiment of Neumann, which appears to be misunderstood in the same manner; for Neumann, in the place referred to, says only, that dry wormwood is found to yield much more oil than an *equal weight* of the fresh plant. Trials are yet wanting in which fresh and dry plants have been brought to a fair comparison, by di-

viding a quantity of the subject into two equal weights, and distilling one while fresh, and the other after it has been carefully and moderately dried.

But whatever may be the effect of moderate exsiccation, it is certain, that if the drying be long continued, the produce of oil will be diminished, its colour altered, and its smell impaired.

WITH regard to the proportion of water to be employed, if whole plants, moderately dried, are used, or the shavings of woods, as much of either may be put into the vessel as, lightly pressed, will occupy half its cavity; and as much water may be added, as will rise up to two-thirds its height. The water and ingredients, altogether, should never take up more than three-fourths of the still; there should be liquor enough to prevent any danger of an empyreuma, but not so much as to be too apt to boil over into the receiver.

THE maceration should be continued so long, that the water may fully penetrate the parts of the subject. To promote this effect, woods should be thinly shaved across the grain, or sawed, roots cut transversely into thin slices, barks reduced into coarse powder, and seeds lightly bruised. Very compact and tenacious substances require the maceration to be continued a week or two, or longer; for those of a softer and looser texture, two or three days are sufficient; whilst some tender herbs and flowers not only stand not in need of any at all, but are even injured by it.

Whether the addition of sea-salt, which some have recommended, be of any real service, is much to be doubted. The uses generally assigned to it are, to penetrate and unlock the texture of the subject more effectively.

fectually than simple water could do; and to prevent the fermentation or putrefaction, which the matter is apt to run into during the length of time for which the maceration is often continued. But sea-salt seems rather to harden and condense, than to soften and resolve, both vegetable and animal subjects; and if it prevents putrefaction, it must, on that very account, be rather injurious than of service. The resolution here aimed at, approaches near to a beginning putrefaction; and saline substances, by retarding this, prolong the maceration far beyond the time that would otherwise be necessary. It is in the power of the operator, when he perceives the process coming near this pitch, to put a stop to it at pleasure, by proceeding immediately to distillation: by this means the whole affair will be finished in a very little time, with at least equal advantage in every other respect; provided the manual operations of pounding, rasping, and the like, which are equally necessary in either case, be scientifically complied with.

Bodies of a very viscous and compact texture, were directed, in the Edinburgh Pharmacopoeia, to be fermented for some days with a little yeast; half their quantity of water is sufficient for performing the fermentation. As much more as is necessary is to be added afterwards before the distillation. This process undoubtedly promotes the resolution of the subject, and the extrication of the oil; it rarely happens, however, that assistances of this kind are needful. Particular care must be had not to continue the fermentation too long; or to give a bad flavour to the oil by an ill-chosen ferment, or using too large a quantity of any.

Some chemists pretend, that by

the addition of salts and acid spirits, they have been enabled to gain more oil from certain vegetable matters than could possibly be got from them without such assistance. Experiments made on purpose to settle this point seem to prove the contrary; this at least is constantly found to be true, that where there is any reason to think the yield to be greater than usual, the quality of the oil is proportionably injured. The quantity of true essential oil in vegetables can by no means be increased; and what is really contained in them may be easily separated without any addition of this kind. All that saline matters can do in this respect, is, to make the water susceptible of a greater degree of heat than it can sustain by itself, and thus enable it to carry up a gross unctuous matter not volatile enough to arise with pure water: this gross matter, mingling with the pure oil, increases the quantity, but at the same time must necessarily debase its quality. And indeed, when water alone is made use of, the oil which comes over about the end of the operation is remarkably less fragrant, and of a thicker consistence, than that which arises at the beginning; distilled a second time, with a gentle heat, it leaves a large quantity of gross almost insipid resinous matter behind.

THE choice of proper instruments is of great consequence for the performance of this process to advantage. There are some oils which pass freely over the swan neck of the head of the common still: others, less volatile, cannot easily be made to rise so high. For obtaining these last, we would recommend a large low head, having a rim or hollow canal round it: in this canal the oil is detained on its first ascent, and
thence

thence conveyed at once into the receiver, the advantages of which are sufficiently obvious.

With regard to the fire, the operator ought to be expeditious in raising it at first, and to keep it up, during the whole process, of such a degree that the oil may freely distil; otherwise the oil will be exposed to an unnecessary heat; a circumstance which ought as much as possible to be avoided. Fire communicates to all these oils a disagreeable impression, as is evident from their being much less grateful when newly distilled, than after they have stood for some time in a cool place; the longer the heat is continued, the more alteration it must produce in them.

The greater number of oils require for their distillation the heat of water strongly boiling; but there are many also which rise with a heat considerably less; such as those of lemon and citron-peel, of the flowers of lavender and rosemary, and of almost all the more odoriferous kinds of flowers. We have already observed, that these flowers have their fragrance much injured, or even destroyed, by beating or bruising them; it is impaired also by the immersion in water in the present process, and the more so in proportion to the continuance of the immersion and the heat: hence these oils, distilled in the common manner, prove much less agreeable in smell than the subject themselves. For the distillation of substances of this class, another method has been contrived; instead of being immersed in water, they are exposed only to its vapour. A proper quantity of water being put into the bottom of the still, the odoriferous herbs or flowers are laid lightly in a basket, of such a size that it may enter into the still, and rest against its sides, just above the water. The head be-

ing then fitted on, and the water made to boil, the steam, percolating through the subject, imbibes the oil, without impairing its fragrance, and carries it over into the receiver. Oils thus obtained possess the odour of the subject in an exquisite degree, and have nothing of the disagreeable scent perceivable in those distilled by boiling them in water in the common manner.

It may be proper to observe, that those oils which rise with a less heat than that of boiling water, are generally called, by the chemical and pharmaceutical writers, *light* oils; and those which require the heat of water strongly boiling, are called *ponderous*. We have avoided these expressions, as they might be thought to relate to the comparative *gravities* of the oils; with which the volatility or fixedness have no connection. Olive oil is lighter than most of the essential oils; but the heat requisite to make it distil exceeds that in which the heaviest essential oil distils, considerably more than the heat of boiling water exceeds that of ice.

THE water employed in the distillation of essential oils always imbibes some portion of the oil; as is evident from the smell, taste, and colour, which it acquires. It cannot, however, retain above a certain quantity; and therefore, such as has been already used and almost saturated itself, may be advantageously employed, instead of common water, in a second, third, or any future distillation of the same subject.

Some late chemical writers recommend, not the water which comes over, but that which remains in the still, to be used a second time. This can be of no service; containing only such parts of the vegetable as are not capable of arising

in distillation, and which serve only to impede the action of the water as a menstruum, and to endanger an empyreuma.

After the distillation of one oil, particular care should be had duly to cleanse the worm before it be employed in the distillation of a different plant. Some oils, those of wormwood and aniseeds for instance, adhere to it so tenaciously, as not to be melted out by heat, or washed off by water: the best way of cleansing the worm from these, is to run a little spirit of wine through it.

Essential oils, after they are distilled, should be suffered to stand for some days, in vessels loosely covered with paper, till they have lost their disagreeable fiery odour, and become limpid: then put them up in small bottles, which are to be kept quite full, closely stopped, in a cool place; with these cautions, they will retain their virtues in perfection for many years.

When carelessly kept, they in time gradually lose of their flavour, and become gross and thick. Some endeavour to recover them again after they have undergone this change, by grinding them with about thrice their weight of common salt, then adding a large proportion of water, and distilling them afresh: the purer part arises thin and limpid, possessing a great degree of the pristine smell and taste of the oil, though inferior in both respects to what the oil was at first. This rectification, as it is called, succeeds equally without the salt: the oils, when thus altered, are nearly in the same state with the turpentine, and other thickened oily juices, which readily yield their purer oil in distillation with water alone.

When essential oils have entirely lost their smell, some recommend

adding them in the distillation of a fresh quantity of the oil of the same plant; by which means they are said to satiate themselves anew with the odorous matter, and become entirely renovated. This practice, however, ought doubtless to be disapproved, as being no other than a specious sophistication; for it can do more than divide, between the old and the new, the active matter which belongs to the new alone.

Essential oils, medicinally considered, agree in general qualities of pungency and heat; in particular virtues, they differ as much as the subjects from which they are obtained, the oil being the direct principle in which the virtues, or at least a considerable part of the virtues, of the several subjects reside. Thus the carminative virtue of the warm seeds, the diuretic of juniper berries, the emmenagogue of savin, the nerve of rosemary, the stomachic of mint, the antiscorbutic of scurvy-grass, the cordial of aromatics, &c. are supposed to be concentrated in their oils.

There is another remarkable difference in essential oils, the foundation of which is less obvious, that of the degree of their pungency and heat. These are by no means in proportion, as might be expected, to those of the subject they were drawn from. The oil of cinnamon, for instance, is excessively pungent and fiery; in its undiluted state it is almost caustic; whereas cloves, a spice which in substance is far more pungent than the other, yields an oil which is far less so. This difference seems to depend partly upon the quantity of oil afforded, cinnamon yielding much less than cloves, and consequently having its active matter concentrated into a smaller volume; partly, upon a difference in the nature of the active parts themselves: for though

essential oils contain always the specific odour and flavour of their subjects, whether grateful or ungrateful, they do not always contain the whole pungency; this resides frequently in a more fixed resinous matter, and does not rise with the oil. After the distillation of cloves, pepper, and some other spices, a part of their pungency is found to remain behind: a simple tincture of them in rectified spirit of wine is even more pungent than their pure essential oils.

The more grateful oils are frequently made use of for reconciling to the stomach medicines of themselves disgusting. It has been customary to employ them as correctors for the resinous purgatives; an use which they do not seem to be well adapted to. All the service they can here be of is to make the resin sit more easily at first on the stomach: far from abating the irritating quality, upon which the virulence of its operation depends, these pungent oils superadd a fresh stimulus.

Essential oils are never given alone, on account of their extreme heat and pungency; which in some is so great, that a single drop let fall upon the tongue, produces a gangrenous eschar. They are readily imbibed by pure dry sugar, and in this form may be conveniently exhibited. Ground with eight or ten times their weight of the sugar, they become soluble in aqueous liquors, and thus may be diluted to any assigned degree. Mucilages also render them miscible with water into an uniform milky liquor. They dissolve likewise in spirit of wine; the more fragrant in an equal weight, and almost all of them in less than four times their own quantity; these solutions may be either taken on sugar, or mixed with syrups, or the like: on mixing them

with water, the liquor grows milky, and the oil separates.

The more pungent oils are employed externally against paralytic complaints, numbness, pains, and aches, cold tumours, and in other cases where particular parts require to be heated or stimulated. The tooth-ach is sometimes relieved by a drop of these almost caustic oils, received on cotton, and cautiously introduced into the hollow tooth.

OLEUM ESSENTIALE.

Lond.

Essential oil of

- | | |
|-------------------------------|---------------|
| 1. <i>Anisi,</i> | Anise |
| 2. <i>Carui,</i> | Caraway |
| 3. <i>Lavendulæ,</i> | Lavender |
| 4. <i>Menthæ piperitidis,</i> | Peppermint |
| 5. <i>Menthæ sativæ,</i> | Spearmint |
| 6. <i>Origani,</i> | Origanum |
| 7. <i>Pulegii,</i> | Pennyroyal |
| 8. <i>Rarifmarini,</i> | Rosemary |
| 9. <i>Baccæ juniperi,</i> | Junip. berry |
| 10. <i>Radicis sassafras,</i> | Sassaf. root. |

Let these oils be drawn off by distillation, from an alembic with a large refrigeratory; but, to prevent an empyreuma, water must be added to the ingredients; and in this they must be macerated before distillation.

The water which comes over with the oil in distillation is to kept for use.

OLEA ESSENTIALIA.

Edin.

Essential oils.

- Herbæ menthæ sativæ,* of the herbs of garden mint.
—menthæ piperitidis, of Peppermint
—sabinæ, of Savin.
Summitatum rosmarini, of the tops of rosemary.
Spicarum florentium lavendulæ, of spikes of lavender.
Seminum anisi, of Aniseeds.
Bacarum juniperi, of junip. berries.
Radicis sassafras, of Sassafras root.

Piperis Jamaicensis, of Jamaica pepper.

These are prepared almost in the same manner as the simple distilled waters, excepting that for procuring the oil a somewhat less quantity of water is to be used. Seeds and woody matters are first to be bruised or shaved. The oil arises with the water; and as it is lighter or heavier, swims on the surface, or sinks to the bottom, from which it is afterwards to be separated.

It is, however, to be remarked, that, in preparing these distilled waters and oils, so many varieties must necessarily take place from the goodness of the subject itself, its texture, the time of the year, and such like circumstances, that a certain and general rule, which should strictly apply to each example, can scarcely be laid down; wherefore we have only explained the general method, leaving many things to be varied by the judgment of the operator.

To the directions for preparing these essential oils given by the London and Edinburgh colleges, we shall here next subjoin a few remarks on their medical properties.

OLEUM SEMINUM ANISI ESSENTIALE.

Lond. Edin.

Essential oil of aniseeds.

This oil possesses the taste and smell of the aniseeds in perfection. It is one of the mildest of the distilled oils; 15 or 20 drops may be taken at a time without danger, tho' common practice rarely goes so far as half this number. Its smell is extremely durable and diffusive: milk drawn from the breast after taking it is found impregnated with its odour; and possibly this may be, in part, the foundation of the pec-

toral virtues usually ascribed to it: in flatulencies and colics, it is said by some to be less effectual than the seeds themselves.

It is remarkable of this oil, that it congeals, even when the air is not sensibly cold, into a butyraceous consistence: and hence, in the distillation of it, the operator ought not to be over-solicitous in keeping the water in the refrigeratory too cool: it behoves him rather to let it grow somewhat hot, particularly towards the end of the process; otherwise the oil congealing, may so stop up the worm, as to endanger blowing off the head of the still, or at least a considerable quantity of oil will remain in it.

OLEUM SEMINUM CARUI ESSENTIALE.

Lond.

Essential oil of caraway seeds.

The flavour of this exactly resembles that of the caraway itself. It is a very hot and pungent oil; a single drop is a moderate dose, and five or six is a very large one. It is not unfrequently made use of as a carminative; and supposed by some to be peculiarly serviceable for promoting urine, to which it communicates some degree of its smell.

OLEUM florum LAVENDULÆ ESSENTIALÆ.

Lond. Edinb.

Essential oil of lavender flowers.

This oil when in perfection, is very limpid, of a pleasant yellowish colour, extremely fragrant, possessing in an eminent degree the peculiar smell generally admired in the flowers. It is a medicine of great use, both externally and internally, in paralytic and lethargic complaints, rheumatic pains, and debilities of the nervous system. The dose is from one drop to five or six.

Laven-

Lavender flowers yield the most fragrant oil, and in considerably the largest quantity, when they are ready to fall off spontaneously, and the leaves begin to shew themselves: the seeds give out extremely little. The flowers may be separated from the rest of the plant, by drying it a little, and then gently beating it: they should be immediately committed to distillation, and the process conducted with a well regulated gentle heat; too great heat would not only change the colour of the oil, but likewise make a disagreeable alteration in its smell.

OLEUM MENTHÆ PIPERITIDIS ESSENTIALE.

Lond. Edinb.

Essential oil of the leaves of peppermint.

This possesses the smell, taste, and virtues of the peppermint in perfection; the colour is a pale greenish yellow. It is a medicine of great pungency and subtilty: and diffues, almost as soon as taken, a glowing warmth through the whole system. In colics, accompanied with great coldness, and in some hysteric complaints, it is of excellent service. A drop or two are in general a sufficient dose.

OLEUM MENTHÆ SATIVÆ ESSENTIALE.

Lond. Edinb.

Essential oil of the leaves of common mint.

This oil smells and tastes strongly of the mint, but is in both respects somewhat less agreeable than the herb itself. It is an useful stomachic medicine; and not unfrequently exhibited in want of appetite, weakness of the stomach, retching to vomit and other like disorders, when not accompanied with heat or inflammation: two or three drops, or more are given for a dose. It is

likewise employed externally for the same purpose; and is an useful ingredient in the stomachic plaster of the shops.

OLEUM ORIGANI ESSENTIALE.

Lond.

Essential oil of the leaves of origanum.

This oil has a very pungent acrimonious taste, and a penetrating smell. It has been chiefly employed externally as an errhine, and for easing pains of the teeth.

OLEUM PULEGII ESSENTIALE.

Lond.

Essential oil of the leaves of pennyroyal.

This oil, in smell and taste, resembles the original plant; the virtues which it likewise possesses. It is given in hysteric cases from one to four or five drops.

OLEUM ROSIMARINI ESSENTIALE.

Lond. Edinb.

Essential oil of rosemary.

The oil of rosemary is drawn from the plant in flower. When in perfection, it is very light and thin, pale, and almost colourless; of great fragrancly, though not quite so agreeable as the rosemary itself. It is recommended in the dose of a few drops, in nervous and hysteric complaints. Boerhaave holds it in great esteem against epilepsies, and suppressions of the uterine purgations occasioned by weakness and inactivity.

OLEUM baccarum JUNIPERI ESSENTIALE.

Lond. Edinb.

Essential oil of juniper-berries.

This oil is a very warm and pungent one; of a strong flavour not

unlike that of the berries. In the dose of a drop or two, it proves a serviceable carminative and stomachic: in one of six, eight, or more, stimulating, detergent, diuretic, and emmenagogue: it seems to have somewhat of the nature of the turpentine, or their distilled oil; like which it communicates a violent smell to the urine.

The oil of these berries resides partly in vesicles spread through the substance of the fruit, and partly in little cells contained in the seeds: when the berry is dry, and the oil hardened into a resinous substance, it becomes visible, upon breaking the seeds, in form of little transparent drops. In order therefore to obtain this oil to advantage we ought, previous to the distillation, to bruise the berry thoroughly, so as to break the seeds, and entirely lay open the oily receptacles.

OLEUM SASSAFRAS ESSENTIALE.

Lond. Edinb.

Essential oil of sassafras.

This is the most ponderous of all the known essential oils, but rises in distillation with sufficient ease: it appears limpid as water, has a moderately pungent taste, a very fragrant smell, exactly resembling that of the sassafras. It stands greatly commended as a sudorific, and for purifying the blood and juices: it is likewise supposed to be of service in humoral asthmas and coughs. The dose is from one drop to eight or ten; though Geoffroy goes as far as twenty.

The decoction remaining after the distillation of the oil, affords by inspissation an useful extract, of a mild bitterish, subastringent taste. Hoffman says, he has given it with great benefit, in doses of a scruple, as a corroborant in cachectic cases, in the decline of intermitting fe-

vers, and for abating hypochondriacal spasms.

OLEUM SABINÆ ESSENTIALE.

Lond. Edinb.

Essential oil of savin leaves.

Savin is one of the plants which, in former editions of the Edinburgh Pharmacopœia, were directed to be lightly fermented before the distillation: this, however, is not very necessary; for savin yields, without fermentation, and even without any such maceration, a very large quantity of oil: the foregoing herb stands more in need of a treatment of this kind. The oil of savin is a celebrated uterine and emmenagogue: in cold phlegmatic habits, it is undoubtedly a medicine of great service, though not capable of performing what it has been often represented to do. The dose is, two or three drops, or more.

OLEUM ESSENTIALE PIPE- RIS JAMAICENSIS.

Edinb.

Essential oil of Jamaica pepper.

This is a very elegant oil, and may be used as a succedaneum to those of some of the dearer spices. It is of a fine pale colour; in flavour more agreeable than the oil of cloves, and not far short of that of nutmegs. It sinks in water, like the oils of some of the eastern spices.

OLEUM PETROLEI.

Lond.

Oil of fossil tar.

Distil fossil tar, the *bitumen petroleum*, in a sand heat.

THE oil obtained from this tar will be more or less thin according to the continuance of the distillation; and by its continuance the tar will at last be reduced to a black coal; and then the oil will be pretty deep in

colour, though perfectly fluid. This oil has a property similar to that of the tincture of nephritic wood in water, appearing blue when looked upon, but of an orange colour when held betwixt the eye and the light. By long keeping it loses this property. It is less disagreeable than some of the other empyreumatic oils which had formerly a place in our pharmacopœia, such as the oleum lateritium, though very acrid and stimulating.

OLEUM TEREBINTHINÆ.

Lond.

Oil of turpentine.

Take of

Common turpentine, five pounds.

Water, four pounds.

Distil the turpentine with the water from an alembic of copper. After the distillation of the oil, what remains is yellow resin.

OLEUM TEREBINTHINÆ
RECTIFICATUM.

Lond.

Rectified oil of turpentine.

Take of

Oil of turpentine, one pound ;

Distilled water, four pints.

Distil.

THE process here proposed for rectifying this oil, is not only tedious but accompanied with danger. For unless the luting be very close, some of the vapour will be apt to get through ; and if this catch fire, it will infallibly burst the vessels. This rectified oil, which in many pharmacopœias is styled æthereal, does not considerably differ in specific gravity, smell, taste, or medical qualities, from the former.

The spirit of turpentine, as this essential oil has been styled, is not unfrequently taken internally as a diuretic and sudorific. And in these ways it has sometimes a con-

siderable effect when taken even to the extent of a few drops only. It has, however, been given in much larger doses, especially when mixed with honey. Recourse has principally been had to such doses in cases of chronic rheumatism, particularly in those modifications of it which are styled *sciatica and lumbago*. But they have not been often successful, and sometimes they have had the effect of inducing bloody urine.

OLEUM ANIMALE.

Lond.

Animal oil.

Take of

Oil of hartshorn, one pound.

Distil three times.

OLEUM e CORNUBUS REC-
TIFICATUM, five OLEUM
ANIMALE.

Edinb.

Rectified oil of horns, or animal oil.

Take of

Empyreumatic oil, newly distilled from the horns of animals as much as you will.

Distil with a gentle heat, in a matras furnished with a head, as long as a thin colourless oil comes over, which is to be freed of alkaline salt and spirit by means of water. That this oil may remain limpid and good, it ought to be put up in small phials completely filled and inverted, having previously put into each phial a few drops of water, that on inverting it the water may interpose itself betwixt the oil and the mouth of the phial.

THE quantity of oil employed in this process should be considerable : for it leaves so much black matter behind in the several distillations, that it is reduced at last to a small portion of its original quantity. It is said, that the product is got more

limpid, by mixing the oil with quicklime into a soft paste; the lime keeping down more of the gross matter than would remain without such an addition. The quicklime may here also, perhaps, act by abstracting fixed air; to the absorption of which we are disposed to refer in some measure the spoiling of the oil on exposure to the atmosphere.

This oil was first introduced by Dippelius, whose name it has since generally born.

Animal oils thus rectified, are thin and limpid, of a subtle, penetrating, not disagreeable smell and taste. They are strongly recommended as anodynes and antispasmodics, in doses from 15 to 30 drops. Hoffman reports, that they procure a calm and sweet sleep, which continues often for 20 hours, without being followed by any languor or debility, but rather leaving the patient more alert and cheerful than before: that they procure likewise a gentle sweat, without increasing the heat of the blood: that given to 20 drops or more, on an empty stomach, six hours before the accession of an intermitting fever, they frequently remove the disorder; and that they are likewise a very generous remedy in inveterate and chronical epilepsies, and in convulsive motions, especially if given before the usual time of the attack, and preceded by proper evacuations.

The empyreumatic oils of vegetables, rectified in the same manner by repeated distillations, suffer a like change with the animal; losing their dark colour and offensive smell, and becoming limpid, penetrating, and agreeable: in this state they are supposed, like the animal oil, to be anodyne, antispasmodic, and diaphoretic, or sudorific. It is observable, that all the empyreumatic oils dissolve in spirit of wine, and that the clearer they are rectified or redistil-

led they dissolve the more readily; a circumstance in which they differ remarkably from essential oils, which by repeated distillations, become more and more difficult of solution.

How far these preparations really possess the virtues that have been ascribed to them, has not yet been sufficiently determined by experience; the tediousness and trouble of the rectification having prevented their coming into general use, or being often made. They are liable also to a more material inconvenience in regard to their medicinal use, precariousness in their quality for how perfectly soever they be rectified, they gradually lose, in keeping, the qualities they had received from that process, and return more and more towards their original fetidness.

OLEUM ET SAL SUCCINI.

Edinb.

Oil and salt of amber.

Take

Equal parts of amber reduced to a powder and of pure sand.

Mix them, and put them into a glass retort, of which the mixture may fill one half: then adapt a large receiver, and distil in a sand-furnace, with a fire gradually increased. At first a spirit will come over, with some yellow oil; then more yellow oil, along with a little salt; and upon raising the heat, more of the salt, with a reddish and black coloured oil.

When the distillation is finished, empty the liquor out of the receiver; and having collected together the salt which adheres to the sides, dry it by gentle pressure between the folds of some spongy paper; then purify it by solution in warm water and by crystallization.

OLEUM SUCCINI RECTIFICATUM.

Edinb.

Distil the oil in a glass retort with six times its quantity of water till two-thirds of the water have passed into the receiver; then separate the rectified oil from the water, and keep it for use in close shut vessels.

OLEUM SUCCINI RECTIFICATUM.

*Lond.**Rectified oil of amber.*

Take of

Oil of amber, one pound.

Distil three times.

THE London college introduce their directions for the preparation of the sal and oleum succini at an after part of their work, under the head of sales. Here we may only observe, that they direct it to be prepared from the amber alone, without the intervention of sand. But this makes no essential difference in the article when prepared.

THE Edinburgh college have rejected what was formerly called the spirit, as being nothing else than the watery parts, fraught with the inert impurities of the bitumen and a very small portion of the salt. In the distillation of amber, the fire must for some time be continued gentle, scarce exceeding the degree at which water boils, till the aqueous phlegm and thin oil have arisen; after which it is to be slowly increased. If the fire were urged hastily, the amber would swell up, and rise in its whole substance into the receiver, without undergoing the required decomposition or separation of its parts. When sand or similar intermedia are mixed with it,

it is less subject to this rarefaction, and the fire may be raised somewhat more expeditiously; tho' this little advantage is perhaps more than counterbalanced by the room which the sand takes up in the retort.

Our chemists generally leave the receiver unluted, that it may be occasionally removed as the salt rises and concretes in the neck of the retort; from whence it is every now and then scraped out to prevent the oil from carrying it down into the receiver. When a gross thick oil begins to arise, and no more salt appears, the distillation is stopt, tho' it might, perhaps, be continued longer to advantage.

Mr Pott informs us (in a curious dissertation on the salt of amber, published in the ninth volume of the Memoirs of the Academy of Sciences of Berlin), that the Prussian workmen, who prepare large quantities of this salt for exportation, from cuttings and small pieces of amber, perform the distillation without any intermedium, and in an open fire: that sweeping out the salt from the neck of the retort being found too troublesome, they suffer the oil to carry it down to the receiver, and afterwards separate it means of bibulous paper, which imbibes the oil, and leaves the salt dry; which paper is afterwards squeezed and distilled: that they continue the distillation till all that can be forced over has arisen, taking care only to catch the last thick oil in a separate receiver; and that from this they extract a considerable quantity of salt, by shaking it in a strong vessel with three or four fresh portions of hot water, and evaporating and crystallising the filtered waters.

The spirit of amber so called, is no more than a solution of a small
por-

portion of the salt in phlegm or water; and therefore is very properly employed for dissolving the salt in order to its crystallization.

The salt, freed from as much of the oil as spongy paper will imbibe, retains so much as to appear of a dark brown colour. Mr Pott says, the method he has found to succeed best, and with the least loss, is, to dissolve the salt in hot water, and put into the paper, through which the solution is to be filtered, a little cotton slightly moistened with oil of amber: this, he says, detains a good deal of the oil of the salt, and the solution passes through the more pure. The liquor being evaporated with a very gentle fire, as that of a water-bath, and set to shoot, the first crystals prove transparent, with a slight yellowish tinge; but those which follow are brown, oily, and bitter, and are therefore to be further deperated in the same manner. The whole quantity of crystals amounts to about one-thirtieth of the weight of the crude amber employed. By sublimation from sea-salt, as directed in former editions of the Edinburgh Pharmacopœia, the salt is thought to be more perfectly and more expeditiously purified: Mr Pott objects to sublimation, that a part of the salt is decomposed by it, a coaly matter being left behind, even though the salt was previously purified by crystallization: it may be presumed, however, that this coal proceeds rather from the burning of some remains of the oily matter, than from the decomposition of any part of the true salt.

Pure salt of amber has a penetrating, subastringent acid, taste. It dissolves both in water and in rectified spirit; though not readily in either, and scarcely at all in the latter without the assistance of heat: of cold water in summer, it requires for its solution about twenty times

its own weight; of boiling water only about twice its weight. Exposed in a glass vessel, to a heat a little greater than that of boiling water, it first melts, then rises in a white fume, and concretes again in the upper part of the glass into fine white flakes, leaving, unless it was perfectly pure, a little coaly matter behind. It effervesces with alkalies both fixed and volatile, and forms with them neutral compounds, much resembling those composed of the same alkalies and vegetable acids. Mixed with acid liquors, it makes no sensible commotion. Ground with fixed alkaline salts, it does not exhale any urinous odour. By these characters, it is conceived this salt may be readily distinguished from all the other matters that have been mixed with, or vended for it. With regard to its virtue, it is accounted aperient, diuretic, and, on account of its retaining some portion of the oil, antihysterical: Boerhaave gives it the character of *diureticorum et antihysteri-corum princeps*. Its great price, however, has prevented its coming much into use; and perhaps its real virtues are not equal to the opinion generally entertained of them.

The rectified oil has a strong bituminous smell, and a pungent acid taste. Given in a dose of ten or twelve drops, it heats, stimulates, and promotes the fluid secretions; It is chiefly celebrated in hysterical disorders, and in deficiencies of the uterine purgations. Sometimes it is used externally, in liniments for weak or paralytic limbs and rheumatic pains. This oil differs from all those of the vegetable kingdom, and agrees with the mineral petrolea, in not being soluble, either in its rectified or unrectified state, by spirit of wine, fixt alkaline lixivium, or volatile alkaline spirits; the oil, after long digestion or agitation, separating

paring as freely as common oil does from water.

OLEUM VINI.

Lond.

Oil of wine.

Take of

Alcohol,
Vitriolic acid, of each one pint.
Mix them by degrees, and distil; taking care that no black foam passes into the receiver. Separate the oily part of the distilled liquor from the *volatile vitriolic acid*.—To the oily part add as much water of *pure kali* as is sufficient to take away the sulphureous smell: then distil the *ether* with a gentle heat. The oil of wine remains in the retort, swimming on the watery liquor, from which it is to be separated.

SOME caution is requisite in mixing the two liquors, that the consequent heat and ebullition, which would not only dissipate a part of the mixture, but hazard the breaking of the vessel and the hurt of the operator, may be avoided. The securest way is to add the vitriolic acid to the spirit of wine by a little at a time, waiting till the first addition be incorporated before another quantity be put in. By this, the ensuing heat is inconsiderable, and the mixture is effected without inconvenience.

OLEUM ABSINTHII DESTILLATUM.

Ross.

Essential oil of wormwood.

Let the fresh leaves of wormwood slightly dried be macerated with a sufficient quantity of water, and then subject to distillation; and let the oil which comes over be separated from the water which accompanies it.

THIS is one of the more ungrateful oils: it smells strongly of the wormwood, and contains its particular nauseous taste, but has little or nothing of its bitterness; this remaining intire in the decoction left after the distillation: its colour, when drawn from the fresh herb, is a dark green; from the dry, a brownish yellow. This oil is recommended by Hoffman as a mild anodyne in spasmodic contractions: for this purpose, he directs a dram of it to be dissolved in an ounce of rectified spirit of wine, and seven or eight drops of the mixture taken for a dose in any convenient vehicle. Boerhaave greatly commends it in certain fevers, a medicated liquor composed of about seven grains of this oil ground first with a dram of sugar, then with two drams of the salt of wormwood, and afterwards dissolved in six ounces of the distilled water of the same plant: two hours before the fit is expected, the patient is to bathe his feet and legs in warm water, and then to drink two ounces of the liquor every quarter of an hour till the two hours are expired: by this means, he says, all cases of this kind are generally cured with ease and safety, provided there be no scirrhoty or suppuration. The oil of wormwood is employed chiefly as a vermifuge: and for this purpose is sometimes both applied externally to the belly and taken internally: it is most conveniently exhibited in the form of pills, which it may be reduced into by mixing it with crum of bread.

In the same manner with the oleum absinthii, the following oils, mentioned on the authority of the pharmacopœia Rossica, are also directed to be prepared.

OLEUM AURANTII COR-
TICUM.*Roff.**Essential oil of orange-skins.*OLEUM CORTICUM LIMO-
NUM.*Essence of lemons.*

Of these essential oils, as existing in a separate state in the growing vegetable, we have already offered some observations. They are obtained in a very pure state by distillation. They are now rejected from our pharmacopoeias, being employed rather as perfumes than as medicines. This is particularly the case with the essence of lemons, which is a pleasant oil, of a fine smell, very near as agreeable as that of the fresh peel; it is one of the lightest and most volatile essential oils we have, perfectly limpid, and almost colourless. It is taken in doses of two or three drops, as a cordial, in weakness of the stomach, &c. tho' more frequently used as a perfume. It gives a fine flavour to the officinal spiritus volatilis aromaticus of the Edinburgh college, or the spiritus ammoniæ compositus, as it is now styled by that of the London: and it may be remarked, that it enters this formula of both colleges, although neither of them has given it a place among their preparations, probably as it is one of those articles which the apothecary rarely prepares for himself. When soap is given in the form of pills, by the addition of a few drops of this oil they are thought to sit more easily on the stomach.

OLEUM CARYOPHYLLO-
RUM AROMATICORUM
ESSENTIALE.*Roff.**Essential oil of cloves.*

This oil is so ponderous as to

sink in water, and is not easily elevated in distillation: if the water which comes over be returned on the remaining cloves, and the distillation repeated, some more oil will generally be obtained, though much inferior in quality to the first. The oil of cloves is usually described as being "in taste excessively hot" and fiery, and of a gold yellow "colour." (*Boerb. process.*) Such indeed is the composition which we receive under this name from Holland; but the genuine oil of cloves is one of the milder oils: it may be taken with great safety (duly diluted) to the quantity of ten or twelve drops or more. Nor is its colour at all yellow, unless it has been long and carelessly kept, or distilled by too violent a fire: when in perfection, it is limpid and colourless, of a pleasant, moderately warm and pungent taste, and a very agreeable smell, much resembling that of the spice itself. The Dutch oil of cloves contains a large quantity of expressed oil, as evidently appears upon examining it by distillation. This, however, cannot be the addition to which it owes its acrimony. A small proportion of a resinous extract of cloves communicates to a large one of oil a deep colour, and a great degree of acrimony.

OLEUM CHAMOMILLI FLO-
RUM.*Roff.**Essential oil of camomile.*

An oil of camomile had formerly a place in our pharmacopoeias made by infusion of the recent plant, and its flowers in olive oil; and again separating it by pressure after impregnating it with the active parts of the plant by heat. This, however, was intended only for external application; but the essential oil is meant to be used internally.

It is a very pungent oil, of a strong not ungrateful smell, resembling that of the flowers: its colour is yellow, with a cast of greenish or brown. It is sometimes given in the dose of a few drops, as a carminative, in hysteric disorders, and likewise as a vermifuge: it may be conveniently made into pills with crumb of bread.

OLEUM CINNAMOMI CORTICIS.

Roff.

Oil of cinnamon.

This valuable oil is extremely hot and pungent, of a most agreeable flavour, like that of the cinnamon itself. In cold languid cases, and debilities of the nervous system, it is one of the most immediate cordials and restoratives. The dose is one, two or three drops; which must always be carefully diluted by the mediation of sugar, &c; for so great is the pungency of this oil, that a single drop let fall upon the tongue, undiluted, produces, as Boerhaave observes, a gangrenous eschar. In the distillation of this oil a smart fire is required; and the low head, with a channel round it, recommended for the distillation of the less volatile oils, is particularly necessary for this, which is one of the least volatile, and which is afforded by the spice in exceeding small quantity. The distilled water retains no small portion of the oil; but this oil being very ponderous, great part of it subsides from the water, on standing for two or three weeks in a cool place.

OLEUM SEMINUM FENICULI ESSENTIALE.

Roff.

Essential oil of fennel seeds.

The oil obtained from sweet fennel seeds is much more elegant and

agreeable, than that of the common fennel. It is one of the mildest of these preparations; it is nearly of the same degree of warmth with that of anniseeds; to which it is likewise similar in flavour, though far more grateful. It is given from two or three drops to ten or twelve, as a carminative, in cold indispositions of the stomach; and in some kinds of coughs for promoting expectoration.

OLEUM LIGNI RHODII ESSENTIALE.

Roff.

Essential oil of rhodium.

This oil is extremely odoriferous, and principally employed as a perfume in scenting pomatums, and the like. Custom has not as yet received any preparation of this elegant aromatic wood into internal use among us.

OLEUM DISTILLATUM MACIS.

Roff.

Essential oil of mace.

The essential oil of mace is moderately pungent, very volatile, and of a strong aromatic smell, like that of the spice itself. It is thin and limpid, of a pale yellowish colour, with a portion of thicker and darker coloured oil at the bottom. This oil taken internally to the extent of a few drops, is celebrated in vomiting, singultus, and colic pains; and in the same complaints it has also been advised to be applied externally to the umbilical region. It is, however, but rarely to be met with in the shops.

OLEUM MAJORANÆ ESSENTIALE.

Roff.

Essential oil of marjoram leaves.

This oil is very hot and penetrating, in flavour not near so agreeable

able as the marjoram itself; when in perfection, it is of a pale yellow colour; by long keeping, it turns reddish: if distilled with too great a heat, it arises of this colour at first. It is supposed by some to be peculiarly serviceable in relaxations, obstructions, and mucous discharges of the uterus: the dose is one or two drops.

OLEUM NUCIS MOSCHATÆ ESSENTIALE.

Roff.

Essential oil of nutmegs.

The essential oil of nutmegs possesses the flavour and aromatic virtues of the spice in an eminent degree. It is similar in quality to the oil of mace, but somewhat less grateful.

OLEUM RUTÆ ESSEN- TIALE.

Roff.

Essential oil of rue leaves.

The oil of rue has a very acrid taste, and a penetrating smell, resembling that of the herb, but rather more unpleasant. It is sometimes made use of in hysteric disorders and as an anthelmintic; and also in epilepsies proceeding from a relaxed state of the nerves.

Rue yields its oil very sparingly. The largest quantity is obtained from it when the flowers are ready to fall off, and the seeds begin to show themselves: suitable maceration, previous to the distillation, is here extremely necessary.

OLEUM DISTILLATUM SATUREIÆ.

Roff.

Essential oil of savory.

Savory yields on distillation a small quantity of essential oil, of great subtilty and volatility; and

it is unquestionably an active article, but among us it is not employed in medicine.

OLEUM DISTILLATUM. TANACETI.

Roff.

Essential oil of tansy.

Tansy yields on distillation an oil of a greenish colour inclining to yellow. It smells strongly of the herb, and possesses at least its aromatic property in a concentrated state.

OLEUM CERÆ.

Dan.

Oil of wax.

Melt yellow bees-wax with twice its quantity of sand, and distil in a retort placed in a sand-furnance. At first an acid liquor arises, and afterwards a thick oil, which sticks in the neck of the retort, unless it be heated by applying live coal. This may be rectified into a thin oil, by distilling it several times, without addition, in a sand-heat.

BOERHAAVE directs the wax, cut in pieces, to be put into the retort first, so as to fill one half of it; when as much sand may be poured thereon as will fill the remaining half. This is a neater, and much less troublesome way, than melting the wax, and mixing it with the sand before they are put into the retort. The author abovementioned highly commends this oil against roughness and chaps of the skin, and other like purposes: the college of Strasburgh speak also of its being given internally, any say it is a powerful diuretic (*ingens diureticum*) in doses from two to four or more drops; but its disagreeable smell has prevented its coming into use among us.

The number of essential oils which have

have now a place in the London and Edinburgh pharmacopœias, and likewise in the foreign ones of modern date, is much less considerable than formerly; and perhaps those still retained afford a sufficient variety of the more active and useful oils. Most of the oils mentioned above, particularly those which have a place in the London and Edinburgh pharmacopœias, are prepared by our chemists in Britain, and are easily procurable in a tolerable degree of perfection: But the oils from the more expensive spices, though still introduced among the preparations in the foreign pharmacopœias, are, when employed among us, usually imported from abroad.

These are frequently so much adulterated, that it is not an easy matter to meet with such as are at all fit for use. Nor are these adulterations easily discoverable. The grosser abuses, indeed, may be readily detected: thus, if the oil be mixed with spirit of wine, it will turn milky on the addition of water; if with expressed oils, rectified spirit will dissolve the essential, and leave the other behind; if with oil of turpentine, on dipping a piece of paper in the mixture, and drying it with a gentle heat, the turpentine will be betrayed by its smell. But the more subtle artists have contrived other methods of sophistication, which elude all trials of this kind.

Some have looked upon the specific gravity of oils as a certain criterion of their genuineness; and accordingly we have given a table of the gravity of several. This, however, is not to be absolutely depended on: for the genuine oils, obtained from the same subjects, often differ in gravity as much as those drawn from different ones. Cinnamon and cloves, whose oils usually

sink in water, yield, if slowly and warily distilled, an oil of great fragrancy, which is nevertheless specifically lighter than the aqueous fluid employed in the distillation of it; whilst, on the other hand, the last runnings of some of the lighter oils prove sometimes so ponderous as to sink in water.

As all essential oils agree in the general properties of solubility in spirit of wine, indissolubility in water, miscibility with water by the intervention of certain intermedia, volatility in the heat of boiling water, &c. it is plain that they may be variously mixed with each other, or the dearer sophisticated with the cheaper, without any possibility of discovering the abuse by any trials of this kind. And, indeed, it would not be of much advantage to the purchaser, if he had infallible criteria of the genuineness of every individual oil. It is of as much importance that they be *good*, as that they be *genuine*; for genuine oils, from inattentive distillation and long and careless keeping, are often weaker both in smell and taste than the common sophisticated ones.

The smell and taste seem to be the only certain tests of which the nature of the thing will admit. If a bark should have in every respect the appearance of good cinnamon, and should be proved indisputably to be the genuine bark of the cinnamon tree; yet if it want the cinnamon flavour, or has it but in a low degree, we reject it; and the case is the same with the oil. It is only from use and habit, or comparisons with specimens of known quality, that we can judge of the goodness, either of the drugs themselves or of their oils.

Most of the essential oils indeed, are too hot and pungent to be tasted with safety; and the smell of the

the subject is so much concentrated in them, that a small variation in this respect is not easily distinguished: but we can readily dilute them to any assignable degree. A drop of the oil may be dissolved in spirit of wine, or received on a bit of sugar, and dissolved by that intermedium in water. The quantity of liquor which it thus impregnates with its flavour, or the degree of flavour which it communicates to a certain determinate quantity, will be the measure of the degree of goodness of the oil.

We shall here subjoin the result of some experiments, showing *the quantity of essential oil obtained from different vegetables*, reduced into the form of a table. The first column contains the names of the respective vegetable substances; the second, the quantity of each which was submitted to the distillation; and the third, the quantity of oil obtained. In every other part of this book, where *pound* weights are mentioned, the Troy pound of twelve ounces is meant: but these experiments having been

all made by a pound of sixteen ounces, it was thought expedient to set down the matter of fact in the original weights; especially as the several materials, in the large quantity commonly required for the distillation of oils, are purchased by weights of the same kind. But to remove any ambiguity which might arise from hence, and enable the reader to judge more readily of the yield, a reduction of the weights is given in the next column; which shows the number of parts of each of the subjects from which one part of oil was obtained. To each article is affixed the author's name from whom the experiment was taken. The different distillations of one subject, several of which are inserted in the table, show how variable the yield of oil is, and that the exotic spices, as well as our indigenous plants, do not always contain the same proportion of this active principle; though it must be observed, also, that part of the differences may probably rise from the operation itself having been more or less carefully performed.

TABLE

TABLE of the Quantity of ESSENTIAL OIL obtained from different VEGETABLES.

Agallochum wood	-	10 lb.	} yielded of essential oil	4 dra.	} so that one part of oil obtained from	320	Hoff.
Angelica root	-	1 lb.		1 dra.		128	Carth.
Aniseed	-	1 lb.		4 dra.		32	Neum.
Aniseed	-	3 lb.		1 oz.		48	Lewis.
Aniseed	-	4 lb.		1 oz.		64	Lewis.
Arafoetida	-	4 oz.		1 dra.		32	Neum.
Calamus aromaticus	-	50 lb.		2 oz.		185	Hoff.
Calamus aromaticus	-	1 lb.		2 scr.		192	Neum.
Caraway seeds	-	4 lb.		2 oz.		32	Lewis.
Caraway seeds	-	2 lb.		9 dra.		28 $\frac{1}{2}$	Lewis.
Caraway seeds	-	1 cwt.		83 oz.		21 $\frac{1}{2}$	Lewis.
Caroline thistle root	-	1 lb.		2 $\frac{1}{2}$ scr.		153	Neum.
Cardamom seeds	-	1 oz.		1 scr.		24	Neum.
Carrot seeds	-	2 lb.		1 $\frac{1}{2}$ dra.		171	Lewis.
Cascarilla	-	1 lb.		1 dra.		128	Carth.
Camomile flowers	-	1 lb.		30 gra.		256	Carth.
Common camomile flowers	-	6 lb.		5 dra.		153	Lewis.
Wild camomile flowers	-	1 lb.		20 gra.		384	Carth.
Wild camomile flowers	-	6 lb.		2 $\frac{1}{2}$ dra.		307	Lewis.
Chervil leaves, fresh	-	9 lb.		30 gra.		2304	Neum.
Cedar-wood	-	1 lb.		2 dra.		64	Margg
Cinnamon	-	1 lb.		1 dra.		128	Sala.
Cinnamon	-	1 lb.		2 $\frac{1}{2}$ scr.		153	Neum.
Cinnamon	-	4 lb.		6 dra.		85 $\frac{1}{2}$	Lemery
Cinnamon	-	1 lb.		2 dra.		64	Carth.
Cinnamon	-	1 lb.		8 scr.		45 $\frac{1}{2}$	Carth.
Clary seeds	-	4 lb.		2 dra.		256	Lewis.
Clary in flower, fresh	-	130 lb.		3 $\frac{1}{2}$ oz.		594	Lewis.
Cloves	-	1 lb.		1 $\frac{1}{2}$ oz.		10 $\frac{1}{2}$	Teichm
Cloves	-	1 lb.		2 $\frac{1}{2}$ oz.		7 $\frac{1}{2}$	Carth.
Cloves	-	2 lb.	5 oz.	6 $\frac{2}{3}$	Hoff.		
Copaiba balsam	-	1 lb.	6 oz.	2 $\frac{2}{3}$	Ho.		
Copaiba balsam	-	1 lb.	8 oz.	2	Lewis.		
Cummin-feed	-	1 bu. sh.	21 oz.		Lewis.		
Distamnus Creticus	-	1 lb.	30 gra.	256	Lewis.		
Dill-feed	-	4 lb.	2 oz.	32	Lewis.		
Elecampane root	-	2 lb.	3 $\frac{1}{2}$ scr.	245	Neum.		
Elemi	-	1 lb.	1 oz.	16	Neum.		
Fennel-feed, common	-	2 oz.	1 scr.	48	Neum.		
Fennel-feed, sweet	-	1 bu. sh.	18 oz.		Lewis.		
Galangal root	-	1 lb.	1 dra.	128	Carth.		
Garlic root, fresh	-	2 lb.	30 gra.	256	Neum.		
Ginger	-	1 lb.	1 dra.	128	Neum.		
Horseradish root, fresh	-	8 oz.	15 gra.	256	Neum.		
Hyssop leaves	-	2 lb.	1 $\frac{1}{2}$ dra.	237	Neum.		

Hyssop leaves	-	1 lb.	} yielded of essential oil	1 $\frac{1}{7}$ dra.	} so that one part of oil was obtained from	85	Carth.
Hyssop leaves	-	1 lb.		2 dra.		64	Carth.
Hyssop leaves, fresh		2 cwt.		6 oz.		597	Lewis.
Hyssop leaves, fresh		10 lb.		3 dra.		427	Lewis.
Hyssop leaves, fresh		30 lb.		9 dra.		427	Lewis.
Juniper-berries	-	8 lb.		3 oz.		42 $\frac{2}{3}$	Hoff.
Juniper-berries	-	1 lb.		3 dra.		42 $\frac{2}{3}$	Carth.
Lavender in flower, fresh		48 lb.		12 oz.		64	Lewis.
Lavender in flower, fresh		30 lb.		6 $\frac{3}{4}$ oz.		72	Lewis.
Lavender in flower, fresh		13 $\frac{1}{4}$ lb.		60 oz.		403	Lewis.
Lavender flowers, fresh		2 lb.		4 dra.		64	Hoff.
Lavender flowers, dried		4 lb.		2 oz.		32	Lewis.
Lavender flowers, dried		2 lb.		1 oz.		32	Hoff.
Lavender flowers, dried		4 lb.		3 oz.		21 $\frac{1}{3}$	Hoff.
Broad leaved lavender	}	4 lb.		1 oz.		64	Hoff.
flowers, dry		1 lb.		2 dra.		64	Carth.
Lovage-root	-	1 lb.		1 dra.		128	Carth.
Mace	-	1 lb.		5 dra.		25 $\frac{2}{3}$	Neum.
Mace	-	1 lb.		6 dra.		21 $\frac{1}{3}$	Carth.
Marjoram in flower, fresh		81 lb.		3 $\frac{3}{4}$ oz.		347	Lewis.
Marjoram in flower, fresh		13 $\frac{1}{4}$ lb.		3 $\frac{1}{4}$ dra.		493	Lewis.
Marjoram in flower, fresh		34 lb.		1 $\frac{1}{4}$ oz.		362	Lewis.
Marjoram leaves, fresh		18 $\frac{1}{2}$ lb.		4 dra.		592	Lewis.
Marjoram leaves, dried		4 lb.		1 oz.		64	Hoff.
Masterwort root	-	1 lb.		30 gra.		256	Neum.
Milfoil flowers, dried		14 lb.		4 dra.		448	Neum.
Mint in flower, fresh		6 lb.		4 $\frac{1}{4}$ dra.		177	Neum.
Mint leaves, dried		4 lb.		1 $\frac{1}{4}$ oz.		42 $\frac{2}{3}$	Hoff.
Peppermint, fresh		4 lb.	3 dra.	170 $\frac{2}{3}$	Hoff.		
Myrrh	-	1 lb.	2 dra.	64	Hoff.		
Myrrh	-	1 lb.	3 dra.	42 $\frac{2}{3}$	Neum.		
Nutmegs	-	1 lb.	1 oz.	16	Hoff.		
Nutmegs	-	1 lb.	1 oz.	16	Geoff.		
Nutmegs	-	1 lb.	4 dra.	32	Neum.		
Nutmegs	-	1 lb.	6 dra.	21 $\frac{1}{3}$	Sala.		
Nutmegs	-	1 lb.	5 dra.	25 $\frac{2}{3}$	Carth.		
Parsley seeds	-	2 lb.	1 dra.	256	Carth.		
Parsley leaves, fresh		238 lb.	2 oz.	1904	Carth.		
Parsnip seeds	-	8 lb.	2 dra.	512	Carth.		
Pennyroyal in flower, fresh		13 lb.	6 dra.	277	Carth.		
Black pepper	-	2 lb.	6 dra.	42 $\frac{2}{3}$	Carth.		
Black pepper	-	1 lb.	2 $\frac{1}{4}$ dra.	82	Neum.		
Black pepper	-	1 lb.	4 scr.	96	Carth.		
Black pepper	-	1 lb.	1 dra.	128	Heister		
Black pepper	-	6 lb.	3 dra.	256	Geoff.		
Pimento	-	1 oz.	30 gra.	16	Neum.		
Rhodium wood	-	1 lb.	3 dra.	42 $\frac{2}{3}$	Neum.		
Rhodium wood	-	1 lb.	2 dra.	64	Sala.		
Rhodium wood	-	1 lb.	3 dra.	42 $\frac{2}{3}$	Sala.		
Rhodium wood	-	1 lb.	3 dra.	42 $\frac{2}{3}$	Carth.		

Rhodium wood	1 lb.	yielded of essential oil	4 dra.	so that one part of oil was obtained from	32	Carth.
Rosemary in flower	1 cwt.		8 oz.		224	Lewis.
Rosemary leaves	1 lb.		2 dra.		64	Sala.
Rosemary leaves	1 lb.		3 dra.		42 $\frac{1}{2}$	Sala.
Rosemary leaves	3 lb.		3 $\frac{1}{8}$ dra.		121	Neum.
Rosemary leaves	1 lb.		1 dra.		128	Carth.
Rosemary leaves	1 lb.		1 $\frac{1}{2}$ dra.		82	Carth.
Rosemary leaves, fresh	70 lb.		5 oz.		224	Lewis.
Roses	100 lb.		4 dra.		3200	Tachen.
Roses	100 lb.		1 oz.		1600	Homb.
Roses	12 lb.		30 gra.		768	Hoff.
Rue	10 lb.		2 dra.		640	Hoff.
Rue	10 lb.		4 dra.		320	Hoff.
Rue in flower	4 lb.		1 dra.		512	Hoff.
Rue in flower	60 lb.		2 $\frac{1}{4}$ oz.		507	Hoff.
Rue with the seeds	72 lb.		3 oz.		384	Hoff.
Saffron	1 lb.		1 $\frac{1}{2}$ dra.		85 $\frac{1}{3}$	Vogel.
Sage leaves	1 lb.		5 scr.		77	arth.
Sage in flower, fresh	34 lb.		1 $\frac{1}{2}$ oz.		544	Lewis.
Sage of virtue in flower	27 lb.		6 dra.		576	Lewis.
Sage of virtue in flower	8 lb.		1 $\frac{1}{2}$ dra.		681	Lewis.
Sassafras	6 lb.		1 $\frac{3}{4}$ oz.		55	Hoff.
Sassafras	6 lb.		2 oz.		48	Neum.
Savin	2 lb.		5 oz.		6 $\frac{1}{5}$	Hoff.
Saunders, yellow	1 lb.		2 dra.		64	Carth.
Smallage seeds,	1 lb.		2 $\frac{1}{2}$ scr.		154	Neum.
Stechas in flower, fresh	5 $\frac{1}{4}$ lb.		2 dra.		368	Lewis.
Thyme in flower, fresh	2 cwt.		5 $\frac{1}{2}$ oz.		652	Lewis.
Thyme in flower, dry	3 $\frac{3}{4}$ lb.	1 $\frac{1}{2}$ dra.	298	Lewis.		
Lemon-thyme in flower, fresh	51 lb.	1 $\frac{1}{4}$ oz.	653	Lewis.		
Lemon-thyme in flower, fresh	98 lb.	2 $\frac{1}{2}$ oz.	627	Lewis.		
Lemon-thyme, dried a little	104 lb.	3 oz.	555	Lewis.		
Wormwood leaves, dry	4 lb.	1 oz.	64	Lewis.		
Wormwood leaves, dry	18 lb.	1 $\frac{1}{2}$ oz.	192	Lewis.		
Wormwood leaves, dry	25 lb.	3 $\frac{1}{4}$ oz.	114	Lewis.		
Zedoary	1 lb.	1 dra.	128	Neum.		

C H A P. VII.

S A L T S.

ACIDUM VITRIOLICUM DILUTUM.

*Lond.**Diluted or weak vitriolic acid.*

Take of

Vitriolic acid, one ounce by weight;

Distilled water, eight ounces by weight.

Mix them by degrees.

ACIDUM VITRIOLICUM TENUÉ, vulgo SPIRITUS VITRIOLI TENUIS.

*Edin.**Weak vitriolic acid commonly called weak spirit of vitriol.*

Take of

Vitriolic acid, one part;

Water, seven parts.

Mix them.

IN the former editions of our pharmacopœias, directions were given for the preparation of the vitriolic acid by the apothecary himself, under the heads of *Spiritus & Oleum Vitrioli*, *Spiritus Sulphuris per campanam*, &c: But as it is now found that all these modes are expensive, and that this acid may be furnished at a cheaper rate from the trading chemists preparing it upon a large scale, it is with propriety that both colleges have now

rejected it from the preparations, and introduced it only into the list of the materia medica.

When, however, it is of the degree of concentration there required, it can be employed for very few purposes in medicine. The most simple form in which it can be advantageously employed internally, is that in which it is merely diluted with water; and it is highly proper that there should be some fixed standard in which the acid in this state should be kept. It is, however, much to be regretted, that the London and Edinburgh colleges have not adopted the same standard with respect to strength: for in the one, the strong acid constitutes an eighth; and in the other, only a ninth of the mixture. The former proportion, which is that of the Edinburgh college, we are inclined to prefer, as it gives exactly a dram of acid to the ounce; but the dilution by means of distilled water, which is directed by the London, is preferable to spring-water; which, even in its purest state, is rarely free from impregnations in part affecting the acid.

The acid of vitriol is the most ponderous of all the liquids we are acquainted with, and the most powerful of the acids. If any other acid be united with a fixt alkaline salt

salt or earth, upon the addition of the vitriolic, such acid will be dissolved, and arise on applying a moderate heat, leaving the vitriolic in possession of the alkali; though without this addition it would not yield to the most vehement fire. Mixt with water, it instantly creates great heat, infomuch that glass vessels are apt to crack from the mixture, unless it be very slowly performed: exposed to the air, it imbibes moisture, and soon acquires a remarkable increase of weight. In medicine, it is employed chiefly as subservient to other preparations: it is likewise not unfrequently mixed with juleps and the like, in such quantity as will be sufficient to give the liquor an agreeable tartness with the intentions of a cooling antiseptic, restringent, and stomachic.

It is particularly useful for allaying inordinate actions of the stomach, when under the form of singultus or vomiting; but its medical properties have already been mentioned under the article *ACIDUM Vitriolicum* in the materia medica.

ACIDUM NITROSUM.

Lond.

Nitrous acid.

Take of

Purified nitre, by weight, sixty-nine ounces;

Vitriolic acid, by weight, twenty-nine ounces.

Mix and distil.

THE specific gravity of this is to the weight of distilled water as 1,550 to 1,000.

ACIDUM NITROSUM, vulgo
SPIRITUS NITRI GLAUBERI.

Edinb.

Nitrous acid, commonly called Glauber's spirit of nitre.

Take of

Purest nitre, bruised, two pounds;
Vitriolic acid, one pound.

Having put the nitre into a glass retort, pour on it the spirit; then distil in a sand-heat, gradually increased, till the iron sand-pot becomes of a dull red colour.

HERE the vitriolic acid expels that of the nitre, in red corrosive vapours, which begin to issue immediately upon mixture; and which the operator ought cautiously to avoid. A pound of acid of vitriol is sufficient to expel all the acid from about two pounds of nitre, not from more: some direct equal parts of the two. The spirit, in either case, is in quality the same; the difference in this respect, affecting only the residuum. If two parts of nitre be taken to one of acid of vitriol, the remaining alkaline basis of the nitre is completely saturated with the vitriolic acid; and the result is a neutral salt, the same with vitriolated tartar, as we shall see hereafter. If more nitre be used, a part of the nitre in substance will remain blended with this vitriolated salt: if less nitre, it cannot afford alkali enough to saturate the vitriolic acid, and the residuum will not be a neutral salt, but a very acid one. In this last case there is one convenience; the acid salt being readily dissoluble in water, so as to be got out without breaking the retort, which the others are not.

ACIDUM NITROSUM DILUTUM.

Lond.

Diluted or weak nitrous acid.

Take of

Nitrous acid,

Distilled water, each one pound.

Mix them.

ACIDUM NITROSUM
TENUE.*Edinb.**Weak nitrous acid.*

Take of

Nitrous acid,
Water, equal weights.Mix them, taking care to avoid the
noxious vapours.

IN the old editions both of the London and Edinburgh pharmacopœias, directions were given for the preparation of aqua fortis simplex and duplex; but these were no more than different forms of preparing an impure nitrous acid, unfit for medical purposes. They are therefore, with propriety, superseded by the more simple formulæ of acidum nitrosum, and acidum nitrosum dilutum, or tenue, mentioned above. In making the diluted acid, distilled water is preferable to common water.

The vapours separated during the mixing of nitrous acid and water, are the permanently elastic fluid called *nitrous acid air*, which is deleterious to animal life.

The acid of nitre is next in strength to the vitriolic, and dislodges all others from alkaline salts or earths. It differs from all the other acids in deflagrating with inflammable matters: if a solution of any inflammable substance, as hartshorn, &c. in this acid be set to evaporate, as soon as the matter approaches to dryness, a violent detonation ensues. The chief use of this acid is as a menstruum for certain minerals, and as the basis of some particular preparations to be mentioned hereafter. It has been given likewise, diluted with any convenient vehicle, as a diuretic, from ten to fifty drops.

ACIDUM MURIATICUM.

*Lond.**Muriatic acid.*

Take of

Dry sea-salt, ten pounds;
Vitriolic acid, six pounds;
Water, five pounds.Add, by degrees, the vitriolic acid,
first mixed with the water, to the
salt; then distil.

THE specific gravity of this is to that of distilled water as 1,170 to 1,000.

ACIDUM MURIATICUM,
vulgo SPIRITUS SALIS
MARINI.*Edinb.**Muriatic acid, commonly called
Spirit of sea-salt.*

Take of

Sea-salt, two pounds;
Vitriolic acid,
Water, each one pound.

Let the salt first be put into a pot, and brought to a red heat, that the oily impurities may be consumed; then commit it to the retort. Next mix the acid with the water, and when the mixture has cooled, pour it upon the salt. Lastly, distil in sand with a middling heat, as long as any acid comes over.

THE marine, or muriatic acid, arises, not in red fumes like the nitrous, but in white ones. The addition of water is more necessary here than in the foregoing process; the marine vapours being so volatile, as scarcely to condense without some adventitious humidity. The acid of vitriol is most conveniently mixed with the water in an earthen or stone-ware vessel: for unless the mixture be made exceedingly slowly, it grows so hot as to endanger breaking a glass one.

The spirit of sea-salt is the weakest of the mineral acids, but stronger than any of the vegetable: It requires

quires a greater fire to distil it than that of nitre, yet is more readily dissipated by the action of the air. It is used chiefly as a menstruum for the making of other preparations; sometimes, likewise, it is given, properly diluted, as an antiphlogistic, aperient, and diuretic, from ten to sixty or seventy drops.

ACETUM DISTILLATUM.

Lond.

Distilled vinegar.

Take of

Vinegar, five pints.

Distil with a gentle fire, in glass vessels, so long as the drops fall free from empyreuma.

Edin.

Let eight pounds of vinegar be distilled in glass vessels with a gentle heat. Let the two first pounds that come over be thrown away as containing too much water; let four pounds next following be reserved as the distilled vinegar. What remains is a still stronger acid, but too much acted on by the heat.

THIS process may be performed either in a common still with its head, or in a retort. The better kinds of wine-vinegar should be made use of: those prepared from malt liquors, however fine and clear they may seem to be, contain a large quantity of a viscous substance, as appears from the sliminess and ropiness to which they are very much subject: this not only hinders the acid parts from arising freely, but likewise is apt to make the vinegar boil over into the recipient, and at the same time disposes it to receive a disagreeable impression from the fire. And indeed, with the best kind of vinegar, if the distillation be carried on to any great length, it is extremely difficult to

avoid an empyreuma. The best method of preventing this inconvenience is, if a retort be made use of, to place the sand but a little way up its sides, and when somewhat more than half the liquor is come over, to pour on the remainder a quantity of fresh vinegar equal to that of the liquor drawn off. This may be repeated three or four times; the vinegar supplied at each time being previously made hot. The addition of cold liquor would not only prolong the operation, but also endanger breaking the retort. If the common still be employed, it should likewise be occasionally supplied with fresh vinegar in proportion as the spirit runs off; and this continued until the process can be conveniently carried no farther: The distilled spirit must be rectified by a second distillation in a retort or glass alembic; for although the head and receiver be of glass or stone ware, the acid will contract a metallic taint from the pewter worm.

The residuum of this process is commonly thrown away as useless, although, if skilfully managed, it might be made to turn to good account; the most acid parts of the vinegar still remaining in it. Mixed with about three times its weight of fine dry sand, and committed to distillation in a retort, with a well-regulated fire, it yields an exceeding strong acid spirit, together with an empyreumatic oil, which taints the spirit with a disagreeable odour. This acid is nevertheless, without any rectification, better for some purposes (as a little of it will go a great way) than the pure spirit; particularly for making the sal diureticus or kali acetatum of the London college; for there the oily matter, on which its ill flavour depends, is burnt out by the calcination.

The spirit of vinegar is a purer

and stronger acid than vinegar itself, with which it agrees in other respects. The medical virtues of these liquors may be seen in the *Materia Medica*, under the article *ACETUM*, page 116. Their principal difference from the mineral acids consists in their being milder, less stimulating, less disposed to affect the kidneys and promote the urinary secretions, or to coagulate the animal juices. The matter left after the distillation in glass-vessels, tho' not used in medicine, would doubtless prove a serviceable detergent saponaceous acid; and in this light it stands recommended by Boerhaave.

ACETUM CONCENTRATUM.

Succ.

Concentrated vinegar.

Let white-wine vinegar be frozen in a wooden vessel in cold winter weather; and let the fluid in the middle separated from the ice be preserved for use. This may be considered as sufficiently strong if one dram of it be capable of saturating a scruple of the fixed vegetable alkali.

THIS is a very easy mode for obtaining the acid of vinegar in a concentrated state, and freed from a considerable proportion of its water. But at the same time we do not thus obtain the acid either so much concentrated, or in so pure a state as by the following process.

ACIDUM ACETOSUM.

Lond.

Acetous acid.

Take of

Verdeggris, in coarse powder, two pounds.

Dry it perfectly by means of a water-bath saturated with sea-salt;

then distil in a sand-bath, and after that distil the liquor.

Its specific gravity is to that of distilled water as 1,050 to 1000.

By this process it may be readily concluded that we obtain the acetous acid in its most concentrated state, and with the least admixture of water. And after the re-distillation, it may also be supposed that it will be free from all mixture of the copper. But the internal use of it has been objected to by some, on the supposition that it may still retain a portion of the metal; and hitherto it has, we believe, been but little employed.

ACIDUM TARTARI CRYSTALLISATUM.

Succ.

Crystallised acid of tartar.

Take of

Prepared chalk, frequently washed with warm water, two pounds;

Spring water, thirty-two pounds.

After slight boiling, by degrees add of cream of tartar seven pounds, or as much as is sufficient for saturation. Removing the vessel from the fire, let it stand for half an hour, then cautiously pour the clear liquor on the surface into a glass vessel. Wash the residuum or tartarous selenites by pouring water upon it three or four times. To the residuum afterwards add of weak vitriolic acid sixteen pounds, let it be digested for a day, frequently agitating it with a wooden spatula. After this pour the acid liquor into a glass vessel: But with the residuum mix sixteen pounds of spring water: Strain it through paper, and again pour water upon the residuum till it become inspid. Let the

the acid liquors mixed together in a glass vessel be boiled to the consistence of a thin syrup; which being strained, must be set apart for the formation of crystals. Let the crystals collected after repeated distillations be dried upon paper, and afterwards kept in a dry place.

If before crystallization a little of the inspissated acid liquor be diluted with four times its quantity of pure water, and a few drops of vinegar of litharge be put into it, a white sediment will immediately be deposited. If a few drops of the diluted nitrous acid be then added, the mixture will become limpid if the tartarous liquor be pure and entirely free from the vitriolic acid; but if it be not, it will become white. This fault, however, may be corrected, if the acid of tartar be diluted with six pounds of water and a few ounces of the tartarous selenites added to it. After this it may be digested, strained, and crystallized.

By this process, the acid of tartar may be obtained in a pure solid form. It would, however, be perhaps an improvement of the process, if quicklime be employed in place of chalk. For Dr Black has found that quicklime absorbs the whole of the tartarous acid, and then the supernatant liquor contains only the alkaline part of the tartar; whereas when chalk is employed, it contains a solution of soluble tartar, the chalk obtaining only the superabundant acid. By this method then a greater quantity of tartarous acid might be obtained from the sediment. The tartarous acid has not hitherto been much employed in its pure state. But besides being useful for some purposes in medicine,

for which the cream of tartar is at present in use, and where that supersaturated neutral may be less proper, there is also reason to suppose, that from the employment of the pure acid, we should arrive at more certainty in the preparation of the antimonium tartarizatum, or tartar emetic, than by employing the cream of tartar, the proportion of acid in which varies very much from different circumstances. The pure acid of tartar might also probably be employed with advantage for bringing other metallic substances to a saline state.

ACIDUM TARTARI DISTILLATUM.

Succ.

Distilled acid of tartar.

Let pounded crude tartar be put into a tubulated earthen or iron retort till it fills about two-thirds of it, and let distillation be performed by gradually increasing the heat. Into the recipient, which should be very large, an acid liquor will pass over together with the oil; which being separated from the oil, must again be distilled from a glass retort.

If the residuum contained in the earthen or iron retort be diluted with water strained through paper and boiled to dryness, it gives what is called the alkali of tartar. If this do not appear white, it may become such by burning, solution, straining, and evaporation.

THIS is another mode of obtaining both the acid and alkali of tartar in a pretty pure state, and, as well as the former, it is not unworthy of being adopted into our pharmacopœias.

AQUA

AQUA AERIS FIXI.

*Rofs.**Aerated water.*

Let spring water be saturated with the fixed air, or ærial acid, arising from a solution of chalk in vitriolic acid, or in any similar acid. Water may also be impregnated by the fixed air arising from fermenting liquors.

THE ærial acid, of which we have already had occasion to make some observations, (vide page 65), besides the great influence which it has as affecting different saline bodies into the composition of which it enters, is also frequently employed in medicine, with a view to its own action on the human body. The late ingenious Dr Dobson in his Commentary on Fixed Air, has pointed out many purposes for which it may be usefully employed, and several different forms under which it may be used. But there is no form under which it is at present more frequently had recourse to than that of aerated or mephitic water, as it has often been called. And although not yet received either into the London or Edinburgh pharmacopœias, it is daily employed in practice, and is we think justly intitled to a place among the saline preparations.

The most convenient mode of impregnating water with the aerial acid, and thus having it in our power to exhibit that acid as it were in a diluted state, is by means of a well known and sufficiently simple apparatus, contrived by that ingenious philosopher Dr Nooth. Such a machine ought, we think, to be kept in every shop for the more ready preparation of this fluid.

Water properly impregnated with the ærial acid, has an agreeable acidulous taste. It is often employed with great advantage in the way of

common drink, by those who are subjected to stomach ailments, and by calculous patients. But, besides this, it furnishes an excellent vehicle for the exhibition of many other medicines.

Besides the simple aerated water, the Pharmacopœia Roslica contains also an aqua æris fixi martialis, or ferruginous aerated water. This is prepared by suspending iron wires in that water till the water be fully saturated with the metal. And in consequence of this acid, simple water becomes a menstruum both for different metallic and earthy substances. But water in this state may be considered rather as fitted for those purposes for which chalybeates are in use, than as a preparation of the ærial acid.

SAL ET OLEUM SUCCINI.

 *Lond.**Salt and oil of amber.*

Take of

Amber, two pounds.

Distil in a heat of sand, gradually augmented: an acid liquor, oil, and salt fouled with oil, will ascend.

OF this article we have already offered some observations under the head of Essential Oils. The directions here given by the London college differ chiefly from those of the Edinburgh college formerly mentioned, in no sand being employed: But when care was taken that the sand be pure, it can give no improper impregnation to the medicine, and may prevent some inconveniences in the distillation, particularly that of the amber rising in substance into the receiver.

SAL SUCCINI PURIFICATUS.

 *Lond.**Purified salt of amber.*

Take

Take of

Salt of amber, half a pound ;

Distilled water, one pint.

Boil the salt in the distilled water, and set aside the solution to crystallize.

SALT of amber when perfectly pure, is white, of an acid taste, and not ungrateful. It requires for its solution, of cold water, in summer, about twenty times its weight; of boiling water about twice its weight; it is scarcely soluble in rectified spirit without the assistance of heat.

It is given as a cooling diuretic in doses of a few grains, and also in hysterical complaints.

FLORES BENZOËS.

Edinb.

Flowers of Benzoine.

Take of

Benzoine, in powder, one pound.

Put it into an earthen pot placed in sand; and, with a slow fire, sublime the flowers into a proper cone fitted to the pot.

If the flowers be of a yellow colour, mix them with white clay, and sublime them a second time.

FLORES BENZOINI.

Edinb.

Put any quantity of powdered benzoine into an earthen pot, to which, after filling it with a large conical paper cap, apply a gentle heat that the flowers may sublime. If the flowers be impregnated with oil, let them be purified by solution in warm water and crystallization.

BENZOINE, exposed in a retort to a gentle fire, melts and sends up into the neck white, shining crystalline flowers, which are followed by any oily substance. These flowers,

which are at present considered as a peculiar acid, are by some termed *acidum benzoicum*. On raising the heat a little (a recipient being applied to the neck of the retort) a thin yellowish oil comes over, intermingled with an acid liquor, and afterwards a thick butyraceous substance: this last, liquefied in boiling water, gives out to it a considerable quantity of saline matter (separable by filtration and proper exhalation), which appears in all respects similar to the flowers.

It appears, therefore, that the whole quantity of flowers which benzoine is capable of yielding, cannot be obtained by the above processes, since a considerable portion arises after the time of their being discontinued. The greatest part of the flowers arise with a less degree of heat than what is necessary to elevate the oil; but if the operation be hastily conducted, or if the fire be not exceedingly gentle, the oil will arise along with the flowers, and render them foul. Hence in the way of trade, it is extremely difficult to prepare them of the requisite whiteness and purity; the heat which becomes necessary, when large quantities of the benzoine are employed, being so great as to force over some of the oil along with them.

In order, therefore, to obtain these flowers in perfection, only a small quantity of benzoine should be put into the vessel at a time; and that this may not be any impediment to the requisite dispatch, a number of shallow, flat-bottomed, earthen dishes may be employed, each fitted with another vessel inverted over it, or a paper cone. With these you may fill a sand furnace; having fresh dishes charged in readiness to replace those in the furnace, as soon as the process shall appear finished in them: the residuum of the benzoine

zoinc should be scraped out of each of the vessels before a fresh parcel be put in.

These flowers, when made in perfection, have an agreeable taste and fragrant smell. They totally dissolve in spirit of wine; and likewise, by the assistance of heat, in water; but separate again from the latter upon the liquor's growing cold, shooting into saline spicula, which unite together into irregular masses. By the mediation of sugar they remain suspended in cold water, and thus form an elegant balsamic syrup. Some have held them in great esteem as pectoral and sudorific, in the dose of half a scruple or more: but the present practice rarely makes use of them, on account of the offensive oil which, as usually prepared, they are tainted with, and from which a fresh sublimation from tobacco pipe clay, as formerly practised, did not free them so effectually as might be wished. The observations above related, point out the method of deparating them more perfectly, viz. by solution, filtration, and crystallization.

They enter the composition of the paregoric elixir, or *tinctura opii camphorata*, as it is now called.

SAL TARTARI.

Edinb.

Salt of tartar.

Take of

Tartar, what quantity you please. Roll it up in a piece of moist bibulous paper, or put it into a crucible, and surrounding it with live coals, burn it into a coal; next, having beat this coal, calcine it in an open crucible with a middling heat, taking care that it do not melt, and continue the calcination till the coal becomes of a white, or at least of an ash colour. Then dissolve it in warm water; strain the liquor through

a cloth, and evaporate it in a clean iron vessel; diligently stirring it towards the end of the process with an iron spatula, to prevent it from sticking to the bottom of the vessel. A very white salt will remain, which is to be left a little longer on the fire, till the bottom of the vessel becomes almost red. Lastly, when the salt is grown cold, let it be put up in glass vessels well shut.

NATIVE tartar is a saline substance, compounded of an acid, of a fixt alkali, and of oily, viscous, and colouring matter. The purpose of the above process is, to free it from every other matter but the fixed alkali. From the mistaken notion, that tartar was essentially an acid mixed only with impurities, it has been generally supposed that the effect of this operation was the conversion of an acid into an alkali by means of heat. But since Mr Scheele has discovered, that the proper matter of tartar, freed from the oily and colouring parts, is really a salt compounded of an acid, which is predominant, and a fixt alkali, we have no farther need of such an obscure theory. The acid of the tartar by this process is dissipated by means of the heat; and the oily, viscous, and colouring matters, are partly dissipated, and partly brought to the state of insoluble earthy matter, easily separable by the future lixiviation from the alkali, where-with they were loosely combined. But by the last of these processes, something farther is carried on than the separation of the more palpable foreign matters. By allowing the salt, freed from the water of the lixivium, to remain upon the fire till the bottom of the vessel become almost red, any oily matter that may still be present seems to be decomposed by the united action of the heat

heat and fixt alkali forming with a part of the latter, by their reciprocal action, a volatile alkaline salt, forthwith discharged in elastic vapours. Besides the complete discharge of the above principles, the remaining fixt alkali also suffers a considerable loss of its fixed air, or ærial acid; with which, when fully saturated, it forms the imperfect neutral salt, denominated by Dr Black, *mild fixed alkali*; on this account it is somewhat caustic, considerably deliquescent, and in proportion to its possessing these properties more or less, it more or less nearly approaches to the state of pure alkali. It is not, however, so effectually deprived of fixed air as to be sufficiently caustic for a number of purposes. Where causticity is not required, the salt thus purified is abundantly fit for most pharmaceutical purposes: but as a native tartar generally contains small portions of neutral salts besides the foreign matters already noticed, it is necessary, if we wish to have a very pure alkali for nice operations, to employ crystallization, and other means beside the process here directed.

The white and red sorts of tartar are equally fit for the purpose of making fixt salt; the only difference is, that the white affords a somewhat larger quantity than the other; from sixteen ounces of this sort, upwards of four ounces of fixt alkaline salt may be obtained. The use of the paper is to prevent the smaller pieces of the tartar from dropping down into the ash-hole, through the interstices of the coals, upon first injecting it into the furnace.

The calcination of the salt (if the tartar was sufficiently burnt at first) does not increase its strength so much as is supposed: nor is the greenish or blue colour any certain mark either of its strength, or of its

having been, as was formerly supposed, long exposed to a vehement fire: for if the crucible be perfectly clean, close covered, and has stood the fire without cracking, the salt will turn out white, though kept melted and reverberated ever so long: whilst, on the other hand, a slight crack happening in the crucible, or a spark of coal falling in, shall in a few minutes give the salt the colour admired. The colour in effect, is a mark rather of its containing some inflammable matter, than of its strength.

The vegetable alkali prepared from tartar has now no place in the London Pharmacopœia, or at least it is included under the following article.

KALI PRÆPARATUM.

Lond.

Prepared kali.

Take of

Pot-ash, two pounds;

Boiling distilled water, three pints.

Dissolve and filter through paper; evaporate the liquor till a pellicle appears on the surface; then set it aside for a night, that the neutral salts may crystallize; after which pour out the liquor, and boil away the whole of the water, constantly stirring, lest any salt should adhere to the pot.

In like manner is purified impure kali from the ashes of any kind of vegetable.

The same salt may be prepared from tartar burnt till it becomes of an ash colour.

SAL ALCALINUS fixus VEGETABILIS PURIFICATUS.

Edinb.

Fixed vegetable alkaline salt purified.

Let the fixed alkaline salt, called in

Eng-

English *pearl-ashes*, be put into a crucible, and brought to a somewhat red heat, that the oily impurities, if there be any, may be consumed; then having beat and agitated it with an equal weight of water, let them be well mixed. After the feces have subsided, pour the ley into a very clean iron pot, and boil to dryness, diligently stirring the salt towards the end of the process, to prevent its sticking to the vessel.

This salt, if it hath been rightly purified, tho' it be very dry, if beat with an equal weight of water, can be dissolved into a liquor void of colour or smell.

THE potash used in commerce is an alkali mixed with a considerable quantity of remaining charcoal, sulphur, vitriolated tartar, and oily matter. In the large manufactories, the alkaline part is indeed considerably freed from these impurities by mixing the weed-ashes with water, evaporating the clear ley, and burning the remaining part in an oven; but besides that this process is insufficient for the complete separation of the impurities, it also superadds a quantity of stony matter, giving to the alkali the *pearl* appearance (whence its name), and rendering it altogether unfit for pharmaceutical purposes. By the processes here directed, the alkali is effectually freed from all these heterogeneous matters, excepting perhaps a small proportion of vitriolated tartar, or other neutral salt, which may very generally be neglected. As in this process no after calcination is directed, it is probable that the fixed alkali thus prepared will not prove so caustic, that is to say, is not so considerably deprived of fixed air, as in the process directed for preparing the *sal tartari*. It is, how-

ever, sufficiently pure for most purposes; and we consider the above process as the most convenient and cheap method of obtaining the vegetable fixed alkali, in its mild state.

THE purified vegetable alkali, has been known in our pharmacopœias under the different names of *sal absinthii*, *sal tartari*, &c. But all these being now known to be at bottom the same, the terms, as leading to error, have been with justice expunged; and it has been a desideratum to discover some short name equally applicable to the whole. The term employed by the Edinburgh college is too long, being rather a description than a name. But to that employed by the London college, *Kali*, objections have also been made. And it must be allowed, that besides the inconveniences which arises from its being an indeclinable word, the fossil alkali is equally entitled to the same appellation. Besides this, as a considerable portion of the fossil alkali is prepared from burning a vegetable growing on the sea coasts, which has the name of *kali*, the *kali spinosum* of Linnæus, some apparent contradiction and ambiguity from thence arise. And the London college would perhaps have done better, if they had adopted the term *Potassa*; a name which has been appropriated to this salt by some of the most eminent modern chemists.

The purified potassa is frequently employed in medicine, in conjunction with other articles, particularly for the formation of saline neutral draughts and mixtures: But it is used also by itself in doses from three or four grains to fifteen or twenty; and it frequently operates as a powerful diuretic, particularly when aided by proper dilution.

AQUA KALI.

Lond.

Water of kali.

Take of

Kali, one pound.

Set it by in a moist place till it be dissolved, and then strain it.

THIS article had a place in former editions of our pharmacopoeias under the titles of *lixivium tartari*, *liquamen salis tartaris*, *oleum tartari per deliquium*, &c. It is, however, to be considered as a mere watery solution of the mild vegetable alkali, formed by its attracting moisture from the air; and therefore it is with propriety styled the *aqua kali*.

The solutions of fixt alkaline salts, effected by exposing them to a moist air, are generally looked upon as being purer than those made by applying water directly: for though the salt be repeatedly dissolved in water, filtered, and exsiccated; yet on being liquefied by the humidity of the air, it will still deposit a portion of earthy matter: but it must be observed, that the exsiccated salt leaves always an earthy matter on being dissolved in water, as well as on being deliquated in the air. Whether it leaves more in the one way than in the other, is not determined with precision. The deliquated *lixivium* is said to contain nearly one part of the alkaline salt to three of an aqueous fluid. It is indifferent, in regard to the *lixivium* itself, whether the white ashes of tartar, or the salt extracted from them, be used; but as the ashes leave a much greater quantity of earth, the separation of the ley proves more troublesome.

The *aqua kali* of the present edition of the London pharmacopoeia then may be considered as an improvement of the *lixivium tartari* of their former edition. But the Edinburgh college considering this solution as being in no respect different

from that made by pure water, have entirely rejected this preparation from their pharmacopoeia, and probably with justice.

AQUA KALI PURI.

Lond.

Water of pure kali.

Take of

Kali, four pounds;

Quick-lime, six pounds;

Distilled water, four gallons.

Put four pints of water to the lime, and let them stand together for an hour; after which, add the kali and the rest of the water; then boil for a quarter of an hour: suffer the liquor to cool, and strain. A pint of this liquor ought to weigh sixteen ounces. If the liquor effervesces with any acid, add more lime.

A preparation similar to this had a place in the former edition of the London pharmacopoeia, under the title of *lixivium saponarium*. Quicklime, by depriving the mild alkali of its aerial acid, renders it caustic: hence this ley is much more acrimonious, and acts more powerfully as a menstruum of oils, fats, &c. than a solution of the potassa alone. The lime should be used fresh from the kiln; by long keeping, even in close vessels, it loses of its strength: such should be made choice of as is thoroughly burnt or calcined, which may be known by its comparative lightness.

All the instruments employed in this process, should be either of wood, earthen ware, or glass: the common metallic ones would be corroded by the ley, so as either to discolour or communicate disagreeable qualities to it. If it should be needful to filtre or strain the liquor, care must be taken that the filtre or strainer be of vegetable matter: woollen, silk, and that sort of filtering

ing paper which is made of animal substances, are quickly corroded and dissolved by it.

The liquor is most conveniently weighed in a narrow-necked glass bottle, of such a size, that the measure of a wine pint may arise some height into its neck; the place to which it reaches being marked with a diamond. A pint of the common leys of our soapmakers weighs more than sixteen ounces: it has been found that their soap-ley will be reduced to the standard here proposed, by mixing it with something less than equal measure of water.

Although this liquor is indeed pure alkali dissolved in water, yet we are inclined to give the preference to the name employed by the Edinburgh college, as well as to the modes of preparing it, directed in the following formulæ.

LIXIVIUM CAUSTICUM.

Edinb.

Caustic ley.

Take of

Fresh-burnt quicklime, eight ounces;

Purified fixed vegetable alkaline salt, eight ounces.

Throw in the quicklime, with twenty-eight ounces of warm water, into an iron or earthen vessel. The ebullition and extinction of the lime being perfectly finished, instantly add the alkaline salt; and having thoroughly mixed them, shut the vessel till it cools. Stir the cooled matter, and pour out the whole into a glass funnel, whose throat must be stopt up with a piece of clean rag. Let the upper mouth of the funnel be covered, whilst the tube of it is inserted into a glass vessel, so that the ley may gradually drop through the rag into that vessel.

When it first gives over dropping, pour upon it into the funnel some ounces of water; but cautiously, and in such a manner, that the water shall swim above the matter. The ley will again begin to drop, and the affusion of water is to be repeated in the same manner, until three pounds have dropped, which takes up the space of two or three days; then agitating the superior and inferior parts of the ley together, mix them, and put up the liquor in a well-shut vessel. If the ley be rightly prepared, it will be void of colour or smell; nor will it raise an effervescence with acids, except, perhaps, a very slight one. Colour and odour denote the salt not sufficiently calcined; and effervescence, that the quicklime has not been good.

THE reasons and propriety of the different steps in the above process will be best understood by studying the theory on which it is founded. The principle of mildness in all alkaline salts, whether fixed or volatile, vegetable or fossil, in very evidently fixed air, or the ærial acid: But as quicklime has a greater attraction for fixed air than any of these salts, so if this substance be presented to any of them, they are thereby deprived of their fixed air, and forthwith become caustic. This is what precisely happens in the above process (see ANALYSIS of the VEGETABLES by FIRE, page 40. The propriety of closely shutting the vessels through almost every step of the operation, is sufficiently obvious; viz. to prevent the absorption of fixed air from the atmosphere which might defeat our intentions. When only a piece of cloth is put into the throat of the funnel, the operation

is

is much more tedious, because the pores of the cloth are soon blocked up with the wet powdery matter. To prevent this, it may be convenient to place above the cloth a piece of fine Fly's wire-work; but as metallic matters are apt to be corroded, the method used by Dr Black is of all proposed the most eligible. The Doctor first drops a rugged stone into the tube of the funnel, in a certain place of which it forms itself a fine bed, whilst the inequalities on its surface afford interstices of sufficient size for the passage of the filtering liquor. On the upper surface of this stone he lightly impedes a thin layer of lint or clean tow; immediately above this, but not in contact with it, he drops a stone similar to the former, and of a size proportioned to the swell in the upper part of the tube of the funnel. The interstices between this second stone and the funnel are filled up with stones of a less dimension, and the gradation uniformly continued till pretty small sand is employed. Finally, this is covered with a layer of coarser sand and small stones to sustain the weight of the matter, and to prevent its being inviscated in the minute interstices of the fine sand. The throat of the funnel being thus built up, the stony fabric is to be freed of clay and other adhering impurities, by making clean water pass through it till the water comes clear and transparent from the extremity of the funnel. It is obvious, that in this contrivance the author has, as usual, copied nature in the means she employs to deplete watery matters in the bowels of the earth; and it might be usefully applied for the filtration of various other fluids.

It is a very necessary caution to pour the water gently into the funnel; for if it be thrown in a forcible stream, a quantity of the powdery

matter will be washed down, and render all our previous labour useless. The part of the ley holding the greatest quantity of salt in solution, will no doubt be heaviest, and will consequently sink lowest in the vessel: the agitation of the ley is therefore necessary, in order procure a solution of uniform strength through all its parts. If the salt has been previously freed of oily and other inflammable matters, this ley will be colourless and void of smell. If the quicklime has been so effectually deprived of its own fixed air, as to be able to absorb the whole of that in the alkali, the ley will make no effervescence with acids, being now deprived of fixed air, to the discharge of which by acids this appearance is to be ascribed in the mild or aerated alkalies.

The caustic ley is therefore to be considered as a solution of pure alkali in water. See article *FIXED AIR*, page 65.

It may be proper to observe, for the sake of understanding the whole of the theory of the above process, that whilst the alkali has become caustic, from being deprived of fixed air by the quicklime, the lime has in its turn become mild and insoluble in water from having received the fixed air of alkali.

The caustic ley, under various pompous names, has been much used as a lithontriptic; but its fame is now beginning to decline. In acidities in the stomach, attended with much flatulence and laxity, the caustic ley is better adapted than mild alkalies; as in its union with the acid matter it does not separate air. When covered with mucilaginous matters, it may be safely taken into the stomach; and by stimulating, it coincides with the other intentions of cure; by some dyspeptic patients it has been employed with advantage.

KALI PURUM.

Lond.

Pure kali.

Take of

Water of pure kali, one gallon.

Evaporate it to dryness; after which let the salt melt on the fire, and pour it out.

CAUSTICUM COMMUNE
ACERRIMUM.

Edinb.

The strongest common caustic.

Take of

Caustic ley, what quantity you please.

Evaporate it in a very clean iron vessel upon a gentle fire, till, on the ebullition ceasing, the saline matter gently flows like oil, which happens before the vessel becomes red. Pour out the caustic, thus liquefied, upon a smooth iron plate; let it be divided into small pieces before it hardens, and these are to be put up into well-shut phials.

THESE preparations may be considered as differing in no essential particular. But the directions given by the Edinburgh college are the most precise and distinct.

The effect of the above processes is simply to discharge the water of the solution, whereby the causticity of the alkali is more concentrated in any given quantity. These preparations are strong and sudden caustics. The caustic prepared in this way has an inconvenience of being apt to liquefy too much upon the part to which it is applied, so that it is not easily confined within the limits in which it is intended to operate; and indeed the suddenness of its action depends on this disposition to liquefy.

CALIX CUM KALI PURO.

Lond.

Lime with pure kali.

Take of

Quick-lime, five pounds and four ounces;

Water of pure kali, sixteen pounds by weight.

Boil away the water of pure kali to a fourth part; then sprinkle in the lime, broken to powder by the affusion of water. Keep it in a vessel close stopped.

CAUSTICUM COMMUNE MI-
TIUS

Edinb.

The milder common caustic.

Take of

Caustic ley, what quantity you please.

Evaporate in an iron vessel till one-third remains; then mix with it as much new-slaked quicklime as will bring it to the consistence of pretty solid pap, which is to be kept in a vessel closely stop'd.

THESE preparations do not essentially differ from each other, while the chief difference between the present formula and that which stood in the last edition of the London pharmacopœia is in the name. It was then styled the *causticum commune acerrimum*.

Here the addition of lime in substance renders the preparation less apt to liquefy than the foregoing, and consequently it is more easily confinable within the intended limits, but proportionably slower in its operation. The design of keeping or of slaking the lime is, that its acrimony may be somewhat abated.

Exposed long to the air, these preparations gradually resume their power of effervescence, and lose proportionably

portionably of the additional activity which the quicklime had produced in them.

NATRON PRÆPARATUM.

Lond.

Prepared natron.

Take of

Barilla, powdered, two pounds;
Distilled water, one gallon.

Boil the barilla into four pints of water for half an hour, and strain. Boil the part which remains after straining with the rest of the water, and strain. Evaporate the mixed liquors to two pints, and set them by for eight days: strain the liquor again; and, after due boiling, set it aside to crystallize. Dissolve the crystals in distilled water; strain the solution, boil and set it aside to crystallize.

THE name of *natron*, here used by the London college for the fixed fossil alkali, has, as well as their name for the vegetable alkali, been by some objected to. And although they are here supported by the authority of the ancients, yet perhaps they would have done better in following the best modern chemists by employing the term *sal soda*. This article differs in name only from the following.

SAL ALCALINUS fixus FOS- SILIS PURIFICATUS.

Edinb.

Fixed fossil alkaline salt purified.

Take of

Ashes of Spanish kali, commonly called soda or barilla, as much as you please.

Bruise them; then boil in water till all the salt be dissolved in the water. Strain it thro' paper, and evaporate in an iron vessel, so that after the liquor has cooled the salt may concrete into crystals.

By the above processes, the fossil alkali is obtained sufficiently pure, being much more disposed to crystallize than the vegetable alkali; the admixture of this last, objected to by Dr Lewis, is hereby in a great measure prevented.

It is with great propriety, that in this, as well as many other processes, the London college direct the use of distilled water, as being free from every impregnation.

The natron, or fossil alkali, is found lying upon the ground in the island of Teneriff, and some other countries. The native productions of this salt seem to have been better known to the ancients than to late naturalists; and it is, with good reason, supposed to be the nitre of the Bible. How far the native natron may supersede artificial means to procure it from mixed bodies, we have not been able to learn with certainty.

The fossil alkali is not only a constituent of different neutrals, but is also sometimes employed as a medicine by itself. And in its purified state it has been by some reckoned useful in affections of the scrophulous kind.

AMMONIA PRÆPARATA.

Lond.

Prepared Ammonia.

Take of

Sal ammoniac, powdered, one pound;

Prepared chalk, two pounds.

Mix and sublime.

AQUA AMMONIÆ.

Lond.

Water of ammonia.

Take of

Sal ammonica, one pound;

Pot-ash, one pound and a half;

Water, four pints.

Draw off two pints, by distillation, with a slow fire.

ALCALI VOLATILE ex SALE AMMONIACO, vulgo SAL AMMONIACUS VOLATILIS.

Edinb.

Volatile alkali from sal ammoniac, commonly called Volatile sal ammoniac.

Take of

Sal ammoniac, one pound;

Chalk, very pure and dry, two pounds;

Mix them well, and sublime from a retort into a refrigerated receiver.

SPIRITUS SALIS AMMONIACI.

Edinb.

Spirit of sal ammoniac.

Take

Sal ammoniac,

Purified vegetable fixed alkali, of each sixteen ounces;

Water, two pounds.

Having mixed the salts, and put them into a glass retort, pour in the water; then distil to dryness with a sand-bath, gradually raising the heat.

THESE articles, which in the last edition of the London Pharmacopœia were styled *spiritus et sal volatilis salis ammoniaci*, were then directed to be prepared in the same manner.

Sal ammoniac is a neutral salt, composed of volatile alkali and marine acid. In these processes the acid is absorbed by the fixed alkali or chalk; and the volatile alkali is of course set at liberty.

The volatile alkali is, however, in its mild state, having caught the fixed air, or aerial acid, discharged from the fixed alkali or chalk on their uniting with the muriatic acid.

The fixed alkali begins to act upon the sal ammoniac, and extricates a

pungent urinous odour as soon as they are mixed. Hence it is most convenient not to mix them till put into the distilling vessel: the two salts may be dissolved separately in water, the solutions poured into a retort, and a receiver immediately fitted on. An equal weight of the fixed salt is fully, perhaps more than sufficient, to extricate all the volatile.

Chalk does not begin to act upon the the sal ammoniac till a considerable heat be applied. Hence these may be without inconvenience, and indeed ought to be thoroughly mixed together before they are put into the retort. The surface of the mixture may be covered with a little more powdered chalk, to prevent such particles of the sal ammoniac as may happen to lie uppermost from subliming unchanged. Tho' the fire must here be much greater than when fixed alkaline salt is used, it must not be strong, nor suddenly raised; for if it be, a part of the chalk (though of itself not capable of being elevated by any degree of heat) will be carried up along with the volatile salt. M. du Hamel experienced the justness of this observation: He relates, in the Memoirs of the French Academy of Sciences for the year 1735, that he frequently found his volatile salt, when a very strong fire was made use of in the sublimation, amount to more, sometimes one half more, than the weight of the crude sal ammoniac employed: and that, though it is certain that not three-fourths of this concrete are pure volatile salt, the fixed earthy matter, thus once volatilised by the alkali, arose along with it again upon the gentlest resublimation, dissolved with it in water, and exhaled with it in the air.

When all the salt has sublimed, and the receiver grown cool, it may

be taken off, and luted to another retort charged with fresh materials. This process may be repeated till the recipient appears lined with volatile salt to a considerable thickness; the vessel must then be broken, in order to get out the salt.

The volatile salt and spirit of sal ammoniac are the purest of all the medicines of this kind. They are somewhat more acrimonious than those produced directly from animal substances, which always contain a portion of the oil of the subject, and receive from thence some degree of a saponaceous quality. These last may be reduced to the same degree of purity, by combining them with acids into ammoniacal salts; and afterwards recovering the volatile alkali from these compounds by the process above directed.

The matter which remains in the retort after the distillation of the spirit, and sublimation of the salt of sal ammoniac, is found to consist of marine acid united with the fixt alkali or chalk employed. When fixt alkaline salts has been used as the intermedium, the residuum, or *caput mortuum* as it is called, yields, on solution and crystallisation, a salt exactly similar to the *spiritus salis marini coagulatus* afterwards described; and hence we may judge of the extraordinary virtues formerly attributed to this salt, under the names of *sal antihystericum*, *antihypochondriacum*, *febrifugum*, *digestivum Sylvii*, &c.

The *caput mortuum* of the volatile salt, where chalk is employed as an intermedium, exposed to a moist air, runs into a pungent liquor, which proves nearly the same with a solution of chalk made directly in the marine acid; it is called by some *oleum cretæ*; oil of chalk. If calcined shells, or other animal limes, be mingled with sal ammoniac, a mass will be ob-

tained, which likewise deliquesces in the air, and forms a liquor of the same kind.

AQUA AMMONIÆ PURÆ

Lond.

Water of pure ammonia.

Tak of

Sal ammoniac, one pound;
Quicklime, two pounds;
Water, one gallon.

Add to the lime two pints of the water. Let them stand together an hour; then add the sal ammoniac and the other six pints of water boiling, and immediately cover the vessel. Pour out the liquor when cold, and distil off with a slow fire one pint.

ALCALI VOLATILE CAUSTICUM, vulgo SPIRITUS SALIS AMMONIACI CUM CALCE VIVA.

Edinb.

Caustic volatile alkali, commonly called *spirit of sal ammoniac with quicklime*.

Take of

Quicklime, fresh burnt, two pounds;
Water one pound.

Having put the water into an iron or stone-ware vessel, add the quicklime, previously beat; cover the vessel for twenty-four hours, whilst the lime falls into a fine powder, which commit to the retort. Then add sixteen ounces of sal ammoniac, diluted with four times its weight of water; then shutting the mouth of the retort, mix them together by agitation. Lastly, distil into a refrigerated receiver, with a very gentle heat, so that the operator can easily bear the heat of the retort applied to his hands; twenty ounces of liquor are to be drawn off. In this distillation the vessels are to be so luted as

thoroughly to exclude the most penetrating vapours. After the distillation, however, they are to be opened, and the alkali poured out before the retort hath altogether cooled.

THE theory of this process is precisely the same with that directed for the preparation of *lixivium causticum*. The effect of the quicklime on the sal ammoniac, is very different from that of the chalk and fixt alkali on the foregoing process. Immediately on mixture, a very penetrating vapour exhales; and in distillation the whole of the volatile salt arises in a liquid form; no part of it appearing in a concrete state, how gently soever the liquor be redistilled. This spirit is far more pungent than the other, both in smell and taste; and, like fixt alkalies rendered caustic by the same intermedium, it raises no effervescence on the admixture of acids. The whole of these phenomena are to be ascribed to the absorption of fixed air from the alkali by means of the quicklime; and from being thus deprived of the aerial acid, the volatile alkali is brought to a caustic state.

This spirit is held to be too acrimonious for internal use, and has therefore been chiefly employed for smelling to in faintings, &c. tho' when properly diluted, it may be given inwardly with safety. It is a powerful menstruum for some vegetable substances, as Peruvian bark, from which the other spirits extract little. It is also most convenient for the purpose of rendering oils miscible with water; as in the preparation of what is called in extemporaneous practice *the oily mixture*.

Some have mixed a quantity of this with the officinal spirits both of sal ammoniac and of hartshorn:

which thus become more pungent, so as to bear an addition of a considerable quantity of water, without any danger of the discovery from the taste or smell. This abuse would be prevented, if what has been formerly laid down as a mark of the strength of these spirits (some of the volatile salt remaining undissolved in them) were attended to. It may be detected by adding to a little of the suspected spirit about one-fourth its quantity or more of rectified spirit of wine: which, if the volatile spirit be genuine, will precipitate a part of its volatile salt, but occasions no visible separation or change in the caustic spirit, or in those which are sophisticated with it.

Others have substituted to the spirit of sal ammoniac a solution of crude sal ammoniac and fixt alkaline salt mixed together. This mixture deposits a saline matter on the addition of spirit of wine, like the genuine spirit; from which, however, it may be distinguished, by the salt which is thus separated not being a volatile alkaline, but a fixt neutral salt. The abuse may be more readily detected by a drop or two of solution of silver made in aquafortis, which will produce no change in the appearance of the true spirit, but will render the counterfeit turbid and milky.

LIQUOR VOLATILIS SAL
ET OLEUM, CORNU CER-
VI.

Lond.

The volatile liquor, salt, and oil, of hartshorn.

Take of

Hartshorn, ten pounds.

Distil with a fire gradually increased. A volatile liquor, salt, and oil, will ascend.

The oil and salt being separated, distil the liquor three times.

To the salt add an equal weight of prepared chalk, and sublime thrice, or till it become white.

The same volatile liquor, salt, and oil may be obtained from any parts (except the fat) of any kind of animals.

THE volatile alkali obtained from hartshorn, whether in a solid or fluid state, is precisely the same with that obtained from sal ammoniac. And as that process is the easiest, the Edinburgh college have entirely rejected the present. While, however, the names of spirit and salt of hartshorn are still in daily use, ammonia, or the volatile alkali, is still prepared from bones and other animal substances by several very extensive traders.

The wholesale dealers have very large pots for the distillation of hartshorn, with earthen heads almost like those of the common still: for receivers, they use a couple of oil jars, the mouths of which are luted together; the pipe that comes from the head enters the lowermost jar through a hole made on purpose in its bottom. When a large quantity of the subject is to be distilled, it is customary to continue the operation for several days successively; only unluting the head occasionally to put in fresh materials.

When only a small quantity of spirit or salt is wanted, a common iron pot, such as is usually fixed in sand furnaces, may be employed; an iron head being fitted to it. The receiver ought to be large, and a glass, or rather tin adopter, inserted between it and the pipe of the head.

The distilling vessel being charged with pieces of the horn, a moderate fire is applied, which is slowly increased, and raised at length almost to the utmost degree. At

first a watery liquor arises; the quantity of which will be smaller or greater according as the horns were more or less dry: this is succeeded by the salt and oil; the salt at first dissolves as it comes over in the phlegm, and thus forms what is called *spirit*. When the phlegm is saturated, the remainder of the salt concretes in a solid form to the sides of the recipient. If it be required to have the whole of the salt solid and undissolved, the phlegm should be removed as soon as the salt begins to arise, which may be known by the appearance of white fumes: and that this may be done the more commodiously, the receiver should be left unluted, till this first part of the process be finished. The white vapours which now arise, sometimes come with such vehemence, as to throw off or burst the receiver; to prevent this accident, it is convenient to have a small hole in the luting; which may be occasionally stoppt with a wooden peg, or opened as the operator shall find proper. After the salt has all arisen, a thick dark-coloured oil comes over: the process is now to be discontinued; and the vessels, when grown cold, unluted.

All the liquid matters being poured out of the receiver, the salt which remains adhering to its sides is to be washed out with a little water, and added to the rest. It is convenient to let the whole stand for a few hours, that the oil may the better disengage itself from the liquor, so as to be first separated by a funnel, and afterwards more perfectly by filtration through wetted paper. The salt and spirits are then to be farther purified as above directed.

The spirit of hartshorn met with in the shops is extremely precarious in point of strength; the quantity of salt contained in it (on which its

efficacy depends) varying according as the distillation in rectifying it is continued for a longer or shorter time. If after the volatile salt has arisen, so much of the phlegm or watery part be driven over as is just sufficient to dissolve it, the spirit will be fully saturated, and as strong as it can be made. If the process be not at this instant stopped, the phlegm, continuing to arise, must render the spirit continually weaker and weaker. The distillation therefore ought to be discontinued at this period; or rather whilst some of the salt still remains undissolved: the spirit will thus prove always equal, and the buyer be furnished with a certain criterion of its strength. Very few have taken any notice of the abovementioned inconvenience of these kinds of spirits; and the remedy is first hinted at in the *Pharmacopœia Reformata*. The purity of the spirit is easily determined from its clearness and grateful odour.

VOLATILE alkaline salts, and their solutions called *Spirits*, agree, in many respects, with fixt alkalies, and their solutions or leys; as in changing the colour of blue flowers to a green; effervescing with and neutralising acids when in their mild state; liquefying the animal juices; and corroding the fleshy parts, so as when applied to the skin, and prevented from exhaling by a proper covering, to act as caustics; dissolving oils and sulphur, though less readily than the fixed alkalies, on account, probably, of their not being able to bear any considerable heat, by which their activity might be promoted. Their principal difference from the other alkalies seems to consist in their volatility: they exhale or emit pungent vapours in the coldest state of the atmosphere; and by their stimulating

smell they prove serviceable in languors and faintings. Taken internally, they discover a greater colliquating as well as stimulating power; the blood drawn from a vein, after their use has been continued for some time, is said to be remarkably more fluid than before; they are likewise more disposed to operate by perspiration, and to act on the nervous system. They are particularly useful in lethargic cases; in hysterical and hypochondriacal disorders, and in the languors, headaches, inflations of the stomach, flatulent colics, and other symptoms which attend them; they are generally found more serviceable to aged persons, and in phlegmatic habits, than in the opposite circumstances. In some fevers, particularly those of the low kind, accompanied with a cough, hoarseness, and a redundancy of phlegm, they are of great utility; raising the *vis vitæ*, and exciting a salutary diaphoresis: but in putrid fevers, scurvy, and wherever the mass of blood is thin and acrimonious, their use is ambiguous. As they are more powerful than the fixt, in liquefying tenacious humours; so they prove more hurtful, where the fluids are already in a colliquated state. In vernal intermittents, particularly those of the slow kind, they are often of the most efficacious remedy. Dr Bisset observes, in his *Essay on the Medical Constitution of Great Britain*, that though many cases occur which will yield to no other medicine than the bark, yet he has met with many which were only suppressed from time to time by the bark, but were completely cured by alkaline spirits: He tells us, that these spirits will often carry off vernal intermittents, without any previous evacuations; but that they are generally more effectual, if a purge be premised; and in plethoric or in-

flamma-

flamatory cafes, or where the fever personates a remittent, venefection is necessary.

These salts are most commodiously taken in a liquid form, largely diluted; or in that of a bolus, which should be made up only as it is wanted. The dose is from a grain or two to ten or twelve. Ten drops of a well made spirit, or saturated solution, are reckoned to contain about a grain of the salt. In intermittents, fifteen or twenty drops of the spirit are given in a tea-cupful of cold spring water, and repeated five or six times in each intermission.

THE volatile salts and spirits prepared from different animal substances, have been supposed capable of producing different effects upon the human body, and to receive specific virtues from the subject. The salt of vipers has been esteemed particularly serviceable in the disorders occasioned by the bite of that animal; and a salt drawn from the human skull, in diseases of the head. But modern practice acknowledges no such different effects from these preparations; and chemical experiments have shown their identity. There is, indeed, when not sufficiently purified, a very perceptible difference in the smell, taste, degree of pungency, and volatility of these salts; and in this state their medicinal virtues vary considerably enough to deserve notice: but this difference they have in common, according as they are more or less loaded with oil, not as they are produced from this or that animal substance. As first distilled, they may be looked upon as a kind of volatile soap, in which the oil is the prevailing principle; in this state they have much less of the proper alkaline acrimony and pungency than when they have under-

gone repeated distillations, and such other preparations as disengage the oil from the salt; for by these means they lose their saponaceous quality, and acquiring greater degrees of acrimony, become medicines of a different class. These preparations therefore do not differ near so much from each other, as they do from themselves in different states of purity. To which may be added, that when we consider them as loaded with oil, the virtues of a distilled animal oil itself are likewise to be brought into the account.

These oils, as first distilled, are highly fetid and offensive, of an extremely heating quality, and of such activity, that, according to Hoffman's account, half a drop dissolved in a dram of spirit of wine, is sufficient to raise a copious sweat. By repeated rectifications, they lose their offensiveness, and at the same time become mild in their medicinal operation. The rectified oils may be given to the quantity of twenty or thirty drops, and are said to be anodyne and antispasmodic, to procure a calm sleep and gentle sweat, without heating or exagitating the body, as has been observed in treating of the *oleum animale*. It is obvious, therefore, that the salts and spirits must differ, not only according to the quantity of oil they contain, but according to the quality of the oil itself in its different states.

The volatile salts and spirits, as first distilled, are of a brown colour, and a very offensive smell: by repeated rectification, as directed in the processes above set down, they lose great part of the oil on which these qualities depend, the salt becomes white, the spirit limpid as water, and of a grateful odour; and this is the mark of sufficient rectification.

It has been objected to the repeated rectification of these preparations, that, by separating the oil, it renders them similar to the pure salt and spirit of sal ammoniac, which are procurable at an easier rate. But the intention is not to purify them wholly from the oil, but to separate the grosser part, and to subtilize the rest, so as to bring it towards the same state as when the oil is rectified by itself. The rectification of spirit of hartshorn, has been repeated twenty times successively, and found still to participate of oil, but of an oil very different from what it was in the first distillation.

The rectified oils, in long-keeping, become again ferid. The salts and spirits also, however carefully rectified, suffer in length of time the same change; refusing their original brown colour and ill smell; a proof that the rectification is far from having divested them of oil. Any intentions, however, which they are thus capable of answering, may be as effectually accomplished by a mixture of the volatile alkali with the oleum animale, in its rectified state, to any extent that may be thought necessary.

KALI VITRIOLATUM.

Lond.

Vitriolated kali.

Take of

The salt which remains after the distillation of the nitrous acid, two pounds.

Distilled water, two gallons.

Burn out the superfluous acid, with a strong fire, in an open vessel: then boil it a little while in the water; strain, and set the liquor aside to crystallize.

THE salt thus formed, is the same with the vitriolated tartar of the last edition of the London Pharma-

copoeia; but it is now prepared in a cheaper and easier manner, at least for those who distil the nitrous acid. In both ways a neutral is formed, consisting of the fixed vegetable alkali, united to the vitriolic acid. But a similar compound may also be obtained by the following process of the Edinburgh Pharmacopoeia.

ALKALI FIXUM VEGETABILE VITRIOLATUM, vulgò TARTARUM VITRIOLATUM.

Edinb.

Vitriolated fixed vegetable alkali, commonly called Vitriolated tartar.

Take of

Vitriolic acid, diluted with six times its quantity of water, as much as you please.

Put it into a capacious glass vessel, and gradually drop into it, of purified fixed vegetable alkali, diluted with six times its weight of water, as much as is sufficient thoroughly to neutralize the acid. The effervescence being finished, strain the liquor through paper; and after proper evaporation, set it apart to crystallize.

THE operator ought to take care that the vapour separated during the effervescence shall not be applied to his nostrils; as fixed air, when applied to the olfactory nerves, is highly deleterious to life.

This is an elegant, and one of the least troublesome ways of preparing this salt. The Edinburgh college, in their former editions, ordered the acid liquor to be dropped into the alkaline: by the converse procedure now received, it is obviously more easy to secure against a redundance of acidity; and for the greater certainty in this point,

point, it may be expedient, as in the foregoing process, to drop in a little more of the alkaline ley than the cessation of the effervescence seems to require.

In a former edition of the same Pharmacopœia, the acid was directed to be diluted only with equal its quantity of water, and the alkali with that quantity of water which it is capable of imbibing from the atmosphere. By that imperfection there was not near enough of water to keep vitriolated tartar dissolved; on which account, as fast as the alkali was neutralized by the acid, a great part fell to the bottom in a powdery form. In order to obtain perfect and well formed crystals, the liquor should not be set in the cold, but continued in moderate heat, such as the hand can scarcely bear, that the water may slowly evaporate.

It is remarkable, that although the vitriolic acid and fixed alkaline salt do each readily unite with water, and strongly attract moisture, even from the air, yet the neutral resulting from the combination of these two, vitriolated tartar, is one of the salts most difficult of solution, very little of it being taken up by cold water.

Vitriolated tartar, in small doses, as a scruple or half a dram, is an useful aperient; in larger ones, as four or five drms, a mild cathartic, which does not pass off so hastily as the *sal catharticus amarus*, or *sal Glauberi*, and seems to extend its action further. The wholesale dealers in medicines have commonly substituted to it an article otherwise almost useless in their shops, the residuum of Glauber's spirit of nitre. This may be looked upon as a venial fraud, if the spirit has been prepared as formerly directed, and the residuum dissolved and crystallized: but it is a very dangerous one if the

vitriolic acid has been used in an over proportion, and the caput mortuum employed without crystallization; the salt in this case, instead of a mild neutral one, of a moderately bitter taste, proving highly acid. The purchaser ought therefore to insist upon the salt being in a crystalline form. The crystals, when perfect, are oblong, with six flat sides, and terminated at each end by a six-sided pyramid: some appear composed of two pyramids joined together by the bases; and many, in the most perfect crystallizations I have seen, are very irregular. They decrepitate in the fire, somewhat like those of sea-salt, for which they have sometimes been mistaken.

SAL POLYCHRESTUS.

Edinb.

Salt of many virtues.

Take

Nitre in powder,

Flowers of sulphur, of each equal parts.

Mingle them well together, and inject the mixture, by little and little at a time, into a red-hot crucible: the deslagration being over, let the salt cool, after which it is to be put up in a glass vessel well shut. The salt may be purified by dissolving it in warm water, filtering the solution, and exhaling it to dryness; or by crystallization.

THIS is another method of uniting the vitriolic acid with the common vegetable fixt alkali. Both the nitre and the sulphur are decomposed in the operation: the acid of the nitre and the inflammable principle of the sulphur, detonate together, and are dissipated; while the acid of the sulphur (which, as we have already seen, is no other than the vitriolic acid) remains com-

combined with the alkaline basis of the nitre. The shops, accordingly, have substituted to the sal polychrest the foregoing preparation.

NATRŌN VITRIOLATUM.

Lond.

Vitriolated natron.

Take of

The salt which remains after the distillation of the muriatic acid, two pounds;

Distilled water, two pints and an half.

Burn out the superfluous acid with a strong fire, in an open vessel; then boil it for a little in the water: strain the solution, and set it by to crystallize.

SODA VITRIOLATA, vulgo SAL CATHARTICUS GLAUBERI.

Edinb.

*Vitriolated soda, commonly called
Cathartic salt of Glauber.*

Dissolve in warm water the mass which remains after the distillation of spirit of sea-salt: filtre the solution, and crystallize the salt.

THE directions given for the preparation of this salt, long known by the name of Sal mirabile Glauberi, are nearly the same in the pharmacopoeias of both colleges, but those of the London college are to be preferred, as being most accurate and explicit.

In a former edition of the Edinburgh pharmacopoeia, it was ordered, that if the crystals (obtained as above) proved too sharp, they should be again dissolved in water, and the filtered liquor evaporated to such a pitch only as may dispose the salt to crystallize. But there is no great danger of the crystals proving too sharp, even when the spirit of salt is made with the lar-

gest proportion of oil of vitriol directed under that process. The liquor which remains after the crystallization is indeed very acid; and with regard to this preparation, it is convenient it should be so; for otherwise the crystals will be very small, and likewise in a small quantity. Where a sufficient proportion of oil of vitriol has not been employed in the distillation of the spirit, it is necessary to add some to the liquor, in order to promote the crystallization of the salt.

The title of sal catharticus, which this salt has often had, expresses its medical virtues. Taken from half an ounce to an ounce, or more, it proves a mild and useful purgative; and in smaller doses, largely diluted, a serviceable aperient and diuretic. The shops frequently substitute to it the *sal catharticus amarus*, which is nearly of the same quality, but somewhat more unpleasent, and, as is said, less mild in operation. They are very easily distinguishable from each other, by the effect of alkaline salts upon solutions of them. The solution of Glauber's salt suffers no visible change from this addition, its own basis being a true fixt alkali: but the solution of the *sal catharticus amarus* grows instantly white and turbid, its basis, which is an earth, being extricated copiously by the alkaline salt.

NITRUM PURIFICATUM.

Lond.

Purified nitre.

Take of

Nitre, two pounds,

Distilled water, four pints.

Boil the nitre in the water till it be dissolved; strain the solution, and set it apart to crystallize.

COMMON nitre contains usually a considerable proportion of sea-salt, which

which in this process is separated, the sea-salt remaining dissolved after greatest part of the nitre has crystallized. The crystals which shoot after the first evaporation are large, regular, and pure: but when the remaining liquor is further evaporated, and this repeated a second or third time, the crystals prove at length small, imperfect, and tipped with little cubical gleans of sea-salt.

When rough nitre, in the state wherein it is first extracted from the earths impregnated with it, is treated in this manner, there remains at last, a liquor called mother-ley, which will no longer afford any crystals. This appears to participate of the nitrous and marine acids, and to contain an earthy matter dissolved by those acids. On adding alkaline lixivium, the earth is precipitated; and when thoroughly washed with water, proves insipid. If the liquor be evaporated to dryness, a bitterish saline matter is left; which being strongly calcined in a crucible, parts with the acids, and becomes, as in the other case, insipid.

This earth has been celebrated as an excellent purgative, in the dose of a dram or two; and in smaller doses, as an alterant in hypochondriacal and other disorders. This medicine was for some time kept a great secret, under the names of *Magnesia alba*, *Nitrous panacea*, *Count Palma's powder*, *Il polvere albo Romano*, *Poudre de Sentinelli*, &c. till Lancisi made it public in his notes on the *Metalloteca Vaticana*. It has been supposed, that this earth is no other than a portion of the lime commonly added in the elixation of nitre at the European nitre-works: but though the specimens of magnesia examined by Neumann, and some of that which has lately been brought hither from abroad, gave plain marks of a cal-

careous nature; yet the true magnesia must be an earth of a different kind, calcareous earths being rather astringent than purgative. The earthy basis of the *sal catharticus amarus* is found to have the properties ascribed to the true magnesia of nitre, and appears to be the very same species of earth: from that salt therefore this medicine is now prepared, as will be seen hereafter. The magnesia alba differs from calcareous earths, in having a less powerful attraction for fixed air, and in not becoming caustic by calcination.

KALI ACETATUM.

Lond.

Acetated kali.

Take of

Kali, one pound.

Boil it with a slow fire, in four or five times the quantity of distilled vinegar; the effervescence ceasing, let there be added, at different times, more distilled vinegar, until the first vinegar being nearly evaporated, the addition of fresh will excite no effervescence, which will happen when about twenty pounds of distilled vinegar are consumed; afterwards let it be dried slowly. An impure salt will be left, which melt for a little while with a slow fire; then let it be dissolved in water, and filtered through paper.

If the fusion has been rightly performed, the strained liquor will be colourless; if otherwise, of a brown colour.

Lastly, evaporate this liquor with a slow fire, in a very shallow glass vessel; the salt whilst it dries being sometimes stirred, that it may sooner grow dry, which should be kept in a vessel close stopp'd.

The salt ought to be of the greatest whiteness, and dissolve wholly, both in water and spirit of wine, without

without leaving any feces. If the salt, although white, should deposite any feces in spirit of wine, that solution in the spirit should be filtered through paper, and the salt again dried.

ALCALI FIXUM VEGETABILE ACETARUM, vulgo. TARTARUM REGENERATUM.

Edinb.

Acetated fixed vegetable alkali, commonly called Regenerated tartar.

Take of

Salt of tartar, one pound.

Boil it with a very gentle heat in four or five times its quantity of distilled vinegar; add more distilled vinegar, at different times, till on the watery part of the former quantity being nearly dissipated by evaporation, the new addition of vinegar ceases to raise any effervescence. This happens, when about twenty pounds by weight of distilled vinegar has been consumed. The impure salt remaining after the exsiccation, is to be liquefied with a gentle heat for a short time, and it is proper that it should only be for a short time; then dissolve it in water, and strain through paper. If the liquefaction has been properly performed, the strained liquor will be limpid; but, if otherwise, of a brown colour.

Evaporate this liquor with a very gentle heat in a shallow glass vessel, occasionally stirring the salt as it becomes dry, that its moisture may sooner be dissipated. Then put it up into a vessel very closely stop'd, to prevent it from liquefying in the air.

This salt had formerly the name of sal diureticus in the London

pharmacopoeia; but that which they now employ, or perhaps in preference to it, the name of Potassa acetata gives a clearer idea of its nature.

THE purification of this salt is not a little troublesome. The operator must be particularly careful in melting it, not to use a great heat, or to keep it long liquefied: a little should be occasionally taken out, and put into water; and as soon as it begins to part freely with its black colour, the whole is to be removed from the fire. In the last drying, the heat must not be so great as to melt it; otherwise it will not prove totally soluble. If the solution in spirit of wine be exsiccated, and the remaining salt liquefied with a very soft fire, it gains the leafy appearance which has procured it the name *Terra foliata*.

In the fourth volume of the Memoirs of the correspondents of the French Academy, lately published, Mr Cadet has given a method of making the salt white at the first evaporation, without the trouble of any further purification. He observes, that the brown colour depends upon the oily matter of the vinegar being burnt by the heat commonly employed in the evaporation; and his improvement consists in diminishing the heat at the time that this burning is liable to happen. The process he recommends is as follows:

Dissolve a pound of salt of tartar in a sufficient quantity of cold water; filtre the solution, and add by degrees as much distilled vinegar as will saturate it, or a little more. Set the liquor to evaporate in a stone-ware vessel in a gentle heat, not so strong as to make it boil. When a pellicle appears

pears on the surface, the rest of the process must be finished in a water-bath. The liquor acquires by degrees an oily consistence, and a pretty deep brown colour; but the pellicle or scum on the top looks whitish, and when taken off and cooled, appears a congeries or little brilliant silver-like plates. The matter is to be kept continually stirring, till it be wholly changed into this white flaky matter; the complete drying of which is most conveniently effected in a warm oven.

WE shall not take upon us to determine whether the pure or impure salt is preferable as a medicine; observing only, that the latter is more of a saponaceous nature, the former more acrid, though somewhat more agreeable to the stomach. Mr Cadet reckons the salt prepared in his method superior both to the brown and white sorts made in the common way, as possessing both the oily quality of the one and the agreeableness of the other, and as being always uniform or of the same power; whereas the others are liable to vary considerably, according to the degree of heat employed in the evaporation. They are all medicines of great efficacy, and may be so dosed and managed as to prove either mildly cathartic, or powerfully diuretic: few of the saline deobstruents come up to them in virtue. The dose is from half a scruple to a dram or two. A bare mixture, however, of alkaline salt and vinegar without exsiccation, is not perhaps much inferior as a medicine to the more elaborate salt. Two drams of the alkali, saturated with vinegar, have been known to occasion ten or twelve stools in hydropic cases, and a plentiful dis-

charge of urine, without any inconvenience.

AQUA AMMONIÆ ACETATÆ.

Lond.

Water of acetated ammonia.

Take of

Ammonia, by weight, two ounces;

Distilled vinegar, four pints; or as much as is sufficient to saturate the ammonia.

Mix.

SPIRITUS MINDERERI.

Edinb.

Spirit of mindererus.

Take any quantity of the volatile alkaline salt of sal ammoniac, and gradually pour upon it distilled vinegar till the effervescence ceases; occasionally stirring the mixture to promote the action of the vinegar on the salt.

THOUGH this article has long been known by the name of Spiritus Mendereri, so called from the inventor; yet that employed by the London college is undoubtedly preferable, as giving a proper idea of its constituent parts.

This is an excellent aperient saline liquor. Taken warm in bed, it proves commonly a powerful diaphoretic or sudorific; and as it operates without heat, it has place in febrile and inflammatory disorders, where medicines of the warm kind, if they fail of procuring sweat, aggravate the distemper. Its action may likewise be determined to the kidneys, by walking about in a cool air. The common dose is half an ounce, either by itself, or along with other medicines adapted to the intention. Its strength is not a little precarious, depending much

much on that of the vinegar; an inconvenience which cannot easily be obviated, for the saline matter is not reducible to the form of a concrete salt.

KALI TARTARISATUM.

Lond.

Tartarised kali.

Take of

Kali one pound.

Crystals of tartar, three pounds;

Distilled water, boiling, one gallon.

To the salt, dissolved in water, throw in gradually the crystals of tartar, powdered: filtre the liquor, when cold, through paper; and, after due evaporation, set it apart to crystallize.

ALCALI FIXUM VEGETABILE TARTARISATUM, vulgo TARTARUM SOLUBILE.

Edinb.

Tartarised vegetable fixed alkali,
commonly called *Soluble tartar.*

Take of

Purified fixt vegetable alkaline salt, one pound;

Water, fifteen pounds.

To the salt dissolved in the boiling water gradually add crystals of tar in fine powder, as long as the addition thereof raises any effervescence, which almost ceases before three times the weight of the alkaline salt hath been injected; then strain the cooled liquor through a paper, and after due evaporation set it aside to crystallize.

COMMON white tartar is perhaps preferable for this operation to the crystals usually met with. Its impurities can here be no objection; since it will be sufficiently deparated by the subsequent filtration.

The preparation of this medicine by either of the above methods is

very easy; though some chemists have rendered it sufficiently troublesome, by a nicety which is not at all wanted. They insist upon hitting the very exact point of saturation between the alkaline salt and the acid of the tartar; and caution the operator to be extremely careful, when he comes near this mark, lest by imprudently adding too large a portion of either, he renders the salt too acid or too alkaline. If the liquor be suffered to cool a little before it be committed to the filtre, and then properly exhaled and crystallized, no error of this kind can happen, though the saturation should not be very exactly hit: for since crystals of tartar are very difficultly soluble even in boiling water, and when dissolved therein concrete again upon the liquor's growing cold, if any more of them has been employed than is taken up by the alkali, this superfluous quantity will be left upon the filtre; and on the other hand, if too much of the alkali has been made use of, it will remain uncrystallized. The crystallization of this salt indeed cannot be effected without a good deal of trouble: it is therefore most convenient to let the acid salt prevail at first; to separate the superfluous quantity, by suffering the liquor to cool a little before filtration; and then proceed to the total evaporation of the aqueous fluid which will leave behind it the neutral salt required. The most proper vessel for this purpose is a stone-ware one; iron discolours the salt.

Soluble tartar in doses of a scruple, half a dram, or a dram, is a mild cooling aperient: two or three drams commonly loosen the belly; and an ounce proves pretty strongly purgative. It has been particularly recommended as a purgative for maniacal and melancholic patients. Malouin says, it is equal in purgative

tive virtue to the cathartic salt of Glauber. It is an useful addition to the purgatives of the resinous kind, as it promotes their operation, and at the same time tends to correct their griping quality. But it must never be given in conjunction with any acid; for all acids decompose it, absorbing its alkaline salt, and precipitating the tartar. On this account it is improper to join to it tamarinds, or such like acid fruits; which is too often done in the extemporaneous practice of those physicians who are fond of mixing different cathartics together.

NATRON TARTARISATUM.

Lond.

Tartarified natron.

Take of

Natron, twenty ounces;
Crystals of tartar, powdered, two pounds;
Distilled water, boiling, ten pints.

Dissolve the natron in the water, and gradually add the crystals of tartar: filtre the liquor through paper; evaporate, and set it aside to crystallize.

SODA TARTARIZATA, vulgo SAL RUPELLENSIS.

Edinb.

Tartarified soda, commonly called *Rochel salt*.

The *sal Rupellensis* may be prepared from purified fossile alkaline salt and crystals of tartar, in the same manner as directed for the *tartarum solubile*.

THIS is a species of soluble tartar, made with the salt of kali or soda, which is the same with the mineral alkali, or basis of sea-salt. It crystallises far more easily than the preceding preparation, and does not, like it, grow moist in the air.

It is also considerably less purgative, but is equally decomposed by acids. It appears to be a very elegant salt, and begins now to come into esteem in this country, as it has long been in France.

ALUMINIS PURIFICATIO.

Lond.

Purification of alum.

Take of

Alum, one pound;
Chalk, one dram by weight;
Distilled water, one pint.

Boil them a little, strain, and set the liquor aside to crystallize.

WE have already offered some observations on alum in the *Materia Medica*; and in general it comes from the alum works in England in a state of such purity as to be fit for every purpose in medicine: accordingly we do not observe that the purification of alum has a place in any other pharmacopœia; but by the present process it will be freed, not only from different impurities, but also from superabundant acid.

ALUMEN USTUM.

Lond. Edinb.

Burnt alum.

Take of

Alum, half a pound.

Burn it in an earthen vessel so long as it bubbles.

THIS, with strict propriety, ought rather, perhaps, to be called dried alum than burnt alum: for the only effect of the burning here directed is to expel the water. In this state it is so acrid as to be frequently employed as an escharotic; and it is with this intention, chiefly, that it has a place in our pharmacopœias: but it has sometimes also been taken internally, particularly in cases of cholic.

SAL five SACCHARUM LACTIS.

Succ.

Take of the whey of milk, prepared by runnet, any quantity : let it be boiled over a moderate fire to the consistence of a syrup; then put it in a cold place, that crystals may be formed. Let the fluid which remains be again managed in the same manner, and let the crystals formed be washed with cold water.

It has been by some imagined, that the superiority of one milk over another depends on its containing a larger proportion of this saline or saccharine part; and particularly, that upon this the reputed virtues of ass milk depend. Hence this preparation has been greatly celebrated in disorders of the breast, but is far from answering what has been expected from it. It has little sweetness, and is difficult of solution in water. A saline substance, much better deserving the name of sugar, may be obtained by evaporating new milk, particularly that of the ass, to dryness, digesting the dry matter in water till the water has extracted its soluble parts, and then inspissating the filtered liquor. This preparation is of great sweetness, though neither white nor crystalline; nor is it perhaps in the pure crystallizable parts of milk that its medicinal virtues lie; and so little reliance is put upon it as a medicine, that it has no place in the London or Edinburgh pharmacopœias; although it long has stood, and still stands, in the foreign ones.

SAL ACETOSELLÆ.

*Succ.**Salt of sorrel.*

Take any quantity of the expressed juice of the leaves of wood-sor-

rel; let it boil gently, that the feculent matter may be separated; then strain it till it be clear, and after this boil it on a moderate fire to the consistence of a syrup. Put it into long necked glass vessels, and place it in a cold situation that it may crystallize. Let these crystals be dissolved in water, and again formed into purer ones.

To make the sorrel yield its juice readily, it should be chopt to pieces, and well bruised in a small mortar, before it be committed to the press. The magma which remains in the bag still retaining no inconsiderable quantity of saline matter, may be advantageously boiled in water, and the decoction added to the expressed juice. The whole may be afterwards deperated together, either by the method above directed, or by running the liquor several times through a linen cloth. In some cases, the addition of a considerable portion of water is necessary, that the juice, thus diluted, may part the more freely from its feculencies; on the separation of which the success of the process much depends.

The evaporation should be performed either in shallow glass basins, or in such earthen ones as are of a compact close texture; such are those usually called stone-ware. The common earthen vessels are subject to have their glazing corroded, and are so extremely porous, as readily to imbibe and retain a good quantity of the liquor; metallic vessels are particularly apt to be corroded by these acid kinds of juices.

These juices are so viscid, and abound so much with heterogeneous matter, of a quite different nature from any thing saline, that a pellicle, or pure saline incrustation
upon

upon the surface, is in vain expected. Boerhaave therefore, and the more expert writers in pharmaceutical chemistry, with great judgment direct the evaporation of the superfluous moisture to be continued until the matter has acquired the consistence of cream. If it be now suffered to stand for an hour or two in a warm place, it will, notwithstanding the former depurations, deposit a fresh sediment, from which it should be warily decanted before it be put into the vessel in which it is designed to be crystallized.

Some recommend an unglazed earthen vessel as preferable for this purpose to a glass one; the smoothness of the latter being supposed to hinder the salt from sticking thereto; whilst the juice easily insinuating itself into the pores of the former, has a great advantage of shooting its saline spicula to the sides. Others slightly incrustate the sides and bottom of whatever vessel they employ with a certain mineral salt, which greatly disposes the juice to crystallize, to which of itself it is very averse: but this addition is, with regard to its medical virtue, quite different from the salt here intended.

The liquor which remains after the crystallization may be depurated by a gentle colature, and after due inspissation set to shoot again; when a farther yield of crystals will be obtained.

The process for obtaining this salt is very tedious; and the quantity of salt which the juices afford is extremely small: hence they are hardly ever made or expected in the shops. They may be somewhat sooner separated from the mucilaginous and other feculencies, by clarification with whites of eggs, and by adding very pure white clay.

In the manner above described, salts may be also obtained from other acid, austere, and bitterish plants, which contain but a small quantity of oil.

The virtues of the essential salts have not been sufficiently determined from experience. Thus much, however, is certain, that they do not, as has been supposed, possess the virtues of the subjects entire, excepting only the acids and sweets. The others seem to be, almost all of them, nearly similar, whatever plant they were obtained from. In watery extracts of wormwood, carduus, camomile, and many other vegetables, kept for some time in a soft state, there may be observed fine saline efflorescences on the surface, which have all nearly the same taste, somewhat of the nitrous kind. They are supposed by some to be at bottom no more than an impure species of volatile nitre (that is, a salt composed of the nitrous acid and volatile alkali): those which were examined by the chemists of the French academy deflagrated in the fire, and being triturated with fixt alkali, exhaled an urinous odour; plain marks of their containing those two ingredients.

SAL ACIDUM BORACIS.

Succ.

Acid salt of borax.

Take of

Borax, an ounce and a half,

Warm spring-water, one pound.

Mix them in a glass vessel, that the borax may be dissolved; then pour into it three drams of the concentrated acid of vitriol: evaporate the liquor till a pellicle appears upon it; after this let it remain at rest till the crystals be formed. Let them be washed with cold water and kept for use.

THIS salt, which has long been known by the title of *Sal sedativus Hombergii*, is not untrrequently formed by sublimation: but the process by crystallization here directed is less troublesome, though the salt proves generally less white, and is apt likewise to retain a part of Glauber's salt, especially if the evaporation be long protracted.

The salt of borax to the taste appears to be a neutral; but when it is examined by alkalies, it shows the properties of an acid, effervescing, uniting, and crystallizing with them, and it destroys their alkaline quality. It dissolves both in water and spirit of wine, although not very readily in either.

The virtues attributed to it may in some degree be inferred from the name of *sedative*, by which it was long distinguished. It has been supposed to be a mild anodyne, to diminish febrile heat, to prevent or remove delirium; and to allay, at least for some time, spasmodical affections, particularly those which are the attendants of hypochondri-

asis and hysteria. It may be given in doses from two to twenty grains.

SAL AMMONIACUM DEPURATUM.

Succ.

Purified sal ammoniac.

Dissolve sal ammoniac in spring-water; strain the liquor through paper; evaporate it to dryness in a glass vessel by means of a moderate fire.

THE sal ammoniac imported from the Mediterranean often contains such impurities as to render the above process necessary; but that which is prepared in Britain from foot and sea-salt, is in general brought to market in a state of very great purity. Hence this process is now altogether omitted both in the London and Edinburgh pharmacopoeias. It furnishes, however, when necessary, an easy and effectual mode of obtaining a pure *ammonia muriata*.

C H A P. VIII.

M A G N E S I A.

M A G N E S I A.

MAGNESIA ALBA.

*Lond.**White magnesia.*

Take of

Bitter purging salt,
Kali, each two pounds;
Distilled water, boiling, twenty
pints.

Dissolve the bitter salt and the kali separately in ten pints of water, and filter through paper; then mix them. Boil the liquor a little while, and strain it whilst hot through linen, upon which will remain the white magnesia; then wash away, by repeated affusions of distilled water, the vitriolated kali.

MAGNESIA ALBA.

*Edinb.**White Magnesia.*

Take of

Bitter purging salt,
Purified fixed vegetable alkali,
equal weights.

Dissolve them separately in double their quantity of warm water, and let the liquor be strained or otherwise freed from the feces; then mix them, and instantly add eight times their quantity of warm water. Let the liquor boil for a little on the fire, stirring it at the same time; then

let it rest till the heat be somewhat diminished: after which strain it through a cloth: the magnesia will remain upon the cloth, and it is to be washed with pure water till it be altogether void of saline taste.

THE processes here directed by the London and Edinburgh colleges are nearly the same; but the former seem to have improved somewhat on the latter, both in simplifying the process, and in the employment of distilled water.

The *sal catharticus amarus*, or *Epsom salt*, is a combination of the vitriolic acid and magnesia. In this process then, a double elective attraction takes place: the vitriolic acid forsakes the magnesia and joins to the mild alkali, with which it has a greater attraction; whilst the magnesia in its turn unites with the fixed air discharged from the mild alkali, and ready to be absorbed by any substance with which it can combine.

We have therefore two new products, viz. a vitriolated tartar, and magnesia united with fixed air. The former is dissolved in the water, and may be preserved for use; the latter, as being much less soluble, sinks to the bottom of the vessel.

The intention of employing such a large quantity of water and of the boiling is, that the vitriolated tartar may be all thoroughly dissolved, this salt being so scantily soluble in water, that without this expedient a part of it might be precipitated along with the magnesia. It might perhaps be more convenient to employ the mineral alkali; which forming a Glauber's salt with the vitriolic acid, would require less water for its suspension. By the after ablutions, however, the magnesia is sufficiently freed of any portion of vitriolated tartar which may have adhered to it.

The ablutions should be made with very pure water; for nicer purposes distilled water may be used with advantage; and soft water is in every case necessary. Hard water for this process is peculiarly inadmissible, as the principle in waters giving the property called *hardness*, is generally owing to an imperfect nitrous selenite, whose base is capable of being disengaged by magnesia united with fixed air. For though the attraction of magnesia itself to the nitrous acid, is not greater than that of calcareous earths; yet when combined with fixed air, a peculiar circumstance intervenes, whereon it is deducible, that the sum of the forces tending to join the calcareous earth with the air of the magnesia, and the magnesia with the acid, is greater than the sum of the forces tending to join the calcareous earth with the acid, and the magnesia with the fixed air.

This phenomenon must therefore depend on the presence of fixed air, and its greater attraction for lime than for magnesia. On this account, if hard water be used, a quantity of calcareous earth must infallibly be deposited on the magnesia;

whilst the nitrous acid with which it was combined in the water, shall in its turn attach itself to a portion of the magnesia, forming what may be called a *nitrous magnesia*.

All the alkalies, and also calcareous earths, have a greater attraction for fixed air than magnesia has: Hence, if this last be precipitated from its solution in acids by caustic alkali, it is then procured free of fixed air; but for this purpose calcination is more generally employed in the manner described in the process which next follows. Magnesia is scarcely soluble in any quantity whatever in water: the infinitely small portion which this fluid is capable of taking up, is owing to the fixed air of the magnesia; and it has been lately discovered, that water impregnated with this acid, is capable of dissolving a considerable portion: for this purpose it is necessary to employ magnesia already saturated with fixed air, as magnesia deprived of this air would quickly abstract it from the water, whereby the force of the latter would be very considerably diminished. Such a solution of magnesia might be useful for several purposes in medicine.

MAGNESIA is the same species of earth with that obtained from the mother-ley of nitre, which was for several years a celebrated secret in the hands of some particular persons abroad. Hoffman, who describes the preparation of the nitrous magnesia, gives it the character of an useful antacid, a safe and inoffensive laxative in doses of a dram or two, and a diaphoretic and diuretic when given in smaller doses of fifteen or twenty grains. Since his time, it has had a considerable place in the practice of foreign physicians; and is now in great esteem among us,

particularly in heart-burns, and for preventing or removing the many disorders which children are so frequently thrown into from a redundancy of acid humours in the first passages: it is preferred, on account of its laxative quality, to the common absorbents, which, unless gentle purgatives be given occasionally to carry them off, are apt to lodge in the body, and occasion a costiveness very detrimental to infants.

Magnesia alba, when prepared in perfection, is a white and very subtle earth, perfectly void of smell or taste, of the class of those which dissolve in acids. It dissolves freely even in the vitriolic acid; which, in the common way of making solutions, takes up only an inconsiderable portion of other earths. Combined with this acid, it forms the bitter parging, or Epsom salt, very easily soluble in water; while the common absorbents form with the same acid almost insipid concretes, very difficult of solution. Solutions of magnesia in all acids are bitter and purgative; while those of the other earths are more or less austere and astringent. A large dose of magnesia, if the stomach contain no acid to dissolve it, does not purge or produce any sensible effect: a moderate one, if an acid be lodged there, or if acid liquors are taken after it, procures several stools; whereas the common absorbents, in the same circumstances, instead of loosening, bind the belly. It is obvious, therefore, that magnesia is specifically different from the other earths, and that it is applicable to useful purposes in medicine.

Magnesia was formerly made with the mother-water of nitre evaporated to dryness, or precipitated by a fixed alkali. It has gone un-

der different names, as the *White powder of the Count of Palma*, *powder of Sentinelle*, *polychrest*, *Laxative powder*, &c. It seems to have got the character *alba*, to distinguish it from the dark coloured mineral called also *Magnesia*, or *manganese*; a substance possessing very different properties. We have not heard that pure native magnesia has been found in its uncombined state: A combination of it with sulphur has been discovered to cover a stratum of coal at Littry in Lower Normandy. It has also been found in certain serpentine earths in Saxony, and in marly and alum earths.

MAGNESIA USTA.

Lond.

Calcined magnesia.

Take of

White magnesia, four ounces.

Expose it to a strong heat for two hours; and when cold, set it by.

Keep it in a vessel closely stop'd.

MAGNESIA USTA.

Edinb.

Calcined magnesia.

Let magnesia, placed in a crucible, be continued in a red heat for two hours; then put it up in close glass vessels.

By this process the magnesia is freed of fixed air; which, according to Dr Black's experiments, constitutes about $\frac{7}{11}$ of its weight. A kind of opaque foggy vapour is observed to escape during the calcination, which is nothing else than a quantity of fine particles of magnesia buoyed off along with a stream of the disengaged air. About the end of the operation, the magnesia exhibits a kind of luminous, or phosphorescent property; and this may be considered a pretty exact criterion of its being deprived of air.

Calcined magnesia is equally mild as when saturated with fixed air; and this circumstance is sufficient to establish a difference between it and calcareous earth; all of which is converted, by calcination, into a caustic quicklime.

The magnesia usta is used for the same general purposes as the magnesia combined with fixed air. In certain affections of the stomach, accompanied with much flatulence, the calcined magnesia is found preferable, not only as containing more of the real earth of magnesia in a

given quantity, but as being also deprived of its air. It neutralizes the acid of the stomach, without that extrication of air, which is often a troublesome consequence in employing the aerated magnesia in these complaints. It is proper to observe, that magnesia, whether combined with, or deprived of fixed air, is similar to the mild calcareous earths in promoting and increasing putrefaction. The same has even been observed with respect to the Epsom and some other salts which have this earth for their base.

C H A P. IX.

PREPARATA E SULPHURE.

PREPARATIONS OF SULPHUR.

FLORES SULPHURIS LOTI.

Lond.

Washed flowers of sulphur.

Take of

Flowers of sulphur, one pound;
Distilled water, four pints.

Boil the flowers of sulphur a little while in the distilled water; then pour off this water, and wash off the acid with cold water; lastly, dry the flowers.

IN the former editions of our pharmacopoeias, directions were given for the preparation of the flowers of sulphur themselves: But as a large apparatus is necessary for doing it with any advantage, it is now almost never attempted by the apothecaries. When the flowers are

properly prepared, no change is made on the qualities of the sulphur. Its impurities only are separated; and at the same time it is reduced to a finer powder than it can easily be brought to by any other means. But as the flowers of sulphur are generally sublimed into very capacious rooms, which contain a large quantity of air, or in vessels not perfectly close; some of those that arise at first are apt to take fire, and thus are changed into a volatile acid vapour, which mingling with the flowers that sublime afterwards, communicates to them a considerable degree of acidity. In this case, the abluion here directed is for the general use of the medicine absolutely necessary

fary; for the flowers, thus tainted with acid, sometimes occasion gripes; and may, in other respects, be productive of effects different from those of pure sulphur. There are, however, some particular combinations, to which they are supposed to be better adapted when unwashed, such as their union with mercury into æthiops mineral; and accordingly for that preparation the unwashed flowers are directed by the London college.

KALI SULPHURATUM.

Lond.

Sulphurated kali.

Take of

Flowers of sulphur, one ounce;
Kali, five ounces.

Mix the salt with the melted sulphur, by frequently stirring, until they unite into an uniform mass.

THIS preparation in the former editions of our pharmacopœias had the name of *hepar sulphuris*.

It is much more convenient to melt the sulphur first by itself, and add the salt of tartar by degrees, as here directed, than to grind them together, and afterwards endeavour to melt them as ordered in former editions: For in this last case the mixture will not flow sufficiently thin to be properly united by stirring; and the sulphur either takes fire, or sublimes in flowers: which probably has been the reason why so large a proportion of it has been commonly directed. Even in the present method a considerable part of the sulphur will be dissipated; and if it were not, the hepar would not be of its due quality: for one part of sulphur requires two of the alkaline salt to render it perfectly soluble in water, which this preparation ought to be.

The hepar sulphuris has a fetid smell, and a nauseous taste. Solutions of it in water, made with sugar into a syrup, have been recommended in coughs and other disorders of the breast. Our Pharmacopœias, nevertheless, have deservedly rejected this syrup, as common practice has almost done the balsams. Solutions of the hepar, in water, have been also recommended in herpetic and other cutaneous affections. Some physicians have even employed this solution, in a large quantity, as a bath for the cure of psora; and in cases of tinea capitis, it has often been used by way of lotion.

The hepar, digested in rectified spirit of wine, imparts a rich gold colour, a warm, somewhat aromatic taste, and a peculiar, not ungrateful smell. A tincture of this kind is kept in the shops under the name of another mineral. The hepar sulphuris has been by some strongly recommended to prevent the effects of mineral poisons.

OLFUM SULPHURATUM ET PETROLEUM SULPHURATUM.

Lond.

Sulphurated oil and sulphurated petroleum.

Take of

Flowers of sulphur, four ounces;

Olive oil, sixteen ounces.

Boil the flowers of brimstone, with the oil, in a pot slightly covered, until they be united.

In the same manner is made *sulphurated petroleum*.

THESE articles are analogous to what had formerly a place in our pharmacopœias under the titles of *balsamum sulphuris simplex, crassum et Barbadense*. And besides these,

a place was also given to the balsamum sulphuris anisatum, terebinthinatum, &c. While these articles, however, are now banished from our pharmacopœias, even those retained are less in use than formerly.

These preparations are more conveniently and safely made in a tall glass body, with the mouth at least an inch in diameter, than in the circulatory or close vessels in which they commonly have been directed to be prepared: for when the sulphur and oil begin to act vehemently upon each other, they not only rarify into a large volume, but likewise throw out impetuously great quantities of an elastic vapour; which if the vessels be closed, or the orifices not sufficient to allow it a free exit, will infallibly burst them: Hoffman relates a very remarkable history of the effects of an accident of this kind. In the vessel above recommended, the process may be completed, without danger, in four or five hours, by duly managing the fire, which should be very gentle for some time, and afterwards increased so as to make the oil just bubble or boil; in which state it should be kept till all the sulphur appears to be taken up.

Essential oils employed as a menstrua for sulphur, undergo a great alteration from the degree of heat necessary for enabling them to dissolve the sulphur; and hence the balsams have not near so much of their flavour as might be expected. It should therefore seem more eligible to add a proper quantity of the essential oil to the simple balsam; these readily incorporate by a gentle warmth, if the vessel be now and then shaken. We may thus compose a balsam more elegant than those made in the manner formerly recommended, and which

retains so much of the flavour of the oil, as is in some measure sufficient to cover the taste of the sulphur, and render it supportable.

The balsams of sulphur have been strongly recommended in coughs, consumptions, and other disorders of the breast and lungs: But the reputation which they have had in these cases, does not appear to have been built upon any fair trial or experience of their virtues. They are manifestly hot, acrimonious, and irritating; and therefore should be used with the utmost caution. They have frequently been found to injure the appetite, offend the stomach and viscera, parch the body, and occasion thirst and febrile heats. The dose of the simple balsam is from ten to forty drops: those with essential oils are not given in above half these quantities. Externally, they are employed for cleansing and healing foul running ulcers. Boerhaave conjectures, that their use in these cases gave occasion to the virtues ascribed to them when taken internally.

SULPHUR PRÆCIPITATUM.

Lond.

Precipitated sulphur.

Take of

Sulphurated kali, six ounces;

Distilled water, one pound and an half;

Vitriolic acid, diluted, as much as is sufficient.

Boil the sulphurated kali in the distilled water until it be dissolved.

Filter the liquor through paper, to which add the vitriolic acid.

Wash the precipitated powder by often pouring on water till it becomes insipid.

THIS preparation is not so white as that of the last pharmacopœia, which

which was made with quicklime; and which in some pharmacopoeias had the name *lac sulphuris*.

Pure lac sulphuris is not different in quality from pure sulphur itself: to which it is preferred in unguents, &c. only on account of its colour. The whiteness does not proceed from the sulphur having lost any of its parts in the operation, or from any new matter superadded: for if common sulphur be ground with alkaline salts, and set to sub-

lime, it arises of a like white colour, the whole quantity of the alkali remaining unchanged; and if the lac be melted with a gentle fire, it returns into yellow sulphur again.

It may be observed, that the name *lac sulphuris*, or *milk of sulphur*, applied among us to the precipitate, is by the French writers confined to the white liquor before the precipitate has fallen from it.

C H A P. X.

PREPARATA E ANTIMONIS.

PREPARATIONS OF ANTIMONY.

ANTIMONY is composed of a metal, united with sulphur or common brimstone.

If powdered antimony be exposed to a gentle fire, the sulphur exhales; the metallic part remaining in form of a white calx, reducible, by proper fluxes, into a whitish brittle metal, called *regulus*. This is readily distinguished from the other bodies of that class, by its not being soluble in aquafortis; its proper menstruum is aqua regia.

If aqua regia be poured upon crude antimony, the metallic part will be dissolved; and the sulphur thrown out, partly to the sides of the vessel, and partly to the surface of the liquor, in the form of a greyish yellow substance. This, separated and purified by sublimation, appears on all trials the

same with pure common brimstone.

The metal, freed from the sulphur naturally blended with it, and afterwards fused with common brimstone, resumes the appearance and qualities of crude antimony.

THE antimonial metal is a medicine of the greatest power of any known substance; a quantity too minute to be sensible on the tenderest balance, is capable of producing virulent effects, if taken dissolved, or in a soluble state. If given in such a form as to be immediately miscible with the animal fluids, it proves violently emetic; if so managed as to be more slowly acted on, cathartic; and in either case, if the dose be extremely small, diaphoretic. Thus, though vegetable

table acids extract so little from this metal, that the remainder seems to have lost nothing of its weight, the tinctures prove in no larger doses strongly emetic, and in smaller ones powerfully diaphoretic. The regulus has been cast into the form of pills, which acted as virulent cathartics, though without suffering any sensible diminution of weight in their passage through the body; and this repeatedly, for a great number of times.

This metal, divested of the inflammable principle which it has in common with other metallic bodies that are reduced to a calx, becomes indissoluble and inactive. The calx nevertheless, urged with a strong fire, melts into a glass, which is as easy of solution, and as virulent in operation, as the regulus itself: the glass, thoroughly mingled with such substances as prevents its solubility, as wax, resins, and the like, is again rendered mild.

Vegetable acids, as has already been observed, dissolve but an extremely minute portion of this metal: the solution nevertheless proves powerfully emetic and cathartic. The nitrous and vitriolic acids only corrode it into a powder, to which they adhere so slightly as to be separable in a considerable degree by water, and totally by fire, leaving the regulus in form of a calx similar to that prepared by fire alone. The marine acid has a very different effect; this reduces the regulus into a violent corrosive; and though it difficultly unites, yet very closely adheres to it, insomuch as not to be separable by any ablution, nor by fire, the regulus arising along with it. The nitrous or vitriolic acids expel the marine, and thus reduce the corrosive into a calx similar to the foregoing.

Sulphur remarkably abates the power of this metal: and hence crude antimony, in which the regulus appears to be combined with sulphur, from one-fourth to one-half its weight, proves altogether mild. If a part of the sulphur be taken away, by such operations as do not destroy or calcine the metal, the remaining mass becomes proportionably more active.

The sulphur of antimony may be expelled by desflagration with nitre: the larger the quantity of nitre, to a certain point, the more of the sulphur will be dissipated, and the preparation will be the more active. If the quantity of nitre be more than sufficient to consume the sulphur, the rest of it, desflagrating with the inflammable principle of the regulus itself, renders it again mild.

The sulphur of antimony is likewise absorbed, in fusion, by certain metals, and by alkaline salts. These last, when united with sulphur, prove a menstruum for all the metals (zinc excepted); and hence, if the fusion be long continued, the regulus is taken up, and rendered soluble in water.

FROM these particulars with respect to antimony, it may naturally be concluded, that it not only furnishes us with an useful and active medicine, but that it may also be exhibited for medical purposes under a great variety of different forms, and that the effects of these will be considerably diversified. And this has in reality been the case. When treating of antimony in the materia medica, we have not only offered some observations on its medical, but have also exhibited a view of its different preparations for medical purposes, thrown into a tabular form by Dr Black. But although

though there is perhaps no preparation there mentioned, which is not fitted to serve some useful purpose; yet the colleges both of London and Edinburgh have now restricted the number of preparations in their pharmacopœias to a few only. And it is highly probable, that from the proper employment of these every useful purpose to be answered by antimony may be accomplished.

ANTIMONIUM CALCINATUM.

Lond.

Calcined antimony.

Take of

Antimony, powdered, eight ounces.

Nitre, powdered, two pounds.

Mix them, and cast the mixture by degrees into a red hot crucible.

Burn the white matter about half an hour; and, when cold, powder it; after which wash it with distilled water.

IN the last edition of the London Pharmacopœia this preparation had the name of *calx antimonii*; and it may be considered as at least very nearly approaching to some other antimonials of the old pharmacopœias, particularly to the antimonium diaphoreticum nitratum, antimonium diaphoreticum lotum, and the nitrum stibiatum; none of which are now received as separate formulas of our pharmacopœia, and indeed even the *calx antimonii* itself, at least as thus prepared, has now no place in the Edinburgh pharmacopœia.

The calx of antimony, when freed by washing from the saline matter, is extremely mild, if not altogether inactive. Hoffman, Lemery, and others, assure us, that they have never experienced from it any such effects as its usual title imports: Boerhaave declares, that

it is a mere metallic earth, entirely destitute of all medicinal virtue; and the Committee of the London College admit, that it has no sensible operation. The common dose is from five grains to a scruple, or half a dram; though Wilson relates, that he has known it given by half ounces, and repeated two or three times a-day, for several days together.

Some report, that this calx, by keeping for a length of time, contracts an emetic quality: From whence it has been concluded, that the powers of the reguline part are not entirely destroyed; that the preparation has the virtues of other antimonials which are given as alteratives; that is, in such small doses as not to stimulate the primæ viæ; and that therefore diaphoretic antimony, or calcined antimony, as it is now more properly styled, is certainly among the mildest preparations of that mineral, and may be used for children, and similar delicate constitutions where the stomach and intestines are easily affected. The observation, however, from which these conclusions are drawn, does not appear to be well founded: Ludovici relates, that after keeping the powder for four years, it proved as mild as at first: and the Strasburgh pharmacopœia, with good reason, suspects that where the calx has proved emetic, it had either been given in such cases as would of themselves have been attended with this symptom, for the great alexipharmac virtues attributed to it have occasioned it to be exhibited even in the more dangerous malignant fevers, and other disorders which are frequently accompanied with vomiting; or that it had not been sufficiently calcined, or perfectly freed from such part of the regulus as might remain uncalcined. The

uncalcined part being grosser than the true calx, the separation is effected by washing over with water, in the same manner as directed for separating earthy powders from their grosser parts.

It has been observed, that when diaphoretic antimony is prepared with nitre abounding with sea-salt, of which all the common nitre contains some portion, the medicine has proved violently emetic. This effect is not owing to any particular quality of the sea-salt, but to its quantity, by which the proportion of the nitre to the antimony is rendered less.

The *nitrum sibiatum*, as it was called, is produced by the deflagration of the sulphur of the antimony with the nitre, in the same manner as the *sal polychrest*, from which it differs no otherwise than in retaining some portion of the antimonial calx.

Notwithstanding the doubts entertained by some respecting the activity of the antimonium calcinarum, yet the London college have in our opinion done right in retaining it. For while it is on all hands allowed, that it is the mildest of our antimonials; there are some accurate observers who consider it as by no means inefficacious. Thus Dr Healde tells us, that he has been in the habit of employing it for upwards of forty years, and is much deceived, if when genuine, it be not productive of good effects.

CALX ANTIMONII NITRATA.

Edinb.

Nitrated calx of antimony.

Take of

Antimony, calcined for making the glass of antimony;

Nitre, equal weights.

Having mixed, and put them into a crucible, let them be toasted,

so that the matter shall be of a red colour for an hour; then let it be taken out of the crucible, and, after beating it, wash it repeatedly with warm water till it be insipid.

ALTHOUGH this preparation agrees nearly in name with the preceding, and has been considered as being nearly a complete calx of antimony, yet there can be no doubt that it is a medicine of a much more active nature than the former; and in place of being one of the mildest of the antimonials, it often operates with great violence when given in doses of a few grains only.

But as the effects of every preparation of antimony, not already conjoined with an acid, must depend on the quantity and condition of the acid in the stomach, so the ablution of the base of the nitre in this process, gives full power to the acid of the stomach to act as far as possible on the calx; whereas when the unwashed calx is employed, a great quantity of the acid in the stomach is neutralised by the alkaline base of the nitre adhering to the calx. The *calx antimonii nitrata* is supposed to be nearly the same with the article which has been so much celebrated, and has had such an extensive sale under the title of *Dr James's fever powder*. And it was as an article which might be employed in the place of James's powder, that the Edinburgh college introduced this into their pharmacopoeia. There is, however, reason to believe, that the preparation of James's powder is somewhat different from that here directed; but their effects, as far as our observation goes, appear to be very nearly the same.

The *calx antimonii nitrata* has been thought by some preferable to emetic

emetic tartar, where the permanent effects of a long-continued nausea are required, and where we wish our antimonials to pass the pylorus and produce purging. But, like every other preparation where the reguline part is only rendered active by the acid in the stomach, the *calx antimonii nitrata* is in all cases of uncertain operation; sometimes proving perfectly inert, and at other times very violent in its effects. The dose is generally ten or twelve grains, and this is often given all at once; an inconvenience not attending the emetic tartar; the quantity and effects of which we can generally measure with surprising minuteness.

There is, however, reason to believe, that by means of James's powder, and the *calix nitrata*, an artificial termination of fever is sometimes accomplished, and that too more frequently than by emetic tartar. This perhaps may sometimes be the consequence of the violence with which they operate. At the same time it must be admitted, that even the most violent operation by no means ensures an immediate recovery, but that on the contrary it is sometimes manifestly attended with bad effects.

CROCUS ANTIMONII.

Lond.

Crocus of antimony.

Take of

Antimony, powdered;

Nitre, powdered, of each one pound;

Sea-salt, one ounce.

Mix, and put them by degrees into a red-hot crucible, and melt them with an augmented heat. Pour out the melted matter; and, when cold, separate it from the scoriæ.

Edinb.

The mixture of antimony and nitre, made as above, is to be injected by degrees into a red-hot crucible; when the detonation is over, separate the reddish metallic matter from the whitish crust; beat it into powder, and edulcorate it by repeated washings with hot water, till the water comes off insipid.

HERE the antimonial sulphur is almost totally consumed, and the metallic part left divested of its corrector. These preparations, given from two to six grains, generally act as violent emetics, greatly disordering the constitution. But the operation, like that of every preparation of antimony whose reguline part is not joined with an acid, must be liable to variations according to the quantity and condition of the acid in the stomach. Their principal use is in maniacal cases, as the basis of some other preparations; and among the farriers, who frequently give to horses an ounce or two a day, divided into different doses as an alterative: in these and other quadrupeds, this medicine acts chiefly as a diaphoretic.

The chemists have been accustomed to make the crocus with a less proportion of nitre than what is directed above; and without any farther melting than what ensues from the heat which the matter acquires by deflagration, which when the quantity is large, is very considerable: a little common salt is added to promote the fusion. The mixture is put by degrees into an iron pot or mortar, somewhat heated, and placed under a chimney: when the first ladleful is in, a piece of lighted charcoal is thrown to it, which sets the matter on fire; the rest

rest of the mixture is then added by little and little; the deflagration is soon over, and the whole appears in perfect fusion: when cold, a considerable quantity of scoriæ is found upon the surface; which scoriæ are easily knocked off with a hammer. The crocus prepared after this manner, is of a redder colour than that of the former editions of the London pharmacopœia. And indeed the method now directed by the London college may be considered as founded on this: It differs principally from that of the Edinburgh college in the employment of the sea-salt, by which the process is much facilitated.

ANTIMONIUM MURIATUM.

Lond.

Muriated antimony.

Take of

The crocus of antimony, powdered;

Vitriolic acid, each one pound;

Dry sea-salt, two pounds.

Pour the vitriolic acid into a retort, adding by degrees the sea-salt and crocus of antimony, previously mixed; then distil in a sand-bath. Let the distilled matter be exposed to the air several days, and then let the fluid part be poured off from the dregs.

CAUSTICUM ANTIMONIALE vulgo BUTYRUM ANTIMONII.

Edinb.

Butter of antimony.

Take of

Crude antimony, one part;

Corrosive mercury sublimate, two parts.

Grind them first separately; then thoroughly mix them together, taking the utmost care to avoid

the vapours. Put the mixture into a coated glass retort (having a short wide neck), so as to fill one half of it: the retort being placed in a sand-furnace, and a receiver adapted to it, give first a gentle heat, that only a dewy vapour may arise: the fire being then increased, an oily liquor will ascend and congeal in the neck of the retort, appearing like ice, which is to be melted down by a live-coal cautiously applied. This oily matter is to be rectified in a glass retort into a pellucid liquor.

THE process here directed by the Edinburgh college, and which is nearly the same with what stood in the former edition of the London pharmacopœia, is extremely dangerous, insomuch, that even the life of the operator, though tolerably versed in common pharmacy, may be much endangered for want of due care. Boerhaave relates, that one, who from the title he gives him is not to be supposed inexpert in chemical operations, or unacquainted with the danger attending this, was suffocated for want of proper care to prevent the bursting of the retort. The fumes which arise; even upon mixing the antimony with the sublimate, are highly noxious, and sometimes issue so copiously and suddenly, as very difficultly to be avoided. The utmost circumspection therefore is necessary.

The caustic, or butter, as it is called, appears to be a solution of the metallic part of the antimony in the marine acid of the sublimate: the sulphur of the antimony, and the mercury of the sublimate remain at the bottom of the retort, united into an ethiops. This solution does not succeed with spirit of salt

salt in its liquid state, and cannot be effected, unless (as in the case of making sublimate) either the acid be highly concentrated, and both the ingredients strongly heated; or when the antimony is exposed to the vapours of the acid distilled from the black calx of manganese. By this last process a perfect solution of the regulus of antimony in the muriatic acid is effected. Of this more simple, more safe, and less expentive method of preparing muriated antimony, an account is given by Mr Russel in the Transactions of the Royal Society of Edinburgh.

If regulus of antimony were added in the distillation of spirit of sea-salt without water, a solution would also be made.

The method, however, now directed by the London college, in which vitriolic acid and sea-salt are employed to give a double elective attraction, is perhaps to be considered as preferable to any of the others. In this they have followed very nearly the directions given in the Pharmacopœia Suecica, which are taken from the process of Mr Scheele.

When the congealed matter that arises into the neck of the retort is liquified by the moisture of the air, it proves less corrosive than when melted down and rectified by heat; though, it seems, in either case, to be sufficiently strong for the purposes it is intended for, as the consuming of fungous flesh and the callous lips of ulcers. It is remarkable, that though this saline concrete readily and almost entirely dissolves by the humidity of the air, only a small quantity of white powder separating, it nevertheless will not dissolve on putting water to it directly: even when previously liquified by the air, the addition of

water will precipitate the solution. And accordingly, by the addition of water is formed that once celebrated article known by the title of *mercurius vitæ*, or *Algeroth's powder*. This preparation, although not now used by itself, is employed both by the Edinburgh college and also by some of the foreign ones, in the formation of emetic tartar, the most useful of all the antimonials. And although chemists are not altogether agreed with regard to the best mode of forming the antimonium tartarizatum, yet we shall afterwards have occasion to observe, when treating of that article, the preparation of it from the antimonium muriatum, or rather from its precipitate. Algeroth's powder is perhaps the best mode which has yet been prepared. And were it even with no other intention, a safe, easy, and cheap method, of forming an antimonium muriatum, may be considered as an important improvement in our pharmacopœias.

PULVIS ANTIMONIALIS.

Lond.

Antimonial powder.

Take of

Antimony, coarsely powdered,
Hartshorn-shavings, each two
pounds;

Mix, and put them into a broad red hot iron pot, stirring constantly till the mass acquires a grey colour. Powder the matter when cold, and put it into a coated crucible. Lute to it another crucible inverted, which has a small hole in its bottom: augment the fire by degrees to a red heat, and keep it so for two hours. Lastly, reduce the matter, when cold, to a very fine powder.

In this preparation, the metallic part of the antimony in a state

of calx, will be united with that part of the hartshorn which is indistructible by the action of fire, viz. its absorbent earth. If this powder be properly prepared, it is of a white colour. It is a mild antimonial preparation, and is given as an alterative from three to six grains for a dose. In this quantity, however, it sometimes creates nausea, and even vomits. In larger doses it proves emetic, and operates by stool.

SULPHUR ANTIMONII
PRÆCIPITATUM.

Lond.

Precipitated sulphur of antimony.

Take of

Antimony, powdered, two pounds;
Water of pure kali, four pints;
Distilled water, three pints.

Mix, and boil them with a slow fire for three hours, constantly stirring, and adding the distilled water as it shall be wanted; strain the hot ley through a double linen cloth, and into the liquor, whilst yet hot, drop by degrees as much diluted vitriolic acid as is sufficient to precipitate the sulphur. Wash off, with warm water, the vitriolated kali.

SULPHUR ANTIMONII
PRÆCIPITATUM, vulgo
SULPHUR AURATUM AN-
TIMONII.

Edinb.

Golden sulphur of antimony.

Boil, in an iron pot, four pounds of caustic ley diluted with three pints of water, and throw in by degrees two pounds of powdered antimony; keeping them continually stirring, with an iron spatula, for three hours, over a gentle fire, and occasionally supplying more water. The liquor loaded with the sulphur of antimony being then strained through a woollen cloth, drop into it gradually,

whilst it continues hot, so much spirit of nitre, diluted with an equal quantity of water, as shall be sufficient to precipitate the sulphur, which is afterwards to be carefully washed with hot water.

THE foregoing preparations are not strictly sulphurs; they contain a considerable quantity of the metallic part of the antimony, which is reducible from them by proper fluxes. These medicines must needs be liable to great variation in point of strength; and in this respect they are, perhaps, the most precarious, though some have affirmed that they are the most certain of the antimonial medicines.

They prove emetic when taken on an empty stomach, in a dose of four, five, or six grains; but in the present practice they are scarce prescribed with this intention; being chiefly used as alterative deobstruents, particularly in cutaneous disorders. Their emetic quality is easily blunted, by making them up into pills with resins or extracts, and giving them on a full stomach: with these cautions, they have been increased to the rate of sixteen grains a-day, and continued for a considerable time, without occasioning any disturbance upwards or downwards. As their strength is precarious, they should be taken at first in very small doses, and increased by degrees according to their effect.

A composition of the sulphur auratum, with mercurius dulcis, has been found a powerful, yet safe alterative, in cutaneous disorders; and has completed a cure after salivation had failed. In venereal cases, likewise, this medicine has produced excellent effects. A mixture of equal parts of the sulphur and calomel (well triturated together and
made

made into pills with extracts, &c.) may be taken from four to eight or ten grains, morning and night; the patient keeping moderately warm, and drinking after each dose a draught of a decoction of the woods, or other like liquors. This medicine generally promotes perspiration, scarce occasioning any tendency to vomit or purge, or affecting the mouth.

ANTIMONIUM TARTARISATUM.

Lond.

Tartarised antimony.

Take of

Crocus of antimony, powdered,
one pound and an half;

Crystals of tartar, two pounds;
Distilled water, two gallons.

Boil in a glass vessel about a quarter of an hour: filter through paper, and set aside the strained liquor to crystallize.

TARTARUS ANTIMONIALIS vulgo TARTARUS EMETICUS.

Edinb.

Emetic tartar.

Take of

The causticum antimoniale what quantity you choose; pour it into warm water, in which so much of the purified vegetable fixed alkali has been previously dissolved, that the antimonial powder may be precipitated, which after being well washed is to be exsiccated.

Then to five pounds of water add of this powder nine drams of crystals of tartar, beat into a very fine powder, two ounces and a half; boil for a little till the powders be dissolved.

Let the strained solution be slowly evaporated in a glass vessel to a pellicle, so that crystals may be formed.

WE have here two modes of forming the most common, and perhaps we may add the most useful, of all the antimonial preparations that has been long known in the shops under the name of *emetic tartar*. These modes differ considerably from each other; but in both, the reguline part of the antimony is united with the acid of the tartar. It is perhaps difficult to say to which mode of preparation the preference is to be given; for on this subject the best chemists are still divided in their opinion. The mode directed by the London college is nearly the same with that in former editions of their Pharmacopoeia, while that now adopted by the Edinburgh college, in which they have nearly followed the Pharmacopoeia Rossica, is of later date. That in both ways good emetic tartar may be formed, is very certain: But in our opinion, when it is formed of the precipitate from the muriatic acid, or the *poudre d'Algerotti*, as it has been called, there is the least chance of its being uncertain in its operation: and this method comes recommended to us on the authority of Bergman, Scheele, and some others of the first names in chemistry. Bergman advises, that the calx be precipitated by simple water, as being least liable to variation; and this is the direction followed in the Pharmacopoeia Rossica. But when the calx is precipitated by an alkaline ley, as it is directed by the Edinburgh college, it is more certainly freed from the muriatic acid, and will of course be milder.

In the after part of the process, whether precipitate or crocus have been used, the quantity of the antimonial ought always to be some drams more than is absolutely necessary for saturating the acid of tartar, so that no crystals may shoot which are not impregnated with the active metallic part of the antimony.

And in order to secure an uniform strength, some attention is necessary in collecting the crystals, as some may contain more metal than others. After they are all separated from the liquor, they ought to be beat together in a glass mortar into a fine powder, whereby the medicine may be of uniform strength.

Emetic tartar is, of all the preparations of antimony, the most certain in its operation.

It will be sufficient, in considering the medicinal effects of antimonials, that we should observe, once for all, that their emetic property depends on two different conditions of the reguline part: the first is where the reguline part is only active, by being rendered so from meeting with an acid in the stomach; the second is, where the reguline part is already joined with an acid, rendering it active. It is obvious, that these preparations, reducible to the first head, must always be of uncertain operation. Such then is the equal uncertainty in the chemical condition and medicinal effects of the croci, the hepata, and the calces; all of which processes are different steps or degrees of freeing the reguline part from sulphur and phlogiston. It is equally plain, that the preparations coming under the second head, must be always constant and certain in their operation. Such a one is emetic tartar, the dose and effects of which we can measure with great exactness.

The title of this medicine expresses its principal operation. It is one of the best of the antimonial emetics, acting more powerfully than the quantity of crocus contained in it would do by itself, though it does not so much ruffle the constitution. And indeed antimonials in general, when thus rendered soluble by vege-

table acids, are more safe and certain in their effects than the violent preparations of that mineral exhibited by themselves; the former never varying in their action from a difference in the food taken during their use, or other similar circumstances; which occasioning more or less of the others to be dissolved, make them operate with different degrees of force. Thus, crude antimony, where acid food has been liberally taken, has sometimes proved violently emetic; whilst in other circumstances, it has no such effect.

The dose of emetic tartar, when designed to produce the full effect of an emetic, is from two to four grains. It may likewise be advantageously given in much smaller doses, as a nauseating and sudorific medicine.

ANTIMONIUM VITRIFICATUM.

Lond.

Vitrified antimony.

Take of

Powdered antimony, four ounces.

Calcine it in a broad earthen vessel, with a fire gradually raised, stirring with an iron rod until it no longer emits a sulphureous smoke. Put this powder into a crucible, so as to fill two-thirds of it. A cover being fitted on, make a fire under it, at first moderate, afterwards stronger, until the matter be melted. Pour out the melted glass.

VITRUM ANTIMONII.

Edin.

Glass of antimony.

Strow antimony, beat into a coarse powder like sand, upon a shallow unglazed earthen vessel, and apply

a gentle heat underneath, that the antimony may be heated slowly; keeping at the same time continually stirring to prevent from running into lumps. White vapours of a sulphureous smell will arise from it. When at the same degree of heat these cease to exhale, increase the fire a little, so that the vapours may again arise; go on in this manner till the powder, when brought to a red heat, exhales no more vapours. Melt the calx in a crucible with an intense heat, till it takes on the appearance of melted glass; then pour it out on a heated brass plate or dish.

THE calcination of antimony, to fit it for making a transparent glass, succeeds very slowly, unless the operator be very wary and circumspect in the management of it. The most convenient vessel is a broad shallow dish, or a smooth flat tile, placed under a chimney. The antimony should be the purer sort, such as is usually found at the apex of the cones; this, grossly powdered, is to be evenly spread over the bottom of the pan, so as not to lie above a quarter of an inch thick on any part. The fire should be at first no greater than is just sufficient to raise a fume from the antimony, which is to be now and then stirred: when the fumes begin to decay, increase the heat, taking care not to raise it so high as to melt the antimony or run the powder into lumps: after some time the vessel may be made red hot, and kept in this state until the matter will not, upon being stirred, any longer fume. If this part of the process be duly conducted, the antimony will appear in an uniform powder, without any lumps and of a grey colour.

With this powder fill two-thirds of a crucible, which is to be cover-

ed with a tile, and placed in a wind-furnance. Gradually increase the fire till the calx be in perfect fusion, when it is to be now and then examined by dipping a clean iron wire into it. If the matter which adheres to the end of the wire appears smooth and equally transparent, the vitrification is completed, and the glass may be poured out upon a hot smooth stone or copperplate, and suffered to cool by slow degrees to prevent its cracking and flying in pieces. It is of a transparent yellowish red colour.

The glass of antimony usually met with in the shops, is said to be prepared with certain additions; which may, perhaps, render it not so fit for the purpose here designed. By the method above directed, it may be easily made of the requisite perfection without and addition.

As antimony may be rendered nearly or altogether inactive by calcination, it might be expected that the calx and glass of the present process would be likewise inert. But here the calcination is far less perfect than in the other case, where the inflammable principle of the regulus is totally burnt out by deflagration with nitre: there the calx is of perfect whiteness, and a glass made from that calx (with the addition of any saline flux, for of itself it will not vitrify) has little colour: but here so much of the inflammable principle is left, that the calx is grey and the glass of a high colour. The calcined antimony is said by Boerhaave to be violently emetic. Experience has shown that the glass is so, insomuch as to be unsafe for internal use. At present it is chiefly employed in forming some other antimonial preparations, particularly the vitrum antimonii ceratum, the next article to be mentioned; and the vinum antimonii, afterwards to be treated of under the head of

Wines. It is also not unfrequently employed in the formation of emetic tartar; and it was directed for that purpose in the last edition of the Edinburgh pharmacopoeia, being perhaps even superior to the crocus antimonii.

VITRUM ANTIMONII CERATUM.

Edinb.

Cerated glass of antimony.

Take of

Yellow wax, a dram;

Glass of antimony, reduced into powder, an ounce.

Melt the wax in an iron vessel, and throw into it the powdered glass: keep the mixture over a gentle fire for half an hour, continually stirring it; then pour it out upon a paper, and when cold grind it into powder.

THE glass melts in the wax with a very soft heat: after it has been about twenty minutes on the fire, it begins to change its colour, and in ten more comes near to that of Scotch snuff, which is a mark of its being sufficiently prepared: the quantity set down above, loses about one dram of its weight in the process.

This medicine was for some time much esteemed in dysenteries: several instances of its good effects in these cases may be seen in the fifth volume of the Edinburgh Essays, from which the above remarks on the preparation are taken. The dose is from two or three grains to twenty, according to the age and strength of the patient. In this operation, it makes some persons sick, and vomit; it purges almost every one; though it has sometimes effected a cure without occasioning any evacuation or sickness. It is now, however, much less used than formerly.

Mr Geoffroy gives two pretty sin-

gular preparations of glass of antimony, which seem to have some affinity with this. One is made by digesting the glass, most subtilly levigated, with a solution of mastich made in spirit of wine, for three or four days, now and then shaking the mixture; and at last evaporating the spirit so as to leave the mastich and glass exactly mingled. Glass of antimony thus prepared, is said not to prove emetic, but to act merely as a cathartic, and that not of the violent kind. A preparation like this was first published by Hartman, under the name of *Chylista*.

The other preparation is made by burning spirit of wine upon the glass three or four times, the powder being every time exquisitely rubbed upon a marble. The dose of this medicine is from ten grains to twenty or thirty: it is said to operate mildly both upwards and downwards, and sometimes to prove sudorific.

CERUSSA ANTIMONII.

Brun.

Cerusse of antimony.

Take of

Regulus of antimony, one part;
Nitro, three parts.

Deflagrate them together in the manner directed for the antimonum calcinatum.

THE result of this process and that formerly directed for the calcined antimony are nearly the same.

It is not necessary to use so much nitre here, as when antimony itself is employed; for the sulphur which the crude mineral contains, and which requires for its dissipation nearly an equal weight of nitre to the antimony, is here already separated. Two parts of nitre to one of the regulus are sufficient. It is better, however, to have an overproportion of nitre than an under one,

one, lest some parts of the regulus should escape being sufficiently calcined.

It may be proper to observe, that though crude antimony and the regulus yield the same calces, yet the salts separated in washing the calces are very different. As crude antimony contains common sulphur, the acid of the sulphur unites with the alkaline basis of the nitre, and the result is a neutral salt. As the regulus contains the phlogistic, or inflammable principle, but no sulphur, the nitre is alkalised, as it would be by charcoal or such like inflammable bodies, and is at the same time rendered more acrimonious than the common alkaline salts; probably owing to the calx absorbing the air of the alkali. If only equal parts of the regulus and nitre be employed, and the fire kept up strong for an hour or more, the salt will prove more caustic than even the potential cautery of the shops. But the causticity of the salt will still be far greater, if, instead of the simple regulus of antimony, the martial regulus be used.

KERMES MINERALIS.

Gen.

Kermes mineral.

Take of

Any fixed alkaline salt, four ounces;

Water, one pint.

Boil them together for two hours, then filtre the warm liquor; as it cools, the kermes will precipitate. Pour off the water, and add to it three ounces of fresh alkaline salt, and a pint more of water: in this liquor, boil the remaining antimony as before; and repeat the process a third time, with the addition of only two ounces of alkaline salt, and another pint of water; filtering the liquor as at first, and collecting the powders

which subside from them in cooling.

THIS medicine has of late been greatly esteemed in France especially, under the names of *Kermes mineral pulvis*, *Carthusianus*, *poudre des Chartreux*, &c. It was, originally, a preparation of Glauber, and for some time kept a great secret, till at length the French king purchased the preparation from M. de la Ligerie, for a considerable sum, and communicated it to the public in the year 1720. In virtue, it is not different from the sulphurs abovementioned; all of them owe their efficacy to a part of the regulus of the antimony, which the alkaline salt, by the mediation of the sulphur, renders soluble in water.

Chemists are, however, divided in their opinions with respect to the precise chemical condition of the reguline part in the preparations called *hepata of antimony*. Some have alleged that they contain not a particle of the alkaline salt: It is at any rate certain, that the quantity and condition of the reguline part must vary according to the different proportions of the ingredients, the time of the precipitation, the greater or less degree of causticity of the alkali employed, and several other circumstances. At best, the whole of them are liable to the same uncertainty in their operation as the calces of antimony.

PANACEA ANTIMONII.

Panacea of antimony.

Take of

Antimony, six ounces;

Nitre, two ounces;

Common salt, an ounce and a half;

Charcoal, an ounce.

Reduce them into a fine powder, and put the mixture into a red-hot crucible, by half a spoonful

at a time, continuing the fire a quarter of an hour after the last injection: then either pour the matter into a cone, or let it cool in the crucible; which when cold must be broken to get it out. In the bottom will be found a quantity of regulus; above this a compact liver-coloured substance; and on the top, a more spongy mass: this last is to be reduced into powder,edulcorated with water, and dried, when it appears of a fine golden colour.

THIS preparation is supposed to have been the basis of *Lockyer's*

pills, which were formerly a celebrated purge. Ten grains of the powder, mixed with an ounce of white sugar-candy, and made up into a mass with a mucilage of gum tragacanth, may be divided into an hundred small pills; of which one, two, or three, taken at a time, are said to work gently by stool and vomit. The compact liver-coloured substance, which lies immediately above the regulus, operates more severely. This last appears to be nearly of the same nature with the *crocus antimonij*, and the former with the *sulphur auratum*.

C H A P. XI.

PREPARATA EX ARGENTO.

PREPARATIONS OF SILVER.

ARGENTUM NITRATUM.

Lond.

Nitrated silver.

Take of

Silver, one ounce;

Diluted nitrous acid, four ounces.

Dissolve the silver in the nitrous acid, in a glass vessel, over a sand-heat; then dry it by an heat gently raised: afterwards melt it in a crucible, that it may be poured into proper forms, carefully avoiding too great heat.

SAL ARGENTI, vulgo CAUSTICUM LUNARE.

Edinb.

Salt of silver, commonly called Lunar caustic.

Take of

Purest silver, flatted into plates, and cut in pieces, four ounces;

Weak nitrous acid, eight ounces;

Purest water, four ounces.

Dissolve the silver in a phial with a gentle heat, and evaporate the solution to dryness. Then put the mass into a large crucible, and apply the heat, at first gently, and augment it by degrees till the mass flows like oil; then pour it into iron pipes made for this purpose, previously heated.

THESE

THESE processes do not differ in any material particular. But the name of *argentum nitratum* is preferable to the more indefinite one of *sal argenti*.

Strong spirit of nitre will dissolve somewhat more than half its weight of pure silver; and the weaker of the aquæ fortes, formerly described, proportionably less, according to their quantity of pure nitrous acid. Sometimes this spirit contains a portion of the vitriolic, or marine acids; which, however minute, renders it unfit for dissolving this metal, and should therefore be carefully separated before the solution be attempted. The method which the refiners employ for examining the purity of their aquafortis, and purifying it if necessary, is to let fall into it a few drops of a perfect solution of silver already made: if the liquor remain clear, and grow not in the least turbid or whitish, it is fit for use; otherwise, they add a small quantity more of the solution, which immediately turns the whole of a milky white colour; the mixture being then suffered to rest for some time, deposits a white sediment; from which it is warily decanted, examined afresh, and, if need be, farther purified by a fresh addition of the solution.

The silver flatted into thin plates, as directed in the second of the above processes, needs not be cut in pieces: the solution will go on the more speedily, if they are only turned round into spiral circumvolutions, so as to be conveniently got into the glass, with care that the several surfaces do not touch each other. By this management, a greater extent of the surface is exposed to the action of the menstruum, than when the plates are cut in pieces and laid above each other. Good aquafortis will dissolve about half its

weight of silver; and it is not advisable to use a greater quantity of the menstruum than is sufficient for effecting the solution, for all the surplus must be evaporated in the subsequent fusion.

It is necessary to employ very pure water; for if hard water were used in this process, the nitrous acid would forsake a part of the silver to join with the calcareous earth of the imperfect nitrous selenite; whereby a part of the silver would be precipitated.

The crucible ought to be large enough to hold five or six times the quantity of the dry matter; for it bubbles and swells up greatly, so as otherwise to be apt to run over. During this time, also, little drops are now and then spirted up, whose causticity is increased by their heat, against which the operator ought therefore to be on his guard. The fire must be kept moderate till this ebullition ceases, and till the matter becomes consistent in the heat that made it boil before: then quickly increase the fire till the matter flows thin at the bottom like oil, on which it is to be immediately poured into the mould, without waiting till the fumes cease to appear; for when this happens, the preparation proves not only too thick to run freely into the mould, but likewise less corrosive than it is expected to be.

In want of a proper iron mould, one may be formed of tempered tobacco-pipe clay, not too moist, by making in a lump of it, with a smooth stick first greased, as many holes as there is occasion for: pour the liquid matter into these cavities, and when congealed take it out by breaking the mould. Each piece is to be wiped clean from the grease, and wrapt up in soft dry paper, not only to keep the air from acting upon them, but likewise to prevent their cor-

cor-

corroding or discolouring the fingers in handling.

This preparation is a strong caustic; and frequently employed as such, for consuming warts and other fleshy excrescences, keeping down fungous flesh in wounds or ulcers, and other similar uses. It is rarely applied where a deep eschar is required, as in the laying open of imposthumations and tumours; for the quantity necessary for these purposes, liquefying by the moisture of the skin, spreads beyond the limits in which it is intended to operate.

PILULÆ LUNARES.

The lunar pills.

Dissolve pure silver in aquafortis, as in the foregoing process; and after due evaporation, set the liquor apart to crystallize. Let the crystals be again dissolved in common water, and mingled with a solution of equal their weight of nitre. Evaporate this mixture to dryness, and continue the exsiccation with a gentle heat, keeping

the matter constantly stirring till no more fumes arise.

HERE it is necessary to continue the fire till the fumes entirely cease, as more of the acid is required to be dissipated than in the preceding process. The preparation is, nevertheless, in taste very sharp, intensely bitter and nauseous: applied to ulcers, it acts as a caustic, but it is much milder than the foregoing. Boerhaave, Boyle, and others, commend it highly in hydropic cases. The former assures us, that two grains of it made into a pill with crumb of bread and a little sugar, and taken on an empty stomach (some warm water, sweetened with honey, being drank immediately after), purge gently without griping, and bring away a large quantity of water, almost without the patient's perceiving it: that it kills worms, and cures many inveterate ulcerous disorders. He nevertheless cautions against using it too freely, or in too large a dose; and observes, that it always proves corrosive and weakening, especially to the stomach.

C H A P. XII.

P R E P A R A T A E F E R R O .

P R E P A R A T I O N S O F I R O N .

FERRUM AMMONIACALE.

*Lond.**Ammoniacal iron.*

Take of

Iron filings, one pound ;
Sal ammoniac, two pounds.Mix, and sublime. What remains
at the bottom of the vessel mix by
rubbing together with the sub-
limed matter, and again sub-
lime.FLORES MARTIALES, vulgo
ENS VENERIS.*Edinb.**Martial flowers, commonly called
Ens veneris.*

Take of

Colcothar of martial vitriol, wash-
ed and well dried,

Sal ammoniac, equal weights.

Having mixed them well, sublime.

THOUGH the mode of prepara-
tion directed by the two colleges is
here different, yet the preparation is
at bottom the same; and it is per-
haps difficult to say which mode of
preparation is to be preferred as the
easiest and best.

The name of *ens veneris* has by
some been very improperly applied
to this preparation, as it contains
not a particle of copper. The proper

ens veneris is prepared from the
blue vitriol; but, as we shall soon
see, is often not materially different
from the *flores martiales*.

The success of this process de-
pends principally upon the fire being
hastily raised, that the sal ammoniac
may not sublime before the heat be
sufficient to enable it to carry up a
sufficient quantity of the iron. Hence
glass vessels are not so proper as ear-
then or iron ones: for when the for-
mer are made use of, the fire cannot
be raised quickly enough, without
endangering the breaking of them.
The most convenient vessel is an iron
pot; to which may be luted an in-
verted earthen jar, having a small
hole in its bottom to suffer the elas-
tic vapours, which arise during the
operation, to escape. It is of ad-
vantage to thoroughly mix the in-
gredients together, moisten them
with a little water, and then gently
dry them; and to repeat the pulve-
rification, humectation, and exticca-
tion two or three times, or oftener.
If this method be followed, the sal
ammoniac may be increased to three
times the quantity of the iron, or
farther; and a single sublimation
will often be sufficient to raise flow-
ers of a very deep orange colour.

This preparation is supposed to be
highly

highly aperient and attenuating; though no otherwise so than the rest of the chalybeates, or at most only by virtue of the saline matter joined to the iron. It has been found of service in hysterical and hypochondriacal cases, and in distempers proceeding from a laxity and weakness of the solids, as the rickets. It may be conveniently taken in the form of bolus, from two or three grains to ten: it is nauseous in a liquid form (unless in spirituous tincture); and occasions pills to swell and crumble, except such as are made of the gums.

FERRI RUBIGO.

Lond.

Rust of Iron.

Take of

Iron filings, one pound.

Expose them to the air, often moistening them with water, until they be corroded into rust; then powder them in an iron mortar, and wash off with distilled water the very fine powder.

But the remainder, which will not by moderate rubbing be reduced into a powder easily washed off, must be moistened, exposed to the air for a longer time, and again powdered and washed as before. Let the washed powder be dried.

FERRI RUBIGO, vulgo FERRI LIMATURA PRÆPARATA.

Edinb.

Rust of iron, commonly called Shavings of iron prepared.

Set purified filings of iron in a moist place, that they may turn to rust, which is to be ground into an impalpable powder."

THE cleansing of iron filings by means of a magnet is very tedious,

and does not answer so well as might be expected; for if they be rusty, they will not be attracted by it, or not sufficiently: nor will they by this means be entirely freed from brass, copper, or other metallic substances which may adhere to them. It appears from the experiments of Henckel, that if iron be mixed by fusion with even its own weight of any of the other metals, regulus of antimony alone excepted, the compound will be vigorously attracted by the loadstone.—The rust of iron is to be procured at a moderate rate from the dealers in iron, free from any impurities, except such as may be washed off by water.

The rust of iron is preferable as a medicine to the calces, or croci, made by a strong fire. Hoffman relates, that he has frequently given it with remarkable success in obstinate chlorotic cases accompanied with excessive headachs and other violent symptoms; and that he usually joined with it pimpinella, arum root, and salt of tartar, with a little cinnamon and sugar. The dose is from four or five grains to twenty or thirty. Some have gone as far as a dram: But all the preparations of this metal answer best in small doses, which should rather be often repeated than enlarged.

FERRUM TARTARISATUM.

Lond.

Tartarised iron.

Take of

Filings of iron, one pound.

Powdered crystals of tartar, two pounds.

Mix them with distilled water into a thick paste. Expose it to the air in an open earthen vessel for eight days; then rub the matter, dried in a bath of sand, to the finest powder.

THIS

THIS is an useful preparation of iron, in which that metal is chiefly brought to a saline state by means of the cream of tartar. It has now for the first time a place in the London pharmacopœia; but it had before been introduced into some of the foreign ones, particularly the Pharmacopœia Genevensis, under the title of *mars tartarizatus*; and indeed it is almost precisely the same with the *mars solubilis* of the old editions of the Edinburgh pharmacopœia.

FERRUM VITRIOLATUM.

Lond.

Vitriolated iron.

Take of

Filings of iron,
Vitriolic acid, each eight ounces;
Distilled water, three pints.

Mix them in a glass vessel; and, when the effervescence has ceased, place the mixture for some time upon hot sand; then pour off the liquor, straining it through paper; and, after due exhalation, set it aside to crystallize.

VITRIOLUM MARTIS, seu SAL CHALYBIS.

Edinb.

Vitriol of iron, or salt of steel.

Take of

Purified filings of iron, six ounces;
Vitriolic acid, eight ounces;
Water, two pounds and a half.

Mix them, and when the effervescence ceases, let the mixture stand for some time upon warm sand; then strain the liquor through paper, and after due evaporation set it at rest to crystallize.

DURING the dissolution of the iron an elastic vapour arises, which on the approach of flame catches fire and explodes, so as sometimes to

burst the vessel. To this particular therefore the operator ought to have due regard.

This vapour is also noxious to animal life. It is the inflammable air of Dr Priestley.

The chemists are seldom at the trouble of preparing this salt according to the directions above given; but in its stead substitute common green vitriol, purified by solution in water, filtration, and crystallization. The only difference between the two is, that the common vitriol contains somewhat more metal in proportion to the acid; and hence in keeping, its green colour is much sooner debased by a rusty brownish cast. The superfluous quantity of metal may be easily separated, by suffering the solution of the vitriol to stand for some time in a cold place, when a brownish yellow ochery sediment will fall to the bottom; or it may be perfectly dissolved, and kept suspended by a suitable addition of oil of vitriol. If the vitriol be suspected to contain any cupreous matter, which it does not appear that the common English vitriol ever does, though almost all the foreign vitriols do, the addition of some bright iron wire to the solution will both discover, and effectually separate, that metal: for the acid quits the copper to dissolve a proportionable quantity of the iron; and the copper, in its separation from the acid, adheres to the undissolved iron, and forms a skin of a true copper colour upon its surface. Even a vitriol of pure copper may, on this principle, be converted into a pure vitriol of iron.

But though the vitriolic acid appears in this operation to have so much stronger a disposition to unite with iron than with copper, that it totally rejects the latter upon presenting the former for it to act upon;

the operator may, nevertheless, give a dangerous impregnation of copper to the purest and most saturated solution of iron in the vitriolic acid, by the use of copper vessels. If the martial solution be boiled in a copper vessel, it never fails to dissolve a part of the copper, distinguishable by its giving a cupreous stain to a piece of bright iron immersed in it. By the addition of the iron, the copper is separated; by boiling it again without iron, more of the copper is dissolved; and this may in like manner be separated by adding more iron.

The salt of steel is one of the most efficacious preparations of this metal; and not unfrequently made use of in cachectic and chlorotic cases, for exciting the uterine purgations, strengthening the tone of the viscera, and destroying worms. It may be conveniently taken in a liquid form, largely diluted with aqueous fluids: Boerhaave directs it to be dissolved in an hundred times its weight of water, and the solution to be taken in the dose of twelve ounces on an empty stomach, walking gently after it. Thus managed, he says, it opens the body, purges, proves diuretic, kills and expels worms, tinges the excrements black, or forms them into a matter like clay, strengthens the fibres, and thus cures many different distempers. The quantity of vitriol in the above dose of the solution, is fifty-seven grains and a half; but in common practice, such large doses of this strong chalybeate are never ventured on. Four or five grains, and in many cases half a grain, are sufficient for the intentions in which chalybeate medicines are given. Very dilute solutions, as that of a grain of the salt in a pint of water, may be used as succedanea to the natural chaly-

beate waters, and will in many cases produce similar effects.

COLCOTHAR VITRIOLI.

Edinb.

Colcothar of vitriol.

Let calcined vitriol be urged with a violent fire till it passes into a matter of a very red colour.

IN this preparation, the iron which had been brought to a saline state by means of the acid of vitriol, is again deprived of that acid by the action of fire. It may be considered therefore as differing in nothing from the residuum which remains in the retort, when vitriolic acid is distilled from martial vitriol. The colcothar is very rarely employed by itself for medical purposes; but it is used in the preparation of some other chalybeates, particularly the flores martiales, when prepared according to the method directed by the Edinburgh college.

ÆTHIOPS MARTIALIS.

Gen.

Martial Æthiops.

Take of

The rust of iron, as much as you incline;

Olive oil, a sufficient quantity to make it into a paste.

Let this be distilled in a retort by a strong fire to dryness. Keep the residuum reduced to a fine powder in a close vessel.

AN article under this name had formerly a place in some of the old pharmacopoeias, and is described by Lemery in the Memoirs of the French Academy; but it was formed by a tedious process, continued for several months by the aid of water. Here the process is much shorter, and is supposed to give nearly

nearly the same product. Some have recommended it, upon the supposition that the iron is here obtained in a very subtle state : but it is not in general supposed to have any advantage over the other more common chalybeates.

CROCUS MARTIS APERIENS ET ASTRINGENS.

Opening and astringent crocus of iron.

THESE are prepared by mixing iron filings with twice their weight of powdered sulphur, deflagrating in a red hot crucible; and in the one case keeping the preparation over the fire till it assumes a red colour; in the other, by reverberating it for a long time in the most extreme degree of heat.

Preparations under these names

still retain a place in some of the foreign pharmacopoeias, but they are variously prepared. They may however be considered as possessing the same medical powder: and although the preparations mentioned above probably differ somewhat from each other in their virtues, yet that difference is not of such a nature as is imported by the titles by which they are usually distinguished. For all the preparations of iron probably act by an astringent quality; and that which is above denominated the astringent crocus, has probably least effect in that way. At one period, these preparations were not unfrequently in use; and they were given in the form of bolus, electuary, or pill, from a few grains to a scruple; but among us they are at present so little in use, as to have now no place in our pharmacopoeias.

C H A P. XIII.

PRÆPARATA EX HYDRARGYRO.

PREPARATIONS OF MERCURY.

WE have already treated of mercury at some length in the *Materia Medica*, and have there given a full view of the different mercurial preparations, reduced to the form of a table. From that table it is evident, that there is no article which has been employed for medical purposes in a greater variety of forms. The colleges of

London and Edinburgh have admitted into their pharmacopoeias only a few of these; but from the selection they have made, there is reason to believe that every useful purpose for which mercury has been employed may be answered; and these purposes are both numerous and considerable. For it is at least very generally allowed among intel-

light practitioners, that there are very few articles kept in the shops of our apothecaries which can be considered as so extensively useful.

Mercury or quicksilver, in its crude state, is a ponderous metallic fluid, totally volatile in a strong fire, and calcinable by a weaker one (though very difficultly) into a red powdery substance. It dissolves in the nitrous acid, is corroded by the vitriolic, but not acted on by the marine in its liquid state: it nevertheless may be combined with this last, if skilfully applied in the form of fume. Quicksilver unites, by trituration, with earthy, unctuous, resinous, and other similar substances, so as to lose its fluidity: triturated with sulphur, it forms a black mass, which by sublimation changes into a beautiful red one.

The general virtues of the mercurial preparations we have already endeavoured to state under the article Hydragyrus in the *Materia Medica*. Here it is sufficient to observe, that while in certain circumstances they act as stimulants, and even as corrosives, to the parts to which they are applied; under a different management, when introduced into the habit, they seem to forward circulation through even the smallest and most remote vessels of the body; and may be so managed as to promote excretions through all the emunctories. But while they thus operate as a powerful stimulus to the sanguiferous, and probably also to the lymphatic system, they seem to exert but little influence on the nervous system. By this means they prove eminently serviceable in certain inveterate chronical disorders, proceeding from obstinate obstructions of the glands. Crude mercury has no effect this way. Resolved into fume, or divided into minute particles, and prevented from re-

uniting by the interposition of other substances, it operates very powerfully; unless the dividing body be sulphur, which restrains its action. Combined with a small quantity of the mineral acids, it acts effectually, though in general mildly; with a larger, it proves violently corrosive.

HYDRARGYRUS PURIFICATUS.

Lond.

Purified quicksilver.

Take of

Quicksilver,

Filings of iron, each four pounds.

Rub them together, and distil from an iron vessel.

As in the distillation of quicksilver glass retorts are very liable to be broken, an iron one is here with propriety directed; and by the addition of the filings of iron, matters which might otherwise arise with the quicksilver will be more apt to be retained in the retort: But still this happens so readily, even merely with that degree of heat which is necessary to elevate the mercury, that it is very doubtful whether much advantage be obtained from this process; and accordingly it has now no place in the pharmacopoeia of the Edinburgh college.

HYDRARGYRUS ACETATUS.

Lond.

Acetated quicksilver.

Take of

Purified quicksilver, one pound;

Diluted nitrous acid, two pounds;

Water of kali, as much as is sufficient.

Mix the quicksilver with the acid in a glass vessel, and dissolve it in a sand-bath; then drop in by degrees the water of kali, that the calx

calx of quicksilver may be precipitated; wash this calx with plenty of distilled water, and dry it with a gentle heat. These things being done,

Take of

The calx of quicksilver, just now described, one pound.

Acetous acid, as much as is necessary to dissolve the calx.

Mix them in a glass vessel; and the solution being completed, strain it through paper; then evaporate it till a pellicle appears, and set it aside to crystallize.

Keep these crystals in a vessel close stopt.

OF all the saline preparations of mercury, it has long been the opinion of the best chemists, that those in which it was brought to a saline form, by means of acetous acid, would be the mildest; and such a preparation was conjectured to be the basis of a celebrated pill, prepared and sold by Mr Keyser. It was however found to be a very difficult matter to imitate his pill, or to obtain a combination of mercury with the acetous acid: but not long since, the process for preparing these pills was published by authority at Paris, after being purchased by the French King. The process here described, though in some particulars much less operose than that of Mr Keyser, yet nearly approaches to it, and furnishes us with the mildest of the saline mercurials.

HYDRARGYRUS CALCINATUS.

Lond.

Calcined quicksilver.

Take of

Purified quicksilver, one pound.

Expose the quicksilver, in a flat-bottomed glass cucurbit, to an heat of about 600 degrees in a sand-

bath, till it becomes a red powder.

THIS preparation may now be made in a shorter time than by the process formerly directed in the London pharmacopœia, which in general required several months; for the access of air, without which calcination cannot be performed, was then very much excluded. Still, however, the process is a tedious one, and might perhaps be improved. A vessel might be so contrived, as to occasion a continual flux of air over the surface of the mercury.

This preparation is by some highly esteemed in venereal cases, and supposed to be the most efficacious and certain of all the mercurials. It may be advantageously given in conjunction with opiates: a bolus or pill, containing from half a grain to two grains of this calx, and a quarter or half a grain or more of opium, with the addition of some warm aromatic ingredient, may be taken every night. Thus managed, it acts mildly, though powerfully, as an alterative and diaphoretic: given by itself in larger doses, as four or five grains, it proves a rough emetic and cathartic.

PULVIS MERCURII CINEREUS.

Edinb.

Ash-coloured powder of mercury.

Take of

Quicksilver,

Weak nitrous acid, equal weights.

Mix them so as to dissolve the quicksilver; dilute the solution with pure water, and add spirit of sal ammoniac as much as is sufficient to separate the mercury perfectly from the acid; then wash the powder in pure water, and dry it.

IN this process the mercurial nitre is decomposed; the precipitate, therefore, is a calx of mercury, and the clear liquor a solution of nitrous ammoniac. From the great attraction which the nitrous acid has for phlogiston, or from its ready disposition to part with pure air, the precipitates of mercury, from its solution in this acid, are more completely in the state of a calx than those from any other menstruum. There are, however, several niceties to be observed in conducting this process. If we employ too small a proportion of acid, and assist the solution by heat, the solution will contain an excess of calx capable of being separated by the water; and the whole precipitate from such a solution would be of a white colour. If, on the other hand, we employ too large a proportion of acid, the mercury is then so far calcined as to be capable of being dissolved by the volatile alkali: and this might happen in proportion as the quantity should be superabundant to the neutralization of the acid. The use of the water is to dissolve the nitrous ammoniac as fast as it is formed, and thereby prevent it from falling down and mixing with the precipitate. It is necessary to employ the purest water; as if such was used as contains a nitrous selenite, not only a part of the mercury may be precipitated by the base of the selenite, but this last might also be deposited by the succeeding addition of the alkali.

The pulvis mercurii cinereus has of late years been much celebrated for the cure of venereal affections. It was first proposed by Dr Saunders to be made by precipitating the mercury from calomel, as the best substitute for the tedious and expensive process of the *precipitatus per se*, and of the grey powder produced by triture with gum arabic. From the testimony of Dr Home,

and several other practitioners, we have no doubt of its being a very valuable preparation of mercury. It may be given in a bolus or wafer, from one to six or seven grains; the dose being gradually increased according to its effects upon the person.

HYDRARGYRUS CUM CRE-
TA
Lond.

Quicksilver with chalk.

Take of

Purified quicksilver, three ounces; Powdered chalk, five ounces.

Rub them together until the globules disappear.

IN this preparation, as well as the two former, we have also the mercury in a state of calx; but in place of being brought to that state by the aid of fire or of acids, what may here be considered as calcination is effected by triture.

This preparation had no place in the former editions of the London pharmacopoeia. A preparation, nearly similar indeed, under the title of Mercurius Alcalifatus, in which crabs eyes were employed in place of chalk, had a place in the old editions of the Edinburgh pharmacopoeia, but was rejected from that published in 1744, and has never again been restored. One reason for rejecting it was its being liable to gross abuse in the preparation, by the addition of some intermedium, facilitating the union of mercury with the absorbent earth, but diminishing or altering its power. The present preparation is liable to the same objection. Some, however, are of opinion, that when duly prepared, it is an useful alterative. But there can be little doubt, that the absorbent earth, by destroying acid in the alimentary canal, will

will diminish the activity of the mercurial calx.

HYDRARGYRUS MURIATUS

Lond.

Muriated quicksilver.

Take of

Purified quicksilver,
Vitriolic acid, each two pounds ;
Dried sea-salt, three pounds and
an half.

Mix the quicksilver with the acids in a glass vessel, and boil in a sand-heat until the matter be dried. Mix it, when cold, with the sea-salt, in a glass vessel ; then sublime in a glass cucurbit, with a heat gradually raised. Lastly, let the sublimed matter be separated from the scorice.

MERCURIUS SUBLIMATUS CORROSIVUS.

Edinb.

Sublimate corrosive mercury.

Take of

Quicksilver,
Weak nitrous acid, of each four
ounces ;
Calcined sea-salt,
Calcined vitriol, of each five
ounces.

Dissolve the quicksilver in the nitrous acid, and evaporate the solution to a white and thoroughly dry mass ; then add the sea-salt and vitriol. Having ground and mixed them well together, put the whole into a phial, one half of which they ought to fill ; then sublime in sand, first with a gentle heat, but afterwards to be gradually increased.

THE sublimate prepared by either of these methods is the same, as the sublimate in both consists only of mercury and the acid of the sea-salt united together. In the process directed by the Edinburgh col-

lege, the materials being mixed and exposed to the fire, first the vitriol parts with its acid, which, dislodging those of nitre and marine salt, take their place. The marine acid, resolved into fume and assisted by the nitrous, dissolves the mercury, now also strongly heated. This acid, though it very difficultly acts on mercury, yet when thus once united with it, is more strongly retained thereby than any other acid. The nitrous spirit, therefore, having nothing to retain it (for its own basis and that of the sea-salt are both occupied by the vitriolic, and that which the vitriolic forsook to unite with these, is now scarcely combinable with it) arises ; leaving the mercury and marine acid to sublime together when the heat shall be strong enough to elevate them. Some small portion of the marine spirit arises along with the nitrous ; and hence this compound acid has been usually employed, instead of the *aquafortis composita*, to which it is similar, for making the red corrosive.

It appears, therefore, that the vitriol, and the bases of the nitre and sea-salt, are of no farther use in this process, than as convenient intermediums for facilitating the union of the mercury with the marine acids. They likewise serve to afford a support for the sublimate to rest upon, which thus assumes the form it is expected in, that of a placenta or cake.

The process, however, now adopted by the London college is a more simple and better one. There the mercury, corroded by the vitriolic acid into a white mass, is mixed with about an equal quantity of sea-salt, and set to sublime ; the vitriolic acid quits the mercury to unite with the basis of the sea-salt ; and the acid of the sea-salt, now set at liberty, unites with the mercury, and

sublimes with it into the compound required. The discovery of this method is generally attributed to Boulduc; though it is found also in Kunkel's *Laboratorium Chymicum*. When the process is conducted in this way, the residuous matter is a pure Glauber's salt, and the sublimate is also free of ferruginous matter; a greater or less quantity of which is very generally carried up along with the mercury when vitriol of iron is employed. Boulduc's method has therefore the advantage in this, that the proportion of mercury in a given quantity of sublimate must be less liable to variation.

If the mercury be corroded by the nitrous acid instead of the vitriolic, the event will be the same; that acid equally quitting the mercury, and setting loose the marine; and the sublimate made by this method is the same with the foregoing; but as the quantity of fixt matter is smaller, it more difficultly assumes the form of a cake. It requires indeed some skill in the operator to give it this appearance when either process is followed. When large quantities are made, this form may be easily obtained, by placing the matras no deeper in the sand than the surface of the matter contained in it; and removing a little of the sand from the sides of the glass, as soon as the flowers begin to appear in the neck; when the heat should likewise be somewhat lowered, and not at all raised during the whole process. The sublimation is known to be completed by the edges of the crystalline cake, which will form upon the surface of the caput mortuum, appearing smooth and even, and a little removed from it.

Our apothecaries rarely, and few even of the chemists, attempt the making of this preparation themselves; greatest part of what is used among us comes from Venice and

Holland. This foreign sublimate has been reported to be adulterated with arsenic. Some affirm that this dangerous fraud may be discovered by the sublimate turning black on being moistened with alkaline ley; which by others is denied. As this point seemed of some importance to be determined, sundry experiments have been made with this view, which prove the insufficiency of alkalies for discovering arsenic. Alkaline ley, poured into a solution of pure sublimate, into a solution of pure arsenic, and into a mixture of the two solutions in different proportions, produced no blackness in any; and though the pure sublimate, and the mixtures of it with arsenic, exhibited some differences in these trials, yet these differences were neither so constant, nor so strongly marked, as to be laid down universally for criteria of the presence or absence of arsenic: different specimens of sublimate, known to be pure, have been found to differ considerably in this respect; probably from their holding a little more or less mercury in proportion to the acid, or from their retaining some small portion of those acids which were employed in the preparation as intermedia.

Some chemists deny the practicability of this adulteration. There is a process common in books of chemistry, wherein sublimate and arsenic being mixed together and set to sublime, they do not arise in one mass, or yield any thing similar to the preparation here intended: the arsenic absorbs the acid of the sublimate, and is reduced thereby into a liquid or batyraceous consistence; while the mercury, thus freed from the acid, distils in its running form: if the quantity of arsenic be insufficient to decompose the whole of the sublimate, the remainder of the sublimate concretes distinct from
the

the arfenical butter. From whence they conclude, that arsenic and sublimate cannot be united together into a crystalline cake, the form in which this preparation is brought to us.

The above experiment is not altogether decisive; for though arsenic and sulphur do not assume the required form by the common process, it is possible they may by some other management. It will therefore be proper to point out means for the satisfaction of those who may be desirous of convincing themselves of the genuineness of this important preparation. Let some of the sublimate, powdered in a glass mortar, be well mixed with twice its weight of black flux, and a little filings or shavings of iron: put the mixture into a crucible capable of holding four or five times as much; give a gradual fire till the ebullition ceases, and then hastily increase it to a white heat. If no fumes of a garlic smell can be perceived during the process, and if the particles of iron retain their form, without any of them being melted, we may be secure that the mixture contained no arsenic.

SUBLIMATE is a most violent corrosive, presently corrupting and destroying all the parts of the body it touches. A solution of it in water, in the proportion of about a dram to a quart, is made use of for keeping down proud flesh, and cleansing foul ulcers; and a more dilute solution as a cosmetic, and for destroying cutaneous insects. But a great deal of caution is requisite even in these external uses of it.

Some have nevertheless ventured to give it internally, in the dose of one-tenth or one-eighth of a grain. Boerhaave relates, that if a grain of it be dissolved in an ounce or more of water, and a dram of this solu-

tion, softened with syrup of violets, taken twice or thrice a-day, it will perform wonders in many reputed incurable distempers; but he particularly cautions us not to venture upon it, unless the method of managing it be well known.

Sublimate dissolved in vinous spirit has of late been given internally in larger doses; from a quarter of a grain to half a grain. This method of using it was brought into repute by Baron Van Swieten at Vienna, particularly for venereal maladies; and several trials of it have been made in this kingdom also with success. Eight grains of the sublimate are dissolved in sixteen ounces of rectified spirit of wine or proof-spirit; the rectified spirit dissolves it more perfectly, and seems to make the medicine milder in its operation than the proof spirit of the original prescription of Van Swieten. Of this solution, from one to two spoonfuls, that is, from half an ounce to an ounce are given twice a-day, and continued till all the symptoms are removed; observing to use a low diet, with plentiful dilution, otherwise the sublimate is apt to purge, and gripe severely. It generally purges more or less at the beginning, but afterwards seems to operate chiefly by urine and perspiration.

Sublimate consists of mercury united with a large quantity of marine acid. There are two general methods of destroying its corrosive quality, and rendering it mild; the one is, combining with it as much fresh mercury as the acid is capable of taking up; and the other, by separating a part of the acid by means of alkaline salts, and the like. On the first principle, mercurius dulcis is formed; on the latter, white precipitate. But before entering on these, it is proper to give the following formula.

SOLUTIO MERCURII SUB-
LIMATI CORROSIVI.*Edinb.**Solution of sublimate corrosive mer-
cury.*

Take of

Sublimate corrosive mercury, six
grains;

Sal ammoniac, twelve grains.

Dissolve in a pound of distilled water.

If hard water be used for this pur-
pose, the solution suffers a kind of
decomposition from the nitrous
felenite of the water.

THE solution of corrosive subli-
mate in water is very much assisted
by sal ammoniac. There was a
practice some years ago, of mixing
up this solution with wheat-flour
into the consistence of pills for in-
ternal use; and the quantity of
sublimate in each pill was easily
ascertained.

This solution may also be used
for washing venereal and other
sores; but in many instances it
will be found too acrid for that pur-
pose, and will require to be weak-
ened by the addition of a portion
of water.

CALOMELAS.

*Lond.**Calomel.*

Take of

Muriated quicksilver, one pound;
Purified quicksilver, by weight,
nine ounces.

Rub them together till the globules
disappear, and sublime. In the
same manner repeat the sublima-
tion four times. Afterwards rub
the matter into the finest powder,
and wash it by pouring on boil-
ing distilled water.

MERCURIUS DULCIS.

*Edinb.**Sweet mercury.*

Take of

Corrosive mercury sublimate, re-
duced to a powder in a glass
mortar, four ounces;Pure quicksilver, three ounces
and a half.

Mix them well together, by long
trituration in a glass or marble
mortar, until the quicksilver ceas-
es to appear. Put the powder
into an oblong phial, of such a
size, that only one-third of it
may be filled; and set the glass
in sand. By degrees of fire, suc-
cessively applied, almost all the
mercury will sublime, and adhere
to the upper part of the vessel.
The glass being then broken, and
the red powder which is found
in its bottom, with the whitish
one that sticks about the neck,
being thrown away, let the white
mercury be sublimed again three
or four times, and reduced to a
very fine powder.

THE trituration of corrosive sub-
limate with quicksilver is a very
noxious operation: for it is almost
impossible, by any care, to prevent
the lighter particles of the former
from arising so as to affect the ope-
rator's eyes and mouth. It is never-
theless of the utmost consequence,
that the ingredients be perfectly u-
nited before the sublimation is be-
gun. It is necessary to pulverise the
sublimate before the mercury is ad-
ded to it; but this may be safely
performed, with a little caution es-
pecially if during the pulverization
the matter be now and then sprinkled
with a little spirit of wine; this ad-
dition does not at all impede the
union of the ingredients, or preju-
dice the sublimation: it will be
convenient not to close the top of
the subliming vessel with a cap of
paper at first (as is usually practised),
but to defer this till the mixture be-
gins,

gins to sublime, that the spirit may escape.

The rationale of this process deserves particular attention; and the more so, as a mistaken theory herein has been productive of several errors with regard to the operation of mercurials in general. It is supposed, that the dulcification, as it is called, of the *mercurius corrosivus*, is owing to the spiculæ or sharp points, on which its corrosiveness depends, being broken and worn off by the frequent sublimations. If this opinion were just, the corrosive would become mild, without any addition, barely by repeating the sublimation, but this is contrary to all experience. The abatement of the corrosive quality of the sublimate is entirely owing to the combination of so much fresh mercury with it as is capable of being united; and by whatever means this combination be effected, the preparation will be sufficiently dulcified. Triture and digestion promote the union of the two, whilst sublimation tends rather to disunite them. The prudent operator, therefore, will not be solicitous about separating such mercurial globules as appear distinct after the first sublimation: he will endeavour rather to combine them with the rest, by repeating the triture and digestion.

The college of Wirtemberg require their *mercurius dulcis* to be only twice sublimed; and the Augustin but once; and Neumann proposes making it directly by a single sublimation, from the ingredients which the corrosive sublimate is prepared from, by only taking the quicksilver in a larger proportion.

Mr Selle of Berlin has lately proposed a method of making *mercurius dulcis* nearly similar to that of Neumann. He directs, that to four ounces of pure quicksilver there should be added as much strong vi-

triotic acid. These are to be mixed over a strong fire till they become a solid hard mass. This mass is to be triturated in a stone mortar with two ounces and a half of quicksilver and four ounces and an half of dried common salt. And by a single, or at most two sublimations, an excellent *mercurius dulcis* is, he assures us, obtained.

If the medicine, made after either of these methods, should prove in any degree acrid, water boiled on it for some time will dissolve and separate that part in which its acrimony consists. The marks of the preparation being sufficiently dulcified are, its being perfectly insipid to the taste, and indissoluble by long boiling in water. Whether the water, in which it has been boiled, has taken up any part of it, may be known by dropping into the liquor a ley of any fixt alkaline salt, or any volatile alkaline spirit: if the decoction has any mercurial impregnation, it will grow turbid on this addition: if otherwise, it will continue limpid. But here care must be taken not to be deceived by an extraneous saline matter in the water itself; most of the common spring waters turn milky on the addition of alkalies: and therefore, for experiments of this kind, distilled water or rain water ought to be used.

This name of *calomel*, though for a considerable time banished from our best pharmacopœias, is again restored by the London college. But we cannot help thinking, that they might easily have invented a name better expressing the constituent parts and nature of the preparation.

Calomel, or *mercurius dulcis*, may be considered as one of the most useful of the mercurial preparations; and it may be estimated as holding an intermediate place between the hydrargyrus acetatus, one of the

mildest of the saline preparations, and the hydrargyrus muriatus, or corrosive sublimate, one of the most acrid of them.

HYDRARGYRUS MURIATUS MITIS.

Lond.

Mild muriated quicksilver.

Take of

Purified quicksilver,

Diluted nitrous acid, of each half a pound.

Mix in a glass vessel, and set it aside until the quicksilver be dissolved.

Let them boil, that the salt may be dissolved. Pour out the boiling liquor into a glass vessel, into which another boiling liquor has been put before, consisting of,

Sea-salt, four ounces;

Distilled water, eight pints.

After a white powder has subsided to the bottom of the vessel, let the liquor swimming at the top be poured out, and the remaining powder be washed till it becomes insipid, with frequent affusions of hot water; then dried on blotting paper with a gentle heat.

THIS preparation had a place in former editions of the London and Edinburgh pharmacopoeias, under the name of *mercurius dulcis precipitatus*. But the process as now given is somewhat altered, being that of Mr Scheele of Sweden, who has recommended this as an easy and expeditious method of preparing sweet mercury or calomel.

It appears from several tests, that this precipitate is equal in every respect to that prepared by the preceding processes; it is less troublesome and expensive, and the operator is not exposed to the noxious dust arising from the triture of the quicksilver with the corrosive sublimate, which necessarily happens by the common method. The powder is also finer than can be made from

the common sublimed sweet mercury by any trituration whatever. The clear liquor standing over the precipitate, is a solution of cubic or rhomboidal nitre.

Mercurius dulcis, which may be considered as precisely the same with the calomelas and hydrargyrus muriatus mitis, appears to be one of the best and safest preparations of this mineral, when intended to act as a quick and general stimulant. Many of the more elaborate processes are no other than attempts to produce from mercury such a medicine as this really is. The dose, recommended by some for raising a salivation, is ten or fifteen grains taken in the form of a bolus or pills, every night or oftener, till the ptyalism begins. As an alterant and diaphoretic, it has been given in doses of five or six grains; a purgative being occasionally interposed, to prevent its affecting the mouth. It answers, however, much better when given in smaller quantities, as one, two, or three grains every morning and evening, in conjunction with such substances as determine its action to the skin, as the extract or resin of guaiacum; the patient at the same time keeping warm, and drinking liberally of warm diluent liquors. By this method of managing it, obstinate cutaneous and venereal distempers have been successfully cured, without any remarkable increase of the sensible evacuations. It is sometimes, however, difficult to measure its effects in this way; and it is so very apt to run off by the intestines, that we can seldom administer it in such a manner as to produce such permanent effects as are often required, and as we are able to do by other preparations. It has lately been proposed to rub the gums and inside of the mouth with this preparation, as a ready and effectual method of producing salivation; this practice has been particularly

cularly recommended in the internal hydrocephalus, where it is exceedingly difficult to excite a salivation by other means. The advantages of this practice are not fully confirmed by experience; and when mercury is attended with advantage in hydrocephalus, this is not probably the consequence of any discharge under the form of salivation, but merely of the mercury being introduced into the system in an active state, and thus promoting absorption. And of this, salivation, when it arises from the internal use of mercury, may be considered as the strongest test: But this is by no means the case when salivation arises from a topical action on the excretories of saliva.

HYDRARGYRUS NITRATUS RUBER.

Lond.

Red nitrated quicksilver.

Take of

Purified quicksilver,

Nitrous acid, of each one pound;

Muriatic acid, one dram.

Mix in a glass vessel, and dissolve the quicksilver in a sand-bath; then raise the fire until the matter be formed into red crystals.

MERCURIUS CORROSIVUS RUBER, vulgo PRECIPITATUS RUBER.

Edinb.

Red corrosive, commonly called Red precipitate mercury.

Take of

Quicksilver,

Weak nitrous acid, of each one pound.

Let the quicksilver be dissolved in the acid, and then let the solution be evaporated to a white dry mass. This being beat into a powder, must be put into a glass retort, and subjected to a fire gradually increased, till a small

quantity of it, taken out in a glass spoon and allowed to cool, assumes the form of shining red squamae. Let the vessel be then removed from the fire. During the process the matter must be carefully agitated by a glass rod, that it may be equally heated.

THE marine acid in the menstruum, ordered in the first process, disposes the mercurial calx to assume the bright sparkling look admired in it; which, though perhaps no advantage to it as a medicine, ought nevertheless to be insisted on by the buyer as a mark of its goodness and strength. As soon as the matter has gained this appearance, it should be immediately removed from the fire, otherwise it will soon lose it again. The preparation of this red precipitate, as it is called, in perfection, is supposed by some to be a secret not known to our chemists; inasmuch, that we are under the necessity of importing it from abroad. This reflection seems to be founded on misinformation: we sometimes indeed receive considerable quantities of it from Holland; but this depends upon the ingredients being commonly cheaper there than with us, and not upon any secret in the manner of the preparation.

This precipitate is, as its title imports, an escharotic, and with this intention is frequently employed by the surgeons with basilicum and other dressings, for consuming fungous flesh in ulcers, and the like purposes. It is subject to great uncertainty in point of strength; more or less of the acid exhaling, according to the degree and continuance of the fire. The best criterion of its strength, as already observed, is its brilliant appearance; which is also the mark of its genuineness: if mixed with minium, which it is sometimes said to be, the duller hue will

will discover the abuse. This admixture may be more certainly detected by means of fire: the mercurial part will totally evaporate, leaving the minium behind.

Some have ventured to give this medicine internally, in venereal, scrophulous, and other obstinate chronic disorders, in doses of two or three grains, or more. But certainly the milder mercurials, properly managed, are capable of answering all that can be expected from this without occasioning violent anxieties, tormina of the bowels, and similar ill consequences, which the best management can scarcely prevent this corrosive preparation from sometimes inducing. The chemists have contrived sundry methods of correcting and rendering it milder, by divesting it of a portion of the acid; but to no very good purpose, as they either leave the medicine still too corrosive, or render it similar to others which are procurable at an easier rate.

CLAX HYDRARGYRI ALBA.

Lond.

White clax of quicksilver.

Take of

Muriated quicksilver,

Sal ammoniac,

Water of kali each, half a pound.

Dissolve first the sal ammoniac, afterwards the muriated quicksilver in distilled water, and add the water of kali. Wash the precipitated powder until it becomes insipid.

MERCURIUS PRÆCIPITATUS ALBUS.

Edinb.

White precipitate of mercury.

Dissolve sublimate corrosive mercury in a sufficient quantity of hot water, and gradually drop into the solution some spirit of sal ammoniac as long as any precipitation

ensues. Wash the precipitated powder with several fresh quantities of warm water.

THESE preparations are used chiefly in ointments; with which intention their fine white colour is no small recommendation to them. For internal purposes they are rarely employed, nor is it at all wanted; they are nearly similar to mercurius dulcis, but less certain in their effects.

Though the processes directed by the London and Edinburgh colleges be here somewhat different, yet the preparations are ultimately the same. The process described by the Edinburgh college is the most simple; but is liable to some objections.

Corrosive sublimate, as we have already seen, consists of mercury united with a large proportion of acid: it is there dulcified by adding as much fresh mercury as is sufficient to satiate all the acid; here, by separating all the acid that is not satiated. This last way seems an unfrugal one, on account not only of the loss of the acid, but of the volatile spirit necessary for absorbing it. The operator, may, however, if it should be thought worth while, recover the volatile salt from the liquor, by adding to it, after the precipitate has been separated, a proper quantity of potash, and distilling with a gentle heat, in the same manner as for the spirit or volatile salt of sal ammoniac; for a true sal ammoniac is regenerated, in the precipitation, from the union of the volatile spirit with the marine acid of the sublimate. It is by no means advisable to use the liquor itself as a solution of sal ammoniac, or to separate the sal ammoniac from it by evaporation and crystallization, as a part of the mercury might be retained, and communicate dangerous qualities: but the volatile salt separated by di-

distillation, may be used without fear of its containing any mercury; none of which will arise with the heat by which volatile salts are distilled.

Fixt alkalies answers as effectually, for precipitating solutions of sublimate, as the volatile; but the precipitate, obtained by means of the former, instead of being white, as with the latter, is generally of a reddish yellow or orange colour. If sal ammoniac be dissolved along with the sublimate, the addition of fixt alkalies will now, extricating the volatile alkali of the sal ammoniac, occasion as white precipitation as if the volatile salt had been previously separated and employed in its pure state: and this compendium is now allowed by the London college in the process which they have adopted.

There the sal ammoniac, besides its use in the capital intention, to make a white precipitation, promotes the solution of the sublimate; which of itself, is difficultly, and scarce at all totally, soluble by repeated boiling in water: for however skilfully it be prepared, some part of it will have an under-proportion of acid, and consequently approach to the state of mercurius dulcis. A good deal of care is requisite in the precipitation; for if too large a quantity of the fixt alkaline solution be imprudently added, the precipitate will loose the elegant white colour for which it is valued.

HYDRARGYRUS CUM SULPHURE.

Lond.

Quicksilver with sulphur.

Take of

Purified quicksilver,

Flowers of sulphur, each one pound.

Rub them together until the globules disappear.

ÆTHIOPS MINERALIS.

Edinb.

Æthiops mineral.

Take of

Quicksilver,

Flowers of sulphur, each equal weights.

Grind them together in a glass or stone mortar, with a glass pebble, till the mercurial globules totally disappear.

An ethiops is made also with a double quantity of mercury.

WE need hardly remark, that these preparations, though now differing in name, are in reality the same. Nor need we add, that the direction given by the Edinburgh college, of using a glass or stone mortar and pestle, is necessary and proper.

The union of the mercury and sulphur might be much facilitated by the assistance of a little warmth. Some are accustomed to make this preparation in a very expeditious manner by melting the sulphur in an iron ladle, then adding the quicksilver, and stirring them together till the mixture be completed. The small degree of heat here sufficient, cannot reasonably be supposed to do any injury to substances which have already undergone much greater fires, not only in the extraction from their ores, but likewise in the purifications of them directed in the pharmacopœia. In the following process, they are exposed in conjunction to a strong fire, without suspicion of the compound receiving any ill quality from it. Thus much is certain, that the ingredients are more perfectly united by heat than by the degree of triture usually bestowed upon them. From the ethiops prepared by triture, part of the mercury is apt to be spued out on making it into an electuary or pills; from

from that made by fire, no separation is observed to happen.

Ethiops mineral is one of the most inactive of the mercurial preparations. Some practitioners, however, have represented it as possessing extraordinary virtues; and most people imagine it is a medicine of some efficacy. But what benefit is to be expected from it in the common doses of eight or ten grains, or a scruple, may be judged from hence, that it has been taken in doses of several drams, and continued for a considerable time, without producing any remarkable effect. Sulphur eminently abates the power of all the more active minerals, and seems to be at the same time restrained by them from operating in the body itself. Boerhaave, who is in general sufficiently liberal in the commendation of medicines, disapproves of the ethiops in very strong terms. "It cannot enter the absorbent vessels, the lacteals, or lymphatics; but passes directly thro' the intestinal tube, where it may happen to destroy worms, if it operates luckily. They are deceived who expect any other effects from it; at least I myself could never find them. I am afraid it is unwarily given, in such large quantities, to children and persons of tender constitutions, as being a foreign mass, unconquerable by the body, the more to be suspected, as it there continues long sluggish and inactive. It does not raise a salivation, because it cannot come into the blood. Who knows the effects of a substance, which so long as it remains compounded, seems no more active than any ponderous insipid earth?" The ethiops, with a double proportion of mercury now received into our pharmacopoeias, has a greater chance

for operating as a mercurial; and probably the quantity of mercury might be still further increased to advantage.

HYDRARGYRUS SULPHURATUS RUBER.

Lond.

Red sulphurated quicksilver.

Take of

Quicksilver purified, forty ounces;

Sulphur, eight ounces.

Mix the quicksilver with the melted sulphur; and if the mixture takes fire, extinguish it by covering the vessel; afterwards reduce the mass to powder, and sublime it.

It has been customary to order a larger quantity of sulphur than here directed: but smaller proportions answer better; for the less sulphur, the finer coloured is the cinnabar.

As soon as the mercury and sulphur begin to unite, a considerable explosion frequently happens, and the mixture is very apt to take fire, especially if the process be somewhat hastily conducted. This accident the operator will have previous notice of, from the matter swelling up, and growing suddenly consistent: as soon as this happens, the vessel must be immediately close covered.

During the sublimation, care must be had that the matter rise not into the neck of the vessel, so as to block up and burst the glass: to prevent this, a wide necked bolt head, or rather an oval earthen jar, coated, should be chosen for the subliming vessel. If the former be employed, it will be convenient to introduce at times an iron wire, somewhat heated, in order to be the better assured that the passage is not blocking up; the

the danger of which may be prevented by cautiously raising the vessel higher from the fire.

If the ingredients were pure, no feces will remain: in such cases, the sublimation may be known to be over, by introducing a wire as before, and feeling therewith the bottom of the vessel, which will then be perfectly smooth: if any roughness or inequalities are perceived, either the mixture was impure, or the sublimation is not completed; if the latter be the case, the wire will soon be covered over with the rising cinnabar.

The preparers of cinnabar in large quantity, employ earthen jars, which in shape pretty much resemble an egg. These are of different sizes, according to the quantity intended to be made at one sublimation, which sometimes amounts to two hundred weight. The jar is usually coated from the small end almost to the middle, to prevent its breaking from the vehemence or irregularity of the fire. The greater part, which is placed uppermost, not being received within the furnace, has no occasion for this defence. The whole secret, with regard to this process, is the management of the fire, which should be so strong as to keep the matter continually subliming to the upper part of the jar, without coming out at its mouth, which is covered with an iron plate; care should also be taken to put into the subliming vessel only small quantities of the mixture at a time.

The principal use of cinnabar is as a pigment. It was formerly held in great esteem as a medicine in cutaneous foulnesses, gouty and rheumatic pains, epileptic cases, &c. but of late it has lost much of its reputation. It appears to be nearly similar to the ethiops already spoken of. Cartheuser relates, that having

given cinnabar in large quantities to a dog, it produced no sensible effect, but was partly voided along with the feces unaltered, and partly found entire in the stomach and intestines upon opening the animal. The celebrated Frederick Hoffman, after bestowing high encomiums on this preparation, as having, in many instances within his own knowledge, perfectly cured epilepsies and vertiges from contusions of the head (where it is probable, however, that the cure did not so much depend upon the cinnabar as on the spontaneous recovery of the parts from the external injury), observes, that the large repeated doses, necessary for having any effect, can be borne only where the first passages are strong; and that if the fibres of the stomach and intestines are lax and flaccid, the cinnabar, accumulated and concreting with the mucous matter of the parts, occasions great oppression; which seems to be an acknowledgment that the cinnabar is not subdued by the powers of digestion, and has no proper medicinal activity. There are indeed some instances of the daily use of cinnabar having brought on a salivation; perhaps from the cinnabar, made use of in those cases, having contained a less proportion of sulphur than the sorts commonly met with. The regulus of antimony, and even white arsenic, when combined with a certain quantity of common sulphur, seem to have their deleterious power destroyed: on separating more and more of the sulphur, they exert more and more of their proper virulence. It does not seem unreasonable to presume, that mercury may have its activity varied in the same manner; that when perfectly satiated with sulphur, it may be inert: and that when the quantity of sulphur is more and more lessened,

the

the compound may have greater and greater degrees of the proper efficacy of mercurials.

Cinnabar is sometimes used in fumigations against venereal ulcers in the nose, mouth, and throat. Half a dram of it burnt, the fume being imbibed with the breath, has occasioned a violent salivation. This effect is by no means owing to the medicine as cinnabar: when set on fire, it is no longer a mixture of mercury and sulphur; but mercury resolved into fume, and blended in part with the volatile vitriolic acid; in either of which circumstances, this mineral, as already observed, has very powerful effects.

HYDRARGYRUS VITRIOLATUS.

Lond

Vitriolated quicksilver.

Take of

Quicksilver, purified,
Vitriolic acid, each one pound.

Mix in a glass vessel, and heat them by degrees, until they unite into a white mass, which is to be perfectly dried with a strong fire. This matter, on the affusion of a large quantity of hot distilled water, immediately becomes yellow, and falls to powder. Rub the powder carefully with this water in a glass mortar. After the powder has subsided, pour off the water; and, adding more distilled water several times, wash the matter till it become inspid.

MERCURIUS FLAVUS,

vulgo

TURPETHUM MINERALE.

Edinb

*Yellow mercury, commonly called
Turbith mineral.*

Take of

Quicksilver, four ounces;
Vitriolic acid, eight ounces.

Cautiously mix them together, and distil in a retort, placed in a sand-furnace, to dryness: the white calx, which is left at the bottom, being ground to powder, must be thrown into warm water. It immediately assumes a yellow colour, but must afterwards be purified by repeated ablutions.

THE quantity of oil of vitriol, formerly directed, was double to that now employed by the Edinburgh college. The reduction made in this article greatly facilitates the process; and the proportions of the London college are perhaps preferable.

Boerhaave directs this preparation to be made in an open glass, slowly heated, and then placed immediately upon burning coals; care being taken to avoid the fumes which are extremely noxious. This method will succeed very well with a little address when the ingredients are in small quantity: but where the mixture is large, it is better to use a retort, placed in a sand-furnace, with a recipient, containing a small quantity of water luted to it. Great care should be taken, when the oil of vitriol begins to bubble, to steadily keep up the heat, without at all increasing it, till the ebullition ceases, when the fire should be augmented to the utmost degree, that as much as possible of the redundant acid may be expelled.

If the matter be but barely exhausted, it proves a caustic salt, which in the ablution with water will almost all dissolve, leaving only a little quantity of turbith: the more of the acid that has been dissipated, the less of the remaining mercury will dissolve, and consequently the yield of turbith will be greater; fire expelling only such part of the acid as is not completely satiated with mercury, while water takes up al-

ways,

ways, along with the acid, a proportionable quantity of the mercury itself. Even when the matter has been strongly calcined, a part will still be soluble: this evidently appears upon pouring into the washings a little solution of fixt alkaline salt, which will throw down a considerable quantity of yellow precipitate, greatly resembling the turbith, except that it is less violent in operation.

From this experiment it appears, that the best method of edulcorating this powder is, by impregnating the water, intended to be used in its ablutio, with a determined proportion of fixt alkaline salt: for by this means, the washed turbith will not only turn out greater in quantity, but, what is of more consequence, always have an equal degree of strength; a circumstance which deserves particularly to be considered, especially in making such preparations as, from an error in the process, may prove too violently corrosive to be used with any tolerable degree of safety. It is necessary to employ warm water if we are anxious for a fine colour. If cold water be used, the precipitate will be white.

It is observable, that though the superfluous acid be here absorbed from the mercury by the alkaline salt; yet in some circumstances this acid forsakes that salt to unite with mercury. If *tartarum vitriolatum*, or *kali vitriolatum*, as it is now called, which is a combination of vitriolic acid with fixt alkalies, be dissolved in water, and the solution added to a solution of mercury in aquafortis, the vitriolic acid will unite with the mercury, and form with it a turbith, which falls to the bottom; leaving only the alkali dissolved in the aquafortis, and united with its acid into a regenerated nitre. On this principle depends the prepara-

tion described by Wilson, under the title of *An excellent precipitate of mercury*; which is no other than a true turbith, though not generally known to be such. It is made by dissolving four ounces of kali vitriolatum in sixteen ounces of spirit of nitre; dissolving in this compound liquor four ounces of mercury; abstracting the menstruum by a sand-heat; and edulcorating with water the gold-coloured mass which remains.

Turbith mineral is a strong emetic, and with this intention operates the most powerfully of all the mercurials that can be safely given internally. Its action, however, is not confined to the primæ viæ; it will sometimes excite a salivation, if a purgative be not taken soon after it. This medicine is used chiefly in virulent gonorrhœas, and other venereal cases, where there is a great flux of humours to the parts. Its chief use at present is in swellings of the testicle from a venereal affection; and it seems not only to act as a mercurial, but also, by the severe vomiting it occasions, to perform the office of a discutient, by accelerating the motion of the blood in the parts affected. It is said likewise to have been employed with success, in robust constitutions, against leprous disorders, and obstinate glandular obstructions; the dose is from two grains to six or eight. It may be given in doses of a grain or two as an alterative and diaphoretic, in the same manner as the *mercurius calcinatus* already spoken of. Dr Hope has found, that the turbith mineral is the most convenient er-rhine he has had occasion to employ.

This medicine was lately recommended as the most effectual preservative against the hydrophobia. It has been alleged there are several examples of its preventing madness in dogs which had been bitten; and some

some of its performing a cure after the madness was begun : from six or seven grains to a scruple may be given every day, or every second day, for a little time, and repeated at the two or three succeeding fulls and changes of the moon. Some few trials have likewise been made on human subjects bitten by mad dogs ; and in these also the turbith, used either as an emetic or alterative, seemed to have good effects.

The washings of turbith mineral are used by some, externally, for the cure of the itch and other cutaneous foulness. In some cases mercurial lotions may be proper, but they are always to be used with great caution : this is by no means an eligible one, as being extremely unequal in point of strength ; more or less of the mercury being dissolved, as has been observed above, according to the degree of calcination. The pharmacopœia of Paris directs a mercurial wash free from this inconvenience, under the title of *Aqua mercurialis*, or *Mercurius liquidus*. It is composed of one ounce of mercury, dissolved in a sufficient quantity of spirit of nitre, and diluted with thirty ounces of distilled water. In want of distilled water, rain water may be used ; but of spring waters there are very few which will mix with the mercurial solution, without growing turbid and precipitating a part of the mercury.

SOLUTIO MERCURIALIS SIMPLEX.

Jos. Jac. Plenck.

Simple mercurial solution.

Take of

Purest quicksilver, one dram ;
Gum arabic, two drams.

Beat them in a stone mortar, adding by little and little distilled water of fumitory, till the mercury thoroughly disappears in the mucilage.

Having beat and mixed them thoroughly, add by degrees, and at the same time rubbing the whole together,

Syrup of kermes, half an ounce ;
Distilled water of fumitory,
eight ounces.

THIS mixture was much celebrated by its author as an effectual preparation of mercury, unattended with the inconvenience of producing a salivation ; and he imagined that this depended upon a peculiar affinity existing between mercury and mucilage. Hence such a conjunction, the hydrargyrum gummosum, as it has been styled, has been the foundation of mixtures, pills, syrups, and several other formulæ, as may be seen from the table of mercurial preparations in the materia medica.

By a long continued triture, mercury seems to undergo a degree of calcination ; at least its globular appearance is not to be discerned by the best microscope : its colour is converted into that of a greyish powder ; and from the inactive substance in its globular form, it is now become one of the most powerful preparations of this metallic body. The use of the gum seems to be nothing more, than to afford the interposition of a viscid substance to keep the particles at a distance from each other, till the triture requisite to produce this change be performed. Dr Saunders has clearly proved, that no real solution takes place in this process, and that though a quantity of mercurial particles are still retained in the mixture after the globular parts have been deposited by dilution with water, yet that this suspended mercurial matter is only diffused in the liquor, and capable of being perfectly separated by filtration. That long triture is capable of affecting the above change on

mer-

mercury, is fully evinced from the well-known experiment of Dr Boerhaave, in producing a kind of calcined mercury by exposing quicksilver inclosed in a phial to the agitation produced by keeping the phial tied to a wind mill for fourteen years. By inclosing a pound of quicksilver in an iron box, with a quantity of iron nails and a small quantity of water, by the addition of which a greater degree of intestine motion is given to the particles of the mercury, and fixing the box to the wheel of a carriage, Dr Saunders obtained, during a journey of four hundred miles, two ounces of a greyish powder, or calx of mercury.

On the above accounts we are not to ascribe the effects of Plenck's solution to an intimate division of the globules of mercury, nor to any affinity, nor elective attraction, betwixt gum arabic and mercury; which last Mr Plenck has very unphilosophically supposed. The same thing can be done by means of gum tragacanth, by honey, and by sundry balsams. It is evidently owing to the conversion of the quicksilver

to a calciform nature; but as this will be accomplished more or less completely, according to the different circumstances during the triture, it is certainly preferable, instead of Plenck's solution, to diffuse in mucilage, or other viscid matters, a determinate quantity of the *Pulvis cinereus*, or other calx of mercury.

It is proper to take notice, that there is in many instances a real advantage in employing mucilaginous matters along with mercurials, these being found to prevent diarrhoea and salivation to a remarkable degree. So far, then, Mr Plenck's solution is a good preparation of mercury, tho' his chemical rationale is perhaps erroneous. The distilled water and syrup are of no consequence to the preparation, either as facilitating the process, or for medicinal use.

It is always most expeditious to triturate the mercury with the gum in the state of mucilage. Dr Saunders found that the addition of honey was an excellent auxiliary; and the mucilage of gum tragacanth seems better suited for this purpose than that of gum arabic.

C H A P. XIV.

PRÆPARATA EX PLUMBO.

PREPARATIONS OF LEAD.

LEAD readily melts in the fire, and calcines into a dusky powder: which, if the flame is reverberated on it, becomes at first yellow, then red, and at length melts into a vitreous mass. This metal dissolves easily in the nitrous acid, difficultly in the vitriolic, and in small quantity in the vegetable acids; it is also soluble in expressed oil, especially when calcined.

Lead and its calces, whilst undissolved, have no considerable effects as medicines. Dissolved in oils, they are supposed to be (when externally applied) anti-inflammatory and desiccative. Combined with vegetable acids, they are remarkably so; and taken internally, prove a powerful but dangerous styptic.

There are two preparations of lead, *red* and *white lead*, as they are commonly called, which are much more extensively employed in other arts than in medicine, and of course they are prepared in large quantities. These formerly stood among the preparations in our pharmacopœias. But they are now referred to the materia medica. Accordingly we have already had occasion to make some observations with respect to them. But we shall here insert from the old editions of the Edinburgh pharmacopœia, the directions there given for preparing them.

MINIUM.

Red lead.

Let any quantity of lead be melted

in an unglazed earthen vessel, and kept stirring with an iron spatula till it falls into powder, at first blackish, afterwards yellow, and at length of a deep red colour, in which last state it is called *minium*; taking care not to raise the fire so high as to run the calx into a vitreous mass.

THE preparation of red-lead is so troublesome and tedious, as scarce ever to be attempted by the apothecary or chemist; nor indeed is this commodity expected to be made by them, the preparation of it being a distinct branch of business. The makers melt large quantities of lead at once, upon the bottom of a reverberatory furnace built for this purpose, and so contrived, that the flame acts upon a large surface of the metal, which is continually changed by the means of iron rakes drawn backwards and forwards, till the fluidity of the lead is destroyed; after which, the calx is only now and then turned. By barely stirring the calx, as above directed, in a vessel over the fire, it acquires no redness; the reverberation of flame upon the surface being absolutely necessary for this effect. It is said, that twenty pounds of lead gain, in this process, five pounds; and that the calx, being reduced into lead again, is found one pound less than the original weight of the metal.

These calces are employed in external applications, for abating inflammations, cleansing and healing ulcers,

ulcers, and the like. Their effects, however, are not very considerable; nor are they perhaps of much farther real use, than as they give consistence to the plaster, unguent, &c.

CERUSSA.

Cerusse, or white lead.

Put some vinegar into the bottom of an earthen vessel, and suspend over the vinegar very thin plates of lead, in such a manner that the vapour which arises from the acid may circulate about the plates. Set the containing vessel in the heat of horse-dung for three weeks; if at the end of this time the plates be not totally calcined, scrape off the white powder, and expose them again to the steam of vinegar, till all the lead be thus corroded into powder.

THE making of white lead also is become a trade by itself, and confined to a few persons, who have large conveniences for this purpose. The general method which they follow, is nearly the same with that above described. See the Philosophical Transactions, N^o 137.

In this preparation, the lead is so far opened by the acid, as to discover, when taken internally, the malignant quality of the metal; and to prove externally, when sprinkled on running sores, or ulcers, moderately cooling, drying, and astringent.

CERUSSA ACETATA.

Lond.

Acetated cerusse.

Take of

Cerusse, one pound;

Distilled vinegar, one gallon and an half.

Boil the cerusse with the vinegar until the vinegar is saturated; then

filter through paper; and, after proper evaporation, set it aside to crystallize.

SAL PLUMBI, vulgo SACCCHARUM SATURNI.

Edinb.

Salt, commonly called Sugar, of lead.

Put any quantity of cerusse into a cucurbit, and pour upon it ten times its quantity of distilled vinegar. Let the mixture stand upon warm sand till the vinegar becomes sweet; when it is to be poured off, and fresh vinegar added as often as it comes off sweet. Then let all the vinegar be evaporated in a glass-vessel to the consistence of pretty thin honey, and set it aside in a cold place, that crystals may be formed, which are to be afterwards dried in the shade. The remaining liquor is again to be evaporated, that new crystals may be formed; the evaporation of the residuous liquor is to be repeated till no more crystals congregate.

CERUSSE (especially that sort called *flake lead*, which is not, like the others, subject to adulteration) is much preferable either to minium or litharge, for making the sugar of lead: for the corrosion, which it has already undergone from the steam of vinegar, disposes it to dissolve more readily. It should be finely powdered before the vinegar be put to it; and during the digestion, or boiling, every now and then stirred up with a wooden spatula, to promote its dissolution, and prevent its concreting into a hard mass at the bottom. The strong acid obtained from the *caput mortuum* of vinegar may be employed for this purpose to better advantage than the weaker, though purer acid, above directed. If a small quantity of rectified spirit of wine be prudently added to the so-

lution as soon as it is duly exhaled, and the mixture suffered to grow cold by slow degrees, the sugar will concrete into very large and transparent crystals, which are scarcely to be obtained by any other method.

If the crystals be dried in sunshine, they acquire a blackish or livid colour. This seems to happen from the absorption of light and its conversion into phlogiston. If it be owing to the escape of pure air, why are the rays of the sun necessary to this discharge? On whatever principles we account for it, the fact is the same; that the crystals soon lose their saline condition, and the lead gradually re-assumes its metallic form. From this property of lead readily absorbing phlogiston, or parting with pure air, a solution of the *saccharum saturni* becomes a very convenient sympathetic ink; on the same grounds it is also used for a more important purpose. As lead communicates a sweetness and astringency very similar to the product of the vinous fermentation, a practice formerly prevailed among fraudulent dealers, of correcting the too great sharpness of acid wines by adulterating them with this metal. The abuse may be detected in two different ways: a piece of paper may be wrote upon, or moistened, with the liquor to be examined, and then exposed to the vapours of liver of sulphur: the writ, or moistened paper, will become of a livid colour, and this will happen though two or three hundred leaves of a book were interposed between the paper and the vapours; by this method, then, we make a kind of sympathetic ink. But the best way of making the test is, to drop a small quantity of a solution of the liver of sulphur into the suspected liquor: if there be any lead present, this addition will in-

stantly occasion the precipitation of a livid or dark coloured cloud.

The sugar of lead is much more efficacious than the foregoing preparations, in answering the several intentions to which they are applied. Some have ventured upon it internally, in doses of a few grains, as a styptic, in hæmorrhagies, profuse colliquative sweats, seminal fluxes, the fluor albus, &c. nor has it failed their expectations. It very powerfully restrains the discharge; but almost as certainly as it does this, it occasions symptoms of another kind, often more dangerous than those removed by it, and sometimes fatal. Violent pains in the bowels or through the whole body, and obstinate constipations, sometimes immediately follow, especially if the dose has been considerable: cramps, tremors, and weakness of the nerves, generally, sooner or later, ensue.

Boerhaave is of opinion, that this preparation proves malignant only, as far as its acid happens to be absorbed in the body; for in such case, he says, "it returns again into ce-russe, which is violently poisonous." On this principle it would follow, that in habits where acidities abound, the sugar of lead would be innocent. But this is far from being the case. Lead and its preparations act in the body only in as far as they are combined with acid; cerusse possesses the qualities of the *saccharum* only in a low degree; and either of them freed from the acid, has little, if any, effect at all. For the same reasons, the sal plumbi is preferable to the pompous *extract* and *vegeto-mineral water* of Goulard, in which the lead is much less perfectly combined in a saline state. It is sometimes convenient to assist the solution of the *saccharum saturni* in water, by adding a portion of vinegar.

negar. The effects of the external application of lead seems to differ from the strength of the solution: thus a very weak solution seems to diminish directly the action of the vessels, and is therefore more peculiarly proper in active inflammations, as of the eyes; whereas a strong solution operates as a direct stimulant, and is therefore more successful in passive ophthalmia.

AQUA LITHARGYRI ACETATI.

Lond.

Water of acetated litharge.

Take of

Litharge, two pounds and four ounces;

Distilled vinegar, one gallon.

Mix and boil to six pints, constantly stirring; then set it a

side. After the feces have subsided, strain.

THIS preparation may be considered as nearly the same with the extract and vegeto-mineral water of Mr Goulard. And it is probably from the circumstances of his preparations having come into a common use, that the London college have given this article a place in their pharmacopoeia. It may, however, be a matter of doubt whether it be really entitled to a place. For as we have already observed, every purpose to be answered by it may be better obtained from the employment of a solution of the cerussa acetata in simple water. The aqua lithargyri acetata is intended for external use only.

C H A P. XV.

PRÆPARATA E STANNO.

PREPARATIONS OF TIN.

TIN easily melts in the fire, and calcines into a dusky powder; which, by a farther continuance of the heat, becomes white. A mass of tin heated till it be just ready to melt, proves extremely brittle, so as to fall in pieces from a blow; and by dexterous agitation, into powder. Its proper menstruum is aqua regia; though the other mineral acids also may be made to dissolve it, and the vegetable ones in small quantity. It

crystallizes with the vegetable and vitriolic acids; but with the others, deliquesces.

The virtues of this metal are little known. It has been recommended as an antihysterical, antihæctic, &c. At present it is chiefly used as an anthelmintic.

STANNUM PULVERATUM.

Lond.

Powdered tin.

F f 3

Take

Take of

Tin six pounds.

Melt it in an iron vessel, and stir it with an iron rod until a powder floats on the surface. Take off the powder, and, when cold, pass it through a sieve.

THIS preparation may be considered as nearly the same with the calx Jovis, which had a place in the former editions of the Edinburgh pharmacopœia; but from the late editions the calx has been expunged, and the limatura, or pulvis stanni, has a place only in their list of the materia medica. But although seldom prepared by the apothecary himself, it is not unfrequently employed as a remedy against worms, particularly the flat kinds, which too often elude the force of other medicines. The general dose is from a scruple to a dram; some confine it to a few grains. But Dr Alston assures us, in the Edinburgh Essays, that its success chiefly depends upon its being given in much larger quantities: he directs an ounce of the powder on an empty stomach, mixed with four ounces of molasses; next day half an ounce; and the day following, half an ounce more: after which a cathartic is administer-

ed: he says the worms are usually voided during the operation of the purge, but that pains of the stomach occasioned by them are removed almost immediately upon taking the first dose of the tin.

This practice is sometimes successful in the expulsion of tænia, but by no means so frequently as Dr Alston's observations would lead us to hope.

STANNI AMALGAMA.

Dan.

Amalgam of tin.

Take of

Shavings of pure tin, two ounces.

Pure quicksilver, three drams.

Let them be rubbed to a powder in a stone mortar.

SOME have imagined that tin thus acted upon by mercury, is in a more active condition than when exhibited in the state of powder: and accordingly it has been given in worm cases. But as both are equally insoluble in the animal fluids, this is not to be expected; and to obtain any peculiar properties which tin may possess to their full extent, it will probably be necessary to exhibit it in some saline state.

C H A P. XVI.

P R Æ P A R A T A E Z I N C O .

P R E P A R A T I O N S O F Z I N C .

ZINCUM CALCINATUM.

*Lond.**Calcined zinc.*

Take of

Zinc, broken into small pieces,
eight ounces.Cast the pieces of zinc, at several
times, into an ignited, large, and
deep, crucible, placed leaning,
or half-upright, putting upon it
another crucible in such a manner
that the air may have free access
to the burning zinc.Take out the calx as soon as it ap-
pears, and sift its white and light-
er part.CALX ZINCI vulgo FLORES
ZINCI.*Edinb.**Flowers of zinc.*Let a large crucible be placed in a
furnace, in an inclined situation,
only half upright; when the bot-
tom of the vessel is moderately
red, put a small piece of zinc, a-
bout the weight of two drams,
into it. The zinc flames in a
short time, and is at the same
time converted into a spongy
calx, which is to be raked from
the surface of the metal with
an iron spatula, that the com-bustion may be more complete:
when the zinc ceases to flame,
take the calx out of the crucible.
Having put in another piece of
zinc, the operation may be re-
peated as often as you please.
Lastly, the calx is to be prepared
like antimony.THESE flowers, as used external-
ly, are preferable for medicinal pur-
poses to tutty, and the more impure
sublimates of zinc, which are obtain-
ed in the brass works; and likewise
to calamine, the natural ore of this
metal, which contains a large quan-
tity of earth, and frequently a por-
tion of heterogeneous metallic mat-
ter. But besides being applied ex-
ternally, they have also of late been
used internally. The flowers of
zinc, in doses from one to seven or
eight grains, have been much cele-
brated of late years in the cure of
epilepsy and several spasmodic affec-
tions: and there are sufficient testi-
monies of their good effects, where
tonic remedies in those affections are
proper.

VITRIOLUM ALBUM.

*Edinb.**White Vitriol.*

F f 4

Take

Take of

Zinc, cut into small pieces, three ounces;

Vitriolic acid five, ounces;

Water, twenty ounces;

Having mixed the acid and water, add the zinc, and when the ebullition is finished strain the liquor; then after proper evaporation set it apart in a cold place, that it may shoot into crystals.

THIS salt is an elegant white vitriol. It differs from the common white vitriol, and the sal vitrioli of the shops, only in being purer, and perfectly free from any admixture of copper, or such other foreign metallic bodies as the others generally contain.

ZINCI VITRIOLATI PURIFICATIO.

Lond.

Purification of vitriolated zinc.

Take of

White vitriol, one pound;

Vitriolic acid, one dram;

Boiling distilled water, three pints.

Mix, and filter through paper.

After a proper evaporation, set it aside in a cold place to crystallize.

ALTHOUGH the Edinburgh college have given a formula for the preparation of white vitriol, yet their direction is very rarely followed by any of the apothecaries or chemists, who in general purchase it as obtained from the Gosler mines. When, however, it is got in this way, it is often a very impure salt, and requires that purification which is here directed, and which is by no means necessary for the white vitriol artificially prepared, in the manner above directed. But by this process, the ordinary white vitriol, in its common state of impurity, will be freed from those impregnations of earthy and other matters which it often contains. And in this purified state it answers many useful purposes, not only externally but internally; and particularly in doses from ten grains to half a dram, it operates almost instantly as an emetic, and is at the same time perfectly safe. By employing it internally in smaller doses, we may obtain, and perhaps even more effectually, all the tonic power of the zinc; and some think it in every case preferable to the calx zinci.

C H A P. XVII.

AQUÆ DISTILLATÆ.

London.

AQUÆ STILLATIIVÆ SIMPLICES.

Edinburgh.

SIMPLE DISTILLED WATERS.

THE effluvia which exhale into the air from many vegetables, particularly from those of the odorous kind, consist apparently of principles of great subtility and activity, capable of strongly and suddenly affecting the brain and nervous system, especially in those whose nerves are of great sensibility; and likewise of operating in a slower manner upon the system of grosser vessels. Thus Boerhaave observes, that in hysterical and hypochondriacal persons, the fragrant odour of the Indian hyacinth excites strange spasms, which the strong scent of rue relieves: that the effluvia of the walnut-tree occasion headaches, and make the body costive; that those of poppies procure sleep; and that the smell of bean blossoms, long continued, disorders the senses. Lemery relates, from his own knowledge, that several persons were purged by staying long in a room where damask roses were drying.

Some of the chemists have indulged themselves in the pleasing survey of these presiding spirits, as they

are called, of vegetables; their peculiar nature in the different species of plants; their exhalation into the atmosphere by the sun's heat, and dispersion by winds; their rendering the air of particular places medicinal, or otherwise, according to the nature of the plants that abound. They have contrived also different means for collecting these fugitive emanations, and concentrating and condensing them into a liquid form; employing either the native moisture of the subject, or an addition of water, as a vehicle or matrix for retaining them.

THE process which has been judged most analogous to that of nature, is the following. The subject fresh gathered at the season of its greatest vigour, with the morning dew upon it, is laid lightly and unbruised in a shallow vessel, to which is adapted a low head with a recipient; under the vessel a live coal is placed, and occasionally renewed, so as to keep up an uniform heat, no greater than that which obtains in the

the atmosphere in summer, viz. about 85 degrees of Farenheit's thermometer. In this degree of heat there arises, exceeding slowly, an invisible vapour, which condenses in the head into dewy drops, and falls down into the receiver; and which has been supposed to be that very substance that the plant would have spontaneously emitted in the open air.

But on submitting to this process many kinds of odoriferous vegetables, the liquors obtained by it have been found to be very different from the natural effluvia of the respective subjects: they have had very little smell, and no remarkable taste. It appears that a heat, equal to that of the atmosphere, is incapable of raising in close vessels those parts of vegetables which they emit in the open air. It may therefore be presumed, that in this last case some other cause concurs to the effect: that it is not the sun's heat alone which raises and impregnates the air with the odorous principles of vegetables, but that the air itself, or the watery humidity with which it abounds, acting as a true dissolvent, extracts and imbibes them; so that the natural effluvia of a plant may be looked upon as an infusion of the plant made in air. The purgative virtue of the damask-rose, and the astringency of the walnut-tree, which as above observed, are in some degree communicated to the air, may be totally extracted by infusion both in watery and spirituous menstrua, but never rise in distillation with any degree of heat: and the volatile odours of aromatic herbs, which are diffused through the atmosphere in the lowest warmth, cannot be made to distil without a heat much greater than is ever found to obtain in a shaded air.

We apprehend, that the effluvia arising from growing vegetables, are

chiefly exhaled by the living energy of the plant: the odorous matter is a real secretion, which cannot be performed independent of active vessels; and it is reasonable to allow the same powers for the exhalation of these effluvia as for the transpiration of their watery parts.

The above process, therefore, and the theory on which it is built, appear to be faulty in two points: 1. In supposing that all those principles, which naturally exhale from vegetables may be collected by distillation; whereas there are many which the air extracts in virtue of its dissolving power; some are also incapable of being collected in a visible and inelastic form; and there are those which are artificially separable by dissolvents only: 2. In employing a degree of heat sufficient for separating even those parts which are truly exhalable by heat.

THE foregoing method of distillation is commonly called *distillation by the cold still*; but those who have practised it, have generally employed a considerable heat. A shallow leaden vessel is filled with the fresh herbs, flowers, &c. which are heaped above it; so that when the head is fitted on, this also may be filled a considerable way. A little fire is made under the vessel, sufficient to make the bottom much hotter than the hand can bear, care being taken only not to heat it so far as to endanger scorching any part of the subject. If the bottom of the vessel be not made so hot as to have this effect on the part contiguous to it, it is not to be feared that the heat communicated to the rest of the included matter will be great enough to do it any injury. By this management, the volatile parts of several odorous plants, as mint, are effectually forced over; and if the process has been carefully managed,

ged, the distilled liquor proves richly impregnated with the native odour and flavour of the subject, without having received any kind of disagreeable impression from the heat made use of.

This process has been chiefly practised in private families; the slowness of the distillation, and the attendance and care necessary for preventing the scorching of some part of the plant, so as to communicate an ungrateful burnt flavour to the liquor, rendering it inconsistent with the dispatch requisite in the larger way of business.

ANOTHER method has therefore been had recourse to, that by the common still, called, in distinction from the foregoing, the *hot still*. Here a quantity of water is added to the plant to prevent its purging; and the liquor is kept nearly of a boiling heat, or made fully to boil; so that the vapour rises plentifully into the head, and passing thence into a spiral pipe or worm placed in a vessel of cold water, is there condensed, and runs out in drops quickly succeeding each other, or in a continued stream. The additional water does not at all weaken the produce; for the most volatile parts of the subject rise first, and impregnate the liquor that first distils: as soon as the plant has given over its virtue sufficiently, which is known by examining from time to time the liquor, that runs from the nose of the worm, the distillation is to be stopped.

This is the method of distillation commonly practised for the officinal waters. It is accompanied with one imperfection, affecting chiefly those waters whose principal value consists in the delicacy of their flavour; this being not a little injured by the boiling heat usually employed, and by the coagitation of the

odorous particles of the subject with the water. Sometimes also a part of the plant sticks to the sides of the still, and is so far scorched as to give an ungrateful taint to the liquor.

THERE is another method of making this operation, which has been recommended for the distillation of the more volatile essential oils, and which is equally applicable to that of the waters. In this method, the advantages of the foregoing ones are united, and their inconveniences obviated. A quantity of water being poured into the still, and the herbs or flowers placed in a basket over it, there can be no possibility of burning; the water may be made to boil, but so as not to rise up into the basket, which would defeat the intention of this contrivance. The hot vapour of the water passing lightly through all the interstices of the subject matter, imbibes and carries over the volatile parts unaltered in their native flavour. By this means the distilled waters of all those substances whose oils are of the more volatile kind, are obtained in the utmost perfection, and with sufficient dispatch; for which last intention the still may be filled quite up to the head.

IN the distillation of essential oils, the water, as was observed in the foregoing section, imbibes always part of the oil. The distilled liquors here treated of, are no other than water thus impregnated with the essential oil of the subject; whatever smell, taste, or virtue, is here communicated to water, or obtained in the form of a watery liquor, being found in a concentrated state in the oil. The essential oil, or some part of it, more attenuated and subtilized than the rest, is the direct principle on which the title of *spiritus rector*,
or

or presiding spirit, has been bestowed.

All those vegetables therefore which contain an essential oil, will give over some virtue to water by distillation: but the degree of the impregnation of the water, or the quantity of water which a plant is capable of satiating with its virtue, are by no means in proportion to the quantity of its oil. The oil satiates only the water that comes over at the same time with it: if there be more oil than is sufficient for this saturation, the surplus separates and concretes in its proper form not miscible with the water that arises afterwards. Some odoriferous flowers, whose oil is in so small quantity, that scarcely any visible mark of it appears, unless fifty or an hundred pounds or more are distilled at once, give nevertheless, as strong an impregnation to water as those plants which abound most with oil.

MANY have been of opinion, that distilled waters may be more and more impregnated with the virtues of the subject, and their strength increased to any assigned degree, by *cobobation*, that is, by redistilling them a number of times from fresh parcels of the plant. Experience, however, shows the contrary; a water skilfully drawn in the first distillation, proves on every repeated one not stronger but more disagreeable. Aqueous liquors are not capable of imbibing above a certain quantity of the volatile oil of vegetables; and this they may be made to take up by one, as well as by any number of distillations: the oftener the process is repeated, the ungrateful impression which they generally receive from the fire, even at the first time, becomes greater and greater. Those plants which do not yield at first

waters sufficiently strong, are not proper subjects for this process, since their virtue may be obtained much more advantageously by others.

General Rules for the DISTILLATION of the OFFICIAL SIMPLE WATERS.

I.

Where they are directed fresh, such only must be employed: but some are allowed to be used dry, as being easily procurable in this state all times of the year, though rather more elegant waters might be obtained from them whilst green.

WHEN fresh and juicy herbs are to be distilled, thrice their weight of water will be fully sufficient; but dry ones require a much larger quantity. In general there should be so much water, that after all intended to be distilled has come over, there may be liquor enough left to prevent the matter from burning to the still.

II.

The distillation may be performed in an alembic with a refrigerator, the junctures being luted.

III.

Plants differ so much, according to the soil and season of which they are the produce, and likewise according to their own age, that it is impossible to fix the quantity of water to be drawn from a certain weight of them to any invariable standard. The distillation may always be continued as long as the liquor runs well-flavoured off the subject, and no longer.

If the herbs are of prime goodness, they must be taken in the weights prescribed: but when fresh ones are substituted to dry, or when the plants themselves are the produce

produce of unfavourable seasons, and weaker than ordinary, the quantities are to be varied according to the discretion of the artist.

AFTER the odorous water, alone intended for use, has come over, an acidulous liquor arises, which has sometimes extracted so much from the copper head of the still as to prove emetic. To this are owing the anthelmintic virtues attributed to certain distilled waters.

IV.

In a preceding edition of the Edinburgh pharmacopœia, some vegetables were ordered to be slightly fermented with the addition of yeast, previously to the distillation.

THE principle on which this management is founded, is certainly just; for the fermentation somewhat opens and unlocks their texture, so as to make them part with more in the subsequent distillation than could be drawn over from them without some assistance of this kind. Those plants, however, which require this treatment, are not proper subjects for simple waters to be drawn from, their virtues being obtainable to better advantage by other processes.

V.

If any drops of oil swim on the surface of the water, they are to be carefully taken off.

VI.

That the waters may keep the better, about one-twentieth part their weight of proof-spirit may be added to each after they are distilled.

A great number of distilled waters were formerly kept in the shops, and are still retained in foreign pharmacopœias. The Faculty of

Paris direct, in the last edition of their *Codex Medicamentarius*, no less than one hundred and twenty-five different waters, and one hundred and thirty different ingredients in one single water. Near one half of these preparations have scarcely any virtue or flavour from the subject, and many of the others are insignificant.

The Colleges of London and Edinburgh have rejected these ostentatious superfluities, and given an elegant and compendious set of waters, sufficient for answering such purposes as these kinds of preparations are applied to in practice. Distilled waters are employed chiefly as grateful diluents, as suitable vehicles for medicines of greater efficacy, or for rendering disgustful ones more acceptable to the palate and stomach; few are depended on, with any intention of consequence, by themselves.

AQUA DISTILLATA.

Lond.

Distilled water.

Take of

Spring-water, ten gallons.

Draw off by distillation, first, four pints; which being thrown away, draw off four gallons. This water is to be kept in a glass or earthen bottle with a glass stopper.

AQUA DISTILLATA.

Edinb.

Distilled water.

Let well or river water be distilled in very clean vessels till about two thirds are drawn off.

NATIVE water is seldom or never found pure, and generally contains earthy, saline, metallic, or other matters. Distillation is therefore employed as a means of freeing it of these heterogeneous parts. For
some

some pharmaceutical purposes distilled water is absolutely necessary: thus, if we employ hard undistilled water for dissolving sugar of lead, instead of a perfect solution, we produce a milky-like cloud, owing to a real decomposition of parts.

Distilled water is now employed by the London college for a great variety of purposes; and there can be no doubt, that in many chemical and pharmaceutical processes, the employment of a heterogeneous fluid, in place of the pure element, may produce an essential alteration of qualities, or frustrate the intention in view. While the London college have made more use of distilled water than any other, their directions for preparing it seem to be the best. For as some impregnation may be more volatile than pure water, it is freed from these by throwing away what comes first over; and by keeping it afterwards in a close vessel, absorption from the air is prevented.

AQUA ANETHI.

Lond.

Dill-water.

Take of

Dill-seed, bruised, one pound;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

AQUA SEMINUM ANETHI SIMPLEX.

Edinb.

Simple dill-seed water.

Take of

Dill-seeds, one pound;

Pour on as much water as when ten pounds have been drawn off by distillation, there may remain as much as is sufficient to prevent an empyreuma.

After proper maceration, let ten pounds be drawn off.

ALTHOUGH the dill-water holds a place, not only in the London and Edinburgh pharmacopœias, but also in most of the foreign ones; yet it is not much employed in practice. It obtains, indeed, a pretty strong impregnation from the seeds, and is sometimes employed as a carminative, particularly as the basis of mixtures and juleps; but it is less powerful and less agreeable than that of peppermint, cinnamon, and some others.

AQUA CINNAMOMI.

Lond. Edinb.

Cinnamon-water.

Take of

Cinnamon, bruised, one pound;

Water, sufficient to prevent an empyreuma.

Macerate for twenty-four hours, and draw off one gallon.

FROM one pound of cinnamon the Edinburgh college direct ten pounds of water to be drawn off; and if the cinnamon employed be of good quality, it may yield that quantity with a strong impregnation; but what comes over first is unquestionably the strongest.

This is a very grateful and useful water, possessing in an eminent degree the fragrance and aromatic cordial virtues of the spice. Where real cinnamon-water is wanted, care should be had in the choice of the cinnamon, to avoid the too common imposition of cassia being substituted in its room. The two drugs may be easily distinguished from each other by the marks laid down under the respective articles in the Second Part of this work: but the essential oils of the two approach so near, that after distillation it is perhaps impossible to distinguish the waters; and it is still more doubtful how far

the

the one is in any degree preferable to the other.

The oil of cinnamon is very ponderous, and arises more difficultly than that of any of the other vegetable matters from which simple waters are ordered to be drawn. This observation directs us, in the distillation of this water, to make use of a quick fire and a low vessel. For the same reason, the water does not keep so well as might be wished; the ponderous oil parting from it in time, and falling to the bottom, when the liquor loses its milky hue, its fragrant smell, and aromatic taste. Some recommend a small proportion of sugar to be added, in order to keep the oil united with the water.

AQUA CASSIÆ LIGNEÆ.

Edinb.

Cassia-water.

From a pound and a half of the cassia bark, ten pounds of water are directed to be drawn off in the same manner as the dill water.

THIS distilled water, as we have already observed, when properly prepared, approaches so near to that of cinnamon, that it is almost, if not altogether, impossible to distinguish the difference between the two. And although the London college have given it no place in their pharmacopœia, yet we may venture to assert, that it is no stranger to the shops of the apothecaries. Nay, so great is the difference of price, and so little of sensible qualities, that what is sold under the name of cinnamon-water is almost entirely prepared from cassia alone; and not even prepared from the cassia bark, as directed by the Edinburgh college, but from the cassia buds, which may be had at a still cheaper rate, and which yield

precisely the same essential oil, although in less quantity. When cassia water is prepared precisely according to the directions of the Edinburgh college, from containing a larger proportion of the subject, it has in general a stronger impregnation than their genuine cinnamon water, and is probably in no degree inferior in its virtues.

AQUA FÆNICULI.

Lond.

Fennel-water.

Take of

Sweet fennel-seeds, bruised, one pound.

Water sufficient to prevent an empyreuma.

Draw off one gallon.

THE water of fennel-seeds is not unpleasant. A water has also been distilled from the leaves. When these are employed, they should be taken before the plant has run into flower; for after this time they are much weaker, and less agreeable. Some have observed, that the upper leaves and tops, before the flowers appear, yield a more elegant water, and a remarkably finer essential oil than the lower ones; and that the oil obtained from the one swims on water, whilst that of the other sinks. No part of the herb, however, is equal in flavour to the seeds.

AQUA MENTHÆ PIPERITIDIS.

Lond.

Peppermint-water.

Take of

Herb of peppermint, dried, one pound and an half;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

Edinb.

From three pounds of the leaves of peppermint, ten pounds of water are to be drawn off.

THIS is a very elegant and useful water; it has a warm pungent taste, exactly resembling that of the peppermint itself. A spoonful or two taken at a time, warm the stomach, and give great relief in cold, flatulent colics. Some have substituted a plain infusion of the dried leaves of the plant, which is not greatly different in virtue from the distilled water.

In the distillation of this water, a considerable quantity of essential oil in general comes over in its pure state. And it is not uncommon to employ this for impregnating other water, with which it may be readily mixed by the acid of a little sugar.

AQUA MENTHÆ SATIVÆ.

*London.**Spearmint-water.*

Take of

Spearmint, dried, one pound and an half;

Water sufficient to prevent an empyreuma.

Draw off one gallon.

THE Edinburgh college direct this water to be made in the same proportion as the preceding. But probably three pounds of the fresh herb will not give a stronger impregnation than a pound and a half of the dried: So that the water of the London college may be considered as being as strongly impregnated as that of the Edinburgh college.

This water smells and tastes very strongly of the mint; and proves in many cases an useful stomachic. Boerhaave commends it (cobobated) as a present and incomparable remedy for strengthening a weak sto-

mach, and curing vomiting proceeding from cold viscous phlegm; and also in lenteries.

AQUA PIMENTO.

*London. Edinb.**All-spice water.*

Take of

All-spice, bruised, half a pound.

Water sufficient to prevent an empyreuma.

Macerate for twenty-four hours, and draw off one gallon.

From half a pound of the pimento, the Edinburgh college direct ten pounds of water to be drawn off; so that the impregnation is there somewhat weaker than the above.

THIS distilled water is a very elegant one, and has of late come pretty much into use: the hospitals employ it as a succedaneum to the more costly spice waters. It is, however, inferior in gratefulness to the spirituous water of the same spice hereafter directed.

AQUA PULEGII.

*London. Ed.**Pennyroyal-water.*

Take of

Dried herb pennyroyal, one pound and an half;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

THE pennyroyal water is directed to be prepared by the Edinburgh college in the same proportions as they have ordered with the mint and peppermint. Whether prepared from the recent or dried plant, it possesses in a considerable degree the smell, taste, and virtues, of the pennyroyal. It is not unfrequently employed in hysterical cases, and sometimes with a good effect.

AQUA ROSÆ.

London, Edinburgh.

Rose water.

Take of

Fresh petals of the damask rose, the white heels being cut off, six pounds;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

From the same quantity the Edinburgh college direct ten pounds to be drawn off.

THIS water is principally valued on account of its fine flavour, which approaches to that generally admired in the rose itself. The purgative virtue of the roses remains entire in the liquor left in the still, which has therefore been generally employed for making the solutive honey and syrup, instead of a decoction or infusion of fresh roses prepared on purpose: And this piece of frugality the college have now admitted. A distilled water of red roses has been sometimes called for in the shops, and supplied by that of damask roses, diluted with common water: this is a very venial substitution; for the water drawn from the red rose has no quality which that of the damask does not possess in a far superior degree; neither the purgative virtue of the one, nor the astringency of the other, arising in distillation.

AQUA CORTICIS MALORUM LIMONIORUM RECENTIUM.

Edinburgh.

Lemon-peel water.

From two pounds of recent lemon-peel ten pounds of water are to be drawn off by distillation.

AQUA CORTICIS AURANTIORUM HISPALENTIUM RECENTIUM.

Edinburgh.

Orange-peel water.

From two pounds of orange-peel, ten pounds of water also are directed to be drawn off.

NEITHER of these distilled waters are now to be met with in the London pharmacopœia; and it is probable that no great loss arises from the want of them. For both the one and the other obtain only a very weak impregnation. They are chiefly employed as diluters in fevers and other disorders where the stomach and palate are very apt to be disgusted. And perhaps the only circumstance for which they are valuable is the slightness of the impregnation. For in such affections, any flavour, however agreeable at other times, often becomes highly disgusting to patients.

The distilled waters above taken notice of are the whole that have now a place in the pharmacopœias of the London and Edinburgh colleges. And perhaps this selection is sufficiently large for answering every useful purpose. But besides these, a considerable number of others are still retained even in the modern foreign pharmacopœias; some of which at least it may not be improper to mention.

AQUA ALEXITERIA.

Brun.

Alexiterial water.

Take of

Elder flowers, moderately dried, three pounds;

Angelica leaves, fresh gathered, two pounds;

Spring water, forty pounds.

Draw off, by distillation, thirty pounds.

THIS water is sufficiently elegant with regard to taste and smell; tho' few expect from it such virtues as

its title seems to imply. It is used occasionally for vehicles of alexipharmac medicines, or in juleps to be drank after them, as coinciding with the intention; but in general, is not supposed to be itself of any considerable efficacy.

AQUA CAMPHORÆ.

Brun.

Camphor-water.

Take of

Camphor, an ounce and an half.
Let it be dissolved in half an ounce of the spirit of rosemary, then pour upon it two pounds of fountain water, and draw off by distillation a pound and an half.

THIS distilled water, which has no place in our pharmacopœias, is introduced into some of the foreign ones. And since camphor may be considered as a concrete essential oil, it naturally occurs as a form under which that medicine may be introduced with advantage in a diluted state.

AQUA CASTOREI.

Brun.

Castor water.

Take of

Russia castor, one ounce;
Water, as much as will prevent burning.
Draw off two pints.

CASTOR yields almost all its flavour in distillation to water; but treated in the same manner with spirit of wine, gives over nothing. The spirit of castor formerly kept in the shops had none of the smell or virtues of the drug; whilst the water here directed proves, when fresh drawn very strong of it.

It is remarkable, that the virtues of this animal substance reside in a volatile oil, analogous to the essen-

tial oils of vegetables: some are reported to have obtained, in distilling large quantities of the drug, a small portion of oil, which smelt extremely strong of the castor, and diffused its ungrateful scent to a great distance.

This water is made use of in hysteric cases, and some nervous complaints, though it has not been found to answer what many people expect from it: it loses greatly of its flavour in keeping.

And it is probably from this circumstance that it has no place either in our pharmacopœias or in the modern foreign ones. But at the same time, as holding to a high degree the sensible qualities of the castor, it may be considered as justly deserving future attention.

AQUA CEREFOLII.

Gen.

Chervil-water

Take of

Fresh leaves of chervil, one pound;
Fountain water, as much as is sufficient for allowing eight pounds to be drawn off by distillation, at the same time avoiding empyreuma.

ALTHOUGH the chervil be but little employed in Britain, yet among some of the foreigners it is held in high esteem. And the distilled water is perhaps one of the most elegant forms under which its active parts can be introduced. But there is reason to believe, that those diuretic powers for which it has been chiefly celebrated, will be most certainly obtained from exhibiting it in substance, or under the form of the expressed juice of the recent plant.

AQUA CERASI.

*Succ.**Black-cherry water.*

Take of

Ripe black cherries bruised with the kernels, 20 pounds;

Fountain water, as much as is sufficient for avoiding empyreuma.

Draw off 20 pounds by distillation.

THIS water, although now banished from our pharmacopœias, has long maintained a place in the foreign ones, and even in Britain it is not unfrequently to be met with in the shops. It has often been employed by physicians as a vehicle, in preference to the other distilled waters; and among nurses who have the care of young children, has been the first remedy against the convulsive disorders to which infants are so often subject.

This water has nevertheless of late been brought into disrepute, and by some looked upon as poisonous. They observe, that it receives its flavour principally from the cherry stones; and that these kernels, like many others, bear a resemblance in taste to the leaves of the lauro-cerasus, which have been discovered to yield, by infusion or distillation, the most sudden poison known; some physicians of Worcester have already found by trial purposely made, that a distilled water very strongly impregnated with the flavour of the cherry kernels (no more than two pints being distilled from fourteen pounds of the cherry stones) proved in like manner poisonous to brutes. The London college repeated the same experiment, and found the effects agreeable to those gentlemen's report.

It by no means follows from these trials, nor after such long experience can it be imagined, that

black-cherry water, when no stronger than the shops have been accustomed to prepare it, is unsafe. These kernels plainly resemble opium, and some other things, which poison only when taken in too great a quantity; the water from the very laurel leaves is harmless when duly diluted; and even spirit of wine proves a poison of its kind, not greatly different, if drunk to a certain degree of excess. Nor can it be concluded, from the trials with the strong black-cherry water on dogs, &c. that even this will have the same effects in the human body; that kernels of many sorts of fruits being in substance poisonous to brutes though innocent to man.

It is possible, however, that this water in any degree or strength may not be altogether safe to the tender age of infants, where the principles of life are but just beginning as it were to move: it is possible, that it may there have had pernicious effects, without being suspected: the symptoms it would produce, if it should prove hurtful, being such as children are often thrown into from the disease which it is imagined to relieve. On these considerations, both the London and Edinburgh colleges have chosen to lay it aside; more especially as it has been too often counterfeited with a water distilled from bitter almonds, which are known to communicate a poisonous quality. It is, however, one of those active articles which may perhaps be considered as deserving farther attention.

AQUA CHAMOMILLÆ
FLORUM.*Dan.**Camomile flower water.*

Take of

Camomile flowers, dried in the shade, eight pounds;

G g 2

Wa-

Water, seventy-two pounds; draw off by gentle distillation forty-eight pounds.

CAMOMILE flowers were formerly ordered to be fermented previously to the distillation, a treatment which they stand little in need of: for they give over without any fermentation as much as that process is capable of enabling them to do. In either case the smell and peculiar flavour of the flowers arise without any thing of the bitterness; this remaining behind in the decoction; which, if duly deperated and inspissated, yields an extract similar to that prepared from the flowers in the common manner. The distilled water has been used in flatulent colics, and the like, but is at present held in no great esteem

AQUA FRAGORUM.

Suec.

Strawberry-water.

From twenty pounds of strawberries, twenty pounds of distilled water are drawn off, according to the same directions given for the preparation of the black-cherry.

WATER thus impregnated with the essential oil of the strawberries, will have what to some people will be a very agreeable flavour; but any considerable medical power is not to be expected from it.

AQUA HYSSOPI.

Suec.

Hyssop-water.

From four pounds of the fresh leaves of hyssop, six pounds of water are drawn off.

HYSSOP water has been held by some in considerable esteem as an uterine and a pectoral medicine. It was directed in a former edition of

the Edinburgh pharmacopoeia for making up the black pectoral troches, but is now exchanged for common water. Few at present expect any singular virtues from it, nor is it often to be met with in our shops, being now expunged from our pharmacopoeias. It holds a place, however in most of the foreign ones, and among ourselves there are still some practitioners who frequently employ it. But there can be no doubt that those medical properties which the hyssop contains, may be more readily and effectually extracted by simple infusion.

AQUA LILIORUM ALBORUM.

Brun.

White-lily water.

AQUA LILIORUM CONVALLIUM.

Brun.

May-lily water.

To any quantity of these flowers, four times their weight of water is to be added, and water drawn off by distillation in the proportion of two pounds to each pound of the flowers.

THESE waters must obtain some impregnation of that elegant essential oil, on which the odour of flowers in their growing state depends. But they do not possess any remarkable medical properties.

AQUA MELISSÆ.

Brun.

Balm-water.

The green leaves of the balm are to be macerated with double their weight of water; and from each pound of the plant a pound and an half of water is to be drawn off.

This

THIS water obtains a considerable impregnation from the balm, which yields its essential oil pretty freely on distillation. Though now banished from our pharmacopoeias it has still a place in most of the foreign ones. In the old editions of the Edinburgh pharmacopoeia, this water was ordered to be cohobated, or re-distilled from fresh quantities of the herb. This management seems to have been taken from Boerhaave, who has a very high opinion of the water thus prepared: he says, he has experienced in himself extraordinary effects from it, taken on an empty stomach; that it has scarce its equal in hypochondriacal and hysterical cases, the chlorosis, and palpitation of the heart, as often as these diseases proceed from a disorder of the spirits, rather than from any collection of morbid matter.

But whatever virtues are lodged in balm, may be much more perfectly and advantageously extracted by cold infusion in aqueous or spirituous menstrua: in this last process, the liquor suffers no injury from being returned on fresh parcels of the herbs; a few repetitions will load it with the virtues of the subject, and render it very rich. The impregnation here is almost unlimited; but in distilled waters it is far otherwise.

And as far as any advantage can be obtained from it, this may be had perhaps to its fullest extent by a simple distillation in the manner here directed.

AQUA RUTÆ.

*Rofs.**Rue-water.*

From each pound of rue, with a sufficient quantity of spring water to prevent empyreuma, two pounds of distilled water are to be drawn.

RUE gives over in this process the whole of its smell, and great part of its pungency. The distilled water stands recommended in epileptic cases, the hysteric passion, for promoting perspiration, and other natural secretions. But though still a good deal employed abroad, it is with us falling into disrepute.

AQUA SABINÆ.

Savin-water.

This is distilled from the fresh leaves of savin, after the same manner as the other already mentioned.

THIS water is by some held in considerable esteem for the same purposes as the distilled oil of savin. Boerhaave relates, that he has found it (when prepared by cohobation) to give an almost incredible motion to the whole nervous system; and that when properly used, it proves eminently serviceable for promoting the menses and the hæmorrhoidal flux.

It has now, however, fallen so much into disrepute as to have no place either in our pharmacopoeias or in the best modern foreign ones: But at the same time, when we reflect how readily savin yields a large proportion of active essential oil on distillation, it may perhaps be considered as better intitled to attention than some other distilled waters which are still retained.

AQUA SAMBUCI.

*Brun.**Elder flower water.*

This is distilled from fresh elder flowers, after the same manner as the white-lily water.

THIS water smells considerably of the flowers; but is rarely made use of among us.

AQUA SALVIÆ.

*Brun.**Sage-water.*

This is directed to be prepared from the green leaves of the sage in the same manner as the balm water.

SAGE leaves contain a considerable proportion of essential oil, which they yield pretty freely on distillation. But their whole medicinal properties may with still greater ease and advantage be extracted by simple infusion.

To the simple distilled waters the London college have annexed the following remarks.

We have ordered the waters to be distilled from the dried herbs, because fresh are not ready at all times of the year. Whenever the fresh are used, the weights are to be increased. But, whether the fresh or dried herbs be employed, the operator may vary the weight according to the season in which they have been produced and collected.

Herbs and seeds, kept beyond the space of a year, are improper for the distillation of waters.

To every gallon of these waters add five ounces, by measure, of proof-spirit.

C H A P. XVIII.

SPIRITUS DISTILLATI.

DISTILLED SPIRITS.

THE flavour and virtues of distilled waters are owing, as observed in the preceding chapter, to their being impregnated with a portion of the essential oil of the subject from which they are drawn. Spirit of wine, considered as a vehicle for these oils, has this advantage above water, that it is their proper menstruum, and keeps all the oil that rises with it perfectly dissolved into an uniform limpid liquor.

Nevertheless, many substances, which on being distilled with water, impart to it their virtues in

great perfection; if treated in the same manner with spirit of wine, scarce give over to it any smell or taste. This difference proceeds from hence, that spirit is not susceptible of so great a degree of heat as water. Liquids in general, when made to boil, have received as great a heat as they are capable of sustaining: now, if the extent of heat between freezing and boiling water, as measured by thermometers, be taken for a standard, spirit of wine will be found to boil with less than four-fifths of that heat, or above one-fifth less than the heat of boiling

boiling water. It is obvious therefore, that substances may be volatile enough to rise with the heat of boiling water, but not with that of boiling spirit.

Thus, if cinnamon, for instance, be committed to distillation with a mixture of spirit of wine and water, or with a pure proof-spirit, which is no other than a mixture of about equal parts of the two; the spirit will arise first, clear, colourless, and transparent, and almost without any taste of the spice; but as soon as the more ponderous watery fluid begins to arise, the oil comes freely over with it, so as to render the liquor highly odorous, saped, and of a milky hue.

The proof-spirits usually met with in the shops are accompanied with a degree of ill flavour; which, tho' concealed by means of certain additions, plainly discovers itself in distillation. This nauseous relish does not begin to arise till after the purer spirituous part has come over; which is the very time that the virtues of the ingredients begin also most plentifully to distil; and hence the liquor receives an ungrateful taint. To this cause principally is owing the general complaint, that the cordials of the apothecary are less agreeable than those of the same kind prepared by the distiller; the latter being extremely curious in rectifying or purifying the spirits (when designed for what he calls fine goods) from all ill flavour.

ALCOHOL.

Lond.

Ardent spirit.

Take of

Rectified spirit of wine, one gallon;

Kali, made hot, one pound and an half;

Pure kali, one ounce.

Mix the spirit of wine with the pure kali, and afterwards add one pound of the hot kali; shake them, and digest for twenty-four hours. Pour off the spirit, to which add the rest of the kali, and distil in a water-bath. It is to be kept in a vessel well stopped.

THE specific gravity of the alcohol is to that of distilled water as 815 to 1000.

We have already offered some observations on spirit of wine both in the state of what is called rectified and proof spirit. But in the present formula we have ardent spirit still more freed from an admixture of water than even the former of these. And in this state it is unquestionably best fitted for answering some purposes. It may therefore justly be considered as an omission in the present edition of the Edinburgh Pharmacopœia, that they have no analogous form. In former editions of this work, alcohol was directed to be prepared from French brandy. But this is rather too dear an article in this country for distillation; nor is the spirit obtained from it any ways preferable to one procurable from cheaper liquors. The coarser inflammable spirits may be rendered perfectly pure, and fit for the nicest purposes, by the following method.

If the spirit be exceedingly foul, mix it with about an equal quantity of water, and distil with a slow fire; discontinuing the operation as soon as the liquor begins to run milky, and discovers, by its nauseous taste, that the impure and phlegmatic part is arising. By this treatment, the spirit leaves a considerable portion of its foul oily matter behind it in the water, which now appears milky and turbid, and proves highly disagreeable in taste.

If the spirit be not very foul at first, this ablution is not necessary; if extremely so, it will be needful to repeat it once, twice, or oftener.

As vinous spirits arise with a less degree of fire than watery liquors, we are hence directed to employ, in the distillation of them, a heat less than that in which water boils: and if due regard be had to this circumstance, very weak spirits may, by one or two wary distillations, be tolerably well freed from their aqueous phlegm; especially if the distilling vessels are of such a height, that the spirit, by the heat of a water-bath, may but just pass over them: in this case, the phlegmatic vapours which arise for a little way along with the spirit, will condense and fall back again before they can come to the head. Very pompous instruments have been contrived for this purpose, and carried in a spiral or serpentine form to an extraordinary height. The spirit, ascending through these, was to leave all the watery parts it contained, in its passage, and come over perfectly pure and free from phlegm. But these instruments are built upon erroneous principles, their extravagant height defeating the end it was designed to answer: if the liquor be made to boil, a considerable quantity of mere phlegm will come over along with the spirit; and if the heat be not raised to this pitch, neither phlegm nor spirit will distil. The most convenient instrument is the common still; between the body of which and its head an adpater or copper tube may be fixed.

The spirit being washed, as above directed, from its foul oil, and freed from the greatest part of the phlegm by gentle distillation in a water-bath; add to every gallon of it a pound or two of pure, dry, fixt alkaline salt. Upon digesting these

together for a little time, the alkali, from its known property of attracting water and oils, will imbibe the remaining phlegm, and such part of the disagreeable unctuous matter as may still be left in the spirit, and sink with them to the bottom of the vessel. If the spirit be now again gently drawn over, it will arise entirely free from its phlegm and nauseous flavours; but some particles of the alkaline salt are apt to be carried up with it, and give what the workmen call an urinous relish: this may be prevented by adding, previous to the last distillation, a small proportion of calcined vitriol, alum, or sal catharticus amarus; the acid of these salts will unite with, and neutralize the alkali, and effectually prevent it from arising; while no more of the acid of the salts is extricated than what the alkali absorbs.

The spirit obtained by this means is extremely pure, limpid, perfectly flavourless, and fit for the finest purposes. It may be reduced to the strength commonly understood by proof, by mixing twenty ounces of it with seventeen ounces of water. The distilled cordials made with these spirits prove much more elegant and agreeable, than when the common rectified or proof-spirits of the shops are made use of.

If the rectified spirit be distilled afresh from dry alkaline salt, with a quick fire, it brings over a considerable quantity of the salt; and in this state is supposed to be a more powerful menstruum for certain substances than the pure spirit. This alkalinized spirit is called

TARTARIZED SPIRIT OF WINE.

The process here described, which was long since recommended by Dr Lewis, will sufficiently explain the intention of the London college, in the

the directions they have now given for the preparation of alcohol. And there can be no doubt, that by their process a very pure alcohol may be obtained. Of this we have a sufficient test in the specific gravity of the fluid which comes over, which is to that of distilled water only as 815 to 1000, while the specific gravity of proper rectified spirit, is as 835 to 1000.

SPIRITUS ÆTHERIS VITRIOLICI.

Lond.

Spirit of vitriolic æther.

Take of

Rectified spirit of wine,
Vitriolic acid, each one pound.

Pour in by a little at a time the acid to the spirit, and mix them by shaking; then from a retort into a tubulated receiver, to which another recipient is fitted, distil the spirit of vitriolic æther till sulphureous vapours begin to rise.

ACIDUM VITRIOLICUM VINOSUM, vulgo SPIRITUS VITRIOLI DULCIS.

Edinb.

Vinous vitriolic acid, commonly called Dulcified spirit of vitriol.

Take of

Vitriolic æthereal liquor, one part;
Rectified spirit of wine, two parts.

Mix them.

THE last of these processes is a very ready and convenient method of preparing the dulcified spirit of vitriol, which only differs from ether by the acid being more predominant, and less intimately combined.

In the first process, a good deal of caution is requisite in mixing the two liquors. Some direct the spirit

of wine to be put first into the retort, and the oil of vitriol to be poured upon it all at once; a method of procedure by no means adviseable, as a violent heat and ebullition always ensue, which may not only dissipate a part of the mixture, but hazard also the breaking of the vessel, to the great danger of the operator. Others put the oil of vitriol into the retort first; then by means of a funnel, with a long pipe that may reach down just to the surface of the acid, pour in the spirit of wine: if this be done with sufficient caution, the vinous spirit spreads itself on the surface of the oil of vitriol, and the two liquors appear distinct. On standing for a week or two, the vinous spirit gradually imbibed, without any commotion, and the vessel may then be safely shaken to complete the mixture: but if the spirit be poured in too hastily at first, or if the vessel be moved before the two liquors have in some degree incorporated, the same effect ensues as in the foregoing case. The only secure way is to add the oil of vitriol to the spirit of wine by a little quantity at a time, waiting till the first addition be incorporated before another quantity is put in: by this management, the heat that ensues is inconsiderable, and the mixture is effected without any inconvenience.

The distillation should be performed with an equable and very gentle heat, and not continued so long as till a black froth begins to appear: for before this time, a liquor will arise of a very different nature from the spirit here intended. The several products are most commodiously kept apart by using a tubulated receiver, so placed, that its pipe may convey the matter which shall come over into a vial set underneath. The juncture of the

retort and recipient is to be luted with a paste made of linseed meal, and further secured by a piece of wet bladder; the lower juncture may be closed only with some soft wax, that the wax may be occasionally removed with ease.

The true dulcified spirit arises in thin subtle vapours, which condense upon the sides of the recipient in straight striæ. It is colourless as water, very volatile, inflammable, of an extremely fragrant smell, in taste somewhat aromatic.

After the fire has been kept up for some time, white fumes arise; which either form irregular striæ, or are collected into large round drops like oil: On the first appearance of these, the vial, or the receiver, if a common one is made use of, must be taken away. If another be substituted, and the distillation continued, an acid liquor comes over, of an exceeding pungent smell, like the fumes of burning brimstone. At length a black froth begins hastily to arise, and prevents carrying the process further.

On the surface of the sulphureous spirit is found swimming a small quantity of oil, of a light yellow colour, a strong, penetrating, and very agreeable smell. This oil seems to be nearly of the same nature with the essential oils of vegetables. It readily and totally dissolves in rectified spirit of wine, and communicates to a large quantity of that menstruum the taste and smell of the aromatic or dulcified spirit.

The matter remaining after the distillation is of a dark blackish colour, and still highly acid. Treated with fresh spirit of wine, in the same manner as before, it yields the same productions; till at length all the acid that remains unvolatilized being satiated with the inflammable oily matter of the spirit, the compound proves a bituminous sulphu-

reous mass; which, exposed to the fire in open vessels, readily burns, leaving a considerable quantity of fixed ashes; in close ones, it explodes with violence; and with fixt alkaline salts, forms a compound nearly similar to one composed of alkalies and sulphur.

The new names adopted by the London and Edinburgh colleges for denominating this fluid, the one employing the term of *Spiritus ætheris vitriolici*, the other of *Acidum vitriolicum vinosum*, seem to us to be equally exceptionable; and perhaps the old term of *Spiritus vitrioli dulcis* is not less properly fitted to distinguish it from other fluids, and to convey a proper idea of its nature than either.

Dulcified spirit of vitriol has been for some time greatly esteemed, both as a menstruum and a medicine. It dissolves some resinous and bituminous substances more readily than spirit of wine alone, and extracts elegant tinctures from sundry vegetables. As a medicine, it promotes perspiration and the urinary secretion, expels flatulencies, and in many cases abates spasmodic strictures, eases pains, and procures sleep. The dose is from ten to eighty or ninety drops in any convenient vehicle. It is not essentially different from the celebrated anodyne liquor of Hoffman; to which it is, by the author himself, not unfrequently directed as a succedaneum.

Of this fluid, however, or at least of an article probably still more nearly resembling it, we shall afterwards have occasion to speak, when we treat of the *Spiritus ætheris vitriolici vinosus*.

ÆTHER VITRIOLICUS.

Lond.

Vitriolic æther.

Take

Take of

The spirit of vitriolic æther, two pounds,

Water of pure kali, one ounce.

Shake them together, and distil, with a gentle heat, fourteen ounces by measure.

LIQUOR ÆTHEREUS
VITRIOLICUS.

Edinb.

Vitriolic æthereal liquor

Take of

Rectified spirit of wine,

Vitriolic acid, of each thirty-two ounces.

Pour the spirit into a glass retort fit for sustaining a sudden heat, and add to it the acid in an uniform stream. Mix them by degrees, frequently shaking them moderately: this done, instantly distil from sand previously heated for that purpose, into a receiver kept cool with water or snow.

But the heat is to be so managed, that the liquor shall boil at first and continue to boil till sixteen ounces are drawn off; then let the retort be raised out from the sand.

To the distilled liquor add two drams of the causticum commune acerrimum; then distil again in a highly raised retort with a very gentle heat, into a cool receiver, until ten ounces have been drawn off

If sixteen ounces of rectified spirit of wine be poured upon the acid remaining in the retort after the first distillation, an ethereal liquor may be obtained by repeating the distillation. This may be done pretty often.

THE preparation of this singular fluid, now received into public pharmacopœias, was formerly confined to a few hands; for though se-

veral processes have been published for obtaining it, the success of most of them is precarious, and some of them are accompanied also with danger to the operator. The principal difficulty consists in the first part of the distillation.

It has been usual to direct the heat to be kept up till a black froth begins to appear; but if it is managed in the manner here directed, the quantity of æther which the liquor can afford will be formed and drawn off before the sulphureous froth appears. The use of the caustic alkali, is to engage any uncombined vitriolic acid which may be present in the first distilled liquor. If a mild alkali were employed for this purpose, the separation of its air by the acid might endanger the bursting of the vessels. This last is indeed an inconvenience which attends the whole of this process. It might in a great measure be obviated by employing a range of receivers, such as the *adopter* described in the first part of this work.

THE æther, or æthereal spirit, is the lightest, most volatile and inflammable, of all known liquids. It is lighter than the most highly rectified spirit of wine, in the proportion of about 7 to 8: a drop let fall on the hand, evaporates almost in an instant, scarcely rendering the part moist. It does not mix, or only in a small quantity, with water, spirit of wine, alkaline lixivium, volatile alkaline spirits, or acids; but is a powerful dissolvent for oils, balsams, resins, and other analogous substances: it is the only known substance capable of dissolving the *elastic gum*. It has a fragrant odour, which, in consequence of the volatility of the fluid, is diffused through a large space. It has often been found to

give

give ease in violent headaches, by being applied externally to the part; and to relieve the toothach, by being laid on the afflicted jaw. It has been given also internally, with benefit, in whooping coughs, hysterical cases, in asthma, and indeed in almost every spasmodic affection, from a few drops to the quantity of half an ounce, in a glass of wine or water; which should be swallowed as quickly as possible, as the æther so speedily exhales.

SPIRITUS ÆTHERIS NITROSI.

Lond.

Spirit of nitrous æther.

Take of

Rectified spirit of wine, two pints,

Nitrous acid, half a pound.

Mix them by pouring in the acid to the spirit, and distil with a gentle heat one pound ten ounces.

**ACIDUM NITRI VINOSUM,
vulgo SPIRITUS NITRI.
DULCIS.**

Edin.

Vinous acid of nitre, commonly called Dulcified spirit of nitre.

Take of

Rectified spirit of wine, three pounds;

Nitrous acid, one pound.

Pour the spirit into a capacious phial, placed in a vessel full of cold water, and add the acid by degrees, constantly agitating them. Let the phial be slightly covered, and laid by for seven days in a cool place; then distil the liquor with the heat of boiling water into a receiver kept cool with water or snow, till no more spirit comes over.

By allowing the acid and rectified spirit to stand for some time,

the union of the two is not only more complete, but the danger also of the vessels giving way to the ebullition and heat consequent on their being mixed, is in a great measure prevented. By fixing the degree of heat to the boiling point, the superabundant acid matter is left in the retort, being too ponderous to be raised by that degree of heat.

Here the operator must take care not to invert the order of mixing the two liquors, by pouring the vinous spirit into the acid; for if he should, a violent effervescence and heat would ensue, and the matter be dispersed in highly noxious red fumes. The most convenient and safe method of performing the mixture seems to be, to put the inflammable spirit into a large glass body with a narrow mouth, placed under a chimney, and to pour upon it the acid, by means of a glass funnel, in very small quantities at a time; shaking the vessel as soon as the effervescence ensuing upon each addition ceases, before a fresh quantity is put in: by this means the glass will heat equally, and be prevented from breaking. During the action of the two spirits upon each other, the vessel should be lightly covered: if close stopt, it will burst; and if left entirely open, some of the more valuable parts will exhale. Lemery directs the mixture to be made in an open vessel: by which unscientific procedure, he usually lost, as he himself observes, half his liquor; and we may presume, that the remainder was not the medicine here intended.

Several methods have been contrived for obviating the inconveniences arising from the elastic fluid and violent explosions produced on the mixture of the nitrous acid and rectified spirit of wine: for preparing the nitrous æther they are absolutely necessary, and might perhaps

haps be conveniently used for making the dulcified spirit. The method we judge to be the best, is that employed by Dr Black. On two ounces of the strong acid put into a phial, the Doctor pours, slowly and gradually, about an equal quantity of water; which, by being made to trickle down the sides of the phial, floats on the surface of the acid without mixing with it; he then adds, in the same cautious manner, three ounces of highly rectified spirit of wine, which in its turn floats on the surface of the water. By this means the three fluids are kept separate on account of their different specific gravities, and a stratum of water is interposed between the acid and spirit. The phial is now set in a cool place: the acid gradually ascends, and the spirit descends through the water, this last acting as a boundary to restrain their violent action on each other. By this method a quantity of nitrous æther is formed, without the danger of producing elastic vapours or explosion.

For the preparation of the dulcified spirit, the liquors, when mixed together, should be suffered to rest for some time, as above directed, that the fumes may entirely subside, and the union be in some measure completed. The distillation should be performed with a very slow and well regulated fire; otherwise the vapour will expand with so much force as to burst the vessels. Wilson seems to have experienced the justness of this observation, and hence directs the juncture of the retort and receiver not to be luted, or but slightly: if a tubulated recipient, with its upright long pipe, be made use of, and the distillation performed with the heat of a water-bath, the vessels may be luted without any danger: this method has likewise

another advantage, as it ascertains the time when the operation is finished: examining the distilled spirit every now and then with alkaline salts, as directed above, is sufficiently troublesome; whilst in a water-bath we may safely draw over all that will arise; for this heat will elevate no more of the acid than what is dulcified by the vinous spirit.

Dulcified spirit of nitre has been long held, and not undeservedly, in great esteem. It quenches thirst, promotes the natural secretions, expels flatulencies, and moderately strengthens the stomach: it may be given from twenty drops to a dram, in any convenient vehicle. Mixed with a small quantity of spirit of hartshorn, the spiritus volatilis aromaticus, or any other alkaline spirit, it proves a mild, yet efficacious, diaphoretic, and often remarkably diuretic; especially in some febrile cases, where such a salutary evacuation is wanted. A small proportion of this spirit added to malt spirits, gives them a flavour approaching to that of French brandy.

SPIRITUS AMMONIÆ.

Lond.

Spirit of ammonia.

Take of

Proof-spirit, three pints;
Sal ammoniac, four ounces;
Pot-ash, six ounces.

Mix, and distil with a slow fire one pint and an half.

SPIRITUS SALIS AMMONIACI VINOSUS.

Edinb.

Vinous spirit of sal ammoniac.

Take of

Quicklime, sixteen ounces;
Sal ammoniac, eight ounces;
Rectified spirit of wine, thirty-two ounces.

Having slightly bruised and mixed
the

the quicklime and ammoniacal salt, put them into a glass retort; then add the spirit, and distil in the manner directed for the volatile caustic alkali, till all the spirit has passed over.

THIS spirit has lately come much into esteem, both as a medicine and a menstruum. It is a solution of volatile salt in rectified spirit of wine; for though proof-spirit be made use of, its phlegmatic part does not arise in the distillation, and serves only to facilitate the action of the pure spirit upon the ammoniacal salt. Rectified spirit of wine does not dissolve volatile alkaline salts by simple mixture: on the contrary, it precipitates them, as has been already observed, when they are previously dissolved in water: but by the present process, a considerable proportion of the volatile alkali is combined with the spirit. It might perhaps, for some purposes, be more advisable to use with this intention the volatile spirits made with quicklime; for this may be mixed at once with rectified spirit of wine, in any proportions, without the least danger of any separation of the volatile alkali.

The name here employed by the London college, particularly when put in contradistinction to the aqua ammonia, conveys a clear idea of the article, and is, we think, preferable to that employed by the Edinburgh college.

As a menstruum, the spiritus ammoniae is employed to dissolve essential oils, thus forming the spiritus volatilis aromaticus, or *spiritus ammoniae compositus*, as it is now called by the London college, which again is employed in forming the tinctures of guaiac, valerian, &c.

The chief medical virtues which the spiritus ammoniae possesses, when

exhibited by itself, are those of the volatile alkali.

SPIRITUS AMMONIÆ FOETIDUS.

Lond.

Fetid spirit of ammonia.

Take of

Proof-spirit of wine, six pints;
Sal ammoniac, one pound;
Asafœtida, four ounces.

Pot-ash, one pound and an half.
Mix them, and draw off by distillation five pints, with a slow fire.

Edinb.

Take of

Vinous spirit of sal ammoniac,
eight ounces;
Asafœtida, half an ounce.

Digest in a close vessel twelve hours; then distil off with the heat of boiling water eight ounces.

THIS spirit, the last formula of which is in our opinion the best, as being most easily prepared without any risk of being injured in the preparation, is designed as an antihysterical, and is undoubtedly a very elegant one. Volatile spirits, impregnated for these purposes with different fetids, have been usually kept in the shops: the ingredient here made choice of, is the best calculated of any for general use, and equivalent in virtue to them all. The spirit is pale when newly distilled, but acquires a considerable tinge in keeping.

SPIRITUS ANISI COMPOSITUS.

Lond.

Compound spirit of aniseed.

Take of

Aniseed,
Angelica seed, of each, bruised,
half a pound;

Proof-spirit of wine, one gallon,
Water,

Water, sufficient to prevent an empyreuma.
Draw off one gallon by distillation.

THIS compound spirit is now directed to be prepared by the London college in the same manner as in their former edition. It has no place in the Edinburgh pharmacopœia; but it may justly be considered as a very elegant aniseed water. The angelica seeds greatly improve the flavour of the anise. It is often employed with advantage, particularly in cases of stautent cholick; but it has been alledged to be sometimes too frequently used with this intention as a domestic medicine, especially by old ladies: for unless it be prudently and cautiously employed, it may soon be attended with all the pernicious consequences of dram-drinking.

SPIRITUS CARUI.

Lond.

Spirit of caraway.

Take of

Caraway-seeds, bruised, half a pound;

Proof-spirit of wine, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

AQUA CARVI SPIRITUOSA.

Edinb.

Spiritous caraway water.

Take of

Caraway seeds, half a pound,

Proof-spirit, nine pounds.

Macerate two days in a close vessel; then pour on as much water as will prevent an empyreuma, and draw off by distillation nine pounds.

By this process the spirit obtains in great perfection the flavour of the caraway-seeds; and with some

it is a cordial not uncommonly in use.

SPIRITUS CINNAMOMI.

Lond.

Spirit of cinnamon.

Take of

Bruised cinnamon one pound;

Proof-spirit of wine, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

AQUA CINNAMOMI SPIRITUOSA.

Edinb.

Spiritous cinnamon water.

From one pound of cinnamon, nine pounds of spirit are to be drawn off, in the same manner as in the caraway spirit.

THIS is a very agreeable and useful cordial, but not so strong of the cinnamon as might be expected; for very little of the virtues of the spice arises till after the pure spirituous part has distilled. Hence in the former editions of the London Pharmacopœia, the distillation was ordered to be protracted till two pints more than here directed were come over. By this means, the whole virtue of the cinnamon was more frugally than judiciously obtained; for the disagreeable flavour of the scents of proof spirits, and the acidulous liquor arising from cinnamon as well as other vegetables when their distillation is long continued, give an ill relish to the whole; at the same time that the oil which was extracted from the spice was by this acid thrown down.

In the Pharmacopœia Reformata, it is proposed to make this spirit by mixing the aqua cinnamomi simplex with somewhat less than an equal quantity of rectified spirit: on shaking them together, the liquor loses

its milky hue, soon becomes clear, and more elegant than the water distilled as above: it is equally strong of the cinnamon, and free from the nauseous taint with which the common proof-spirits are impregnated.

SPIRITUS JUNIPERI COMPOSITUS.

Lond.

Compound spirit of Juniper.

Take of

Juniper-berries, bruised, one pound;

Caraway-seeds, bruised,
Sweet-fennel seeds, of each one ounce and an half;

Proof-spirit of wine, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

AQUA JUNIPERI COMPOSITA.

Edin.

Compound juniper water.

Take of

Juniper-berries, well bruised, one pound;

Seed of caraway,
sweet-fennel, each an ounce and a half;

Proof-spirit, nine pounds.

Macerate two days; and having added as much water as will prevent an empyreuma, draw off by distillation nine pounds.

THIS water, mixed with about an equal quantity of the rob of juniper berries, proves an useful medicine in catarrhs, debility of the stomach and intestines, and scarcity of urine. The water by itself is a good cordial and carminative: the service which this and other spirituous waters do with these intentions is commonly known; though the ill consequences that follow from their constant use are too little regarded.

SPIRITUS LAVENDULÆ.

Lond.

Spirit of lavender.

Take of

Fresh flowers of lavender, one one pound and an half;

Proof-spirit of wine, one gallon.

Draw off by distillation in a water-bath, five pints.

SPIRITUS LAVENDULÆ SIMPLEX.

Edinb.

Simple spirit of lavender.

Take of

Flowering spikes of lavender, fresh gathered, two pounds;

Rectified spirit of wine, eight pounds.

Draw off by the heat of boiling water, seven pounds.

THIS spirit, when made in perfection is very grateful and fragrant: It is frequently rubbed on the temples, &c. under the notion of refreshing and comforting the nerves; and it probably operates as a powerful stimulus to their sensible extremities: it is likewise taken internally, to the quantity of a teaspoonful, as a warm cordial.

SPIRITUS MENTHÆ PIPERITIDIS.

Lond.

Spirit of peppermint.

Take of

The herb peppermint, dried, one pound and an half.

Proof-spirit of wine, one gallon;

Water, sufficient to prevent an empyreuma.

AQUA FOLIORUM MENTHÆ PIPERITIDIS SPIRITUOSA.

Edinb.

Spirituos peppermint-water.

From a pound and a half of these leaves, nine pounds of spirit are drawn

drawn off, as from the caraway-seeds.

This spirit receives a strong impregnation from the peppermint. It is employed in flatulent cholics and similar disorders; and in these it sometimes gives immediate relief; but where it is indicated, there are few cases in which the peppermint water is not preferable.

SPIRITUS MENTHÆ SATI-
VÆ.

Lond.

Spirit of spearmint.

Take of

Spearmint dried, one pound and an half;

Proof-spirit of wine, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

THIS spirit has no place in the Edinburgh pharmacopœia. It, however, turns out a very elegant one, and preferable, in weakness of the stomach, retching to vomit, and the like, to many more elaborate preparations. Where the disorder is not accompanied with heat or inflammation, half an ounce of this water may be given diluted with some agreeable aqueous liquor: but, as was already observed with regard to the preceding article, there are many cases in which the prudent practitioner will be disposed to give the preference to the simple distilled water.

SPIRITUS NUCIS MOSCHA-
TÆ.

Lond.

Spirit of nutmeg.

Take of

Bruised nutmegs, two ounces;

Proof-spirit of wine, one gallon;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

AQUA NUCIS MOSCHATÆ
SPIRITUOSA.

Edinb.

Spirituos nutmeg-water.

By two ounces of the nutmeg well bruised, nine pounds of spirit are impregnated.

THIS is an agreeable spirituoso liquor, highly impregnated with the nutmeg flavour. It was formerly celebrated in nephritic disorders, and when combined with a few hawthorn flowers, it had even the title of *aqua nephritica*. At present it is employed only as a cordial liquor, and is not even very frequently in use.

SPIRITUS PIMENTO.

Lond.

Spirit of pimento, or Allspice.

Take of

All-spice, bruised, two ounces;

Proof-spirit of wine, one gallon;

Water sufficient to prevent an empyreuma.

Draw off one gallon.

AQUA PIPERIS JAMAICEN-
SIS SPIRITUOSA.

Edinb.

Spirituos Jamaica-pepper water.

By half a pound of pimento, nine pounds of spirit are to be impregnated.

THIS water is far more agreeable than a simple water drawn from the same spice; and had long a place among the cordials of the distiller before it was received into any public pharmacopœia: but although now adopted both by the London and Edinburgh colleges, it is not

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very

very frequently ordered from the shops of the apothecary.

SPIRITUS PULEGII.

Lond.

Spirit of pennyroyal.

Take of

The herb pennyroyal, dried, one pound and an half ;

Proof-spirit of wine, one gallon ;

Water, sufficient to prevent an empyreuma.

Draw off one gallon.

THIS spirit has no place in the Edinburgh pharmacopœia. It possesses, however, a considerable share of the flavour of the pennyroyal, and by some it is a good deal employed as a carminative and anti-hysterical.

SPIRITUS RAPHANI COMPOSITUS.

Lond.

Compound spirit of horse-radish.

Take of

Fresh horse-radish root,

Dried outer-rind of Seville oranges, each two pounds ;

Fresh herb of garden scurvy-grass, four pounds ;

Bruised nutmegs, one ounce ;

Proof-spirit of wine, two gallons ;

Water, sufficient to prevent an empyreuma.

Draw off two gallons.

THIS spirit has long been considered as an elegant one, and is perhaps as well adapted for the purposes of an antiscorbutic as any thing that can be contrived in this form. It has been alledged, that the horse-radish and scurvy-grass join very well together, giving a similar flavour, though not a little disagreeable ; that the nutmeg suppresses this flavour very successfully, without superadding any of its own,

and that to this, orange-peel adds a flavour very agreeable. Arum root had formerly a place in this water, but is here deservedly thrown out ; for it gives nothing of its pungency over the helm, notwithstanding what is asserted by some pharmaceutical writers to the contrary. Mustard seed, though not hitherto employed in these kinds of compositions, would seem to be an excellent ingredient ; it gives over the whole of its pungency, and is likewise less perishable than most of the other substances of this class: this seed wants no addition, excepting some aromatic material to furnish an agreeable flavour.

But although this process may furnish an agreeable compound spirit, yet it is much to be doubted, whether it possesses those antiscorbutic powers for which it was once celebrated. And with this intention the Edinburgh college place so little confidence in it, that they have now rejected it from their pharmacopœia.

SPIRITUS RORISMARINI.

Lond.

Spirit of rosemary.

Take of

Fresh tops of rosemary, one pound and an half ;

Proof-spirit of wine, one gallon.

Distil in a water-bath, five pints.

Edinb.

Take of

Flowering tops of rosemary, freshly gathered, two pounds ;

Rectified spirit of wine, eight pounds.

Distil in the heat of boiling water till seven pounds come over.

A spirit similar to this is generally brought to us from abroad, under

under the name of Hungary water.

This spirit is very fragrant, so as to be in common use as a perfume: that brought from abroad is superior in fragrance to such as is generally made among us. In order to prepare it in perfection, the vinous spirit should be extremely pure; the rosemary tops gathered when the flowers are full blown upon them, and committed immediately to distillation, particular care being taken not to bruise or press them. The best method of managing the distillation, is that formerly recommended for the distillation of the more volatile essential oils and simple waters, viz. first to place the spirit in the still, and then set in, above the liquor, either an iron hoop, with a hair-cloth stretched over it, upon which the flowers are to be lightly spread, or rather a basket, supported on three pins, reaching down to the bottom. A gentle heat being applied, just sufficient to raise the spirit, its vapour lightly percolating through the flowers, will imbibe their finer parts without making that disagreeable alteration, which liquors applied to such tender subjects, in their grosser form, generally do. Probably the superiority of the French Hungary water, to that prepared among us, is owing to some skilful management of this kind, or to employing a perfectly pure spirit.

In the Wirtemberg pharmacopoeia, some sage and ginger are added, in the proportion of half a pound of the former, and two ounces of the latter, to four pounds of the rosemary.

But the peculiar agreeable flavour of this water in all probability depends on the rosemary alone.

AQUA CARMELITANA.

Dan.

Carmelite water, or compound balm-water.

Take of

Fresh-gathered leaves of balm, a pound and a half;

The recent yellow rind of lemons, four ounces;

Nutmeg,

Coriander, each two ounces;

Cloves,

Cinnamon, each one ounce.

The ingredients being sliced and bruised, pour upon them

Rectified spirit of wine, six pounds;

Balm-water, three pounds.

Digest for three days, then draw off six pounds by distillation.

THIS spirit has been a good deal celebrated, particularly among the French, under the title of *Eau de Carmes*. Mr Baumé, in his *Elements de Pharmaciè*, proposes some improvements on the process. After the spirit added to the ingredients has been drawn off in the heat of a water-bath, he orders the distilled liquor to be rectified by a second distillation, drawing off somewhat less than nine-tenths of it. He recommends, that all the aromatic spirits should be prepared in the same manner. When the common spirits of this kind are rubbed on the hands, &c. they leave, after the more volatile parts have exhaled, a disagreeable empyreumatic smell; and when diluted with water, and taken medicinally, they leave in like manner a nauseous flavour in the mouth. To remedy these imperfections, he made many experiments, which showed, that in order to obtain these liquors of the desirable qualities, the spirit must not only be perfectly pure at first,

but that the liquor ought always to be rectified after it has been distilled from the subjects. In this rectification, only the more volatile, subtil, aromatic parts of the ingredients arise: there remains behind a white liquor, acrid, bitter, loaded only with the grosser oil, and deprived of all the specific flavour of the subjects. Indeed the very imperfection complained of, naturally points out this second distillation as the remedy; for it shows the spirit to contain a grateful and ungrateful matter; the first of which exhales; while the other is left behind. The author says, that when the *aqua melissæ* is prepared as above directed, it has something in it more perfect than any of the odorous spirits, whose excellence is cryed up, and which have the reputation of being the best.

Aromatic spirituous liquors have in general less smell, when newly distilled, than after they have been kept about six months. M. Baumè suspects that the preparations of this kind which have been most in vogue, were such as have been thus improved by keeping: and found that the good effects of age might be produced in a short time by means of cold. He plunges quart bottles of the liquor into a mixture of pounded ice and sea-salt: the spirit, after having suffered, for six or eight hours, the cold thence resulting, proves as grateful as that which has been kept for several years. Simple waters also, after being frozen, prove far more agreeable than they were before, though they are always less so than those which have been drawn with spirit, and exposed to a like degree of cold. This melioration of distilled waters by frost was taken notice of by Geoffroy.

SPIRITUS COCHLEARIÆ.

Succ.

Spirit of scurvygrafs.

Take of

Fresh scurvygrafs, bruised, ten pounds;

Rectified spirit of wine, eight pints.

With the heat of a water-bath, distil off four pints.

THIS spirit is very strong of the scurvygrafs; and has been given, in those cases where the use of this herb is proper, from twenty to one hundred drops. The virtues of scurvygrafs reside in a very subtil, volatile oil, which arises in distillation both with water and pure spirit; and if the liquors are exposed to the air, soon exhales from both. The spirit, newly distilled, is extremely pungent; but if long kept, even in close vessels, it becomes remarkably less so: But it is not probable, that with such a pungent vehicle we can use a sufficient quantity of the herb to produce any permanent or considerable effect: it has been much recommended as a diuretic in dropsies.

The makers of this spirit have frequently added to the scurvygrafs a quantity of horseradish root, and sometimes substituted to it one drawn entirely from the horseradish: the flavour of these two simples being so much alike, that their distilled spirits are scarce distinguishable from each other. Here it may be observed, that though *arum* and *dracunculus* are usually ranked in the same class with the two foregoing vegetables, and looked upon as similar to them; this process discovers a remarkable difference: whilst the former yield all their pungency in distillation both to water and spirit; the latter give over nothing to either,

either, and yet their virtues are destroyed in the operation.

SPIRITUS AURANTII.

Succ.

Orange-peel water.

Take of

Recent orange skins, one pound ;
Proof-spirit, three pounds.

Draw off two pounds by the heat of a water-bath.

THIS spirit, which is now rejected from our pharmacopoeias, had formerly a place in them under the title of *aqua corticum aurantium spirituosum*. It is considerably stronger of the orange peel than the simple water ; and it is used as an useful cordial, stomachic, and carminative.

SPIRITUS AROMATICUS.

Succ.

Aromatic spirit.

Take of

The tops of rosemary, a pound and an half ;

Tops of milfoil,

Thyme, each half a pound ;

Proof-spirit, sixteen pounds ; macerate for two days, and draw off by distillation eight pounds.

If before distillation eight pounds of vinegar be added, it forms the spiritus aromaticus acetatus.

THESE preparations do not dif-

fer materially from the spirit of rosemary or Hungary water ; for on the essential oil of the rosemary their medical properties may be considered as chiefly depending. They are often employed, particularly for external purposes, and for impregnating the air with their vapours, to destroy the influence of febrile contagions.

SPIRITUS ANTICTERICUS.

Gen.

Antiteric spirit.

Take of

Spirit of turpentine, an ounce and an half ;

Rectified spirit of wine, half a pound.

Distil with a gentle heat. Let the oil swimming above in the receiver be separated from the saturated spirit, which is to be preserved for use.

It has been imagined, that this combination of oil of turpentine with ardent spirit will furnish an effectual solvent for biliary calculi. Hence the origin of the name here given it ; but although it may have such an effect when copiously applied to the calculi in a glass vessel ; yet this is not to be expected when it is taken into the stomach, and can only reach them in the course of circulation.

C H A P. XIX.

DECOCTA ET INFUSA.

DECOCTIONS AND INFUSIONS.

WA T E R, the direct menstruum of gums and salts, extracts readily the gummy and saline parts of vegetables. Its action, however, is not limited to these; the resinous and oily principles being, in most vegetables, so intimately blended with the gummy and saline, as to be in part taken up along with them: some of the resinous cathartics, and most of the aromatic herbs, as well as bitters and astringents, yield to water the greatest part of their smell, taste, and medicinal virtue. Even of the pure essential oils, and odorous resins of vegetables, separated from the other principles, water imbibes a part of the flavour; and by the artificial admixture of gummy or saline matter, the whole substance of the oil or resin is made dissoluble in water.

Of pure salts, water dissolves only certain determinate quantities: by applying heat, it is generally enabled to take up more than it can do in the cold, and this in proportion to the degree of heat; but as the liquor cools, this additional quantity separates, and the water retains no more than it would have dissolved without heat. With gum-

my substances, on the other hand, it unites unlimitedly, dissolving more and more of them till it loses its fluidity. Heat expedites the action of the water, but cannot enable it to take up more than it would do by allowing it longer time in the cold. The active parts extracted from most vegetables by water, and oils and resins made soluble in water by the artificial admixture of gum, partake of this property of pure gums, being dissoluble without saturation.

It has been imagined, that vegetables in a fresh state, while their oily, resinous, and other active parts, are already blended with a watery fluid, would yield their virtues to water more freely and more plentifully, than when their native moisture has been dissipated by drying. Experience, however, shows, that dry vegetables in general give out more than fresh ones, water seeming to have little action upon them in their recent state. If, of two equal quantities of mint, one be infused fresh in water, and the other dried, and then infused in the like quantity of water for the same length of time, the infusion of the dry herb will be remarkably the strongest;

strongest : and the case appears to be the same in all the vegetables that have been tried.

In all the preparations described in this chapter, it is to be understood that the subjects must be moderately and newly dried, unless when they are expressly ordered to be taken fresh ; in which case it is to be judged that their virtues are destroyed or impaired by drying.

The native colours of many vegetables are communicated to water along with their medicinal matter ; many impart a colour different from their own ; and others, though of a beautiful and deep colour themselves, give scarcely any to the menstruum. Of the first kind are the yellow and red flowers ; of the second, the leaves of most plants ; of the third, some of the blue flowers, as those of *cyanus* and *larkspur*. Acid liquors change the infusions of most flowers, the yellow ones excepted, to a red ; and alkalies, both fixed and volatile, to a green.

From animal-substances, water extracts the gelatinous and nutritious parts ; whence glues, jellies, broths, &c. ; and along with these, it takes up principles of more activity, as the acrid matter of *cantharides*. It dissolves also some portion of calcined calcareous earths, both of the animal and of the mineral kingdom, but has no action on any other kind of earthy matter.

THE effect of boiling differs from that of infusion in some material particulars. One of the most obvious differences is, that as the essential oils of vegetables, in which their specific odours reside, are volatile in the heat of boiling water, they exhale in the boiling along with the watery steam, and thus are

lost to the remaining decoction ; whereas both in cold, and sometimes in hot infusions, they are preserved ; although in the latter they are by no means perfectly so. Odorous substances, and those in general whose virtues depend on their volatile parts, are therefore unfit for this treatment. The soluble parts of these may, nevertheless, be united in this form with those bodies of a more fixt nature, by boiling the latter till their virtues be sufficiently extracted, and then infusing the former in this decoction.

The extraction of the virtue of the subject is usually promoted or accelerated by a boiling heat ; but this rule is less general than it is commonly supposed to be. We have already observed, that *Peruvian bark* gives out its virtue more perfectly by cold infusion than by coction. In some cases, boiling occasions a manifest disunion of the principles of the subject : thus, when almonds are triturated with cold water, their oil, blended with the mucilaginous or other soluble matter of the almond, unites with the water into a milky liquor called an emulsion : but on boiling them in water, the oil separates and rises to the surface ; and if the most perfect emulsion be made to boil, a like separation happens.

This also appears to take place, though in a less evident manner, in boiling sundry other vegetables ; thus tobacco, *asarum*, and *ipecacuanha*, lose their active powers by boiling : nor does it appear that this change is effected merely by the discharge of volatile parts. From some late experiments, it has been found, that the distilled water of *ipecacuanha* was infinitely less emetic than the infusion from which it was distilled, and that the boiling liquor gradually assumes a black

colour, indicating some kind of decomposition of parts: the same circumstances probably take place in boiling tobacco, asarum, and perhaps all vegetables whatever, tho' from their not producing such sensible operations on the living body, they cannot be so clearly discovered as in ipecacuanha, tobacco, or asarum. The experiments we allude to, were made by Dr Irving, when a student in the college of Edinburgh; and they gained him the prize given by the Harveian Society of that place, for the best experimental inquiry concerning ipecacuanha.

It is for the abovementioned reasons that we think many of the infusions should be made with cold water: it is, however, to be acknowledged, that this is not always absolutely necessary, and in extemporaneous practice it may be often very inconvenient; it is, however, proper to point out the advantages to be expected from this more tedious, but much more complete and elegant, method.

VINEGAR extracts the virtues of several medicinal substances in tolerable perfection: but at the same time its acidity makes a remarkable alteration in them, or superadds a virtue of a different kind; and hence it is more rarely employed with this intention than purely aqueous or spirituous menstua. Some drugs, however, vinegar, for particular purposes, excellently assists, or coincides with, as squills, garlic, ammoniacum, and others: and in many cases where this acid is itself principally depended on, it may be advantageously impregnated with the flavour of certain vegetables; most of the odoriferous flowers impart to it their fragrance, together with a fine purplish or red colour;

violets, for instance, if fresh parcels of them are infused in vinegar in the cold for a little time, communicated to the liquor a pleasant flavour, and deep purplish red colour. Vinegar, like other acids, added to watery infusions or decoctions, generally precipitates a part of what the water had dissolved.

DECOCTUM ALTHÆÆ.

Edinb.

Decoction of marshmallows.

Take of

Dried marshmallow roots, four ounces;

Raisins of the sun, stoned, two ounces;

Water seven pounds.

Boil to five pounds; place apart the strained liquor till the feces have subsided, then pour out the clear liquor.

THE Edinburgh college have substituted this to the more complicated formula of the *Decoction ad Nephriticos* of their former pharmacopoeia, and it fully answers the intentions of that preparation: it is intended chiefly as an emollient, to be liberally drank of in nephritic paroxysms; in which cases, by softening and relaxing the parts, it frequently relieves the pain, and procures an easy passage for the fabulous matter. This medicine is now made more simple than before, without any diminution of its virtue, by the rejection of wild-carrot seed, restharrow root, figs, linseed, and liquorice. The carrot seeds were indeed unfit for this form, as they give out little of their virtue to watery liquors.

DECOCTUM CORNU CERVI.

Lond.

Decoction of hartshorn.

Take

Take of

Burnt and prepared hartshorn,
two ounces ;

Gum arabic, six drams ;

Distilled water, three pints.

Boil, constantly stirring, to two pints, and strain.

THIS decoction is used as common drink in acute diseases attended with a looseness, and where acrimonious humours abound in the primæ viæ. The gum is added, in order to render the liquor lightly glutinous, and thus enable it to sustain more of the clax ; which is the ingredient on which the colour, but probably not the virtue, of the medicine depends upon. Calcined hartshorn has no quality from which it seems capable either of constringing and strengthening the vessels, giving a greater degree of consistency to thin fluids, or obtunding acrimonious humours. It blunts and absorbs acid juices ; but acrimony and acidity are very different ; there are few (perhaps none of the acute) disorders of adults attended with the latter ; and few of infants are unaccompanied therewith. Some have proposed starch as an ingredient in these kinds of decoctions ; a small quantity of this soft gelatinous, farinaceous substance would seem to be greatly preferable to the earthy calx. It may be observed, that the water is not enabled by the boiling to dissolve any part of the clax ; and that in the decoction, the earth is only diffused in substance through the water, as it would be by agitation.

For these reasons, this formula is now rejected by the Edinburgh college, notwithstanding the reputation in which it was held by Dr Sydenham, and other names of the first eminence. But as an absorbent of a similar nature, the Edinburgh

college have introduced the following formula.

POTIO CRETACEA.

Chalk julep.

Edinb.

Take of

Prepared chalk, one ounce ;

Purest refined sugar, half an ounce ;

Mucilage of gum arabic, two ounces ;

Rub them together ; and add by degrees,

Water, two pounds and a half ;

Spirituos cinnamon water, two ounces.

Mix them.

IN the former edition of the Edinburgh pharmacopœia, a preparation of this kind had the title of *Decoction cretaceum*, and the chalk was directed to be boiled with the water and gum. In the present formula, the chalk is much more completely suspended by the mucilage and sugar, which last gives also to the mixture an agreeable taste ; it is proper to employ the finest sugar, as the redundant acid in the coarser kinds might form with the chalk a kind of phosphoric salt. It would perhaps have been more proper to have added an aromatic, by suspending the entire powder of cinnamon, or its oil, by means of the mucilage and sugar : the method here directed is, however, less exceptionable in this than in many other preparations, as the precipitated matter of the spirituos water will probably be inviscated in the saccharine and mucilaginous matter. This is a very elegant form of exhibiting chalk, and is an useful remedy in diseases arising from, or accompanied with, acidity in the primæ viæ. It has been most frequently employed in fluxes proceeding from that cause. At the same time that

the

the mucilage serves to keep the chalk uniformly diffused, it also considerably improves its virtues by sheathing the internal surface of the intestines so often abraded in these affections. It is indeed probable, that chalk, as being somewhat astringent, is in some of these complaints preferable to magnesia; both, however, are improper in dysentery, or other fluxes attended with putrescent matter in the primæ viæ, or a general tendency to a putrefaction of the fluids.

DECOCTUM CORTICIS PERUVIANI.

Lond

Decoction of Peruvian bark.

Take of

Peruvian bark, powdered, one ounce;

Distilled water, one pint and three ounces.

Boil, for ten minutes, in a covered vessel, and strain the liquor whilst hot.

ALTHOUGH a cold watery infusion of bark is in general preferable to any decoction, yet this form has at least the advantage of being more quickly prepared. And the decoction here directed, which is boiled only for a short time, and strained while hot, is preferable to any other.

This decoction should be passed only through a coarse strainer, and drank whilst turbid: if suffered to stand till clear, the more efficacious parts of the bark will subside. We have formerly observed, that the virtues of this drug consist chiefly in its resinous substance, which, tho' it may be totally melted out by the heat of boiling water, remain only partially suspended in that menstruum.

DECOCTUM PRO ENEMATE.

Lond

Decoction for a clyster.

Take of

The dried leaves of mallow, one ounce;

Dried camomile-flowers, half an ounce;

Water, one pint.

Boil, and strain.

THE title of this decoction sufficiently expresses its use, as the basis of glysters. The ingredients should be very lightly boiled, or at least the camomile flowers should not be put in till towards the end, a part of the virtue of these being soon lost by boiling.

DECOCTUM PRO FOMENTO.

Lond

Decoction for fomentation.

Take of

The dried leaves of southernwood,

The dried tops of sea-wormwood,
Dried camomile-flowers, each one ounce;

Dried bay-leaves, half an ounce;

Distilled water, six pints.

Boil them a little, and strain.

DECOCTUM COMMUNE,

Edinb.

Common decoction.

Take of

Camomile-flowers, one ounce;

Carvy seeds, half an ounce;

Water, five pounds.

Boil a quarter of an hour, and strain.

THIS decoction is intended to answer the purposes of both the foregoing. It is less loaded with the ingredients than either, but not perhaps for that reason the less useful.

It is indeed to be acknowledged, that these impregnations are for the most part unnecessary for the purpose of glysters; and in ordinary cases the weight of the water usually solicits a discharge before these medicines can produce any effect.

As fomentations, their virtues in our opinion are totally to be ascribed to the influence of the warm water. And when the herbs themselves are applied, they act only as retaining heat and moisture for a longer time.

DECOCTUM HELLEBORI.

Lond.

Decoction of hellebore.

Take of

The root of white hellebore, powdered, one ounce;
Distilled water, two pints;
Rectified spirit of wine, two ounces.

Boil the water with the root to one pint: and, the liquor being cold and strained, add to it the spirit.

WHITE hellebore, as we formerly observed, is now very rarely employed internally; and the present formula is entirely intended for external use. Recourse is sometimes had to it with advantage in cutaneous eruptions, particularly in tinea capitis. But where the incrustations are entirely removed, leaving a very tender skin, it is necessary that the decoction should be diluted previous to its employment.

DECOCTUM HORDEI.

Lond.

Decoction of barley.

Take of

Pearl-barley, two ounces;
Distilled water, four pints.

The barley being first washed with cold water from the adhering impurities, pour upon it about half

a pint of water, and boil the barley a little time. This water being thrown away, add the distilled water, boiling, to the barley; boil it to two pints, and strain.

DECOCTUM HORDEI COMPOSITUM.

Lond.

Compound decoction of barley.

Take of

The decoction of barley, two pints;
Raisins, stoned,
Figs, sliced, each two ounces;
Liquorice-root, sliced and bruised, half an ounce;
Distilled water, one pint.
Boil to two pints, and strain.

DECOCTUM HORDEI.

Edinb.

Barley-water.

Take of

Pearl-barley, two ounces;
Water, five pints.

First wash the barley from the mealy matter that adheres to it with some cold water; then boil it a little with about half a pint of fresh water, which will acquire a considerable tinge from it. Throw away this tinged water; put the barley into the water prescribed, made first to boil; and continue the boiling till half the water be wasted.

THESE liquors are to be drank freely, as a diluter, in fevers and other disorders: hence it is of consequence that they should be prepared so as to be as elegant and agreeable as possible; for this reason they are inserted in the pharmacopoeia, and the several circumstances which contribute to their elegance set down; if any one of them be omitted, the beverage will be less grateful. However trivial medicines of

this

this class may appear to be, they are of greater importance in the cure of acute diseases than many more elaborate preparations.

Barley-water, however, is much more frequently prepared by nurses than apothecaries, particularly in its simple state. The compound decoction contains a large proportion of saccharine and mucilaginous matter, and may be employed for the same purposes as the decoctum althææ of the Edinburgh pharmacopœia.

DECOCTUM LIGNORUM.

Edinb.

Decoction of the woods.

Take of

Guaiacum saw-dust, three ounces ;

Raisins of the sun, stoned, two ounces ;

Sassafras wood, shaved,
Liquorice, sliced, each one ounce,
Water, ten pounds.

Boil the guaiacum and raisins with the water, over a gentle fire, to the consumption of one half: adding, towards the end, the sassafras and liquorice. Strain out the liquor ; and having suffered it to rest for some time, pour off the clear from the feces without expression.

THIS decoction is very well contrived ; and if its use be daly continued, it will do great service in some cutaneous diseases, in what has been called foulness of the blood and juices, and in some disorders of the breast ; particularly in phlegmatic habits. It may be taken by itself to the quantity of a quarter of a pint two or three times a day, or used as an assistant in a course of mercurial or antimonial alteratives : the patient in either case keeping warm, in order to promote the operation of the medicine. The saw-dust ex-

poses a larger surface to the action of the water than the shavings, directed in the former edition of the pharmacopœia.

DECOCTUM SARSAPARILLÆ.

Lond.

Decoction of sarsaparilla.

Take of

The root of sarsaparilla, sliced,
six ounces ;

Distilled water, eight pints.

Macerate for two hours, with an heat of about 195° ; then take out the root, and bruise it ; return the bruised root to the liquor, and again macerate it for two hours. Then, the liquor being boiled to the measure of four pints, press it out, and strain.

THE sarsaparilla decoction is an article in very common use, particularly in venereal affections. And there can be little doubt, that by this process the medical powers of the sarsaparilla are fully extracted. But it has of late been much questioned, whether this article be in any degree intitled to the high character which was once given of it. Some, as we have already observed, are even disposed to deny its possessing any medical property whatever : But the general opinion is, that it has somewhat of a diaphoretic effect ; and this effect is more readily obtained when it is exhibited under the form of decoction than under any other.

DECOCTUM SARSAPARILLÆ COMPOSITUM.

Lond

Compound decoction of sarsaparilla.

Take of

The root of sarsaparilla, sliced
and bruised, six ounces ;
Bark of the root of sassafras,
Shavings of guaiacum-wood,

Li-

Liquorice-root, bruised, of each
one ounce ;

Bark of the root of mezereon,
three drams ;

Distilled water, ten pints.

Macerate, with a gentle heat, for six hours ; then boil it down to five pints, adding towards the end of the boiling the bark of the root of mezereon, and strain the liquor.

THIS compound decoction is an elegant mode of preparing an article once highly celebrated under the title of the *Lisbon diet drink*. That formula, for a long time after its first introduction into Britain, was kept a secret ; but an account of the method of preparation was at length published in the *Physical and Literary Essays of Edinburgh*, by Dr Donald Monro. And of the formula there given, which is in many respects an unchemical one, the present may justly be considered as an improvement. Even in its original form, but still more in the present state, there can be no doubt, that it furnishes us with a very useful medicine, particularly in those obstinate ulcers originating from venereal infection, which resist the power of mercury. And it is highly probable, that its good effects, principally depend on the impregnation it receives from the mezereon. Perhaps, however, even thus improved, it is more complicated and expensive than is necessary : At least we are inclined to think, that every advantage derived from it, may with equal ease and certainty be obtained, from impregnating with the mezereon in the manner here directed, a simple decoction of the guaiacum, bardana, or althea, without having recourse to several articles, or employing one so expensive as the sarsaparilla.

DECOCTUM SENEKÆ.

Edinb.

Decoction of seneka.

Take of

Seneka, or rattlesnake-root, one ounce ;

Water two pounds.

Boil to sixteen ounces, and strain.

THE virtues of this decoction will be easily understood from those of the root from which it is prepared. The dose, in hydropic cases and rheumatic, or arthritic complaints, is two ounces, to be repeated three or four times a day, according to its effect.

DECOCTUM ULMI.

Lond.

Decoction of elm.

Take of

The fresh inner-bark of elm, bruised, four ounces ;

Distilled water, four pints.

Boil to two pints, and strain.

It has been chiefly, if not entirely, under this form of decoction, that the elm-bark has been employed for combating those cutaneous eruptions against which it has of late been so highly celebrated. Any experience which we have had of it, however, in actual practice, by no means confirms the very favourable account which some have given of its use.

MUCILAGO AMYLI.

Lond.

Mucilage of starch.

Take of

Starch three drams ;

Distilled water, one pint.

Rub the starch, by degrees adding the distilled water ; then boil it a little time.

THE mucilage thus formed of starch is very useful for answering these

these purposes where a glutinous substance is required, and in particular it is often successfully employed under the form of glyster.

MUCILAGO ARABICI
GUMMI

Lond.

Mucilage of gum arabic.

Take of

Gum arabic, powdered, four ounces;

Boiling distilled water, eight ounces.

Rub the gum with the water until it be dissolved.

MUCILAGO GUMMI ARABICI.

Edinb.

Mucilage of arabic.

Take of

Gum arabic, beat into powder, and warm water, each equal weights.

Digest, and frequently stir them till the gum be dissolved, then press the solution through linen.

It is very necessary to pass the mucilage thro' linen in order to free it from pieces of wood and other impurities, which alway adheres to the gum; the linen may be placed in a funnel.

Mucilage of gum arabic is very useful in many operations in pharmacy; it is also much used for properties peculiar to these substances of its own class, and of all the gums it seems to be the purest.

MUCILAGO GUMMI TRAGACANTHÆ.

Edinb.

Mucilage of gum tragacanth.

Take of

Gum tragacanth, powdered, one ounce;

Hot water, eight ounces.

Macerate twenty four hours; then mix them, by rubbing briskly,

that the gum may be dissolved; and press the mucilage through linen cloth.

THIS gum is more difficultly soluble in water than gum arabic, and seems to be considerably more adhesive; it is therefore fitter for forming troches, and such like purposes. It has been thought to be more peculiarly what has been called a pectoral, than the other gums: but this does not seem to be certainly founded. This mucilage is perhaps preferable to the foregoing in those operations in pharmacy where much tenacity is required; as in the suspension of mercury, or other ponderous bodies.

MUCILAGO SEMINIS CYDONII MALI.

Lond.

Mucilage of quince-seed.

Take of

Seeds of the quince, one dram; Distilled water, eight ounces, by measure.

Boil with a slow fire until the water thickens; then pass it thro' linen.

THIS is a pleasant soft mucilage, of a somewhat sweetish taste, and a light agreeable smell: in these respects, and in its easy solubility in water, it differs from the mucilage of gum tragacanth, to which some have supposed it similar: it has another difference, to its disadvantage, being apt to grow mouldy in-keeping.

INFUSUM GENTIANÆ COMPOSITUM.

Lond.

Compound infusions of gentian.

Take of

The root of gentian, one dram; Fresh outer-rind of lemons, half an ounce;

Dried outer-rind of Seville oranges, one dram and an half;

Boil

Boiling water, twelve ounces, by measure.

Macerate for an hour, and strain.

INFUSUM AMARUM.

Edinb.

Bitter infusion.

Take of

Gentian root, half an ounce ;

Dried peel of Seville oranges, one dram ;

Coriander seeds, half a dram ;

Proof-spirit, four ounces ;

Water, one pound.

First pour on the spirit, and three hours thereafter add the water ; then macerate without heat for a night, and strain.

THESE formulæ do not materially differ. That of the London college is the most expeditious mode of preparation : But that of the Edinburgh college possesses other advantages, which are in our opinion more than sufficient to outweigh that circumstance.

In the former edition of the Edinburgh Pharmacopœia, the water was directed to be boiling ; this was at least unnecessary, and was probably liable to the objections observed against decoctions. The proof-spirit is also an useful addition to the infusum amarum, as it now stands in the Edinburgh pharmacopœia : besides that it assists in extracting the resinous parts, and preserving the infusion from fermentation, it communicates an agreeable pungency to the liquor : to answer in some measure these intentions, it was formerly directed to add to the filtrated liquor a quantity of aqua aromatica. This was certainly a piece of very bad pharmacy ; for, besides that the spirit in this preparation, when diluted with the water of the infusion, was now no longer able to retain the suspended matter, it would also dispose the infusion to part with its proper extractive

matter ; and in this way the resinous matter of the aqua aromatica, and the gummy parts of the infusum amarum, would both in some degree separate to the bottom of the vessel ; by the formula now laid down, the infusion contains the different principles of the ingredients in a manner more nearly approaching to their natural and entire state.

INFUSUM SENNÆ SIMPLEX.

Lond.

Simple infusion of senna.

Take of

Senna, an ounce and a half ;

Ginger, powdered, one dram :

Boiling distilled water, one pint.

Macerate them for one hour, in a covered vessel ; and, the liquor being cold, strain it.

THIS, although a simple, is a very elegant infusion of senna, the ginger acting as an useful corrigens. But if the senna were employed to the quantity of a dram and a half or two drams only, with the same menstruum in place of the quantity here ordered, it would be a no less useful medicine, and might be employed for one dose, as it is of advantage that it should be used fresh as here prepared. Of the present infusion, an ounce or two is a sufficient dose.

INFUSUM SENNÆ TARTARISATUM.

Lond.

Tartarised infusion of senna.

Take of

Senna, one ounce and a half ;

Coriander-seeds, bruised, half an ounce ;

Crystals of tartar, two drams ;

Distilled water, one pint.

Dissolve the crystals of tartar by boiling in the water ; then pour the water, as yet boiling, on the senna and seeds. Macerate for an hour

hour in a covered vessel, and strain when cold.

IN the last edition of the London pharmacopœia this had the name of *infusum sennæ commune*.

Formerly an alkaline salt was used in the infusion of senna, instead of the acid one here directed. The first was supposed to promote the operation of the medicine, by superadding a degree of purgative virtue of its own, and by enabling the water to extract somewhat more from the capital ingredient than it would be capable of doing by itself; whilst acids were alleged to have rather a contrary effect. Experience, however, has sufficiently shown, that alkaline salts increase the offensiveness of the senna, whilst crystals of tartar considerably improve the colour of the infusion, and likewise render the taste to some persons less disagreeable. Soluble tartar should seem a good ingredient in these kinds of compositions; as it not only improves the taste, but promotes the purgative virtue of the medicine; this addition also renders the infusion less apt to gripe, or occasion flatulencies.

INFUSUM TAMARINDO- CUM cum SENNA.

Edinb.

Infusion of tamarinds with senna.

Take of

Tamarinds, six drams;
Crystals of tartar,
Senna, each one dram;
Coriander seeds, half a dram;
Red candied sugar, half an ounce;
Boiling water, eight ounces.

Macerate in a close earthen vessel, which has not been vitrified with lead; stir the liquor now and then, and after it has stood four hours strain it. It may also be made with double, triple, &c. the quantity of senna.

BOTH this and the former infusions might be made with cold water. By this means the aromatic quality of the coriander seeds would probably be extracted in a more perfect state; but the crystals of tartar are so difficultly soluble in cold water, that for extemporaneous use it is in some measure necessary to prepare them in the manner here directed; it is not indeed probable, that when such soluble matters as acids and sugar are presented to water, the water shall be able to extract such a quantity of the finer volatile part of aromatics, as to afford any considerable flavour to the liquor: where an aromatic is required, we would therefore propose, that some agreeable aromatic water should be mixed with the liquor immediately before swallowing it; or that a quantity of an aromatic oil should be incorporated with the cold infusion by means of gum, or a part of the sugar which we might reserve for that purpose. It is a very necessary caution not to make this infusion in vessels glazed with lead, otherwise the acid might corrode the lead, and communicate its poisonous effects to the infusions.

Both these infusions are mild and useful purges, the latter in particular is excellently suited for delicate stomachs, at the same time that it is very much calculated for febrile and other acute diseases. It is observable, that sugar added to neutral salts, rather increases than diminishes their nauseousness; but when used along with an acid, such as tamarinds, or a salt wherein the acid predominates, as in crystals of tartar, it is found very much to improve their taste: the acid in this infusion, or rather the combination of acid and sweet, are found to cover the taste of the senna very effectually; the aromatic serves also the same purpose, but would perhaps

haps be better applied in the way above proposed.

INFUSUM ROSÆ.

Lond.

Infusion of the rose.

Take of

Red rose-buds, the heels being cut off, half an ounce ;

Vitriolic acid, diluted, three drams ;

Boiling distilled water, two pints and a half ;

Double-refined sugar, one ounce and a half.

To the water, first poured on the petals in a glass vessel, add the diluted vitriolic acid, and macerate for half an hour. Strain the liquor when cold, and add the sugar.

INFUSUM vulgo TINCTURA ROSARUM.

Edinb.

Infusion commonly called tincture of roses.

Take of

Red roses, dried, one ounce ;

Boiling water, five pounds ;

Vitriolic acid, one dram ;

White sugar, two ounces.

Macerate the roses with the boiling water in an unglazed vessel four hours ; then having poured on the acid, strain the liquor, and add the sugar.

SOME have directed the vitriolic acid to be dropped upon the roses before the water is put to them ; but this method is certainly faulty ; for such of the roses as this caustic liquor falls upon undiluted, will be burnt up by it, and have their texture destroyed. Others have made an infusion of the roses in water first, and then added the acid, from an apprehension, that if this acid be added to the water, it would weaken its power as a menstruum ; but

whatever the acid spirit will hinder the water from extracting, it must precipitate if added afterwards ; though, in this preparation, the vitriolic acid bears so small a proportion to the water, that its effects in this respect will be very little ; and it appears to be of little consequence which of the two ways be followed, only that by the above formula the vessels are exposed a shorter time to the action of the acid. The infusion should be made in a glass or stone-ware vessel, rather than a glazed earthen one ; for the acid will be apt to corrode the glazing of the latter.

This infusion is of an elegant red colour, and makes a very grateful addition to the juleps in hæmorrhagies, and in all cases which require mild coolers and subastringents : it is sometimes taken with boluses or electuaries of the bark, and likewise makes a good gargle ; but although in our pharmacopœias it has its name from the roses, yet its virtues are to be ascribed chiefly, or perhaps solely, to the vitriolic acid.

INFUSUM RHEI.

Edinb.

Infusion of rhubarb.

Take of

Rhubarb, half an ounce ;

Boiling water, eight ounces ;

Spirituous cinnamon water, one ounce.

Macerate the rhubarb in a glass vessel with the boiling water for a night ; then having added the cinnamon water, strain the liquor.

IN this infusion cold water might perhaps be employed with advantage ; we also object to the spiritu-ous cinnamon water on the same grounds as we did before to the aqua aromatica in the infusum amarum of the former edition of the

Edinburgh pharmacopœia: this, however, appears to be one of the best preparations of rhubarb, when designed as a purgative; water extracting its virtue more effectually than either vinous or spirituous menstrua: in this respect rhubarb differs from most of the other vegetable cathartics; and we think the London college might have given it a place in their Pharmacopœia as well as the vinum or tinctura rhabarbari,

AQUA CALCIS.

Lond.

Lime-water.

Take of

Quicklime, half a pound;
Boiling distilled water, twelve pints.

Mix, and set it aside in a covered vessel for one hour; then pour off the liquor, which keep in a close vessel.

Edinb.

Take half a pound of fresh-burnt quicklime, put it into an earthen vessel, and gradually sprinkle upon it four ounces of water, keeping the vessel shut whilst the lime grows hot and falls into powder. Then pour upon it twelve pounds of water, and mix the lime thoroughly with the water by stirring. After the lime has subsided renew the stirring; and let this be done about ten times, always keeping the vessel shut (during the ebullition), that the access of the air may be the more effectually prevented. Lastly, let the water be filtered thro' paper placed in a funnel close shut at its top; and it must be kept in very close vessels.

THE reason of adding the water by degrees to the lime is, that when poured on at once, it reduces the

external part to a kind of muddy substance, or soft paste, which in some measure defends the internal part from being acted upon by the water. It does not appear that the different proportions of water in the two above prescriptions occasion any sensible difference in the strength of the product; the quicklime is far from yielding all its soluble parts to either proportion; the remainder giving a strong impregnation to many fresh quantities of water, though not so strong as to the first. The caution of keeping the water in close-stopt vessels ought to be strictly attended to; for in open ones the calcareous matter dissolved in the liquor soon begins to separate, and forms a white crust upon the surface. This crust is not of a saline nature, as some have imagined; but an insipid earth, no longer miscible with watery liquors. The theory of the production of this earth will be easily understood from what we have said on the article FIXED AIR. The separation first takes place at the surface, as being the part immediately applied to the common air: as long as the crust remains entire, the closeness of its texture so excludes the air, that the rest of the matter still remains impregnated with lime; but when this pellicle is broken by any means, it soon sinks to the bottom, and exposes a new surface for the separation of the lime. In this way a succession of crusts and precipitations are formed, till the whole of the once caustic and soluble quicklime is now found at the bottom of the vessel in the state of a mild insoluble earth, leaving the water perfectly insipid.

The formation of these crusts, and their successive precipitations, are owing to the absorption of fixed air or aërial acid from the atmosphere: and the mild insoluble

state

state of these precipitations is also owing to the same cause.

The distilled water recommended by the London college is certainly preferable to common fountain water; the purity of which can rarely be depended upon.

Lime-water has been thought of great service in scrophulous complaints; but perhaps on no very good foundation. It has also been used both internally and externally for various affections of the skin. It seems to be very considerably astringent, and has been useful in some kinds of alvine fluxes, in diabetes, leucorrhœa, and in sundry other disorders proceeding from a laxity or debility of the solids.

Its more common use is in affections of the stomach accompanied with acidity and flatulence. For which last complaint, the mild, or ærated earths, are less proper on account of the separation of air on their meeting with an acid in the stomach. Lime-water is also capable of dissolving mucus; and may therefore be used where a redundancy of the intestinal mucus affords a nidus for worms, or gives rise to other complaints. It has also been found, that lime-water injected into the anus immediately kills ascarides. The lithontriptic powers of lime-water seem at present to be much doubted. Lime-water is given in doses proportioned to the nature of the complaints; in some cases, as in diabetes it may be given in divided portions to the extent of two quarts a-day. It is used externally for washing what are called *foul or ill-conditioned ulcers*: it is also injected into the vagina and other parts affected with preternatural discharges from laxity.

The use of lime-water in scurvy very doubtful.

ACETUM SCILLÆ.

Lond.

Vinegar of squills.

Take of

Squills, fresh dried, one pound;
Vinegar, six pints;
Proof-spirit, half a pint.

Macerate the squills in the vinegar, with a gentle heat, in a glass vessel, for four-and-twenty hours; then press out the liquor, and set it by that the feces may subside: lastly, pour off the liquor, and add to it the spirit.

ACETUM SCILLITICUM.

Edinb.

Squill vinegar.

Take of

Dried root of squills, two ounces;
Distilled vinegar, two pounds and a half;
Rectified spirit of wine, three ounces.

Macerate the squills with the vinegar eight days; then press out the vinegar, to which add the spirit; and when the feces have subsided, pour out the clear liquor.

VINEGAR of squills is a medicine of great antiquity; we find in a treatise attributed to Galen, an account of its preparation, and of many particular virtues then ascribed to it. It is a very powerful stimulant, aperient, and what is called an attenuant of tenacious juices: and hence is frequently used with great success, in disorders of the breast, occasioned by a load of thick viscid phlegm, and for promoting urine in hydropic cases. The dose of this medicine is from a dram to half an ounce: where crudities abound in the first passages, it may be given at first in a large dose, to evacuate them by vomiting. It is

most conveniently exhibited along with cinnamon, or other agreeable aromatic waters, which prevent the nausea it would otherwise, even in small doses, be apt to occasion.

ACETUM AROMATICUM.

Succ.

Aromatic vinegar.

Take of

Tops of Rosemary,
Leaves of sage, each four ounces;
Flowers of lavender, two ounces;
Cloves, two drams;
Vinegar, eight pounds.

Macerate for four hours, express the liquor, and strain it.

THIS may be considered as an elegant improvement of what had formerly a place in the foreign pharmacopœias, under the title of *Acetum prophylacticum*, which contained not only the present articles, but also a confused farrago of others, as wormwood, rue, garlic, cinnamon, &c.

It is said, that during the plague at Marseilles, four persons, by the use of the acetum prophylacticum as a preservative, attended unhurt, multitudes of those who were infected; that under colour of those services, they robbed both the sick and the dead; and that one of them being afterwards apprehended, saved himself from the gallows by discovering the remedy. The preparation was hence called *Vinaigre des quatre voleurs*; "The vinegar of the four thieves." It is not to be doubted, that vinegar impregnated with antiseptic vegetables, will contribute greatly to prevent the effects of contagious air. And in the present acetum aromaticum, we have a stronger and better impregnation, than from the numerous articles which were before employed. We are far, how-

ever, from imagining that it will be able to counteract the contagion of the plague: but it may on different occasions be more powerful than vinegar in its simple state, for impregnating with antiseptic vapours the chambers of the sick.

ACETUM ROSACEUM.

Succ.

Vinegar of roses.

Take of

The flowers of red roses dried, any quantity; add to them twelve times their weight of vinegar.

Macerate for four days, and strain through paper.

THIS has been chiefly made use of for embrocating the head and temples in some kinds of headach, &c. in which it has now and then been of service. It has also been used for certain cases of ophthalmia. But before it can be applied to the eyes, it will in general require to be diluted with water.

ACETUM LYTHARGYRI.

Succ.

Vinegar of litharge.

Take of

Litharge, tritnated, half a pound;
Vinegar, two pounds.

Digest them together frequently, stirring the mixture with a wooden rod, till the colour of blue paper be not changed by the vinegar; preserve for use the clear liquor which is above the sediment.

THIS liquor is of the same nature with solutions of saccharum saturni, or cerussa acetata, as it is now called. It is only used externally, against cutaneous eruptions, redness, inflammations, &c. But even in these cases some think it is not void of danger; and it is al-

ledged,

leged, that there are examples of its continued use having occasioned sundry ill consequences. Of this, however, we are very doubtful. But by means of the *cerussa acetata* every purpose to be answered by this may be accomplished. This liquor differs only in the proportions from the *aqua lythargyri acetati* of the London pharmacopoeia.

ACETUM COLCHICI.

*Rofs.**Vinegar of colchicum.*

Take of

The recent root of colchicum, cut into slices, one ounce;

Vinegar one pound.

Macerate with a gentle heat for two days; then strain after slight expression.

ALTHOUGH in our pharmacopoeias a place be given to the oxymel and syrup of colchicum, both of which are formed from the vinegar, yet the vinegar itself is not directed to be kept in its separate state: Under this form however it may often be employed with advantage.

INFUSUM KINKINÆ.

*Suec.**Infusion of Peruvian bark.*

Take of

Peruvian bark, bruised, an ounce and a half.

Spring water, boiling, a pound and a half.

Digest for two hours, shaking the vessel frequently; then strain the liquor with expression.

THE Peruvian bark, as we have already had occasion to observe, gives out its medical properties to water not less readily in the way of infusion than of decoction. And in the former, the extractive matter is even more in a state of solution. An infusion, however, not only

more elegant, but stronger than the present, might be obtained, from employing cold water in place of boiling water, and from continuing the maceration for a greater length of time. But in whatever manner it be formed, an infusion will often sit upon the stomach, when the bark either in substance or decoction cannot be retained.

AQUA PICEA.

Tar-water.

Take of

Tar, two pounds;

Water, one gallon;

Stir them strongly together with a wooden rod; and after standing to settle for twelve hours, pour off the water for use.

TAR-WATER has lately been recommended to the world as a certain and safe medicine in almost all diseases; a slow yet effectual alterative in cachexies, scurvies, chlorotic, hysterical, hypochondriacal, and other chronical complaints; and a sudden remedy in acute distempers which demand immediate relief, as pleurisies, peripneumonies, the small-pox, and all kinds of fevers in general. The medicine, though certainly far inferior to the character that has been given of it, is doubtless in many cases of considerable utility: it sensibly raises the pulse; and occasions some considerable evacuation, generally by perspiration or urine, though sometimes by stool or vomit. Hence it is supposed to act by increasing the *vis vitæ*, and enabling nature to expel the morbid humours.

We shall here insert, from the first public recommender of this liquor (Bishop Berkley), some observations on the manner of using it. "Tar-water, when right, is not
" paler than French, nor deeper
" coloured than Spanish white wine,
" and full as clear; if there be no

“ a spirit very sensibly perceived in
 “ drinking you may conclude the
 “ tar-water is not good. It may
 “ be drank either cold or warm. In
 “ colics, I take it to best warm.
 “ As to the quantity, in common
 “ chronical indispositions, a pint
 “ a-day may suffice, taken on an
 “ empty stomach, at two or four
 “ times, to wit, night or morn-
 “ ing, and about two hours after
 “ dinner and breakfast: more may
 “ be taken by stronger stomachs.
 “ But these who labour under great
 “ and inveterate maladies, must
 “ drink a greater quantity, at least
 “ a quart every twenty-four hours.
 “ All of this class must have much
 “ patience and perseverance in the
 “ use of this, as well as of all other
 “ medicines, which, though sure,
 “ must yet in the nature of things
 “ be slow in the cure of inveterate
 “ chronical disorders. In acute cas-
 “ ses, fevers of all kinds, it must
 “ be drank in bed, warm, and in
 “ great quantity (the fever still en-
 “ abling the patient to drink), per-
 “ haps a pint every hour, which I
 “ have known to work surprising
 “ cures. But it works so quick,
 “ and gives such spirits, that the
 “ patients often think themselves
 “ cured before the fever has quite
 “ left them.”

Notwithstanding these encomi-
 ums, tar-water seems to be fast lo-
 sing its reputation. It is not pro-
 bable that water can take up any of
 the more active principles of the
 tar; and it would perhaps be more
 convenient to separate its acid by

distillation, and mix it with water
 occasionally: for it is pretty cer-
 tain that the water can only take
 up the acid of the tar, perhaps
 charged with a very small quantity
 of oily matter in the state of an acid
 soap.

DECOCTUM CATECHU.

Gen.

Decoction of catechu.

Take of

Catechu, three drams;

Spring-water, two pounds.

Boil it to one pound; and add to
the strained liquor.

Syrup of quinces, three ounces.

THIS decoction may be consider-
 ed as nearly similar to the decoctum
 japonicum, and decoctum terræ ja-
 ponicæ of the former editions of our
 pharmacopœia: and like these it
 will be found a very agreeable and
 useful medicine in fluxes that are
 not critical or symptomatic, and in
 a weak lax state of the intestines. A
 spoonful or two may be taken every
 hour, or oftener: thus managed, it
 produces much better effects than if
 larger doses are given at once. But
 for extracting the powers of the ca-
 techu, boiling is not requisite. By
 simple infusion in warm water, all
 its active parts are readily and com-
 pletely dissolved. It may in this
 manner also be readily united with
 cinnamon or other aromatics. And
 an infusum japonicum is, we think,
 a formula justly entitled to a place
 in our pharmacopœias.

C H A P. XX.

VINA MEDICATA.

MEDICATED WINES.

THE original intention of medicated wines was, that medicines which were to be continued for a length of time, might be taken in the most familiar and agreeable form; by this means a course of remedies was complied with, notwithstanding the repugnance and aversion which the sick often manifest to those directly furnished from the shops; and hence the inferior sort of people had their medicated ales. Nevertheless, as vinous liquors excellently extract the virtues of several simples, and are not ill fitted for keeping, they have been employed as officinal menstrua also; and substances of the greatest efficacy are trusted in this form. As compounds of water and inflammable spirit, they take up such parts of vegetables and animals as are soluble in those liquors, though most of them abound at the same time with a mucilaginous or viscous substance, which renders them less effectual menstrua than purer mixtures of water and spirit. They contain likewise a most subtle acid, which somewhat further obstructs their action on certain vegetable and animal matters; but enables them, in proportion to its quantity, to dissolve some bodies of the metallic

kind, and thus impregnate themselves with the corroborating virtues of steel, the alterative and emetic powers of antimony, and the noxious qualities of lead.

To all the medicated wines, after they have been strained, you may add about one-twentieth their quantity of proof-spirit, to preserve them from fermentation. They may be conveniently kept in the same kind of glass bottles that wines generally are for common uses, which should likewise be corked with the same care.

VINUM ALOES.

Lond.

Wine of aloes.

Take of

Socotorine aloes, eight ounces;
White canella, commonly called
Winter's bark, two ounces;
Spanish white-wine, six pints;
Proof-spirit of wine, two pints.

Powder the aloes and white canella separately; when mixed, pour on them the wine: afterwards digest for fourteen days, now and them shaking them; lastly, strain.

It will not be amiss to mix white sand, cleansed from impurities, with the powder, in order to

vent the moistened aloes from getting into lumps.

VINUM ALOETICUM, vulgo
TINCTURA SACRA.

Edinb.

Aloetic wine, or Sacred tincture.

Take of

Socotorine aloes, one ounce;
Lesser cardamom seeds,
Ginger, each one dram;
Spanish white wine, two pounds.

Digest for seven days, stirring now and then, and afterwards strain.

THIS medicine has long been in great esteem, not only as a cathartic, but likewise as a stimulus; the wine dissolving all that part of the aloes in which these qualities reside, a portion only of the less active resinous matter being left. The aromatic ingredients are added to warm the medicine, and somewhat alleviate the ill flavour of the aloes: canella alba, or cloves, are said, among numerous materials that have been made trial of, to answer this end the most successfully; hence the introduction of the former of these into the formula of the London college.

The *tinctura sacra* appears from long experience to be a medicine of excellent service in languid, phlegmatic habits, not only for cleansing the primæ viæ, but likewise for stimulating the solids, warming the habit, promoting or exciting the uterine purgations, and the hæmorrhoidal flux. The dose, as a purgative, is from one to two ounces, or more. It may be introduced into the habit, so as to be productive of excellent effects as an alterant, by giving it in small doses, at proper intervals: thus managed, it does not for a considerable time operate remarkably by stool; but at length proves purgative, and occasions a lax habit of much longer continu-

ance than that produced by the other common cathartics.

VINUM AMARUM.

Edinb.

Bitter wine.

Take of

Root of gentian, half an ounce;
Peruvian bark, once ounce;
Seville orange-peel, dried, two
drams;

Canella alba, one dram;
Proof-spirit, four ounces;
Spanish white-wine, two pounds
and a half.

First pour on the spirit, and after twenty-four hours add the wine; then macerate for three days, and strain.

THIS wine is intended to supply the place of the *Tinctura ad stomachicos*, as it was formerly called. The wine is a menstruum fully capable of extracting the active powers of the different ingredients; and it supplies us with a very useful and elegant stomachic medicine, answering the purposes intended much better than the celebrated elixir of Van Helmont, and other unchemical and uncertain preparations, which had formerly a place in our pharmacopœias.

VINUM ANTIMONII.

Lond.

Wine of antimony.

Take of

Vitrified antimony, powdered,
one ounce;

Spanish white-wine, a pint and
an half.

Digest for twelve days, frequently shaking the vessel, and filter the wine through paper.

VINUM ANTIMONALE.

Edinb.

Antimonial wine

Take

Take of

Glass of antimony, finely powdered, one ounce ;
Spanish white-wine, fifteen ounces.
Macerate for three days, stirring them now and then, and afterwards strain the liquor through paper.

HOWEVER carefully the settling and decantation are performed, the filtration of the wine through paper appears to be necessary, lest some of the finer parts of the glass should chance to remain suspended in substance. It is not here, as in most other wines and tinctures, where the matter left undissolved by the menstruum is of little consequence: the antimonial glass, after the action of the wine, continues as virulent as ever, and capable of impregnating fresh parcels of the liquor as strongly as the first, and this, in appearance, inexhaustibly. After thirty repeated infusions, it has been found scarce sensibly diminished in weight.

The antimonial wine possesses the whole virtues of that mineral, and may be so dosed and managed as to perform all that can be effected by any antimonial preparation; with this advantage, that as the active part of the antimony is here already dissolved and rendered miscible with the animal fluids, its operation is more certain. Given from ten to fifty or sixty drops, it acts generally as an alterative and diaphoretic; in larger doses, as a diuretic and cathartic; whilst three or four drams prove for the most part violently emetic. It has been chiefly used with this last intention, in some maniacal and apoplectic cases; and hence it gained the name of emetic wine.

The quantity of the reguline part must, however, vary according to the proportions of the acid matter in different wines, and the operation

of the medicine must be thereby less certain in degree; the vitrum is preferable to the crocus for making this preparation. See the different preparations of ANTIMONY.

VINUM ANTIMONII TARTARISATI.

Lond.

Wine of tartarised antimony.

Take of

Tartarised antimony, two scruples ;
Boiling distilled water, two ounces ;
Spanish white wine, eight ounces.

Dissolve the tartarised antimony in the boiling distilled water, and add to it the wine.

VINUM e TARTARO ANTIMONIALI.

Edinb.

Wine of antimonial tartar.

Take of

Antimonial, commonly called Emetic tartar, twenty-four grains; and dissolve it in a pound of Spanish white-wine.

WATERY solutions of emetic tartar, on standing, precipitate a part which is less completely in a saline state; by this means, and especially if the solution be not shaken before using it, the dose of that medicine is somewhat ambiguous: in the above formula, the acid matter of the wine increases the saline state of the antimony, and therefore its solubility, whereby the operation of the medicine is more certain, and in many cases more powerful. From the certainty of its effects, this preparation might be very convenient in large hospitals or armies, where great numbers of the sick, and inaccurate nursing, frequently impose an uncertain or dangerous practice.

In

In the formula employed by the Edinburgh college, each ounce of the wine contains two grains of the tartarized antimony; but in that of the London college, each ounce of the menstruum contains four grains: hence, while an ounce of the one may be employed for exciting full vomiting, the same quantity of the other would be too strong a dose. It is much to be regretted, that in articles of this active nature, the proportions employed by the two colleges should differ so considerably; and it would perhaps have been better, had the London college adopted the proportions employed by that of Edinburgh, as they have followed them in adopting this formula.

VINUM FERRI.

Lond.

Wine of iron.

Take of

Filings of iron, four ounces;

Spanish white wine, four pints.

Digest for a month, often shaking the vessel, and then strain.

THIS formula of the London pharmacopœia is now not only simplified, but improved, when compared with their former *vinum chalybeatum*: for the cinnamon and other articles which were then conjoined with the iron, were certainly rather prejudicial than otherwise: but at the same time, Rhenish wine, formerly employed, is perhaps to be considered as a better menstruum than the Spanish wine now directed. It may still, however, be justly considered as a good chalybeate; and we think the Edinburgh college have done wrong in rejecting the formula from their pharmacopœia.

By the London college it was formerly prepared by maceration, without heat; now, however, they

direct digestion for the space of a month. Some have objected to the use of heat, that it impregnated the wine more strongly with the metal, and thus rendered it more unpleasant to the taste: but if this was the only inconvenience, the remedy would be easy, diluting it with more wine. Heat has another effect, much less desirable, and which art cannot remedy; making a disagreeable alteration in the quality of the wine itself: hence it is necessary that it should be very moderate.

Steel wine is a very useful preparation of this metal, and frequently exhibited in chlorotic and other indispositions where chalybeates are proper. Boerhaave recommends it as one of the noblest medicines he was acquainted with, for promoting that power in the body by which blood is made, when weakened by a bare debility of the over-relaxed solids, and an indolent, cold, aqueous indisposition of the juices: for in this case, says he, no virtue of any vegetable or animal substance, no diet, nor regimen, can effect that which is effected by iron: but it proves hurtful where the vital powers are already too strong, whether this proceeds from the fluids or the solids. The dose is from a dram to half an ounce; which may be repeated two or three times a-day.

Some direct solutions of iron, made in wine or other vegetable acids, to be evaporated to the consistence of an extract, under the title of *EXTRACTUM MARTIS*. These preparations have no advantage, in point of virtue, above the common chalybeates; though in some forms, that of pills in particular, they may be rather more commodiously exhibited than most of the officinal chalybeates of equal efficacy. They may be made into pills by themselves, and are tenacious enough to reduce

reduce other substances into that form.

Infuse them together for seven days, and afterwards press the liquor through a strainer.

VINUM IPECACUANHÆ.

Lond.

Wine of ipecacuanha.

Take of

The root of ipecacuanha, bruised, two ounces;

Spanish white wine, two pints.

Digest for ten days, and strain.

VINUM, vulgo TINCTURA IPECACUANHA.

Edinb.

Wine, or Tincture of ipecacuanha.

Take of

Ipecacuanha, in powder, one ounce;

Spanish white wine, fifteen ounces.

After three days maceration, let the tincture be filtrated for use.

BOTH these wines are very mild and safe emetics, and equally serviceable, in dysenteries also, with the ipecacuanha in substance; this root yielding nearly all its virtues to the Spanish white wine, here ordered, as it does a good share of them even to aqueous liquors. The common dose is an ounce, more or less, according to the age and strength of the patient. The college of Edinburgh added formerly a scruple of cochineal, which imparts a fine red colour to the liquor: this article is now omitted, on a complaint, that the red colour of the matters evacuated, sometimes alarmed the patient, as if it proceeded from a discharge of blood.

VINUM MILLEPEDARUM.

Edinb.

Wine of millepedes.

Take of

Live millepedes, bruised, one ounce;

Rhenish wine, eight ounces.

THIS wine has been commended as an admirable cleanser of all the viscera, yielding to nothing in the jaundice, and obstructions of the kidneys or urinary passages, of excellent service in almost all chronic distempers, even in scrophulous and strumous swellings, and in defluxions of rheum upon the eyes. But those who expected these extraordinary virtues from it, have often been deceived; and at present there are few who have any great dependence on it: and hence it is omitted by the London college, probably without any loss. It is directed to be given from half an ounce to two ounces.

VINUM RHABARBARI.

Lond.

Wine of rhubarb.

Take of

Sliced rhubarb, two ounces and a half;

Lesser cardamom-seeds, bruised and husked, half an ounce;

Saffron, two drams;

Spanish white wine, two pints;

Proof-spirit of wine, eight ounces.

Digest for ten days, and strain.

VINUM RHEI.

Edinb.

Rhubarb wine.

Take of

Rhubarb, two ounces;

Canella alba, one dram;

Proof-spirit, two ounces;

Spanish white wine, fifteen ounces.

Macerate for seven days, and strain.

By assisting the solvent power of the menstruum, the proof-spirit in the above formulæ is a very useful ad-

addition. This is a warm, cordial, laxative medicine. It is used chiefly in weakness of the stomach and bowels, and some kinds of loosenesses, for evacuating the offending matter, and strengthening the tone of the viscera. It may be given from half a spoonful to three or four spoonfuls or more, according to the circumstances of the disorder, and the purposes it is intended to answer.

VINUM NICOTIANÆ.

Tobacco wine.

Take of

The dried leaves of the best Virginian tobacco, one ounce ;
Spanish white wine, one pound,
Macerate for four days, and then strain the liquor.

WE have already, under the article NICOTIANA in the Materia Medica, offered some observations on its late introduction into practice by Dr Fowler, as a very useful remedy in the cure of dropsies and dysuries. From this treatise on that subject the present formula is taken ; and we may observe, that while in practice we have frequently experienced from the tobacco those good effects for which Dr Fowler recommends it, we are inclined to give the present formula the preference to every other which he has proposed. It seems to extract more fully the active principles of the tobacco than either water or spirit taken separately.

VINUM SCILLITICUM.

Succ.

Squill wine.

Take of

Dried squills, sliced, one ounce ;
Ginger, one dram ;

French white wine, two pounds.
Macerate for three days, and then strain.

By the wine employed as a menstruum, the active properties of the squills may be readily extracted ; and in some cases at least the present formula may justly be considered as intitled to a preference over either the acetum or oxymel scillæ, which have a place in our pharmacopœias. The ginger here added to the squills operates as an useful corrigent ; and on this account the present formula is preferable to the vinum scilliticum of some other pharmacopœias, where the squills alone are used : For it is chiefly used in those cases where it is intended that the squills should exert their effects, not on the alimentary canal, but on the kidneys or other excretions.

VINUM ZEDORARIÆ.

Dan.

Zedoary wine.

Take of

The root of zedoary, gently
bruised, two pounds ;
Spirit of wine, eight pounds.
Let them be macerated for a month ;
then add
Spring water, eight pounds.
Distil from thence twelve pounds.

THOUGH this formula has the name of a wine, yet it is in reality a distilled spirit, nothing from the zedoary but a portion of its essential oil being united with the ardent spirit : and we are inclined to think ; that the active powers of this article, both as depending on aroma and bitterness, might be better obtained by a simple infusion in Spanish white-wine.

C H A P. XXI.

T I N C T U R Æ.

T I N C T U R E S.

RECTIFIED spirit of wine is the direct menstruum of the resins and essential oils of vegetables, and totally extracts these active principles from sundry vegetable matters, which yield them to water either not at all, or only in part. It dissolves likewise the sweet saccharine matter of vegetables; and generally those parts of animal bodies, in which their peculiar smell and taste reside.

The virtues of many vegetables are extracted almost equally by water and rectified spirit; but in the watery and spirituous tinctures of them there is this difference, that the active parts in the watery extractions are blended with a large proportion of inert gummy matter, on which their solubility in this menstruum in great measure depends, while rectified spirit extracts them almost pure from gum. Hence, when the spirituous tinctures are mixed with watery liquors, a part of what the spirit had taken up from the subject generally separates and subsides, on account of its having been freed from that matter which, being blended with it in the original vegetable, made it soluble in water. This, however, is not uni-

versal; for the active parts of some vegetables, when extracted by rectified spirit, are not precipitated by water, being almost equally dissoluble in both menstua.

Rectified spirit may be tinged by vegetables of all colours, except blue: the leaves of plants in general, which give out but little of their natural colour to watery liquors, communicate to spirit the whole of their green tincture, which for the most part proves elegant, though not very durable.

Fixed alkaline salts deepen the colour of spirituous tinctures; and hence have been supposed to promote the dissolving power of the menstruum, though this does not appear from experience: in the trials that have been made to determine this affair, no more was found to be taken up in the deep-coloured tinctures than in the paler ones, and often not so much; if the alkali be added after the extraction of the tincture, it will heighten the colour as much as when mixed with the ingredients at first. Nor is the addition of these salts in making tinctures, useless only, but likewise prejudicial, as they in general injure the flavour of aromatics, and superadd

peradd a quality, sometimes contrary to the intention of the medicine. Volatile alkaline salts, in many cases promote the action of the spirits. Acids generally weaken it; unless when the acid has been previously combined with the vinous spirit into a compound of new qualities, called *dulcified spirit*.

TINCTURA ABSINTHII.

Edinb.

Tincture of wormwood.

Take of

the flowering tops of wormwood, properly dried, four ounces;

Rectified spirit of wine, two pounds;

Macerate for two days; then press out the spirit, and pour it upon,

Of wormwood, two ounces.

Macerate again for four days; then press the tincture through a cloth, and afterwards strain it through paper.

THE aromatic parts of wormwood are more especially found in the flowering tops, and its bitterness in the leaves: but as the latter are replete with a mucilaginous matter, which might impede the action of the menstruum on the aromatic parts in this very elegant formula, the flowering tops are infused first, and their tincture made to extract the bitter parts of the leaves and stalks. This preparation may therefore be considered as containing the whole virtues of the plant.

In the tincture of wormwood we have one of the strongest of the vegetable bitters. It is sometimes used as an anthelmintic, and still more frequently in stomach ailments: But to most people it is a very disagreeable medicine.

TINCTURA ALOES.

Lond.

Tincture of aloes.

Take of

Socotorine aloes, powdered, half an ounce;

Extract of liquorice, an ounce and an half;

Distilled water,

Proof-spirit of wine, of each eight ounces.

Digest in a sand-bath, now and then shaking the vessel, until the extract be dissolved, and then strain.

IN this simple tincture, all the active parts of the aloes, whether of a gummy or resinous nature, are suspended in the menstruum. The extract of liquorice serves both to promote the suspension and to cover the taste of the aloes; and in these cases where we wish for the operation of the aloes alone, without the aid either of the adjuvans or corrigens, this is perhaps one of the best formulæ under which they can be exhibited in a fluid state.

TINCTURA ALOES COMPOSITA.

Lond.

Compound tincture of aloes.

Take of

Tincture of myrrh, two pints;

Saffron,

Socotorine aloes, of each three ounces.

Digest for eight days, and strain.

ELIXIR ALOES, vulgo PROPRIETATIS.

Edinb.

Elixir of aloes, commonly called Elixir proprietatis.

Take of

Myrrh, in powder, two ounces;

Socotorine aloes, an ounce and a half;

English

English saffron, one ounce;
Rectified spirit of wine,
Proof-spirit, of each one pound.

Digest the myrrh with the spirit for the space of four days; then add the aloes in powder, and the saffron: continue the digestion for two days longer, suffer the feces to subside, and pour off the clear elixir.

THESE two formulæ, though the mode of preparation be somewhat varied, do not materially differ from each other; and both may be considered as being the *elixir proprietatis* of Paracelsus, improved with regard to the manner of preparation. The myrrh, saffron, and aloes, have been usually directed to be digested in the spirit together: by this method the menstruum soon loads itself with the latter, so as scarce to take up any of the myrrh; whilst a tincture extracted first from the myrrh, readily dissolves a large quantity of the others. The alkaline salt, commonly ordered in these preparations with a view to promote the dissolution of the myrrh, we have already observed to be useless; and accordingly it is now omitted. Instead of employing the rectified spirit alone, the Edinburgh college have used an equal proportion of proof-spirit, which is not only a more complete menstruum, but also renders the medicine less heating.

This medicine is highly recommended, and not undeservedly, as a warm stimulant and aperient. It strengthens the stomach and other viscera, cleanses the first passages from tenacious phlegm, and promotes the natural secretions in general. Its continued use has frequently done much service in cachectic and icteric cases, uterine obstructions, and other similar disorders; and particularly in cold, pale,

phlegmatic habits. Where the patient is of a hot, bilious constitution, and florid complexion, this warm stimulating medicine is less proper, and sometimes prejudicial. The dose may be from twenty drops to a tea-spoonful or more, two or three times a-day, according to the purposes which it is intended to answer.

ELIXIR ALOES five PROPRIETATIS VITRIOLICUM.

Edinb.

Vitriolic elixir of aloes or Proprietatis.

Take of

Myrrh,
Socotorine aloes, of each an ounce and a half;
English saffron, one ounce;
Dulcified spirit of vitriol, one pound.

Digest the myrrh with the spirit for four days, in a close vessel; then add the saffron and aloes.

Digest again four days; and when the feces have subsided, pour out the elixir.

THE Edinburgh College have reformed this preparation considerably; and especially by directing the myrrh to be digested first, for the same reasons as were observed on the preceding article. Here the dulcified spirit of vitriol is very judiciously substituted to the spirit of sulphur, ordered in other books of pharmacy to be added to the foregoing preparation: for that strong acid precipitates from the liquor great part of what it had before taken up from the other ingredients; whereas, when the acid is previously combined with the vinous spirit, and thereby dulcified, as it is called, it does not impede its dissolving power. This elixir possesses the general virtues of the preceding, and is, in

virtue

virtue of the menstruum, preferred to it in hot constitutions, and weaknesses of the stomach.

TINCTURA AROMATICA.

Edinb.

Aromatic tincture.

Take of

Cinnamon, six drams ;
 Lesser cardamom-seeds, one ounce ;
 Garden-angelica root, three drams ;
 Long-pepper, two drams ;
 Proof-spirit, two pounds and a half.

Macerate for seven days, and filtre the tincture.

THIS preparation is improved from the preceding editions by the omission of some articles, either superfluous or foreign to the intention ; galangal, gentian, zedoary, bay-berries, and calamus aromaticus. As now reformed, it is a sufficiently elegant warm aromatic.

This very warm aromatic is too hot to be given without dilution. A tea-spoonful or two may be taken in wine, or any other convenient vehicle, in languors, weakness of the stomach, flatulencies, and other similar complaints ; and in these cases it is often employed with advantage.

TINCTURA ASÆ FŒTIDÆ

Lond.

Tincture of asafoetida.

Take of

Asafoetida, four ounces ;
 Rectified spirit of wine, two pints.

Digest with a gentle heat for six days, and strain.

TINCTURA FŒTIDA.

Edinb.

Fetid tincture.

Take of

Asafoetida, two ounces ;
 Vinous spirit of sal ammoniac, one pound.

Macerate for six days in a close shut vessel, and strain.

OF these two formulæ, the last is perhaps most generally useful : The vinous spirit of sal ammoniac is not only a more powerful menstruum than the rectified spirit of wine, but also coincides with the general virtues of the remedy.

This tincture possesses the virtues of the asafoetida itself ; and may be given from ten drops to fifty or sixty. It was first proposed to be made with proof-spirit : this dissolves more of the asafoetida than a rectified one ; but the tincture proves turbid ; and therefore rectified spirit, which extracts a transparent one, is very justly preferred where ardent spirit is to be employed : and with this menstruum we can at least exhibit the asafoetida in a liquid form to greater extent.

TINCTURA BALSAMI PERUVIANI

Lond.

Tincture of balsam of Peru.

Take of

Balsam of Peru, four ounces ;
 Rectified spirit of wine, one pint.

Digest until the balsam be dissolved.

THE whole of the Peruvian balsam is dissolved by spirit of wine : this therefore may be considered as a good method of freeing it from its impurities ; while at the same time it is thus reduced to a state under which it may be readily exhibited : but at present it is very little employed, unless in composition, either under this or any other form.

TINC-

TINCTURA BALSAMI TOLUTANI.

Lond.

Tincture of balsam of Tolu.

Take of

Balsam of Tolu, one ounce and an half ;

Rectified spirit of wine, one pint.

Digest until the balsam be dissolved, and strain.

TINCTURA TOLUTANA.

Edinb.

Tincture of balsam of Tolu.

Take of

Balsam of Tolu, an ounce and a half ;

Rectified spirit of wine, one pound.

Digest until the balsam be dissolved ; and then strain the tincture.

THIS solution of balsam of Tolu possesses all the virtues of the balsam itself. It may be taken internally, with the several intentions for which that valuable balsam is proper, to the quantity of a tea-spoonful or two, in any convenient vehicle. Mixed with the plain syrup of sugar, it forms an elegant balsamic syrup.

TINCTURA BENZOES COMPOSITA.

Lond.

Compound tincture of benzoine.

Take of

Benzoine, three ounces ;

Storax, strained, two ounces ;

Balsam of Tolu, one ounce ;

Socotorine aloes, half an ounce ;

Rectified spirit of wine, two pints.

Digest with a gentle heat for three days, and strain.

BALSAMUM TRAUMATICUM.

Edinb.

Traumatic balsam.

Take of

Benzoine, three ounces :

Balsam of Peru, two ounces ;

Hepatic aloes, half an ounce ;

Rectified spirit of wine, two pounds.

Digest them in a sand-heat, for the space of ten days, and then strain the balsam.

ALTHOUGH the London college have changed the name of this composition, yet they have made very little alteration on the formula which, in their last edition, had the name of *Traumatic balsam* ; a name which it still retains in the Edinburgh pharmacopœia ; and both may be considered as elegant contractions of some very complicated compositions, which were celebrated under different names ; such as Beaumé de Commadeur, Wade's balsam, Friar's balsam, Jesuits drops, &c. These, in general, consisted of a confused farrago of discordant substances. They, however, derived considerable activity from the benzoine and aloes ; and every thing to be expected from them may readily be obtained from the present formulæ.

The compound tincture of benzoine, or traumatic balsam, stands highly recommended, externally, for cleansing and healing wounds and ulcers, for discussing cold tumours, allaying gouty, rheumatic, and other old pains and aches ; and likewise internally, for warming and strengthening the stomach and intestines, expelling flatulencies, and relieving colicky complaints. Outwardly, it is applied cold on the part with a fea-

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ther ; inwardly, a few drops are taken at a time, in wine or any other convenient vehicle.

There is, however, reason to think that its virtues have been considerably over-rated ; and at present it is much less employed than formerly, recourse being chiefly had to it, in cases of recent wounds, with the view of stopping hæmorrhagies, and of promoting healing by the first intention, as it is called.

TINCTURA CANTHARIDIS.

Lond.

Tincture of the Spanish fly.

Take of

Bruised cantharides, two drams ;
Cochineal, powdered, half a dram ;
Proof-spirit of wine, one pint and
an half.

Digest for eight days, and strain.

Edin.

Take of

Cantharides, one dram ;
Proof-spirit, one pound.

Digest for four days, and strain through paper.

THESE tinctures possess the whole virtues of the fly, and are the only preparations of it designed for internal use ; tinctures being by far the most commodious and safe form for the exhibition of this active drug. The two tinctures are scarcely different in virtue from each other. The cochineal is used only as a colouring ingredient : the gum guaiacum, camphor, and essential oil of juniper berries, which were formerly added, however well adapted to the intentions of cure, could be of little consequence in a medicine limited to so small a dose. If any additional substances should be thought requisite for promoting the effect of the cantharides, whether as a diu-

retic, as a detergent in ulcerations of the urinary passages, or as a specific restrigent of seminal glects and the fluor albus, they are more advantageously joined extemporaneously to the tincture, or interposed by themselves at proper intervals. The usual dose of these tinctures, is from ten to twenty drops ; which may be taken in a glass of water, or or any other more agreeable liquor, twice a-day ; and increased by two or three drops at a time, according to the effect.

The tincture of cantharides has of late been highly celebrated as a successful remedy in diabetic cases ; and in some instances of this kind, its use has been pushed to a very considerable extent, without giving rise to any strangurions affections : But we have not found it productive of a change for the better in any of those cases of diabetes in which we have tried it.

TINCTURA CARDAMOMI.

Lond.

Tincture of cardamom.

Take of

Lesser cardamom seeds, husked
and bruised, three ounces ;

Proof-spirit of wine, two pints.

Digest for eight days, and strain.

Edinb.

Take of

Lesser cardamom-seeds, six ounces ;

Proof-spirit, two pounds and a
half.

Macerate for eight days, and strain through paper.

TINCTURE of cardamoms has been in use for a considerable time. It is a pleasant, warm cordial ; and may be taken, along with any proper vehicle, from a dram to a spoonful or two.

TINC-

TINCTURA CARDAMOMI
COMPOSITA.

Lond.

Compound tincture of cardamom.

Take of

Lesser cardamom-seeds, husked,
Carraway-seeds,
Cochineal, each, powdered, two
drams ;
Cinnamon, bruised, half an
ounce ;
Raisins, stoned, four ounces ;
Proof-spirit, two pints.

Digest for fourteen days, and strain.

THIS tincture contains so small a proportion of cardamoms as to be hardly entitled to derive its name from that article ; and from the large proportion of raisins which it contains, the influence of the aromatics must be almost entirely prevented ; while, at the same time, from these it cannot be supposed to obtain any active impregnation.

TINCTURA CASCARILLÆ.

Lond.

Tincture of cascarilla.

Take of

The bark of cascarilla, powdered,
four ounces ;
Proof-spirit of wine, two pints.
Digest with a gentle heat for eight
days, and strain.

PROOF-SPIRIT readily extracts the active powers of the cascarilla ; and the tincture may be employed to answer most of those purposes for which the bark itself is recommended : But in the cure of intermittents, it in general requires to be exhibited in substance.

TINCTURA CASTOREI.

Lond.

Tincture of castor.

Take of

Russia castor, powdered, two ounces ;

Proof-spirit of wine, two pints.
Digest for two days, and strain.

Edinb.

Take of

Russia castor, an ounce and a
half ;
Rectified spirit of wine, one
pound.
Digest them with a gentle heat
for six days, and afterwards
strain off the liquor.

AN alkaline salt was formerly added in this last prescription, which is here judiciously rejected, as being at least an useless, if not prejudicial, ingredient. It has been disputed, whether a weak or rectified spirit, and whether cold or warm digestion are preferable for making this tincture. To determine this point, the following experiment has been mentioned. " Some fine Sibera
" castor having been infused in good
" French brandy, without heat, for
" twenty days, the tincture proved
" very weak on the same individu-
" al castor (the magma or residuum
" of the former tincture) the same
" quantity of rectified spirit was
" poured as before of brandy ; and
" after a few hours warm digestion
" a tincture was extracted much
" stronger than the other." But this experiment is not satisfactory ; the effects of the two menstrua, and of heat, having been respectively compared in very different circumstances.

From other trials, it appears, that castor, macerated without heat, gives out its finer and most grateful parts to either spirit, most perfectly to the rectified. That heat enables both menstrua to extract greatest part of its grosser and more nauseous matter ; and that proof-spirit extracts this last more readily than rectified.

The tincture of castor is recommended in most kinds of nervous complaints and hysteric disorders : In the latter it sometimes does service, though many have complained of its proving ineffectual. The dose is from twenty drops to forty, fifty, or more.

TINCTURA CASTOREI COMPOSITA.

Edinb.

Compound tincture of castor.

Take of

Russia castor, one ounce ;
Asafoetida, half an ounce ;
Vinous spirit of sal ammoniac,
one pound.

Digest for six days in a close stop-
ped phial, frequently shaking the
vessel ; and then strain the tinc-
ture.

THIS composition is a medicine of real efficacy, particularly in hysteric disorders, and the several symptoms which accompany them. The spirit here used is an excellent menstruum, both for the castor and the asafoetida, and greatly adds to their virtues.

TINCTURA CATECHU.

Lond.

Tincture of catechu.

Take of

Catechu, three ounces ;
Cinnamon, bruised, two ounces ;
Proof-spirit of wine, two pints.
Digest for three days, and strain.

TINCTURA JAPONICA.

Edinb.

Japonic tincture.

Take of

Japan earth, three ounces ;
Cinnamon, two ounces ;
Proof-spirit, two pounds and a
half.

After digestion for eight days, let

the tincture be passed through a
strainer.

A tincture of this kind, with the addition of Peruvian bark, ambergris, and musk, to the ingredients above directed, was formerly kept in the shops. The tincture here received, is preferable for general use : where any other ingredients are required, tinctures of them may be occasionally mixed with this in extemporaneous prescription. The cinnamon is a very useful addition to the catechu, not only as it warms the stomach, &c. but likewise as it improves the roughness and astringency of the other.

This tincture is of service in all kinds of defluxions, catarrhs, loosenesses, uterine fluors, and other disorders, where mild astringent medicines are indicated. Two or three tea-spoonfuls may be taken every now and then in red wine, or any other proper vehicle.

TINCTURA CINNAMOMI.

Lond.

Tincture of cinnamon.

Take of

Cinnamon, bruised, one ounce
and an half,
Proof-spirit of wine, one pint.
Digest for ten days, and strain.

Edin.

Take of

Cinnamon, three ounces,
Proof-spirit, two pounds and a
half,
Macerate for eight days, and strain.

THE tincture of cinnamon possesses the restringent virtues of the cinnamon, as well as its aromatic cordial ones ; and in this respect it differs from the distilled waters of that spice.

TINCTURA CINNAMOMI
COMPOSITA.

Lond.

Compound tincture of cinnamon.

Take of

Cinnamon, bruised, six drams ;
Lesser cardamom-seeds, husked,
three drams ;

Long pepper,

Ginger, of each, in powder, two
drams,

Proof-spirit of wine, two pints.

Digest for eight days, and strain.

FROM the different articles which this tincture contains, it must necessarily be of a more hot and fiery nature than the former, though much less strongly impregnated with the cinnamon.

TINCTURA COLOMBÆ.

Lond.

Tincture of colomba.

Take of

Colomba-root, powdered, two
ounces and an half ;

Proof-spirit of wine, two pints.

Digest for eight days, and strain.

THE colomba readily yields its active qualities to the menstruum here employed : and accordingly, under this form, it may be advantageously employed against bilious vomitings, and those different stomach ailments, in which the colomba has been found useful : but where there does not occur some objection to its use in substance, that form is in general preferable to the tincture, which is now for the first time introduced into the Edinburgh pharmacopœia.

TINCTURA CORTICIS AU-
RANTII.

Lond

Tincture of orange-peel

Take of

The fresh exterior peel of Seville
oranges, three ounces ;

Proof-spirit of wine, two pints.

Digest for three days, and strain.

By this menstruum, both the bitter quality of the orange skins, and likewise their peculiar essential oil, is extracted : Hence it may be employed for any purpose in medicine which these are capable of answering. It is, however, but rarely used ; and, as well as the former, has now only for the first time a place in the London pharmacopœia.

TINCTURA CORTICIS PE-
RUVIANI.

Lond.

Tincture of Peruvian bark.

Take of

Peruvian bark, powdered, four
ounces ;

Proof-spirit of wine, two pints.

Digest with a gentle heat for eight
days, and strain.

TINCTURA CORTICIS PE-
RUVIANI.

Edinb.

Tincture of Peruvian bark.

Take of

Peruvian bark, four ounces :

Proof-spirit, two pounds and a
half.

Digest for ten days, and strain.

A medicine of this kind has been for a long time pretty much in esteem, and usually kept in the shops, though but lately received into the pharmacopœias. Some have employed highly-rectified spirit of wine as a menstruum ; which they have taken care fully to saturate, by digestion on a large quantity of the bark. Others have thought of assisting the action of the spirit by the addition of a little fixed alkaline salt,

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which

which does not however, appear to be of any advantage; and others have given the preference to the vitriolic acid which was supposed, by giving a greater consistence to the spirit, to enable it to sustain more than it would be capable of doing by itself; at the same time that the acid improves the medicine by increasing the roughness of the bark. This last tincture, and that made with rectified spirit, have their advantages; though for general use, that above directed is the most convenient of any, the proof-spirit extracting nearly all the virtues of the bark. It may be given from a teaspoonful to half an ounce, or an ounce, according to the different purposes it is intended to answer.

TINCTURA CORTICIS PERUVIANI COMPOSITA.

Lond.

Compound tincture of Peruvian bark.

Take of

Peruvian bark, powdered, two ounces;

Exterior peel of Seville oranges, dried, one ounce and an half;

Virginian snake-root, bruised, three drams;

Saffron, one dram,

Cochineal, powdered, two scruples;

Proof-spirit of wine, twenty ounces.

Digest for fourteen days, and strain.

THIS has been for a considerable time celebrated under the title of *Huxham's tincture of bark*.

The substances here joined to the bark, in some cases, promote its efficacy in the cure of intermittents, and not unfrequently are absolutely necessary. In some ill habits, particularly where the viscera and abdominal glands are obstructed, the bark, by itself, proves unsuccessful, if not injurious; whilst given in com-

junction with stimulating stomachics and decostruents, it more rarely fails of the due effect. Orange-peel and Virginian snake-root are among the best additions for this purpose; to which it is thought by some necessary to join chalybeate medicines also.

As a corroborant and stomachic, it is given in doses of two or three drams; but when employed for the cure of intermittents, it must be taken to a greater extent. For this purpose, however, it is rarely employed, unless with those who are averse to the use of the bark in substance, or whose stomachs will not retain it under that form.

TINCTURA CROCI.

Edinb.

Tincture of saffron.

Take of

English saffron, one ounce;

Proof-spirit, fifteen ounces.

After digesting them for five days, let the tincture be strained thro' paper.

THIS tincture is similar in virtue to the saffron wine. A spirituous menstruum is here preferred to the wine, as a tincture drawn with the former retains its elegant colour longer, and is not apt to deposit in keeping any part of what it had taken up from the saffron. The shops have been accustomed to employ treacle-water as a menstruum for saffron, with a view to the promoting its efficacy with the intention of operating as an alexipharmac; but the acid in that compound water soon destroys the colour of the tincture.

TINCTURA FERRI MURIATI.

Lond.

Tincture of muriated iron.

Take

Take of

The rust of iron, half a pound ;
Muriatic acid, three pounds ;
Rectified spirit of wine, three
pints.

Pour the muriatic acid upon the rust of iron in a glass vessel ; and shake the mixture now and then during three days. Set it by that the feces may subside ; then pour off the liquor : evaporate this to one pint, and, when cold, add to it the vinous spirit.

TINCTURA MARTIS.

Edinb.

Tincture of iron.

Take of

The scales of iron, purified and powdered, three ounces ;
Muriatic acid, as much as is sufficient to dissolve the powder.

Digest with a gentle heat ; and the powder being dissolved, add of rectified spirit of wine as much as will make up of the whole liquor two pounds and a half.

OF these two formulæ, that of the Edinburgh college is, in our opinion, in several respects intitled to the preference. The scales are much fitter for giving a proper solution than the rust. The strength of the muriatic acid is so variable, that the quantity is left to the judgment of the operator. If the acid be superabundant, the solution is of a green colour ; if it be fully saturated with the iron, it is more or less of a reddish or yellow colour ; and this serves as a pretty accurate criterion. As the muriatic acid combines less intimately with rectified spirit than any of the fossil acids, so the after-process of dulcification scarcely, if at all, impairs the solvent power of the acid ; though, when the dulcification happens to be more than usually complete, a small quantity of ferruginous matter is some-

times precipitated on adding the rectified spirit to the solution. But as the rectified spirit increases the volatility of the acid, so if it was added at first, we should lose much more of the menstruum by the heat employed during the digestion. When this tincture is well prepared, it is of a yellowish-red colour ; if the acid be superabundant, it is more or less of a greenish hue ; and if the rectified spirit has been impregnated with the astringent matter of oak casks, it assumes an inky colour.

ALL the tinctures of iron are no other than real solutions of the metal made in acids, and combined with vinous spirits. The tinctures here directed differ from each other only in strength, the acid being the same in both. In our former pharmacopœias, there was a tincture from the matter which remains after the sublimation of the martial flowers ; which though it appears to be a good one, is now expunged as superfluous. Some have recommended dulcified spirit of nitre as a menstruum ; but though this readily dissolves the metal, it does not keep it suspended. The marine is the only acid that can be employed for this purpose.

These tinctures are greatly preferable to the calces or croci of iron, as being not only more speedy, but likewise more certain in their operation. The latter, in some cases, pass off through the intestinal tube with little effect ; whilst the tinctures scarce ever fail. From ten to twenty drops of either of the tinctures may be taken two or three times a-day, in any proper vehicle ; though it is seldom advisable to extend the dose of any tinctures of iron so far as the last of these quantities, especially with the tincture in spirit of salt, which is exceedingly strong of the iron.

TINCTURA FULIGINIS.

*Edinb.**Tincture of foot.*

Take of

Shining wood-foot, one ounce ;
 Asafoetida, half an ounce ;
 Rectified spirit of wine,
 Proof-spirit, of each half a pound.

Digest for six days, and strain.

THE proof-spirit is not liable to any objection here, as giving a turbid tincture ; for when foot is added, whatever spirit be employed, the tincture will not prove transparent. Fuller, in his Pharmacopœia Domestica, has a medicine under the title of *Hysteric tincture*, similar to this, only with a little myrrh, which is no very material addition to asafoetida and foot. These medicines are found serviceable, not only in hysteric cases, but likewise in other nervous disorders. They may be given from a tea-spoonful to a table-spoonful twice a-day.

This medicine has by some been thought serviceable in obstructions of the menses ; but its activity may be considered as depending much more on the asafoetida than on the foot.

TINCTURA GALBANI.

 *Lond.**Tincture of galbanum.*

Take of

Galbanum, cut into small pieces,
 two ounces ;

Proof-spirit of wine, two pints.

Digest with a gentle heat for eight days, and strain.

THIS tincture is now for the first time introduced by the London college, and may be usefully employed for answering several purposes in medicine. It is one of the strongest of the fetid gums ; and although less active, yet much less disagreeable

than asafoetida : and under the form of tincture it may be successfully employed in cases of flatulence and hysteria, where its effects are immediately required, particularly with those who cannot bear asafoetida.

TINCTURA GENTIANÆ
COMPOSITA. *Lond.**Compound tincture of gentian.*

Take of

Gentian-root, sliced and bruised,
 two ounces ;

Exterior dried peel of Seville oranges,
 one ounce ;

Lesser cardamom-seeds, husked
 and bruised, half an ounce ;

Proof-spirit of wine, two pints.

Digest for eight days, and strain.

TINCTURA AMARA, five
ELIXIR STOMACHICUM. *Edinb.**Bitter tincture, or stomachic elixir.*

Take of

Gentian-root, two ounces :

Seville orange-peel, dried, one
 ounce ;

Canella alba, half an ounce ;

Cochineal, half a dram ;

Proof-spirit, two pounds and a
 half.

Macerate for four days, and strain
 through paper.

THESE are very elegant spirituous bitters. As the preparations are designed for keeping, lemon-peel, an excellent ingredient in the watery bitter infusions, has, on account of the perishableness of its flavour, no place in these. The aromatics are here a very commodious ingredient, as in this spirituous menstruum they are free from the inconvenience with which they are attended in other liquors, of rendering them untransparent.

ELIXIR GUAIAACINUM.

*Edinb.**Elixir of guaiacum.*

Take of

Gum guaiacum, one pound ;
 Balsam of Peru, three drams ;
 Rectified spirit of wine, two
 pounds and a half.

THIS tincture may be considered as nearly agreeable in medical virtues with the two following. It is, however, less in use ; but it may be employed with advantage in those cases where an objection occurs to the menstruum used in forming the others.

TINCTURA GUAIACI.

*Lond.**Tincture of gum guaiacum.*

Take of

Gum guaiacum, four ounces ;
 Compound spirit of ammonia, a
 pint and a half.

Digest for three days, and strain,

ELIXIR GUAIAACINUM VOLATILE.

*Edinb.**Volatile elixir of guaiacum.*

Take of

Gum guaiacum, four ounces ;
 Balsam of Peru, two drams ;
 Distilled oil of saffras, half a
 dram :

Vinous spirit of sal ammoniac, a
 pound and a half.

Macerate for six days in a close vessel, and strain.

IN the last of these formulæ, the vinous spirit of sal ammoniac is less acrimonious than the menstruum directed by the London College ; and the Balsam of Peru, and distilled oil of saffras, are useful additions, by increasing the permanence of its operation as a general stimulant, or more particularly as a diaphoretic.

These are very elegant and efficacious tinctures : the volatile spirit excellently dissolving the gum, and at the same time promoting its medicinal virtue. In rheumatic cases, a tea, or eventable, spoonful, taken every morning and evening in any convenient vehicle, particularly in milk, has proved of singular service.

TINCTURA HELLEBORI NIGRI.

*Lond.**Tincture of black hellebore.*

Take of

Black hellebore root, in coarse
 powder, four ounces ;

Cochineal, powdered, two scruples :

Proof-spirit of wine, two pints.

Digest with a gentle heat for eight
 days, and strain.

TINCTURA MELAMPODII.

*Edinb.**Tincture of melampodium, or black hellebore.*

Take of

Black hellebore root, four ounces ;

Cochineal half a dram ;

Proof-spirit, two pounds and a
 half.

Digest them together for eight days,
 and afterwards filtre the tincture,
 through paper.

THIS is perhaps the best preparation of hellebore, when designed for an alterative, the menstruum here employed extracting the whole of its virtues. It has been found, from experience, particularly serviceable in uterine obstructions ; in sanguine constitutions, where chalybeates are hurtful, it has been said that it seldom fails of exciting the menstrual evacuations, and removing the ill consequences of their suppression

pression. So great, according to some, is the power of this medicine, that wherever, from an ill conformation of the parts, or other causes, the expected discharge does not succeed upon the use of it, the blood, as Dr Mead has observed, is so forcibly propelled, as to make its way through other passages. A teaspoonful of the tincture may be taken twice in a day in warm water, or any other convenient vehicle.

The college of Edinburgh had formerly a tincture of this root with wine. Proof-spirit is undoubtedly preferable, both as a menstruum, and as being better fitted for keeping.

TINCTURA JALAPII.

Lond.

Tincture of jalap

Take of

Powdered jalap root, eight ounces;

Proof-spirit of wine, two pints.

Digest with a gentle heat for eight days, and strain.

TINCTURA JALAPPÆ.

Edinb.

Tincture of jalap.

Take of

Jalap, in coarse powder, three ounces;

Proof-spirit, fifteen ounces,

Digest them for eight days, and strain the tincture.

RECTIFIED spirit of wine was formerly ordered for the preparation of this tincture; but rectified spirit dissolving little more than the pure resinous parts of the jalap, rendered the use of the medicine somewhat less commodious than that of the tincture prepared with proof-spirit. Most of the tinctures made in rectified spirit, diluted with water,

so as to be fit for taking, form a turbid white mixture. Many of them are safely taken in this form, without any farther addition; but the cathartic ones are never to be ventured on without an admixture of syrup or mucilage to keep the resin united with the liquor; for if it separates in its pure undivided state, it never fails to produce violent gripes.

Some have preferred to the tinctures of jalap, a solution in spirit of wine of a known quantity of the resin extracted from the root; and observe, that this solution is more certain in strength than any tincture that can be drawn from the root directly. For, as the purgative virtue of jalap resides in its resin, and as all jalap appears from experiment not to be equally resinous, some sorts yielding five, and others not three, ounces of resin from sixteen; it follows, that although the root be always taken in the same proportion to the menstruum, and the menstruum always exactly of the same strength, it may nevertheless, according to the degree of goodness of the jalap, be impregnated with different quantities of resin, and consequently prove different in degree of efficacy. Though this objection against the tincture does not reach so far as some seem to suppose, it certainly behoves the apothecary to be careful in the choice of the root. The inferior sorts may be employed for making *resina jalappæ*, which they yield in as great perfection, though not in so large quantity, as the best. Newmann thinks even the worm eaten jalap as good for that purpose as any other.

TINCTURA e KINO.

Edinb.

Tincture of gum kino.

Take of

Gum kino, two ounces;

Proof-

Proof-spirit, a pound and an half.
Digest eight days, and strain.

THE substance called *gum kino* seems to be really a gum-resin ; on which account proof-spirit is the most proper menstruum. This preparation must therefore possess the virtues of the substance ; and it is perhaps one of the best forms under which it can be exhibited in obstinate diarrhoeas, and in cases of lenteria ; but in hemorrhagies, it is in general proper to exhibit it either in substance or diffused ; yet we cannot help thinking that the want of this tincture is an omission in the London pharmacopoeia.

TINCTURA LAVENDULAE COMPOSITA.

Lond.

Compound tincture of lavender.

Take of

Spirit of lavender three pints ;
——— Rosemary, one pint ;
Cinnamon, bruised,
Nutmegs, bruised, of each half
an ounce ;
Red Saunders, one ounce.

Digest for ten days, and strain.

SPIRITUS LAVENDULAE COMPOSITUS.

Edinb.

Compound spirit of lavender.

Take of

Simple spirit of lavender, three
pounds ;
Simple spirit of rosemary, one
pound ;
Cinnamon, one ounce ;
Cloves, two drams ;
Nutmeg, half an ounce ;
Red Saunders, three drams.

Macerate seven days, and strain.

THESE two compositions, altho' varying a little from each other,

both with respect to their ingredients and names, may yet be considered as precisely the same. Although the London college, in the present edition of their pharmacopoeia, have made many useful alterations with respect to names, yet the propriety of the change here adopted may perhaps be doubted : For it cannot with justice be styled a tincture of lavender, when the distilled spirit of that plant is employed only as a menstruum. If, therefore, it seemed necessary to refer it to the head of tinctures, it ought to have been denominated from the cinnamon or nutmegs ; but since the activity of this article very much depends on the spirit of lavender, the old name is in our opinion justly preferable to the new one.

The red saunders is of no farther use in these compositions than as a colouring ingredient. If a yellow spirit was liked, the yellow saunders would be an excellent article, as it not only communicates a fine colour, but likewise a considerable share of medicinal virtue. A spirit distilled from the flowers of lavender and sage, in due proportion, and digested in the cold for a little time with some cinnamon, nutmegs, and yellow saunders, proves a very elegant and grateful one. Where essential oils are employed, particular care must be had in the choice of them ; for on their goodness that of the medicine depends. The digestion of the spirit with the spices, &c. should be performed without heat, otherwise the flavour of the medicine will be injured.

These spirits are grateful reviving cordials : though considerably more simple, they are not less elegant or valuable, than many other more elaborate preparations. This medicine has long been held in great esteem, under the name of PALSY
DROPS,

DROPS, in all kinds of languors, weakness of the nerves, and decays of age. It may be conveniently taken upon sugar, from ten to eighty, or a hundred drops.

TINCTURA MOSCHI.

Edinb.

Tincture of musk.

Take of

Musk, two drams ;

Rectified spirit of wine, one pound.

Digest for ten days, and strain.

RECTIFIED spirit is the most complete menstruum for musk ; but in this form it is often impossible to give such a quantity of the musk as is necessary for our purpose ; and hence this article is more frequently employed under the form of julep or bolus.

TINCTURA MYRRHÆ.

Lond.

Tincture of myrrh.

Take of

Myrrh, bruised, three ounces ;
Proof-spirit of wine, a pint and
an half ;

Rectified spirit of wine, half a
pint.

Digest with a gentle heat for eight
days, and strain.

TINCTURA MYRRHÆ.

Edinb.

Tincture of myrrh.

Take of

Myrrh, three ounces ;
Proof-spirit, two pounds and a
half.

After digestion for ten days,
strain off the tincture.

THE pharmaceutical writers in general have been of opinion, that no good tincture can be drawn from

myrrh by spirit of wine alone, without the assistance of fixed alkaline salts. But it appears from proper experiments, that these salts only heighten the colour of the tincture, without enabling the menstruum to dissolve any more than it would by itself. Rectified spirit extracts, without any addition, all that part of the myrrh in which its peculiar smell and taste reside, viz. the resin : and proof-spirit dissolves almost the whole of the drug, except its impurities : hence the combination of these two directed by the London college, is perhaps preferable to either by itself.

Tincture of myrrh is recommended internally for warming the habit, attenuating viscid juices, strengthening the solids, opening obstructions, particularly those of the uterine vessels, and resisting putrefaction. Boerhaave greatly esteems it in all languid cases, proceeding from simple inactivity ; in those female disorders which are occasioned by an aqueous, mucous, sluggish disposition of the humours, and a relaxation of the vessels ; in the fluor albus, and all diseases arising from a like cause. The dose is from fifteen drops to forty or more. The medicine may doubtless be given in these cases to advantage ; though with us, it is more commonly used externally, for cleansing foul ulcers, and promoting the exfoliation of carious bones.

TINCTURA OPII.

Lond.

Tincture of opium.

Take of

Hard purified opium, powdered,
ten drams,

Proof-spirit of wine, one pint.

Digest for ten days, and strain.

TINCTURA

TINCTURA THEBAICA,
vulgo LAUDANUM LIQUIDUM.

Edinb.

Tincture of opium, commonly called liquid laudanum.

Take of

Opium, two ounces ;
Spirituos cinnamon-water, one pound and a half.

Digest four days, and strain off the tincture.

THESE are very elegant liquid opiates, the menstruum in the last dissolves nearly the whole substance of the opium, and effectually covers its ill flavour. It were to be wished that the shops were furnished with a liquid opiate, in which the proportion of menstruum was still much larger, so as to admit of the dose being determined by weight or measure, the method by drops seeming too precarious for a medicine of so powerful a kind. The following preparation is contrived with this view.

Take of

Thebaic extract, half a dram ;
Highly rectified spirit of wine, called *alcohol*, ten ounces ;
Simple cinnamon-water, twenty ounces.

Digest them together until the opium be dissolved, and then filter the solution through paper.

THIS preparation is apprehended to be free from all the inconveniences attending the common opiate tinctures. The menstruum dissolves the whole of the opium except the impurities, and consequently the tincture is not liable to any uncertainty in point of strength. The dose may be ascertained to the greatest exactness : one grain of opium is contained in one ounce by measure, which is equal nearly to seven drams by weight. Neither

the tinctures in wine not proof-spirit are so well adapted for keeping as could be wished : in long standing, a part of the opium is gradually thrown off from both, and consequently the tinctures become gradually weaker : the part which thus separates, amounts sometimes, it is said, to near one-fourth of the quantity of opium at first dissolved : it floats on the surface of the vinous tincture, and in the spirituos sinks to the bottom. In the preparation here recommended, it has not been observed that any separation happens.

Instead of the cinnamon-water, pure water may be employed in the mixture ; and where aromatic additions are wanted, either with a medicinal intention, or for covering the ill smell of the opium, any proper tincture or distilled water may be extemporaneously joined. Saffron, an addition once employed by the Edinburgh College, has been looked upon as a corrector of opium ; but the qualities it was supposed to correct are merely imaginary ; nor indeed can that article be of much importance with any intention in the small quantity that enters a dose of the tincture : a grain of opium being accompanied with only half a grain of saffron.

A preparation in some respects similar to that here recommended, was introduced into the Edinburgh pharmacopœia published in 1774, under the title of *Tinctura meconii*. Each ounce of this tincture contained four grains of opium ; and it was proposed, that the doses of it should be measured, not by drops but by weight : But as modern physicians are much more bold in giving opium than their predecessors, such a scrupulous accuracy in the dose is not thought at all necessary : And it is not probable that any dangerous consequence will ever arise,

arise, merely from a difference in the size of drops. This however might be the case, where the tinctura thebaica is by accident taken for the tinctura meconii. To such mistakes, however, it was feared that the analogy of the articles, as well as the caution necessary with respect to both, might lead; and it was upon the whole reckoned safer to have but one liquid laudanum only. It is, however, much to be regretted, that the liquid laudanum of the London and Edinburgh colleges, which by the former is now styled *Tinctura oppii*, by the latter *Tinctura thebaica*, should differ so much from each other in point of strength.

TINCTURA OPII CAMPHORATA.

Lond.

Camphorated tincture of opium.

Take of

Hard purified opium,

Flowers of Benzoin, of each one dram;

Camphor, two scruples;

Essential oil of aniseed, one dram;

Proof-spirit of wine, two pints.

Digest for three days.

ELIXIR PAREGORICUM.

Edinb.

Paregoric elixir.

Take of

Flowers of benzoin,

English saffron, of each three drams;

Opium, two drams;

Essential oil of aniseeds, half a dram;

Vinous spirit of sal ammoniac, sixteen ounces.

Digest for four days in a close vessel, and strain.

THESE two, though differing not merely in name, may yet be con-

sidered as agreeing very nearly in their nature.

The most material difference in the last formula from the first are the substitution of the vinous spirit of sal ammoniac to the proof-spirit of wine, and a larger proportion of opium; the vinous spirit of sal ammoniac is not only, perhaps, a more powerful menstruum, but in most instances coincides with the virtues of the preparation; but as the opium is the ingredient on which we place the principal dependence, so its proportion is increased, in order that we may give it in such a dose as that the acrimony of the menstruum shall not prove hurtful to the stomach.

The London formula is taken from *Le Mort*, with the omission of three unnecessary ingredients, honey, liquorice, and alkaline salt. It was originally prescribed under the title of *ELIXIR ASTHMATICUM*, which it does not ill deserve. It contributes to allay the tickling which provokes frequent coughing; and at the same time is supposed to open the breast, and give greater liberty of breathing: the opium procures (as it does by itself) a temporary relief from the symptoms; whilst the other ingredients tend to remove the cause, and prevent their return. It is given to children against the chincough, &c. from five drops to twenty: to adults, from twenty to an hundred. In the London formula, half an ounce by measure contains about a grain of opium; but in the Edinburgh formula, the proportion of opium is larger.

TINCTURA RHABARBARI.

Lond

Tincture of Rhubarb.

Take of

Rhubarb, sliced, two ounces;

Lesser

Lesser cardamom seeds, husked
and bruised half an ounce ;
Saffron, two drams ;
Proof-spirit of wine, two pints.
Digest for eight days, and strain.

TINCTURA RHEI.

*Edinb.**Tincture of rhubarb.*

Take of
Rhubarb, three ounces ;
Lesser cardamom seeds, half an
ounce ;
Proof-spirit, two pounds and a
half.
Digest for seven days, and strain.

TINCTURA RHABARBARI
COMPOSITA.*Lond.**Compound tincture of rhubarb.*

Take of
Rhubarb, sliced, two ounces ;
Ginger, powdered,
Saffron, each two drams ;
Liquorice-root, bruised, half an
ounce ;
Distilled water, one pint ;
Proof-spirit of wine, twelve oun-
ces.

Digest for fourteen days, and strain.

TINCTURA RHEI AMARA.

*Edinb.**Bitter tincture of rhubarb.*

Take of
Rhubarb, two ounces ;
Gentian-root, half an ounce ;
Virginian snake-root, one dram ;
Proof-spirit, two pounds and a
half.
Digest for seven days, and then
strain the tincture.

TINCTURA RHEI DULCIS.

*Edinb.**Sweet tincture of rhubarb.*

It is made by adding to two pounds
and a half of the strained tincture
of rhubarb, four ounces of sugar-
candy.

THE last of these preparations is
improved from the former editions.
Two ounces of liquor. c and one of
raisins are supplied by an increase of
the sugar-candy.

All the foregoing tinctures of
rhubarb are designed as stomachics
and corroborants, as well as purga-
tives : spirituous liquors excellently
extract those parts of the rhubarb
in which the two first qualities re-
side, and the additional ingredients
considerably promote their efficacy.
In weakness of the stomach, indi-
gestion, laxity of the intestines, di-
arrhocas, colicky and other similar
complaints, these medicines are fre-
quently of great service : the second
is also, in many cases, an useful ad-
dition to the Peruvian bark, in
the cure of intermittents, particu-
larly in cachectic habits, where the
viscera are obstructed ; with these
intentions, a spoonful or two may
be taken for a dose, and occasionally
repeated.

ELIXIR ex ALOE et RHEO,
vulgo SACRUM.*Edinb.*

*Elixir of aloes and rhubarb, com-
monly called sacred elixir.*

Take of
Rhubarb, cut small, ten drams ;
Socotorine aloes, in powder, six
drams ,
Lesser cardamom seeds, half an
ounce ;
Proof-spirit, two pounds and a
half.
Digest for seven days, and then
strain the elixir.

THIS preparation is very much
employed as a warming cordial
purge, and for the general purposes
of aloetics ; with which, however,
it combines the medical properties
of rhubarb.

TINCTURA SABINÆ COM-
POSITA.

Lond.

Compound tincture of savin.

Take of

Extract of savin, one ounce,
Tincture of castor, one pint ;
———— myrrh, half a pint.

Digest till the extract of savin be dissolved, and then strain.

THIS preparation had a place in the last edition of our pharmacopœia, under the title of *Elixir myrrhæ compositum*.

This preparation is improved from one described in some former dispensaries under the name of *ELIXIR UTERINUM*. It is a medicine of great importance in uterine obstructions, and in hypochondriacal cases ; though, possibly, means might be contrived of superadding more effectually the virtues of savin to a tincture of myrrh and castor. It may be given from five drops to twenty or thirty, or more, in pennyroyal water, or any other suitable vehicle.

TINCTURA SCILLÆ.

Lond.

Tincture of squills.

Take of

Squills, fresh dried, four ounces ;
Proof-spirit, of wine, two pints.
Digest for eight days, and pour off the liquor.

FOR extracting the virtues of squills, the menstruum which has hitherto been almost solely employed is vinegar. There, are, however, cases in which ardent spirit may be more proper ; and by the menstruum here directed its virtues are fully extracted. Hence it is with propriety that the London college have introduced this form, as well as the vinegar and oxymel. But, in general, the purposes to be answered by squills may be better obtained by

employing it in substance than in any other form.

TINCTURA SATURNIA,
vulgo ANTIPHTHISICA.

Edinb.

Antiphthical tincture.

Take of

Sugar of lead, an ounce and a half :

Vitriol of iron, one ounce ;

Rectified spirit of wine, one pound.

Let a tincture be extracted without heat.

THE reducing of the salts *separately* into powder, and performing the digestion *without heat*, are very necessary circumstances ; for if the ingredients be attempted to be pulverized together, they will grow soft and almost liquid ; and if heat be made use of, scarce any tincture will be obtained.

This tincture is sometimes given from twenty to thirty drops, for restraining immoderate secretions, particularly the colliquative sweats attending hectic fevers and phthiical disorders ; whence the name *antiphthical* tincture. It is undoubtedly a medicine of great efficacy in these cases, but too dangerous to be rashly ventured on. Some have supposed, that it does not contain any of the sugar of lead : but experiments made for that purpose have shown the contrary.

We must, however, consider the above preparations as very unscientific. Both the acetous and vitriolic acid have a greater attraction for iron than for lead : and though the vitriolic be capable of discharging the acetous acid, yet it makes not only in its entire state a less perfect union with lead than the acetous acid, but it is now also combined with iron, for which it has a greater attraction, and

and can therefore only act on the salt of lead in proportion as it is superabundant in the salt of copperas; but in proportion as the virriolic disengages the acetous acid from the lead, the last in its turn, will attach itself to the iron. Upon the whole, it is difficult to ascertain the precise nature of this preparation; it seems always, however, to contain a quantity of lead in a saline state, sufficient to expunge it from prudent practice: or, at least, if in these cases in which it has hitherto been employed, lead be thought necessary, the sal plumbi may with more safety and advantage be given in its solid state, particularly as combined with opium: And it is probably on this account that the present formula has now no place in the London pharmacopoeia.

TINCTURA SENNÆ.

Lond.

Tincture of senna.

Take of

Senna, one pound;

Caraway-seeds, bruised, one ounce and an half:

Raisins, stoned, sixteen ounces:

Lesser cardamom-seeds, husked and bruised, half an ounce;

Proof-spirit of wine, one gallon.

Digest for fourteen days, and strain.

TINCTURA SENNÆ COMPOSITA, vulgo ELIXIR SALUTIS.

Edinb.

Compound tincture of senna, commonly called Elixir of health.

Take of

Senna leaves, two ounces;

Jalap root, one ounce;

Proof-spirit, two pounds and a half.

Digest for seven days, and to the strained liquor add four ounces of sugar-candy.

BOTH these tinctures are useful carminatives and cathartics, especially to those who have accustomed themselves to the use of spirituous liquors; they oftentimes relieve flatulent and colicky complaints, where the common cordials have little effect: the dose is from one to two ounces. Several preparations of this kind have been offered to the public under the name of Daffy's elixir: the two above are equal to any, and superior to most of them. The last in particular is a very useful addition to the castor oil, in order to take off the mawkish taste; and as coinciding with the virtues of the oil, it is therefore much preferable to brandy, shrub, and such like liquors, which otherwise are often found necessary to make the oil sit upon the stomach.

TINCTURA SERPENTARIÆ.

Lond.

Tincture of snake-root.

Take of

Virginian snake-root, three ounces;

Proof-spirit of wine, two pints.

Digest for eight days, and strain.

Edinb.

Take of

Virginian snake-root, two ounces;

Cochineal, one dram;

Proof-spirit, two pounds and a half.

Digest in a gentle heat for four days, and then strain the tincture.

THE tincture of snake-root was in a former pharmacopoeia directed to be prepared with the tinctura salis tartari, which being now expunged, it was proposed to the college to employ rectified spirit; but as the heat of this spirit prevents the medicine from being taken in so large a dose as

it might otherwise be, a weaker spirit was made choice of. The tincture made in this menstruum, which extracts the whole virtues of the root, may be taken to the quantity of a spoonful or more every five or six hours; and to this extent it often operates as an useful diaphoretic.

TINCTURA VALERIANÆ.

Lond.

Tincture of valerian.

Take of

The root of wild valerian, in coarse powder, four ounces;

Proof-spirit of wine, two pints.

Digest with a gentle heat for eight days, and strain.

THE valerian root ought to be reduced to a pretty fine powder, otherwise the spirit will not sufficiently extract its virtues. The tincture proves of a deep colour, and considerably strong of the valerian; tho' it has not been found to answer so well in the cure of epileptic disorders as the root in substance, exhibited in the form of powder or bolus. The dose of the tincture is, from half a spoonful to a spoonful or more two or three times a-day.

TINCTURA VALERIANÆ VOLATILIS.

Lond.

Volatile tincture of valerian.

Take of

The root of wild valerian, four ounces;

Compound spirit of ammonia, two pints.

Digest for eight days, and strain.

Edinb.

Take of

Wild valerian root, two ounces;

Vinous spirit of sal ammoniac, one pound.

Macerate for six days in a close vessel, and strain.

BOTH the compound and vinous spirit of sal ammoniac are here excellent menstrua, and at the same time considerably promote the virtues of the valerian, which in some cases wants an assistance of this kind. The dose may be a tea-spoonful or two.

TINCTURA VERATRI, sive HELLEBORI ALBI.

Edinb.

Tincture of Veratrum, or white hellebore.

Take of

White hellebore root, eight ounces;

Proof-spirit, two pounds and a half.

Digest them together for ten days, and filtre the tincture through paper.

THIS tincture is sometimes used for acuating cathartics, &c. and as an emetic in apoplectic and maniacal disorders. It may likewise be so managed, as to prove a powerful alterative and deobstruent, in cases where milder remedies have little effect. But a great deal of caution is requisite in its use: the dose, at first ought to be only a few drops; if considerable, it proves violently emetic or cathartic.

ELIXIR VITRIOLI ACIDUM.

Edinb.

Acid Elixir of Vitriol.

Take of

Rectified spirit of wine, two pounds;

Drop into it by little and little six ounces of vitriolic acid; digest the mixture with a very gentle heat in a close vessel for three days, and then add of

Cinnamon, an ounce and a half;

Ginger, one ounce.

Digest again in a close vessel for six days, and then filtre the tincture through

through paper placed in a glass funnel.

THE intention in this process is, to obtain a tincture of aromatic vegetables, in spirit of wine, combined with a considerable proportion of vitriolic acid. When the tincture is first drawn with vinous spirits, and the acid added afterwards, the acid precipitates great part of what the spirit had before taken up; and on the other hand, when the acid is mixed with the spirit immediately before the extraction, it prevents the dissolution of all that it would have precipitated by the former way of treatment: by previously uniting the acid and the vinous spirit together by digestion, the inconvenience is somewhat lessened.

This is a valuable medicine in weakness and relaxations of the stomach and decays of constitution, particularly in those which proceed from irregularities, which are accompanied with slow febrile symptoms, or which follow the suppression of intermittents. It frequently succeeds after bitters and aromatics by themselves had availed nothing; and, indeed, great part of its virtues depend on the vitriolic acid; which, barely diluted with water, has, in these cases, where the stomach could bear the acidity, produced happy effects.

Fuller relates (in his *Medicina Gymnastica*) that he was recovered by Mynsicht's elixir, from an extreme decay of constitution, and continual retchings to vomit. It may be given from ten to thirty or forty drops or more, according to the quantity of acid, twice or thrice a-day, at such times as the stomach is most empty. It is very usefully conjoined with the bark, both as covering its disagreeable taste and coinciding with its virtues.

ELIXIR VITRIOLI DULCE.

Edinb.

Sweet elixir of vitriol.

This is made of the same aromatics, and in the same manner as the tinctura aromatica; except that, in place of the vinous spirit, the dulcified spirit of vitriol is employed.

THIS is designed for persons whose stomachs are too weak to bear the foregoing acid elixir; to the taste, it is gratefully aromatic, without any perceptible acidity. The dulcified spirit of vitriol, here directed, occasions little or no precipitation upon adding it to the tincture.

A medicine of this kind was formerly in great esteem under the title of *Vigani's volatile elixir of vitriol*; the composition of which was first communicated to the public in the *Pharmacopœia reformata*. It is prepared by digesting some volatile spirits of vitriol upon a small quantity of mint leaves curiously dried, till the liquor has acquired a fine green colour. If the spirit, as it frequently does, partakes too much of the acid, this colour will not succeed: in such case, it should be rectified from a little fixed alkaline salt.

SPIRITUS VINOSUS CAMPHORATUS.

Edinb.

Camphorated spirit of wine.

Take of

Camphor, one ounce;
Rectified spirit of wine, one pound.

Mix them together, that the camphor may be dissolved.

It may also be made with a double, triple, &c. proportion of camphor.

THIS solution of camphor is employed

ployed chiefly for external uses, against rheumatic pains, paralytic numbnesses, inflammations, for discussing tumors, preventing gangrenes, or restraining their progress. It is too pungent to be exhibited internally, even when diluted, nor does the solution succeed well; for on the admixture of aqueous liquors, the camphor gradually separates and runs together into little masses.

Hoffman, Rothen, and others, mention a camphorated spirit not subject to this inconvenience. It is prepared by grinding the camphor with somewhat more than an equal weight of fixed alkaline salt, then adding a proper quantity of proof-spirit, and drawing off one half of it by distillation. This spirit was proposed to be received into our pharmacopœias, under the title of *Spiritus camphoræ tartarizatus*. But upon trial, it did not answer expectation: some of the camphor rises with the spirit in distillation, though but a small quantity; whence, mixed with a large portion of water, it does not sensibly render it turbid; but in a proper quantity, it exhibits the same appearance as the more common camphorated spirit: it did not appear, that spirit distilled from camphor, with or without the alkaline salt, differed at all in this respect.

The most convenient method of uniting camphor with aqueous liquors, for internal use, seems to be by the mediation of almonds, or of mucilages; triturated with these, it readily mingles with water into the form of an emulsion, at the same time that its pungency is considerably abated. It may also be commodiously exhibited in the form of an oily draught, expressed oils totally dissolving it.

LINIMENTUM ANODYNUM, vulgo BALSAMUM ANODYNUM.

Edinb.

The anodyne liniment, commonly called Anodyne balsam.

Take of

Opium, one ounce;
White Castile soap, four ounces;
Camphor, two ounces;
Essential oil of rosemary, half an ounce;
Rectified spirit of wine, two pounds.

Digest the opium and soap in the spirit for three days; then to the strained liquor add the camphor and oil, diligently shaking the vessel.

THE several ingredients in this formula are exceedingly well suited for the purposes expressed in the title of this preparation; the anodyne balsam has accordingly been used with much success to allay pains in strained limbs, and such like topical affections.

LINIMENTUM SAPONACEUM vulgo BALSAMUM SAPONACEUM.

Edinb.

Saponaceous balsam or liniment.

This is made in the same manner and of the same ingredients as the anodyne balsam, only omitting the opium.

It is intended as a simplification and improvement of what had formerly the name of *Opodeldoc*, and is employed with the same intentions as the two preceding.

TINCTURA ANTIMONII.

Rofs.

Tincture of antimony.

Take of

Antimony, in powder, half a pound;

salt

Salt of tartar, one pound ;
 Rectified spirit of wine three pints.
 Mix the antimony with the salt of tartar, and inject them by little and little into a crucible placed in a strong fire. Let the mixture melt thin, and continue in this state for half an hour ; after which it is to be poured out into a hot and dry iron mortar. Powder the mass while hot, put it into a heated matrafs, and pour the spirit upon it. Digest them together for three days, and then strain the tincture.

IN this process, the alkaline salt unites with the sulphur of the antimony into a hepar ; which communicates to the spirit a tincture similar to the tinctura sulphuris. This antimonial tincture is supposed to contain likewise some of the reguline parts of the mineral, and is said to have sometimes provoked a puke when taken on an empty stomach, even in a small dose. It stands recommended in doses from ten to sixty drops or more, as a deobstruent, promoter of urine, and purifier of the blood. But there is probably no purpose to be answered by it, which may not be more effectually obtained by other antimonial preparations, particularly the vinum e tartaro antimoniali.

TINCTURA COLOCYNTHIDIS.

Succ.

Tincture of colocynth.

Take of

Colocynth, cut small, and freed from the seeds, one ounce ;
 Aniseed, one dram ;
 Proof-spirit, fourteen ounces.

Macerate for four days, and strain through paper:

IN this tincture we have the active purgative power of the colocynth. And although it be seldom

used as a cathartic by itself, yet even in a small quantity it may be advantageously employed to brisken the operation of others.

TINCTURA CUPRI VOLATILIS.

Gen.

Volatile tincture of copper.

Take of

Filings of copper, one dram ;
 Spirit of sal ammoniac, an ounce and a half.

Mix them, and keep them in a vessel closely stopt, which is to be frequently agitated till the liquor becomes of a beautiful violet colour.

IN this formula the copper is brought to a saline state by means of the volatile alkali. It may therefore be considered as very analogous to the cuprum ammoniacum. And where recourse is had to it in practice, it is employed with the same intentions.

TINCTURA QUASSIÆ.

Succ.

Tincture of quassia.

Take of

Quassia, bruised, two ounces ;
 Proof-spirit, two pounds and an half.

Digest for three days, and then strain through paper.

BY proof-spirit the medical properties, as well as the sensible qualities of the quassia, are readily extracted. And under this form it may be advantageously employed for answering different purposes in medicine.

TINCTURA LACCÆ.

Succ.

Tincture of lac.

Take of

Gum lac, powdered, one ounce ;

L 1 3

Myrrh,

Myrrh, three drams ;
Spirit of scurvy-grass, a pint and
an half.

Digest in a sand-heat for six days ;
after which, strain off the tinc-
ture for use.

THIS tincture is principally em-
ployed for strengthening the gums,
and in bleedings and scorbutic exul-
cerations of them : it may be fitted
for use with these intentions, by
mixing it with honey of roses, or
the like. Some recommend it in-
ternally against scorbutic complaints,
and as a corroborant in gleans, fe-
male weaknesses, &c. Its warmth,
pungency, and manifestly astrin-
gent bitterish taste, point out its vir-
tues in these cases to be considera-
ble, tho' common practice among
us has not yet received it,

TINCTURA NUCIS VO- MICÆ.

Ros.

Tincture of nux vomica.

Take of

Nux vomica, an ounce and a
half ;

Proof-spirit, two pounds.

Digest for some days, and then
strain it.

THE nux vomica, a very active
vegetable, has of late, as we have
already had occasion to observe, been
introduced into practice as taken in-

ternally, for the cure of intermit-
tents and of contagious dysentery.
In these affections it may be employ-
ed under the form of tincture as
well as in substance ; and in this way
it most readily admits of being com-
bined with other articles, either as
adjuvantia or corrigentia.

TINCTURA SUCCINI.

Succ.

Tincture of amber.

Take of

Yellow amber, pounded, one
ounce ;

Vitriolic æther, four ounces.

Digest for three days in a vessel ac-
curately closed, frequently sha-
king the vessel, and after this
strain through paper.

THE tincture of amber was for-
merly prepared with rectified spirit
of wine ; but the menstruum here di-
rected gives a more complete soluti-
on, and forms a more elegant and
active tincture. It possesses the whole
virtues of the concrete ; and altho'
it has at present no place in our
Pharmacopœia, yet it is perhaps to
be considered as one of the most
valuable preparations of amber. It
has been recommended in a variety
of affections, particularly those of
the nervous kind, as hysterical and
epileptic complaints. It may be ta-
ken from a few drops to the extent
of a tea-spoonful in a glass of wine
or any similar vehicle.

C H A P. XXII.

M I S T U R Æ.

M I X T U R E S.

MISTURA CAMPHORATA.

*Lond.**Camphorated mixture.*

Take of

Camphor one dram.

Rectified spirit of wine, ten drops;

Double-refined sugar, half an ounce;

Boiling distilled water, one pint.

Rub the camphor first with the spirit of wine, then with the sugar; lastly add the water by degrees, and strain the mixture.

of emulsion, is very often useful in fevers, taken to the extent of a table-spoonful every three or four hours.

MISTURA CRETACEA.

*Lond.**Chalk mixture.*

Take of

Prepared chalk, one ounce;

Double-refined sugar, six drams;

Gum arabic, powdered, two ounces;

Distilled water, two pints.

Mix them.

POTIO CRETACEA.

*Edinb.**Chalk drink.*

Take of

Prepared chalk, one ounce;

Purest refined sugar, half an ounce;

Mucilage of gum arabic, two ounces;

Rub them together, and add by degrees.

Water, two pounds and an half;
Spirituos cinnamon water, two ounces.

WHILE camphor is often exhibited in a solid state, it is frequently also advantageous to employ it as diffused in watery fluids. And with this intention the present formula is perhaps one of the most simple, the union being effected merely by the aid of a small quantity of spirit of wine and a little sugar. But perhaps the more common form of emulsion in which the union is effected, by triturating the camphor with a few almonds, is not to be considered as inferior to this. For the unctuous quality of the almonds serves to a considerable degree to cover the pungency of the camphor without diminishing its activity. Camphor under the present form as well as that

THESE two preparations agree pretty much both in their name and in their nature. But of the two formulæ that of the Edinburgh col-

lege is most agreeable to the palate, from containing a proportion of cinnamon water, by which the disagreeable taste of the chalk is taken off.

In the former edition of the Edinburgh pharmacopœia, a preparation of this kind stood among the decoctions, and the chalk was directed to be boiled with the water and gum: by the present formula, the chalk is much more completely suspended by the mucilage and sugar; which last gives also to the mixture an agreeable taste. It is proper to employ the finest sugar, as the redundant acid in the coarser kinds might form with the chalk a kind of phosphoric salt. It would perhaps have been more proper to have added an aromatic, by suspending the entire powder of cinnamon, or its oil, by means of the mucilage, and sugar: The method here directed is, however, less exceptionable in this than in many other preparations, as the precipitated matter of the spirituous water will probably be inviscated in the saccharine and mucilaginous matter. This is a very elegant form of exhibiting chalk, and is an useful remedy in diseases arising from, or accompanied with acidity in the primæ viæ. It is frequently employed in diarrhoea proceeding from that cause. The mucilage not only serves to keep the chalk uniformly diffused, but also improves its virtues by sheathing the internal surface of the intestines. The dose of this medicine requires no nicety. It may be taken to the extent of a pound or two in the course of a day.

MISTURA MOSCHATA.

Lond.

Musk-mixture.

Take of

Musk, two scruples;

Gum arabic, powdered,
Double-refined sugar, of each one dram:

Rose-water, six ounces by measure

Rub the musk first with the sugar, then with the gum, and add the rose-water by degrees.

THIS had formerly the name of *Julepume moscho*, and was intended as an improvement upon the *Hysteric julep with musk* of Bates. Orange-flower water is directed by that author; and indeed this more perfectly coincides with the musk than rose-water: but as the former is difficultly procurable in perfection, the latter is here preferred. The julep appears turbid at first: on standing a little time, it deposits a brown powder, and becomes clear, but at the same time loses great part of its virtue. This inconvenience may be prevented by thoroughly grinding the musk with gum arabic before the addition of the water: by means of the gum, the whole substance of the musk is made to remain suspended in the water. Volatile spirits are in many cases an useful addition to musk, and likewise enable water to keep somewhat more of the musk dissolved than it would otherwise retain.

LAC AMYGDALÆ.

Lond.

Almond-milk.

Take of

Sweet almonds, one ounce and an half;

Double-refined sugar, half an ounce;

Distilled water, two pints.

Beat the almonds with the sugar; then, rubbing them together, add by degrees the water, and strain the liquor.

EMUL-

EMULSII COMMUNIS.

*Edinb.**Common emulsion.*

Take of

Sweet almonds, one ounce ;
 Bitter almonds, one dram ;
 Common water, two pounds and
 a half.

Beat the blanched almonds in a marble mortar, and gradually pour on them the common water, working the whole well together; then strain off the liquor.

EMULSIO ARABICA.

*Edinb.**Arabic emulsion.*

This is made in the same manner as the preceding; only adding, whilst beating the almonds.

Of mucilage of gum Arabic, two ounces.

ALL these may be considered as possessing nearly the same qualities. But of the three the last is the most powerful demulcent.

Great care should be taken, that the almonds be not become rancid by keeping; which will not only render the emulsion extremely unpleasant, a circumstance of great consequence in a medicine that requires to be taken in large quantities, but likewise give it injurious qualities little expected from preparations of this class. The addition of the bitter almonds now ordered by the Edinburgh college in preparing these emulsions, may perhaps preserve them in some degree from suffering the above changes; but it is much more useful as giving the emulsion an agreeable flavour. And although the substance of bitter almonds be of a deleterious nature, yet nothing is to be apprehended from the quantity here employed.

These liquors are principally made use of for diluting and obtunding a-

crimonious humours; particularly in heat of urine and strangurics arising either from a natural sharpness of the juices, from the operation of cantharides or other irritating medicines: in these cases, they are to be drank frequently, to the quantity of half a pint or more at a time.

Some have ordered emulsions to be boiled, with a view to deprive them of some imaginary crudity; but by this process they quickly cease to be emulsions, the oil separating from the water, and floating distinctly upon the surface. Acids and vinous spirits produce a like decomposition. On standing also for some days, without addition, the oily matter separates and rises to the top, not in a pure form, but in that of a thick cream. These experiments prove the composition of the emulsions made from the oily seeds of kernels, and at the same time point out some cautions to be attended to in their preparation and use.

LAC AMMONIACI.

 *Lond.**Ammoniacum milk.*

Take of

Ammoniacum, two drams ;
 Distilled water, half a pint.

Rub the gum-resin with the water, gradually poured on, until it becomes a milk.

In the same manner may be made a milk of asafœtida, and of the rest of the gum-resins.

THE ammoniacum milk is employed for attenuating tough phlegm, and promoting expectoration, in humoural asthmas, coughs, and obstructions of the viscera. It may be given to the quantity of two spoonfuls twice a-day.

The lac asafœtidæ is employed in spasmodical, hysterical, and other nervous affections. And it is also

not unfrequently used under the form of injection. It answers the same purposes as asafoetida in substance.

SPIRITUS ÆTHERIS VITRIOLICI COMPOSITUS.

Lond.

Compound of vitriolic æther.

Take of

Spirit of vitriolic æther, two pounds;

Oil of wine, three drams.

Mix them.

THIS is supposed to be, if not precisely the same, at least very nearly, the celebrated liquor *anodynus mineralis* of Hoffman: as we learn from his own writings, that the liquor which he thus denominated, was formed of dulcified spirit of vitriol and the aromatic oil which arises after it: But he does not tell us in what proportions these were combined. It has been highly extolled as an anodyne and antispasmodic medicine; and with these intentions it is not unfrequently employed in practice.

SPIRITUS AMMONIÆ COMPOSITUS.

Lond.

Compound spirit of ammonia.

Take of

Spirit of ammonia, two pints;

Essential oil of lemon,

————— nutmeg, of each two drams.

Mix them.

THIS differs almost only in name from the following.

SPIRITUS VOLATILIS AROMATICUS, vulgo SPIRITUS VOLATILIS OLÆOSUS, et SPIRITUS SALINUS AROMATICUS.

Edinb.

Volatile aromatic spirit, commonly

called volatile oily spirit, and saline aromatic spirit.

Take of

Vinous spirit of sal ammoniac, eight ounces;

Distilled oil of rosemary, one dram and a half;

Distilled oil of lemon-peel, one dram.

Mix them, that the oils may be dissolved.

By the method here directed, the oils are as completely dissolved as when distillation is employed.

Volatile salts, thus united with aromatics, are not only more agreeable in flavour, but likewise more acceptable to the stomach, and less acrimonious than in their pure state. Both the foregoing compositions turn out excellent ones, provided the oils are good, and the distillation skilfully performed. The dose is from five or six drops to sixty or more.

Medicines of this kind might be prepared extemporaneously, by dropping any proper essential oil into the dulcified spirit of sal ammoniac, which will readily dissolve the oil without the assistance of distillation. But it is perhaps preferable that they should be kept in the shops ready mixed.

SPIRITUS AMMONIÆ SUCCINATUS.

Lond.

Succinated spirit of ammonia.

Take of

Alcohol, one ounce;

Water of pure ammonia, four ounces by measure;

Rectified oil of amber, one scruple;

Soap, ten grains.

Digest the soap and oil of amber in the alcohol till they be dissolved; then add the water of pure ammonia, and mix them by shaking.

THIS

THIS composition is extremely penetrating, and has lately come into esteem, particularly for smelling to in lownesses and faintings, under the name of *Eau de luce*. It has been hitherto brought from France. It is not quite limpid, for the oil of amber dissolves only imperfectly in the spirit: if the volatile spirit be not exceedingly strong, scarcely any of the oil will be imbibed.

The *Eau de luce* is not only used with the view of making an impression upon the nose, but is taken internally in the same cases. It has likewise of late been celebrated as a remedy for the bite of the rattlesnake, when used internally, and applied externally to the wounded part.

SPIRITUS CAMPHORATUS.

Lond.

Camphorated spirit.

Take of

Camphor, four ounces;

Rectified spirit of wine, two pints.

Mix them, so that the camphor may be dissolved.

OF this we have already had occasion to speak in the preceding chapter under the title given to it by the Edinburgh college.

EMULSIO OLEOSA SIMPLEX.

Gen.

Simple oily emulsion.

Take of

Almond oil, one ounce;

Syrup of althea, an ounce and a half;

Gum arabic, half an ounce;

Fountain water, six ounces.

Mix, and make an emulsion according to art.

EMULSIO OLEOSA VOLATILIS.

Gen.

Volatile oily emulsion.

Take of

Almond oil, an ounce and a half;

Syrup of althea, one ounce;

Gum arabic, half an ounce;

Volatile alkaline salt, one dram;

Fountain water, seven ounces.

Mix them according to art.

BOTH these are elegant and convenient modes of exhibiting oil internally. And under these forms it is often advantageously employed in cases of cough, hoarseness, and similar affections. By means of the alkali, a more intimate union of oil with water is obtained than can be had with the intermedium either of syrup or vegetable mucilage; and in some cases, the alkali both contributes to answer the intention in view, and prevents the oil from exciting sickness at stomach: But in other instances, the pungency which it imparts is disagreeable to the patient and unfavourable to the disease. According to these circumstances, therefore, where an oily mixture is to be employed, the practitioner will be determined in his choice to have recourse either to the one or the other formula.

JULAPIUM ACIDUM.

Gen.

Acid julep.

Take of

Weak vitriolic acid, three drams;

Simple syrup, three ounces;

Fountain water, two pounds.

Mix them.

IN this state, the vitriolic acid is sufficiently diluted to be taken with ease in considerable doses. And it may thus be advantageously employed in various affections; concerning which

which we have already had occasion to make some remarks in the *Materia Medica*, and which are to be answered, either by its action on the stomach, or on the system in general.

JULAPIUM ÆTHEREUM.

Gen.

Æther julep.

Take of

Pure vitriolic æther, two scruples;

Fountain water, six ounces;

Refined sugar, half an ounce.

Mix them according to art.

ALTHOUGH it is in general proper that æther should be diluted only when it is to be immediately used, yet it is sometimes necessary that it should be put into the hands of the patient in the state in which it is to be taken. In such instances the present formula is a very proper one; but the addition of a little mucilage tends both to cover the pungency of the æther in the mouth, and to retain it in a state of mixture with the water.

JULAPIUM SUCCINATUM.

Gen.

Amber juleps.

Take of

Tincture of amber, two drams;

Refined sugar, half an ounce;

Fountain water, six ounces.

Mix them according to art.

UNDER this form the tincture of amber is so far diluted and sweetened, as to form an agreeable mixture; and in this manner it may often be advantageously employed for counteracting nervous affections, and answering those other purposes for which we have already mentioned that this article is had recourse to in practice.

MIXTURA SALINA.

Succ.

Saline mixture, or julep.

Take of

Fixed vegetable alkali, one ounce;

Fountain water, five ounces.

To this lixivium add,

Lemon juice, two ounces, or as much as is sufficient to saturate the alkali;

Simple syrup, half an ounce.

THIS mixture is frequently prescribed in febrile diseases as a means of promoting a slight discharge by the surface: For where the skin is parched with great increased heat, it generally operates as a gentle diaphoretic. It often also promotes a discharge by the kidneys, and is not unfrequently employed to restrain vomiting. With these intentions it is in daily use among British practitioners, although it has no place in our pharmacopœias, from its being entirely an extemporaneous prescription.

SOLUTIO MINERALIS ARSENICI.

Mineral solution of arsenic.

Take of

White arsenic, reduced to a subtile powder,

Fixed vegetable alkali, each sixty-four grains;

Distilled water, half a pint.

Put it into a florentine flask, and let this be placed in a sand-heat, so that the water may boil gently till the arsenic be completely dissolved; then add to the solution when cold half an ounce of spirit of lavender, and as much distilled water as to make the solution amount to a pint by measure, or fifteen ounces and an half by weight.

FOR the introduction of this remedy

medy we are indebted to Dr Fowler of Stafford. We have already had occasion to mention it when treating of arsenic in the *Materia Medica*: and we then observed, that if it be not precisely the same, it is at least supposed to be very analogous to a remedy which has had a very extensive sale in some parts of England under the name of the *Tasteless ague drop*; and which has been employed with very great success in the cure of obstinate intermittents. But whether the present formula in any degree approaches to the tasteless ague drop or not, there can be no doubt, from the concurring testimony of many eminent practitioners, that it is equally successfully in combating intermittents. For this

purpose it is given according to the age and other circumstances of the patient in doses from two to twenty drops, once, twice, or oftener in the course of the day: And its use has been found to be attended with remarkable success, although with some patients even very small doses have been found to excite severe vomiting. Besides distinctly marked intermittents, this solution has also been sometimes successful in obstinate periodical headachs, and in cutaneous affections of the leprous kind, resisting every other mode of cure. And perhaps in every case where arsenic can be employed with safety or advantage internally, this preparation is preferable to any other with which we are yet acquainted.

C H A P. XXIII.

S Y R U P I.

S Y R U P S.

SYRUPS are saturated solutions of sugar, made in water, or watery vinous infusions, or in juices. They were formerly considered as medicines of much greater importance than they are thought to be at present. Syrups and distilled waters were for some ages made use of as the great alteratives; insomuch that the evacuation of any peccant humour was never attempted, till by a due course of these it had first been

supposed to be regularly prepared for expulsion. Hence arose the exuberant collection of both, which we meet with in pharmacopoeias, and like errors have prevailed in each. As multitudes of distilled waters have been compounded from materials unfit to give any virtue over the helm; so numbers of syrups have been prepared from ingredients, which in this form cannot be taken in sufficient doses to exert their virtues; for

two-thirds of a syrup consist of sugar, and greatest part of the remaining third is an aqueous fluid.

Syrups are at present chiefly regarded as convenient vehicles for medicines of greater efficacy; and made use of for sweetening draughts and juleps, for reducing the lighter powders into boluses, pills, or electuaries, and other similar purposes. Some likewise may not improperly be considered as medicines themselves; as those of saffron, buckthorn berries, and some others.

To the chapter on syrups the London college in their pharmacopoeia have premised the following general observations.

In the making of syrups, where we have not directed either the weight of the sugar, or the manner in which it should be dissolved, this is to be the rule:

Take of

Double-refined sugar, twenty-nine ounces;

Any kind of liquor, one pint.

Dissolve the sugar in the liquor, in a water-bath; then set it aside for twenty-four hours; take off the scum, and pour off the syrup from the feces if there be any.

THE following are the general rules which have commonly been given with respect to the preparation of syrups.

I.

ALL the rules laid down for making decoctions are likewise to be observed in the decoctions for syrups. Vegetables, both for decoctions and infusions, ought to be dry, unless they are expressly ordered otherwise.

II.

In both the London and Edinburgh Pharmacopoeia, only the

purest or double-refined sugar is allowed.

In the syrups prepared by boiling, it has been customary to perform the clarification with whites of eggs after the sugar had been dissolved in the decoction of the vegetable. This method is apparently injurious to the preparation; since not only the impurities of the sugar are thus discharged; but a considerable part likewise of the medicinal matter, which the water had before taken up from the ingredients, is separated along with them. Nor indeed is the clarification and despumation of the sugar, by itself, very advisable; for its purification by this process is not so perfect as might be expected: after it has undergone this process, the refiners still separate from it a quantity of oily matter, which is disagreeable to weak stomachs. It appears therefore most eligible to employ fine sugar for all the syrups; even the purgative ones (which have been usually made with coarse sugar, as somewhat coinciding with their intention) not excepted; for, as purgative medicines are in general ungrateful to the stomach, it is certainly improper to employ an addition which increases their offensiveness.

III.

Where the weight of the sugar is not expressed, twenty-nine ounces are to be taken in every pint of liquor. The sugar is to be reduced into powder, and dissolved in the liquor by the heat of a water-bath, unless ordered otherwise.

Although in the formula of several of the syrups, a double weight of sugar to that of the liquor is directed, yet less will generally be sufficient. First, therefore, dissolve in the liquor an equal weight of sugar, then gradually add some
more

more in powder, till a little remains undissolved at the bottom, which is to be afterwards incorporated by setting the syrup in a water-bath.

The quantity of sugar should be so much as the liquor is capable of keeping dissolved in the cold: if there is more, a part of it will separate, and concrete into crystals, or candy; if less, the syrup will be subject to ferment, especially in warm weather, and change into a vinous, or sour liquor. If in crystallising, only the superfluous sugar separated, it would be of no inconvenience; but when part of the sugar has candid, the remaining syrup is found to have an under proportion, and is as subject to fermentation as if it had wanted sugar at first.

IV.

Copper-vessels, unless they be well tinned should not be employed in the making of acid syrups, or such as are composed of the juices of fruits.

The confectioners, who are the most dexterous people at these kinds of preparations, to avoid the expense of frequently new-tinning their vessels, rarely make use of any other than copper ones untinned, in the preparation even of the most acid syrups, as of oranges and lemons. Nevertheless, by taking due care, that their coppers be well scoured and perfectly clean, and that the syrup remain no longer in them than is absolutely necessary, they avoid giving it any ill taste or quality from the metal. This practice, however, is by no means to be recommended to the apothecary.

V.

The syrup, when made, is to be set by till next day; if any saccharine crust appears upon the surface, it is to be taken off.

SYRUPUS ACETII.

*Edinb.**Syrup of vinegar.*

Take of

Vinegar, two pounds and an half;
Refined sugar, three pounds and an half.

Boil them till a syrup be formed.

THIS is to be considered as simple syrup merely acidulated, and is by no means unpleasent. It is often employed in mucilaginous mixtures, and the like; and on account of its cheapness it is often preferred to syrup of lemons.

SYRUPUS ALTHÆÆ.

*Lond.**Syrup of marshmallow.*

Take of

Fresh root of marshmallow, bruised one pound:

Double-refined sugar, four pounds;
Distilled water, one gallon.

Boil the water with the marshmallow root to one half, and press out the liquor when cold. Set it by twelve hours; and, after the feces have subsided, pour off the liquor. Add the sugar, and boil it to the weight of six pounds.

Edinb.

Take of

Marshmallow roots, somewhat dried, nine ounces;

Water ten pounds;

Purest sugar, four pounds;

Boil the water with the roots to the consumption of one half, and strain the liquor, strongly expressing it. Suffer the strained liquor to rest till the feces have subsided, and when it is free of the dregs, add the sugar; then boil so as to make a syrup.

THE syrup of marshmallows seems to have been a sort of favourite among

mong dispensatory writers, who have taken great pains to alter and amend it, but have been wonderfully tender in retrenching any of its articles. In the last prescription, it is lopt of its superfluities, without any injury to its virtues. It is used chiefly in nephritic cases, for sweetening emollient decoctions, and the like: of itself it can do little service, notwithstanding the high opinion which some have entertained of it; for what can be expected from two or three spoonfuls of the syrup, when the decoction, from which two or three pounds are made, may be taken at a draught or two? It is sometimes useful in tickling coughs, by inviscating irritating matter distilling in the fauces: in this way it sometimes affords considerable relief

SYRUPUS CARYOPHILLI RUBRI.

Lond.

Syrup of clove July-flower.

Take of

Fresh clove July-flowers, the heels being cut off, two pounds;

Boiling distilled water, six pints.

Macerate the flowers for twelve hours in a glass vessel; and, in the strained liquor, dissolve the double-refined sugar, that it may be made a syrup.

SYRUPUS CARYOPHILLO- RUM.

Edinb.

Syrup of clove July-flower.

Take of

Clove July-flowers, fresh gathered and freed from the heels, one pound;

Purest sugar, seven pounds and a quarter;

Boiling water four pounds.

Macerate the flowers in the water for a night; then to the strained liquor add the sugar previously beat, and dissolve it by a gentle

heat, to make the whole into a syrup.

THIS syrup is of an agreeable flavour, and a fine red colour; and for these it is chiefly valued. Some have substituted to it one easily preparable at seasons when the flowers are not to be procured: an ounce of clove spice is infused for some days in twelve ounces of white wine, the liquor strained, and, with the addition of twenty ounces of sugar, boiled to a proper consistence; a little cochineal renders the colour of this syrup exactly similar to that prepared from the clove July-flower; and its flavour is of the same kind, though not so pleasant. The abuse may be readily detected by adding to a little of the syrup some alkaline salt or ley; which will change the genuine syrup to a green colour; but in the counterfeit, it will make no such alteration, only varying the shade of the red.

As the beauty of the colour is a principal quality in this syrup, no force in the way of expression should be used in separating the liquor from the flowers.

SYRUPUS COLCHICI.

Edinb.

Syrup of colchicum.

Take of

Colchicum root, fresh and succulent, cut into small pieces, one ounce;

Vinegar, sixteen ounces;

Purest sugar, twenty-six ounces.

Macerate the root in the vinegar two days, now and then shaking the vessel; then strain it with a gentle pressure. To the strained liquor add the sugar, and boil a little, so as to form a syrup.

THIS syrup seems to be the best preparation of the colchicum; great care is required to take up this root

in the proper season: and from errors of this kind we are to ascribe the uncertainty in the effects of this medicine as found in the shops.

The syrup of colchicum is often successfully employed as a diuretic, and may be taken from a dram or two to the extent of an ounce or more.

SYRUPUS CORTICIS AURANTII.

Lond.

Syrup of orange-peel.

Take of

Fresh outer-rind of Seville oranges, eight ounces;

Boiling distilled water, five pints.

Macerate for twelve hours in a close vessel; and, in the strained liquor, dissolve the double-refined sugar to make a syrup.

Edinb.

Take of

Yellow rind of Seville orange-peel, fresh, six ounces;

Boiling water, three pounds.

Infuse them for a night in a close vessel; then strain the liquor; let it stand to settle; and having poured it off clear from the sediment, dissolve in it four pounds and a quarter of white sugar, so as to make it into a syrup with a gentle heat.

IN making this syrup, it is particularly necessary that the sugar be previously powdered, and dissolved in the infusion with as gentle a heat as possible, to prevent the exhalation of the volatile parts of the peel. With these cautions, the syrup proves a very elegant and agreeable one, possessing great share of the fine flavour of the orange-peel.

SYRUPUS CROCI.

Lond.

Syrup of saffron.

Take of

Saffron, one ounce

Boiling distilled water, one pint.

Macerate the saffron, in the water, for twelve hours, in a close vessel; and dissolve the double refined sugar in the strained liquor that it may be made a syrup.

SAFFRON is very well fitted for making a syrup, as in this form a sufficient dose of it is contained in a reasonable compass. This syrup is at present frequently prescribed; it is a pleasant cordial, and gives a fine colour to juleps.

SYRUPUS SUCCI LIMONIS.

Lond.

Syrup of lemon-juice.

Take of

Lemon-juice, strained, after the feces have subsided, two pints;

Double-refined sugar, fifty ounces.

Dissolve the sugar, that it may be made a syrup.

SYRUPUS e SUCCO MALORUM LIMONIORUM.

Edinb.

Syrup of lemon-juice.

Take of

Juice of lemons, suffered to stand till the feces have subsided, and afterwards strained, two pounds and a half.

Double-refined sugar, fifty ounces.

Dissolve the sugar in the juice, so as to make a syrup thereof.

SYRUPUS FRUCTUS MORI.

Lond.

Syrup of the juice of mulberries.

SYRUPUS FRUCTUS RUBI IDÆI.

Lond.

Syrup of the juice of raspberries.

M m

SY-

SYRUPUS FRUCTUS RIBIS
NIGRI.

Lond.

Syrup of black currants.

These three are directed by the London college to be prepared in the same manner as syrup of lemons, which immediately precedes them.

ALL these four are very pleasant cooling syrups; and with this intention are occasionally made use of in draughts and juleps, for quenching thirst, abating heat, &c. in bilious or inflammatory distempers. They are sometimes likewise employed in gargarisms for inflammations of the mouth and tonsils.

SYRUPUS PAPAVERIS

ALBI.

Lond.

Syrup of the white poppy.

Take of

The heads of white poppies dried, and the seeds taken out, three pounds and an half;

Double-refined sugar, six pounds.

Distilled water, eight gallons.

Slice and bruise the heads, then boil them in the water to three gallons, in a water-bath saturated with sea-salt, and press out the liquor. Reduce this by boiling to about the measure of four pints, and strain it whilst it is hot, first through a sieve, then through a thin woollen cloth, and set it aside for twelve hours, that the feces may subside. Boil the liquor, poured off from the feces, to three pints, and dissolve the sugar in it that it may be made a syrup.

SYRUPUS PAPAVERIS ALBI,
seu de MECONIO, vulgo DIACODION.

Edinb.

Syrup of white poppies, or of meconium, commonly called diacodium.

Take of

White poppy heads, dried, and freed from the seeds, two pounds;

Boiling water, thirty pounds;

Purest sugar, four pounds.

Macerate the bruised heads in the water for a night; next boil till only one-third part of the liquor remain; then strain it; expressing it strongly. Boil the strained liquor to the consumption of one half, and strain again; lastly, add the sugar, and boil to a syrup.

It may also be made by dissolving in two pounds and a half of simple syrup, one dram of the extract of white poppies.

THIS syrup, impregnated with the opiate matter of the poppy heads, is given to children in doses of two or three drams; to adults, from half an ounce to an ounce and upwards, for easing pain, procuring rest, and answering the other intentions of mild opiates. Particular care is requisite in its preparation, that it may be always made, as nearly as possible, of the same strength; and accordingly the colleges have been very minute in their description of the process.

SYRUPUS PAPAVERIS ERRATICI.

Lond.

Syrup of the red poppy.

Take of

The fresh flowers of the wild, or red poppy, four pounds;

Boiling distilled water, four pints and an half.

Put the flowers, by degrees, into the boiling water, in a water-bath, constantly stirring them. After this, the vessel being taken out of the bath, macerate for twelve hours; then press out the liquor, and

and set it apart, that the feces may subside. Lastly, make it into a syrup, with double-refined sugar.

THE design of putting the flowers into boiling water in a water-bath is, that they may be a little scalded, so as to shrink enough to be all immersed in the water; without this artifice, they can scarce be all got in: but they are no longer to be continued over the fire than till this effect is produced, lest the liquor become too thick, and the syrup rendered ropy.

This syrup has been recommended in disorders of the breast, coughs, spitting of blood, pleurisies, and other diseases, both as an emollient and as an opiate. It is one of the lightest of the opiate medicines; and in this respect so weak, that some have doubted of its having any anodyne quality. We indeed presume, that it might be very safely superseded altogether: and accordingly it has now no place either in the Edinburgh pharmacopœia, or some of the best foreign ones, though still retained by the London college.

SYRUPUS ROSÆ.

Lond.

Rose-syrup.

Take of

The dried petals of the damask rose, seven ounces;

Double refined sugar, six pounds;

Boiling distilled water, four pints.

Macerate the petals of the rose in water for twelve hours, and strain. Evaporate the strained liquor to two pints and an half, and add the sugar, that it may be made a syrup.

SYRUPUS ROSARUM PALLIDARUM.

Edinb.

Syrup of pale roses.

Take of

Pale roses, fresh gathered, one pound;

Boiling water, four pounds;

White sugar, three pounds.

Macerate the roses in the water for a night; then to the liquor strained, and freed from the dregs, add the sugar; boil them into a syrup.

This syrup may likewise be made from the liquor remaining after the distillation of rose-water, depurated from its feces.

THE liquor remaining after the distillation of roses (provided the still has been perfectly clean), is as proper for making this syrup as a fresh infusion; for the distillation only collects those volatile parts which are dissipated in the air whilst the infusion is boiling to its consistence: This syrup is an agreeable and mild purgative for children, in the dose of half a spoonful, or a spoonful. It likewise proves gently laxative to adults; and with this intention may be of service in costive habits. Its principal use is in solutive glysters.

SYRUPUS e ROSIS SICCIS.

Edinb.

Syrup of dry roses.

Take of

Red roses, dried, seven ounces;

White sugar, six pounds;

Boiling water, five pounds.

Infuse the roses in the water for a night, then boil them a little; strain out the liquor, and adding to it the sugar, boil them to the consistence of a syrup.

THIS syrup is supposed to be mildly astringent: but is principally valued on account of its red colour. The London college have omitted it, having retained others at least equal to it in that respect.

SYRUPUS SCILLITICUS.

*Edinb.**Syrup of squills.*

Take of

Vinegar of squills, two pounds ;
White sugar, three pounds and
a half.

Make them into a syrup with a
gentle heat.

THIS syrup was formerly prepared with some spices, intended to alleviate the offensiveness of the squills. But while they had not this effect, they often counteracted the intention in view, and are therefore omitted. It is used chiefly in doses of a spoonful or two, for promoting expectoration, which it does very powerfully.

SYRUPUS SIMPLEX, five
COMMUNIS.*Edinb.**Simple or common syrup.*

Take of

Purest sugar, fifteen parts ;
Water, eight parts.

Let the sugar be dissolved by a
gentle heat.

THIS preparation is a plain liquid sweet, void of flavour or colour. It is convenient for sundry purposes where these qualities are not wanted, or would be exceptionable.

SYRUPUS SPINÆ CER-
VINÆ.*Lond.**Syrup of buckthorn.*

Take of

The juice of ripe and fresh buck-
thorn berries, one gallon ;
Ginger, bruised, one ounce ;
All-spice, powdered, one ounce
and an half ;

Double - refined sugar, seven
pounds.

Set by the juice for some days, that

the feces may subside, and strain. Macerate the ginger and all-spice in a pint of the strained juice, for four hours, and strain. Boil away the rest of the juice to three pints ; then add that part of the juice in which the ginger and all-spice have been macerated ; and, lastly, the sugar, that it may be made a syrup.

SYRUPUS e RHAMNO CA-
THARTICO seu e SPINA
CERVINA.*Edinb.**Syrup of buckthorn.*

Take of

The juice of ripe buckthorn ber-
ries, depurated, seven pounds
and a half ;

White sugar, three pounds and
a half.

Boil them to the consistence of a
syrup.

BOTH these preparations, in doses of three or four spoonfuls, operate as brisk cathartics. The principal inconveniences attending them are, their being very unpleasant, and their occasioning a thirst and dryness of the mouth and fauces, and sometimes violent gripes : these effects may be prevented by drinking liberally of water-gruel, or other warm liquids, during the operation. The ungratefulness of the buckthorn is endeavoured to be remedied in the first of the above prescriptions, by the addition of aromatics, which, however, are scarcely sufficient for that purpose. The second also had formerly an aromatic material for the same intention, a dram of the essential oil of cloves ; which being found ineffectual, is now rejected.

SYRUPUS TOLUTANUS.

*Lond.**Syrup of balsam of Tolu*

Take

Take of

The balsam of Tolu, eight ounces;

Distilled water, three pints.

Boil for two hours. Mix with the liquor, strained after it is cold, the double-refined sugar, that it may be made a syrup.

SYRUPUS BALSAMICUS.

Edinb.

Balsamic syrup.

Take of

The syrup of sugar, just made, and warm from the fire, two pounds;

Tincture of balsam of Tolu, one ounce.

When the syrup has grown almost cold, stir into it the tincture, by little at a time, agitating them well together, till perfectly united.

THIS last method of making the balsamic syrup was dropt in one of the preceding editions of the Edinburgh pharmacopoeia, on a complaint that the spirit spoiled the taste of the syrup; which it did in a great degree when the tincture was drawn with malt-spirits, the nauseous oil which all the common malt-spirits are accompanied with communicating that quality; and this was particularly the case when the spirituous part was evaporated from the syrup, as was directed in the former edition of the Edinburgh pharmacopoeia. Particular care therefore should be taken, that the spirit employed for making the tincture, be perfectly clean, and well rectified from all ill flavour.

The intention of the contrivers of the two foregoing processes seems to have been somewhat different. In the first, the more subtile and fragrant parts of the balsam are extracted from the grosser resinous matter, and alone retained in the syrup: the other syrup contains the whole

substance of the balsam in larger quantity. They are both moderately impregnated with the agreeable flavour of the balsam.

In some pharmacopoeias, a syrup of this kind is prepared from a tincture of balsam of Perū, with rose-water, and a proper quantity of sugar.

SYRUPUS VIOLÆ.

Lond.

Syrup of violets.

Take of

The fresh petals of the violet, two pounds.

Boiling distilled water, five pints.

Macerate for twenty-four hours; afterwards strain the liquor, without pressing, through thin linen. Add refined sugar, that it may be made a syrup.

SYRUPUS VIOLARUM.

Edinb.

Syrup of violets.

Take of

Fresh violets, one pound;

Boiling water, four pounds.

Purest sugar, seven pounds and a half.

Macerate the violets in the water for twenty-four hours in a glass, or at least a glazed earthen vessel, close covered; then strain without expression, and to the strained liquor add the sugar, beat, and make into a syrup.

THIS syrup is of a very agreeable flavour; and in the quantity of a spoonful or two proves to children gently laxative. It is apt to lose, in keeping, the elegant blue colour, for which it is chiefly valued; and hence some have been induced to counterfeit it with materials whose colour is more permanent. This abuse may be readily discovered, by adding to a little of the suspected syrup any acid or alkaline liquor. If the syrup be

genuine, the acid will change its blue colour to a red, and the alkali will change it to a green; but if counterfeit, these changes will not happen. It is obvious, from this mutability of the colour of the violet, that the prescriber would be deceived if he should expect to give any blue tinge to acidulated or alkalinised juleps or mixtures, by the addition of the blue syrup.

SYRUPUS ZINGIBERIS.

Lond.

Syrup of ginger.

Take of

Ginger, bruised, four ounces;
Boiling distilled water, three pints
Macerate for four hours, and strain;
then add the refined sugar, that
it may be made a syrup.

Edinb.

Take of

Beat ginger, three ounces;
Boiling water, four pounds;
Purest sugar, seven pounds and a
half
Macerate the ginger in the water in
a close vessel, for twenty-four
hours; then to the liquor strained,
and freed from the feces, add
the beat sugar, and make them
into a syrup.

THESE are agreeable and moderately aromatic syrups, lightly impregnated with the flavour and virtues of the ginger.

SYRUPUS ACIDUS.

Gen.

Acid syrup.

Take of

Weak spirit of vitriol, two drams;
Syrup of lemons, six ounces.
Mix them.

WHERE we wish to obtain a syrup, not only strongly acidulated,

but also powerfully astringent, this formula may be considered as well suited to answer the purpose.

SYRUPUS ALKALINUS

Gen.

Alkaline syrup.

Take of

Salt of tartar, three drams;
Simple syrup, six ounces.

Mix them.

IN this syrup we have in some degree the converse of the preceding; and it may be usefully employed, either for the destruction of acid in the stomach, or for the formation of neutral or effervescent mixtures.

SYRUPUS ALLII.

Succ.

Syrup of garlic.

Take of

The fresh root of garlic, sliced,
one pound;
Boiling water, two pounds.
Macerate them in a close vessel for
an hour; add to the strained li-
quor,
Refined sugar two pounds.
Boil them to a syrup.

THIS syrup formerly held a place in our pharmacopoeias, and was recommended for promoting expectation in cases of chronic catarrh, and other affections of the breast: But, as well as the oxymel ex alio, it is now banished from them; and there can be little doubt that the same intentions may in general be answered by less disagreeable medicines. Yet where we wish to employ garlic as acted upon by a watery menstruum, this formula is perhaps one of the best under which it can be exhibited.

SYRUPUS

SYRUPUS AMYGDALINUS.

*Succ.**Syrup of almonds.*

Take of

Sweet almonds, one pound ;
Bitter almonds, two drams.

Let the almonds be blanched and beat in a stone mortar, with a wooden pestle ; then by degrees add barley-water, two pounds ; strain the liquor, and form it into a syrup, with as much double-refined sugar as may be necessary.

THE agreeable flavour of the almonds, is in this formula communicated to a syrup, which may be advantageously employed to sweeten mixtures, or to form a pleasant drink when diffused in water ; and the flavour is not a little improved by the addition of the proportion of bitter almonds here directed. But even these cannot be supposed to communicate any active quality to this syrup, as they are employed in so small a quantity ; and still less is to be expected from the sweet almonds, which can communicate little more to the syrup than their mild oil.

SYRUPUS CINNAMONI.

*Ross.**Syrup of cinnamon.*

Take of

Cinnamon, bruised, five ounces ;
Spirituous cinnamon-water, two pounds.

Digest them in a close glass vessel for twenty-four hours ; then add to the strained liquor double-refined sugar, three pounds ; boil it to a syrup.

THIS syrup is strongly impregnated with the cinnamon ; and where we wish to sweeten any mixture, at the same time adding to it an agreeable aromatic, it is

perhaps one of the best articles we can employ.

SYRUPUS EMETICUS.

*Brun.**Emetic syrup.*

Take of

Glass of antimony, finely powdered, two drams ;
Rhenish wine, twelve ounces.

Let them be digested for three days in a gentle heat, then strain the liquor through paper, and mix with the strained liquor thirty ounces of double-refined sugar. Let it be formed into a syrup and kept in a close vessel.

THERE can be no doubt of this syrup being strongly impregnated with the emetic quality of the antimony ; and it will at least have so far the advantage of being very agreeable to the taste, that it may be readily taken by very young people. But every good effect to be obtained from it may be had with more certainty, by adding to simple syrup any quantity that may be thought necessary of the tartarus antimonialis, previously dissolved in a small proportion of water.

SYRUPUS HYDRARGYRI.

*Succ.**Syrup of quicksilver.*

Take of

Purified quicksilver, one dram ;
Gum arabic, three drams ;

Rose water, as much as is sufficient for reducing the gum to a mucus.

Let them be rubbed in a mortar, till the quicksilver totally disappears ; then by degrees mix with it simple syrup four ounces.

IN this we have a preparation similar to the mercurial solution of Dr Plenck, formerly mentioned ; and

which while it does not possess any other advantage than mere sweetness of taste, is liable to the objec-

tions formerly urged against that preparation.

C H A P. XXIV.

M E L L A M E D I C A T A.

M E D I C A T E D H O N E Y S.

THE more fixed parts of vegetables, dissolved in watery liquors, may be thence transferred into honey, by mixing the honey with the watery decoction or juice of the plant, and boiling them together till the aqueous part has exhaled, and the honey remains of its original consistence. Honey has not probably, however, any very peculiar advantage over sugar; and it is liable to many inconveniences which sugar is free from: in particular, it is much more liable to run into fermentation, and in many constitutions produces gripes, and often violent effects: The Edinburgh college have therefore rejected the whole of the oxymels from their last edition of the pharmacopœia. And the number of preparations with honey in most of the foreign pharmacopœias is now much diminished. Still, however, there are several much employed by practitioners of eminence, and of course retained in the London pharmacopœia.

MEL ROSÆ.

Lond.

Honey of roses.

Take of

Red rose-buds, with the heels cut off and dried, four ounces;
Distilled water, boiling, three pints;
Clarified honey, five pounds.

Macerate the rose-petals in the water for six hours; then mix the honey with the strained liquor, and boil the mixture to the thickness of a syrup.

THIS preparation is not unfrequently made use of as a mild cooling detergent, particularly in gargarisms for ulcerations and inflammation of the mouth and tonsils. The rose buds here used should be hastily dried; the design of doing so is, that they may the better preserve their astringency.

MEL

MEL SCILLÆ.

Lond.

Honey of squills.

Take of

Clarified honey, three pounds;
Tincture of squills, two pints.
Boil them in a glass vessel to the
thickness of a syrup.

The honey will here be impreg-
nated with all the active parts of the
squills which the tincture before
contained, and may be employed as
an useful expectorant or diuretic.

OXYMEL ÆRUGINIS.

Lond.

Oxymel of verdegriis.

Take of

Prepared verdegriis, one ounce;
Vinegar, seven ounces;
Clarified honey, fourteen ounces.
Dissolve the verdegriis in the vine-
gar, and strain it through linen;
then add the honey, and boil the
whole to a proper thickness.

THIS is an improvement of what
was formerly known in our pharma-
copœias under the title of *Mel Æ-*
gyptiacum; which, however, was, as
then prepared, very uncertain with
respect to strength. It is used only
externally for cleansing foul ulcers,
and keeping down fungous flesh. It
is also often serviceable in venereal
ulcerations of the mouth and tonsils:
But there is some danger from its
application to places from the situa-
tion of which it is apt to be swallow-
ed; for even a small quantity of
verdegriis passing into the stomach
may be productive of distressing, if
not deleterious effects.

OXYMEL COLCHICI.

Lond.

Oxymel of meadow saffron.

Take of

The fresh root of meadow saf-

fron, cut into thin slices, one
ounce;

Distilled vinegar, one pint;

Clarified honey, two pounds.

Macerate the root of meadow-saf-
fron, with the vinegar, in a glass
vessel, with a gentle heat, for
forty-eight hours. Strain the li-
quor, pressed out strongly from
the root, and add the honey.
Lastly, boil the mixture, fre-
quently stirring it with a wooden
spoon, to the thickness of a sy-
rup.

THIS oxymel may be considered
as very analogous to the syrupus col-
chici of which we have already made
some observations. Under this form
it was first introduced by Dr Stoerk.
And although with certain constitu-
tions the syrup is unquestionably pre-
ferable, yet it well deserves a place
in our pharmacopœias, as being an
active medicine.

OXYMEL SCILLÆ.

Lond.

Oxymel of squills.

Take of

Clarified honey, three pounds;
Vinegar of squills, two pints.
Boil them in a glass vessel, with a
slow fire, to the thickness of a
syrup.

THE honey was formerly employ-
ed for this preparation unclarified,
and the scum, which in such cases
arises in the boiling, taken off; by
this means the impurities of the ho-
ney were discharged; but some of
the medicinal parts of the squills,
with which the vinegar was impreg-
nated, were also separated. For this
reason the college of London have
now judiciously ordered the honey
for all these kinds of preparations
to be previously clarified by itself.

Oxymel of squills is an useful a-
perient,

perient, detergent, and expectorant, and of great service in humoral asthma, coughs, and other disorders where thick phlegm abounds. It is given in doses of two or three drams, along with some aromatic water, as that of cinnamon, to prevent the great nausea which it would otherwise be apt to excite. In large doses, it proves emetic.

OXYMEL SIMPLEX.

Lond.

Simple oxymel.

Take of

Clarified honey, two pounds ;

Distilled vinegar, one pint.

Boil them in a glass-vessel, with a slow fire, to the thickness of a syrup.

THIS preparation may be considered as analogous to the syrupus aceti of the Edinburgh pharmacopœia. It is not inferior in efficacy to many more elaborate compositions. It is an agreeable, mild, cooling medicine. It is often used in cooling, detergent, gargarisms, and not unfrequently as an expectorant.

OXYMEL ex ALLIO.

Dan.

Oxymel of garlic.

Take of

Garlic, cut in slices, an ounce and a half ;

Caraway seeds,

Sweet fennel seeds, each two drams ;

Clarified honey, ten ounces ;

Vinegar, half a pint.

Boil the vinegar for a little time, with the seeds bruised, in a gla-

zed earthen vessel ; then add the garlic, and cover the vessel close ; when grown cold, press out the liquor, and dissolve in it the honey by the heat of a water-bath.

THIS oxymel is recommended for attenuating viscid juices, promoting expectoration, and the fluid secretions in general. It is doubtless a medicine of considerable efficacy, though very unpleasant, the flavour of the garlic prevailing, notwithstanding the addition of the aromatic seeds.

OXYMEL PECTORALE.

Brun.

Pectoral oxymel.

Take of

Elecampane roots, one ounce ;

Florence orris roots, half an ounce ;

Gum ammoniacum, one ounce ;

Vinegar, half a pint ;

Clarified honey, one pound ;

Water, three pints.

Let the roots, cut and bruised, be boiled in the water till one-third is wasted ; then strain off the liquor ; let it stand to settle ; and having poured it off clear from the feces, add to it the honey and the ammoniacum, previously dissolved in the vinegar. Mix them together, by boiling them a little.

THE title of this composition expresses its medical virtues. It is designed for those disorders of the breast that proceed from a load of viscid phlegm and obstructions of the pulmonary vessels. Two or three spoonfuls may be taken every night and morning, and continued for some time.

C H A P. XXV.

P U L V E R E S.

P O W D E R S.

THIS form receives such materials only as are capable of being sufficiently dried to become pulverable, without the loss of their virtue. There are many substances, however, of this kind, which cannot be conveniently taken in powder: bitter, acrid, fetid drugs, are too disagreeable: emollient and mucilaginous herbs and roots are too bulky: pure gums cohere, and become tenaceous in the mouth; fixt alkaline salts liquefy upon exposing the composition to the air; and volatile alkalies exhale. Many of the aromatics, too, suffer a greater loss of their odorous principle when kept in powder; as in that form they no doubt expose a much larger surface to the air.

The dose of powders in extemporaneous prescription, is generally about half a dram: it rarely exceeds a whole dram; and is not often less than a scruple. Substances which produce powerful effects in smaller doses are not trusted to this form, unless their bulk be increased by additions of less efficacy; those which require to be given in larger ones are better fitted for other forms,

The usual vehicle for taking the lighter powders, is any agreeable thin liquid. The ponderous powders, particularly those prepared from metallic substances, require a more consistent vehicle, as syrups; for from thin ones they soon subside. Resinous substances likewise are most commodiously taken in thick liquors: in thin ones, they are apt to run into lumps, which are not easily again dissoluble.

General rules for making powders.

I.

Particular care ought to be taken that nothing carious, decayed, or impure, be mixed in the composition of powders: the stalks and corrupted parts of plants are to be separated.

II.

The dry aromatics ought to be sprinkled, during their pulverization, with a few drops of any proper water.

III.

The moister aromatics may be dried with a very gentle heat, before they are committed to the mortar.

IV. Gums,

IV.

Gums, and such other substances as are difficultly pulverable, should be pounded along with the drier ones, that they may pass the sieve together.

V.

No part should be separated for use, until the whole quantity put into the mortar has passed the sieve, and the several siftings been mixed together; for those parts of one and the same subject, which powder first, may prove different, at least in degree of efficacy, from the rest.

VI.

Powders of aromatics are to be prepared only in small quantities at a time, and kept in glass-vessels very closely stoped.

If powders are long kept, and not carefully secured from the air, their virtue is in great measure destroyed, although the parts in which it consists should not in other circumstances prove volatile. Thus, though the virtues of ipecacuanha are so fixt as to remain entire even in extracts made with proper menstrua, yet if the powdered root be exposed for a long time to the air, it loses its emetic quality.

PULVIS ALOETICUS.

Lond.

Aloetic powder.

Take of

Socotorine aloes, one pound;

White canella, three ounces.

Rub them separately to powder, then mix them.

THIS composition has long been known in the shops under the title of *hiera picra*. It furnishes us with an useful aloetic purgative, the canella operating as a good corrigent for the aloes. But it is more frequently employed as the basis of an

electuary of pills, or of a tincture, which was for a long time distinguished by the appellation of *sacred tincture*.

PULVIS ALOETICUS CUM FERRO.

Lond.

Aloetic powder with iron.

Take of

Socotorine aloes, powdered, an ounce and an half;

Myrrh, powdered, two ounces;

Dry extract of gentian;

Vitriolated iron, of each, in powder, one ounce.

Mix them.

IN this powder we have an aloetic and chalybeate conjoined. It consists of nearly the same articles which formerly entered the composition of the *Pilulæ Ecphrasticæ Chalybeatæ*, as they were called; and it is perhaps more frequently employed when brought to the form of pills by means of syrups, than under that of powder: But in either way it is an useful medicine, and is particularly employed with advantage in cases of obstructed menstruation.

PULVIS ALOETICUS CUM GUAIACO.

Lond.

Aloetic powder with guaiacum.

Take of

Socotorine aloes, one ounce and an half;

Gum guaiacum, one ounce;

Aromatic powder, half an ounce.

Rub the aloes and gum guaiacum separately to powder; then mix all the ingredients together.

IN the guaiacum, as well as the aloes, we have a warm gummi-resinous purgative; and both are corrected, as well as more minutely divided, from their combination with the aromatics. This therefore furnishes

nishes us with an useful purgative : But when taken only in small doses, its chief effect is that of promoting perspiration. It is, however, more frequently employed reduced to the form of pills than in the state of powder ; and indeed it consists of nearly the same ingredients which constituted the pilulæ aromaticæ of the former edition of the London pharmacopœia.

PULVIS AROMATICUS.

Lond.

Aromatic powder.

Take of

Cinnamon, two ounces ;
Smaller cardamom-seeds, husked,
Ginger,

Long pepper, of each one ounce.

Rub them together to a powder.

PULVIS DIAROMATON, five SPECIES AROMATICÆ.

Edinb.

Aromatic powder, or Aromatic species.

Take of

Nutmegs,
Lesser cardamom-seeds,
Ginger, of each two ounces.

Beat them together into a powder, to be kept in a phial well shut.

BOTH these compositions are agreeable, hot, spicy medicines ; and as such may be usefully taken in cold phlegmatic habits and decayed constitutions, for warming the stomach, promoting digestion, and strengthening the tone of the viscera. The dose is from ten grains to a scruple and upwards. The first is considerably the warmest. This principally arises from the quantity of long pepper which it contains ; but it is perhaps to be doubted whether from this article any advantage be derived : and a powder not inferior to either might, we think, be formed by substituting cassia to the cinnamon employed by

the one college, or the nutmegs by the other.

PULVIS ASARI COMPOSITUS.

Lond.

Compound powder of asarabacca.

Take of

The dry leaves of asarabacca,
Sweet marjoram,
Syrian herb-mastic,

Dry flowers of lavender, of each one ounce.

Powder them together.

PULVIS STERNUTATORIUS, five CEPHALICUS.

Edinb.

Sternutatory, or Cephalic powder.

Take of

The leaves of asarum, three parts ;
Marjoram, one part.

Beat them together into a powder.

THOUGH the former of these powders be more compounded than the latter, yet they differ very little. They are both agreeable and efficacious errhines, and superior to most of those usually sold under the name of *herb snuff*. They are often employed with great advantage in cases of obstinate headach, and of ophthalmias resisting other modes of cure. Taken under the form of snuff to the extent of five or six grains at bed-time, they will operate the succeeding day as a powerful errhine, inducing frequent sneezing, but still more a large discharge from the nose. It is, however, necessary, during their operation, to avoid exposure to cold.

PULVIS e CERUSSA.

Lond.

Powder of cerusse.

Take of

Cerusse five ounces ;
Sarcocol, one ounce and a half ;

Tra-

Tragacanth, half an ounce.
Rub them together into powder.

THIS composition is the *trochisci albi* of Rhazes brought back to its original simplicity with regard to the ingredients, and without the needless trouble of making it into troches. It is employed for external purposes, as in collyria, lotions, and injections, for repelling acrimonious humours, and in inflammations.

PULVIS e CHELIS CANCRORUM COMPOSITUS.

Lond.

Compound powder of crabs claws.

Take of

Crabs claws, prepared, one pound;
Chalk,
Red coral, each, prepared, three ounces.

Mix them.

THESE powders have lost several of their ingredients, without any injury to their virtues; and possibly they would still bear a farther reduction; for the crabs eyes and chalk are by themselves at least as effectual as any composition of them with coral: and perhaps every purpose to be obtained from them may be accomplished by a more simple absorbent, as the pulvis cretaceus, afterwards to be mentioned, or the powder of the lapilli cancrorum.

PULVIS CONTRAYERVÆ COMPOSITUS.

Lond.

Compound powder of contrayerva.

Take of

Contrayerva, powdered, five ounces;
Compound powder of crabs-claws, one pound and an half.

Mix them.

THIS powder was formerly directed to be made up into balls with

water, and was then called LAPIS CONTRAYERVÆ; a piece of trouble now laid aside as needless, for it was necessary to reduce the balls into powder again before they could be used. Nor did that form contribute, as has been imagined, to their preservation; for it is scarce to be supposed that the powder will lose more by being kept for a reasonable length of time in a close-stopt glass, than the balls will in the humectation with water, and exsiccation in the air, before they are fit for being put by to keep. This medicine has a much better claim to the title of an alexipharmac and sudorific than the foregoing compositions. The contrayerva by itself proves very serviceable in low fevers, where the vis vitæ is weak, and a diaphoresis to be promoted. It is possible, that the crabs-claw powders are of no farther service than as they divide this powerful ingredient, and make it sit more easily on the stomach.

PULVIS e CRETA COMPOSITUS.

Lond.

Compound powder of chalk.

Take of

Prepared chalk, half a pound;
Cinnamon four ounces;
Tormentil,
Gum arabic, of each, three ounces;
Long pepper, half an ounce.

Powder them separately, and mix them.

PULVIS CRETACEUS.

Edinb.

Chalk powder.

Take of

White chalk prepared, four ounces;
Nutmeg, half a dram;
Cinnamon, one dram.

Mix and make them into powder; which may supply the place of the *cardialgic troches*.

THE addition of the aromatics in the above formula, coincides with the general intention of the remedy which is indicated for weakness and acidity in the stomach; and in looseness from acidity.

PULVIS e CRETA COMPOSITUS CUM OPIO.

Lond.

Compound powder of chalk with opium.

Take of

Compound powder of chalk,
eight ounces;

Hard purified opium, powdered,
one dram and an half.

Mix them.

FROM the addition of the opium this remedy becomes still more powerful than the above in restraining diarrhoea.

PULVIS IPECACUANHÆ COMPOSITUS.

Lond.

Compound powder of ipecacuanha.

Take of

Ipecacuanha.

Hard purified opium, of each,
powdered, one dram;

Vitriolated kali, powdered, one
ounce.

Mix them.

PULVIS SUDORIFICUS, sive DOVERI.

Edinb.

Sudorific, or Dover's powder.

Take of

Vitriolated tartar, three drams;

Opium,

Root of ipecacuanha, beat, of
each one scruple.

Mix and grind them accurately together, so as to make an uniform powder.

THE vitriolated tartar, from the

grittiness of its crystals, is perhaps better fitted for tearing and dividing the tenacious opium than any other salt; this seems to be its only use in the preparation. The operator ought to be careful that the opium and ipecacuanha shall be equally diffused through the whole mass of powder, otherwise different portions of the powder must have differences in degree of strength.

The hard purified opium, directed by the London college, is, from this circumstance preferable to opium in its ordinary state, employed by the Edinburgh college.

This powder is one of the most certain sudorifics that we know of; and as such, was recommended by Dr Dover as an effectual remedy in rheumatism. Modern practice confirms its reputation, not only in rheumatism, but also in dropsy and sundry other diseases, where it is often difficult by other means to produce a copious sweat. The dose is from five to ten or twelve grains, according as the patient's stomach and strength bear it. It is convenient to avoid much drinking immediately after taking it, otherwise it is very apt to be rejected by vomiting before any other effects are produced.

PULVIS e JALAPA. COMPOSITUS.

Edinb.

Compound powder of jalap.

Take of

Jalap root, one ounce;

Crystals of tartar, two ounces.

Mix, and diligently grind them together for some time, so as to form a very fine powder.

THE use of the crystals in this preparation is to break down and divide the jalap into very minute particles, whereby its operation is thought to be meliorated; and on this account the two articles are directed

rected to be pounded together, and not separately. But whether from this circumstance any advantage arises or not, there can be no doubt that this combination furnishes us with a very useful and active purgative in every case where it is necessary to produce both a full evacuation of the intestinal canal, and a free discharge from the system in general, under the form of catharsis.

PULVIS e MYRRHA COMPOSITUS.

Lond.

Compound powder of myrrh.

Take of
Myrrh,
Dried safin,
— rue,
Russian castor, of each one ounce.
Rub them together into a powder.

THIS is a reformation of the *trochisci e myrrha*, a composition contrived by Rhazes against uterine obstructions. It may be taken in any convenient vehicle, or made into boluses, from a scruple to a dram or more, two or three times a-day.

PULVIS OPIATUS.

Lond.

Opiate powder.

Take of
Hard purified opium, powdered,
one dram;
Burnt and prepared hartshorn,
nine drams.
Mix them.

THE hartshorn is here intended merely to divide the opium, and to give it the form of powder, altho' it may perhaps have also some influence in rendering the opium more active from destroying acid in the stomach. But whether in this way it has any effect or not, there can be no doubt that it is a very convenient formula for the exhibition of

opium in powder; which on some occasions is preferable to its being given either in a liquid form or in that of pills. As ten grains of this powder contain precisely one of the opium, the requisite dose may be easily adapted to the circumstances of the case. It is often successfully employed as a sweating powder; and has not, like the *Pulvis Doveri*, the effect of inducing sickness at stomach, or vomiting.

PULVIS e SCAMMONIO COMPOSITUS.

Lond.

Compound powder of scammony.

Take of
Scammony,
Hard extract of jalap, of each two ounces;
Ginger, half an ounce.
Powder them separately, and mix them.

Edinb.

Take of
Scammony,
Crystals of tartar, of each two ounces;
Mix, and grind them diligently into a powder.

It is much to be regretted, that in the pharmacopoeias published by authority in Britain, two compositions should be distinguished by the same name, differing considerably from each other in their nature and degree of activity.

The compound powder of scammony in the last edition of the London pharmacopoeia differed considerably from the present: For there the only addition was calcined hartshorn, intended merely for the division of the scammony. This purpose is still better answered by the crystals of tartar, which at the same time conspire with the operation of the scammony as a purgative. But the

the addition of jalap and ginger, according to the present formula of the London pharmacopœia, gives not only a purgative considerably different, but increases also the heating quality of the medicine, while the cream of tartar has an evident refrigerant power. Both may on occasions be useful, but we think that in most cases the Edinburgh formula will be found preferable.

In editions of our pharmacopœias of still older date, this powder was prepared with another very active ingredient, diaphoretic antimony. It was much celebrated as distinguished by the name of its inventor, being called from its first publisher, PULVIS CORNACHINI. In a former edition of the Edinburgh pharmacopœia it was thus directed to be prepared :

Take of

Diaphoretic antimony,
Cream of tartar,
Scammony, each equal parts.

Make them into a powder.

THIS may be given to the quantity of a dram or more. In other prescriptions, the tartar and antimonial calx bear nearly the same proportion to the scammony as the calcined hartshorn did in the London pharmacopœia. It appears probable, that neither of these ingredients, are of any farther use, than as they divide the texture of the scammony; though Cornachini supposes very considerable advantage from some deobstruent quality in the tartar, whereby the vessels shall be opened, and the noxious humours prepared for expulsion; and from the preparation of antimony, though it have no sensible operation, he expects some share of the same success which sometimes attends the rougher preparations of that mineral.

Both the present formulæ may, however, be considered as possessing all the advantages of the pulvis Cornachini.

PULVIS e SCAMMONIO CUM
ALOE.

Lond.

Powder of scammony with aloes.

Take of

Scammony, six drams;
Hard extract of jalap,
Socotorine aloes, of each an ounce
and an half;
Ginger, half an ounce.

Powder them separately, and mix them.

IN this formula, the combination of scammony, jalap, and aloes, furnishes a very active purgative, which with some intentions at least, may be preferable to either of the preceding. Taken from five to ten grains, it will operate as a purgative, even in cases of obstinate costiveness.

PULVIS e SCAMMONIO CUM
CALOMELANE.

Lond.

Powder of scammony with calomel.

Take of

Scammony, half an ounce;
Calomel,
Double-refined sugar, of each
two drams.

Rub them separately to a powder, and then mix them.

IN this formula, we have the scammony in a more simple state, united with such a proportion of calomel as must very considerably aid its purgative power. And accordingly it may be employed with advantage, both in cases of obstinate costiveness, and in dropsical affections, where a considerable discharge is required from the system.

N n

PUL-

PULVIS e SENNA COMPOSITUS.

Lond.

Compound powder of senna.

Take of

Senna,

Crystals of tartar, of each two ounces;

Scammony, half an ounce;

Ginger, two drams.

Rub the scammony by itself, rub the rest together into a powder, and then mix them all.

THIS powder is given as cathartics, in the dose of two scruples, or a dram. The spice is added, not only to divide, but to warm the medicine, and make it sit easier on the stomach. The scammony is used as a stimulus to the senna; the quantity of the latter necessary for a dose, when not assisted by some more powerful material, being too bulky to be conveniently taken in this form.

The composition of this medicine is now considerably simplified, by the rejection both of cinnamon and cloves, as the ginger alone is found fully to answer the intention in view.

PULVIS STYPTICUS.

Edinb.

Styptic powder.

Take of

Alum, an ounce and a half;

Gum kino, three drams.

Grind them together into a fine powder.

IN former editions of our pharmacopœia, a powder of this kind was directed to be made with alum and dragon's blood, and was long in repute as an astringent, under the title of *Pulvis stypticus Helvetii*. The gum kino is judiciously substituted to the dragon's blood, as being a much more powerful and cer-

tain astringent. The chief use of this powder is in hæmorrhagies, especially of the uterus.

PULVIS e TRAGACANTHA COMPOSITUS.

Lond.

Compound powder of tragacanth.

Take of

Tragacanth, powdered,

Gum arabic,

Starch, of each an ounce and a half;

Double-refined sugar, three ounces.

Rub them together into a powder.

THIS composition is somewhat simplified by the rejection of the marsh-mallow, and liquorice-root, which formerly entered it. But this has not probably produced any diminution of its medical properties. It operates as a mild emollient; and hence becomes serviceable in hectic cases, tickling coughs, strangury, some kinds of alvine fluxes, and other disorders proceeding from a thin acrimonious state of the humours, or an abrasion of the mucus of the intestines: they soften, and give a greater degree of consistency to the former, and defend the latter from being irritated or excoriated by them. All the ingredients coincide in these general intentions. The dose is from half a dram to two or three drams, which may be frequently repeated.

PULVIS ANTHELMINTICUS.

Gen.

Anthelmintic powders.

Take of

The flowers of tansy,

Worm-feed, each three drams;

Sal martis, one dram.

Mix them.

BOTH the tansy and worm-feed pos-

possess a considerable degree of anthelmintic power, which is not a little increased by the salt of steel. And from this combination more effect in the expulsion of worms, particularly of the lumbrici, may be expected, than from any of the articles taken by itself. This powder may be taken to the extent of half a dram or upwards for a dose, proportioned to the age and circumstances of the patient.

PULVIS ANTILYSSUS.

Brun.

Powder against the bite of a mad-dog.

Take of

Ash-coloured ground liverwort,
two ounces ;

Black pepper one ounce.

Beat them together into a powder.

THE virtue which this medicine has been celebrated for, is expressed in its title ; the dose is a dram and a half, to be taken in the morning fasting, in half a pint of cows milk warm, for four mornings together.

At one period it was held, on the recommendation of Dr Mead and other eminent practitioners in very high esteem. Now, however it has fallen into such disrepute, as to be banished from most of the modern pharmacopoeias.

PULVIS ARI COMPOSITUS.

Succ.

Compound powder of arum.

Take of

Arum root, fresh dried, two
drams ;

Yellow water-flag roots,

Burnet saxifrage roots, each one
dram ;

Canella alba, a dram ;

Salt of wormwood, one scruple.

Beat them into a powder, which is to be kept in a close vessel.

IN former editions of the Londoⁿ pharmacopoeia, one of the ingredients in this composition was called *Acorus vulgi* or *vulgaris* ; a name which has been applied, by different writers, both to *calamus aromaticus*, and to the *gladiolus luteus*, or common yellow water-flag. In this uncertainty,* the compounder generally took the former. But as the medicine was first contrived by a German physician, Birkmann, and as in some of the German pharmacopoeias the *acorus vulgaris* is explained to be the water-flag, the Swedish college have, rather in conformity to the original prescription, than from any opinion of the virtues of the water-flag (which appear, when the root is dried and powdered, to be very inconsiderable) made choice of this last, and expressed it by the name which more clearly distinguishes it from the other. The caution of keeping the powder in a close vessel is a very necessary one ; for if exposed to the air, the alkaline salt, imbibing moisture from it, would run into a liquid state. Two alkaline salts have been generally directed ; but as they differ from each other only in name, one of them is here justly omitted, and supplied by a proportionable increase of the other. Crabs-eyes were originally an article in this composition, but probably served little other purpose than to increase its volume.

Agreeably to the above remark, the college of Edinburgh, in a revival of their pharmacopoeia, had omitted the crabs-eyes, and continued the former practice of using *calamus aromaticus* for the *acorus vulgaris*. They had likewise exchanged the cinnamon for the canella alba ; and the alkaline salt for a neutral one, better suited to the form of a powder. Their formula was as follows :

N n 2

Take

Take of

Arum roots, newly dried, two ounces ;
 Calamus aromaticus,
 Burnet saxifrage roots, each one ounce ;
 Canella alba, six drams ;
 Vitriolated tartar, two drams.

Mix and make them into a powder.

THIS article, which had formerly a place also in the London pharmacopœia, is still retained in some of the best foreign ones : But it is now altogether rejected from our pharmacopœias.

The *pulvis aricompositus* was originally intended as a stomachic : and in weaknesses and relaxations of the stomach, accompanied with a surcharge of viscid humours, it is doubtless a very useful medicine. It frequently also has good effects in rheumatic cases : the dose may be from a scruple to a dram, two or three times a-day, in any convenient liquor. It should be used as fresh as possible, for its virtue suffers greatly in keeping : the arum root in particular, its capital ingredient, soon loses the pungency, in which its efficacy principally consists.

PULVIS DIGESTIVUS.

Succ.

Digestive powder.

Take of

Bitter purging salts,
 Rhubarb, each equal parts.

Mix them.

IN this composition, the salt will brisken the operation of the rhubarb as a cathartic, and the astringency of the latter will tend to increase the tone of the stomach : hence in consequence of evacuating, and at the same time strengthening the alimentary canal, it may be presumed to have considerable influence in promoting digestion.

PULVIS DYSENTERICUS.

Dan.

Dysenteric powder.

Take of

Rhubarb, one ounce :
 Calcined hartshorn, half an ounce ;
 Gum Arabic, three drams ;
 Cascarilla bark, two drams.

Mix them, and reduce them to a very fine powder.

HERE the rhubarb is combined with another powerful tonic, the cascarilla ; and while the calcined hartshorn serves to neutralize acid, the gum arabic will operate as a demulcent. This composition therefore may be very useful in dysenteric cases, after the violence of the disease has been overcome, and when there remains a debilitated and abraded state of the intestinal canal.

PULVIS FUMALIS.

Roff.

Fumigation powder.

Take of

Olibanum,
 Amber,
 Mastich, each three parts ;
 Storax, two parts ;
 Benzoine,
 Labdanum, each one part.

Mix them into a gross powder.

THIS powder is intended for the purpose of fumigation ; and when burnt it gives out a fragrant odour : hence it may be successfully employed for combating disagreeable smells, and counteracting putrid or other noxious vapours diffused in the atmosphere.

PULVIS INFANTUM.

Succ.

Powder for infants.

Take of

Magnesia alba, one ounce :
 Rhubarb, reduced to a very fine powder, one dram.

Let them be mixed.

THIS powder is very useful for destroying acid, and at the same time restoring diminished tone of the alimentary canal: hence it is often advantageously employed in cases of diarrhoea, which depend on these morbid conditions. And it is in general a circumstance of considerable advantage, that it does not tend to check looseness very suddenly. It is particularly useful with infants, and hence the origin of the name here affixed to it.

PULVIS NITROSUS.

Succ.

Nitrous powder.

Take of

Purified nitre, three ounces;
Salt of sorrel, one ounce;
Double-refined sugar, ten ounces.

Let them be mixed.

THIS is a very convenient and agreeable form of exhibiting nitre: for while the sugar serves not only to divide and diffuse it, but also to correct its taste; the salt of sorrel adds to its refrigerant power.

PULVIS PERUVIANUS PURGANS.

Gen.

Purging Peruvian powder.

Take of

The powder of Peruvian bark, one ounce;
Powder of rhubarb,
Powder of sal ammoniac, each one dram and a half.

It has been imagined by many, that particular advantage resulted from uniting the Peruvian bark with sal ammoniac; and there can be no doubt, that in some cases inconvenience results from the bark in consequence of its binding the belly.

There are therefore circumstances in which the combination here proposed may perhaps be proper: but there is reason to believe that the benefit of the sal ammoniac is more imaginary than real; and it not unfrequently happens, that we are disappointed of the benefit which might otherwise be derived from the bark, in consequence of its proving even of itself a purgative. Hence, in perhaps a majority of cases, the exhibiting it with the additions here proposed will be rather prejudicial than otherwise.

PULVIS SEDATIVUS.

Succ.

Sedative powder.

Take of

Opium, half a scruple;
Purified nitre, five scruples and a half;
Refined-sugar, one ounce.

IN this powder those inconveniences which sometimes result from opium may with certain constitutions be corrected, in consequence of the refrigerant power of nitre; and hence it may prove a very useful sedative powder. The sugar is intended merely to give form to the medicine; and in this state of combination, each dram of it contains a grain of opium; so that a practitioner has it in his power easily to regulate the dose according to circumstances.

PULVIS e SPONGIA.

Gen.

Sponge-powder.

Take of

Burnt sponge, powdered,
Common salt, each three drams.
Mix them, and divide into twelve powders.

WE have formerly mentioned in the *Materia Medica* the use of burnt
N n 3 sponge

sponge in scrophulous affections, and particularly in the cure of the bronchocele. It has of late been highly celebrated for these purposes by Mr Wilmer, under the title of the Coventry remedy. There it was sometimes employed merely in its pure state, combined with a sufficient quantity of honey, to form it into a bolus; sometimes it was given united with calcined cork and pumice stone. What advantages, however, it could have derived from these additions is difficult to con-

ceive; nor can we readily see how it will be improved by the addition of common sea-salt here proposed: for this may probably lead to new combinations, materially altering the qualities of those salts which the sponge itself contains; and on which its virtues, as far as it has any, must depend. At the same time, for any experience which we ourselves have had, we are inclined to think, that these virtues which have been attributed to burnt sponge are more imaginary than real.

C H A P. XXVI.

T R O C H I S C I.

T R O C H E S.

TROCHES and lozenges are composed of powders made up with glutinous substances into little cakes, and afterwards dried. This form is principally made use of for the more commodious exhibition of certain medicines, by fitting them to dissolve slowly in the mouth, so as to pass by degrees into the stomach; and hence these preparations have generally a considerable proportion of sugar or other materials grateful to the palate. Some powders have likewise been reduced into troches, with a view to their preservation: though possibly for no very good reasons: for the moistening, and afterwards drying them in

the air, must in this light be of greater injury, than any advantage accruing from this form can counterbalance.

General RULES for making T R O C H E S.

I.

THE three first rules laid down for making powders, are also to be observed in the powders for troches.

II.

If the mass proves so glutinous as to stick to the fingers in making up, the hands may be anointed with any convenient sweet or aromatic

romatic oil; or else sprinkled with powder of starch, or with that of liquorice.

III.

In order to thoroughly dry the troches, put them on an inverted sieve, in a shady airy place, and frequently turn them.

IV.

Troches are to be kept in glass vessels, or in earthen ones well glazed.

TROCHISCI AMYLI.

Lond.

Troches of starch.

Take of

Starch an ounce and an half;
Liquorice, six drams;
Florentine orris, half an ounce;
Double-refined sugar, one pound and an half.

Rub these to powder, and, by the help of tragacanth, dissolved in water, make troches.

They may be made, if so chosen, without the orris.

TROCHISCI BECHICI ALBI.

Edinb.

White pectoral troches.

Take of

Purest sugar, one pound;
Gum arabic, four ounces;
Starch, one ounce;
Flowers of benzoine, half a dram

Having beat them all into a powder, make them into a proper mass with rose-water, so as to form troches.

THESE compositions are very agreeable pectorals and may be used at pleasure. They are calculated for softening acrimonious humours, and allaying the tickling in the throat which provokes coughing.

Although not only the name but the composition also in the London and Edinburgh pharmacopœias be

somewhat different, yet their effects are very much the same.

TROCHISCI GLYCYRRHI-

ZÆ.

Lond.

Troches of liquorice.

Take of

Extract of liquorice,
Double-refined sugar, of each ten ounces.

Tragacanth, powdered, three ounces.

Make troches by adding water.

TROCHISCI BECHICI NI-

GRI.

Edinb.

Black pectoral troches.

Take of

Extract of liquorice,
Gum arabic, each four ounces;
White sugar eight, ounces.

Dissolve them in warm water, and strain: then evaporate the mixture over a gentle fire till it be of a proper consistence for being formed into troches.

THESE compositions are designed for the same purposes as the white pectoral troches above described. In foreign pharmacopœias there are some other troches of this kind, under the titles of *Trochisci bechici flavi* and *rubri*; the first are coloured with saffron, the latter with bole armenic. The dissolving and straining the extract of liquorice and gum arabic, as now ordered in the last of the above prescriptions, is a considerable improvement; not only as they are by that means more uniformly mixed than they can well be by beating; but likewise as they are thereby purified from the heterogeneous matters, of which both those drugs have commonly no small admixture.

TROCHISCI BECHICI cum

OPIO,

*Edinb.**Pectoral troches with opium.*

Take of

Pure opium, two drams ;
 Balsam of Peru, one dram ;
 Tincture of Tolu, three drams.

Grind the opium with the balsam
 and tincture previously mixed, till
 it be thoroughly dissolved, then
 add by degrees,

Of

Common syrup, eight ounces ;
 Extract of liquorice, softened in
 warm water, five ounces.

Whilst beating them diligently, gra-
 dually sprinkle upon the mixture
 five ounces of powdered gum
 arabic. Exsiccate so as to form
 troches, each weighing ten grains

THE directions for preparing the
 above troches are so full and par-
 ticular, that no farther explanation
 is necessary. Six of the troches pre-
 pared in the manner here ordered,
 contain about one grain of opium.
 These troches are medicines of ap-
 proved efficacy in tickling coughs
 depending on an irritation of the
 fauces. Besides the mechanical ef-
 fect of the inviscating matters and
 involving acrid humours, or lining
 and defending the tender mem-
 branes, the opium must, no doubt,
 have a considerable share, by more
 immediately diminishing the irrita-
 bility of the parts themselves.

The composition of these troches,
 however, would perhaps be improv-
 ed by the omission of the balsam
 of Peru: for although here directed
 only in small quantity, yet it gives
 a taste to the troches which is to
 many people very disagreeable; and
 it is at the same time probable, that
 it adds very little, if any thing, to
 the efficacy of the medicine.

TROCHISCI e NITRO.

*Lond.**Troches of nitre.*

Take of

Purified nitre, powdered, four
 ounces ;
 Double-refined sugar, powdered,
 one pound ;
 Tragacanth, powdered, six oun-
 ces.

With the addition of water, make
 troches.

TROCHISCI e NITRO

*Edinb.**Troches of nitre.*

Take of

Nitre, purified, three ounces ;
 Double-refined sugar, nine oun-
 ces.

Make them into troches with mucil-
 age of gum tragacanth.

THIS is a very agreeable form
 for the exhibition of nitre; though,
 when the salt is thus taken
 without any liquid (if the quantity
 be considerable), it is apt to occasion
 uneasiness about the stomach, which
 can only be prevented by large di-
 lution with aqueous liquors. The
 trochisci e nitro have been said to be
 employed with success in some cases
 of difficult deglutition.

TROCHISCI e SULPHURE.

*Lond.**Troches of sulphure.*

Take of

Washed flowers of sulphur, two
 ounces ;
 Double-refined sugar, four oun-
 ces.

Rub them together; and with the
 mucilage of quince-seeds, now
 and then added, make troches.

TROCHISCI e SULPHURE,
sive DIASULPHURIS.*Edinb.**Troches*

Troches of sulphur.

Take of

Flowers of sulphur, two ounces;
 Flowers of benzoine, one scruple;
 White sugar, four ounces;
 Factitious cinnabar, half a dram.
 Beat them together, and add mucilage of gum tragacanth as much as is sufficient.
 Mix and make them into troches according to art.

THESE compositions are to be considered only as agreeable forms for the exhibition of sulphur, no alteration or addition being here made to its virtue; unless that, by the flowers of benzoine in the second prescription, the medicine is supposed to be rendered more efficacious as a pectoral.

The factitious cinnabar seems chiefly intended as a colouring ingredient.

TROCHISCI e CRETA.

*Lond.**Troches of chalk.*

Take of

Chalk, prepared, four ounces;
 Crabs-claws, prepared, two ounces;
 Cinnamon, half an ounce;
 Double-refined sugar, three ounces.

These being rubbed to powder, add the mucilage of gum arabic, and make troches.

TROCHISCI e MAGNESIA.

*Lond.**Troches of magnesia.*

Take of

Burnt magnesia, four ounces;
 Double-refined sugar, two ounces;
 Ginger powdered, one scruple
 With the addition of the mucilage of gum arabic make troches.

THESE compositions are calculated against that uneasy sensation at the stomach, improperly called the *heartburn*, in which they often give immediate relief, by absorbing and neutralizing the acid juices that occasion this disorder. The absorbent powders here made use of, are of the most powerful kind. The former has in general the effect of binding, the latter of opening, the belly; and from this circumstance the practitioner will be determined in his choice, according to the nature of the case which he has occasion to treat.

TROCHISCI de MINIO.

*Dan.**Red-lead troches.*

Take of

Red-lead, half an ounce;
 Corrosive mercury sublimate, one ounce;
 Crumb of the finest bread, four ounces.

Make them up with rose-water into oblong troches.

THESE troches are employed only for external purposes as escharotics: they are powerfully such, and require a good deal of caution in their use.

TROCHISCI CATECHU.

*Brun.**Troches of catechu.*

Take of

Catechu, one ounce;
 White sugar-candy, two ounces;
 Ambergris,
 Musk, each ten grains;
 Mucilage of gum tragacanth, as much as is sufficient.

Make them into troches.

THIS medicine has long been in esteem as slight restraining; and restringents thus gradually received into

into the stomach produce better effects than when an equal quantity is taken down at once. These troches would be more palatable, and perhaps no less serviceable, were the musk and ambergris omitted.

C H A P. XXVII.

P I L U L Æ.

P I L L S.

TO this form are peculiarly adapted those drugs which operate in a small dose, and whose nauseous and offensive taste or smell require them to be concealed from the palate.

Pills dissolve the most difficultly in the stomach, and produce the most gradual and lasting effects, of all the internal forms. This is, in some cases of great advantage; in others, it is a quality not at all desirable; and sometimes may even be of dangerous consequence, particularly with regard to emetics; which, if they pass the stomach undissolved, and afterwards exert themselves in the intestines, operate there as violent cathartics. Hence emetics are among us scarce ever given in pills; and hence to the resinous and difficultly soluble substances, saponaceous ones ought to be added, in order to promote their solution.

Gummy resins, and inspissated juices, are sometimes soft enough to be made into pills without addition: where any moisture is requisite, spirit of wine is more proper than syrups or conserves, as it unites more readily with them, and

does not sensibly increase their bulk. Light dry powders require syrup or mucilages: and the more ponderous, as the mercurial and other metallic preparations, thick honey, conserve, or extracts.

Light powders require about half their weight of syrup; of honey, about three-fourths their weight; to reduce them into a due consistence for forming pills. Half a dram of the mass will make five or six pills of a moderate size.

General RULES for making PILLS.

I.

Gums and inspissated juices, are to be first softened with the liquid prescribed: then add the powders, and continue beating them altogether till they be perfectly mixed.

II.

The masses for pills are best kept in bladders, which should be moistened now and then with some of the same kind of liquid that the mass was made up with, or with some proper aromatic oil.

PILULÆ ÆTHIOPICÆ.

*Edinb.**Æthiopic pills.*

Take of

Quicksilver, six drams;
 Golden sulphur of antimony,
 Refin of guaiacum,
 Honey, each half an ounce.

Grind the quicksilver with the honey, in a glass mortar, until the mercurial globules entirely disappear; then add the golden sulphur and guaiacum, with as much mucilage of gum arabic as is sufficient to make the mixture into a mass of the proper consistence for forming pills.

THESE pills are much more efficacious than those of a former edition; the æthiops mineral, there ordered, being exchanged for a more active composition. In their present form, they resemble Dr Plummer's pills, described in the Edinburgh Essays, and afterwards to be mentioned. To it they are preferable in one respect, that they are less apt to run off by stool. They are an useful alterative both in cutaneous and venereal disorders. One fourth part of the quantity above prescribed may be made into sixty pills; of which from one to four may be taken every night and morning, the patient keeping moderately warm during the whole time that this course is continued.

PILULÆ ex ALOE.

*Lond.**Pills of aloes.*

Take of

Socotorine aloes, powdered, one ounce;
 Extract of gentian, half an ounce;
 Syrup of ginger, as much as is sufficient.

Beat them together.

PILULÆ ALOETICÆ.

*Edinb.**Aloetic pills.*

Take of

Socotorine aloes, in powder,
 Thick extract of gentian, each two ounces;

Make them into a mass with simple syrup.

THESE pills were formerly directed to be made with Castile soap; from a notion which Boerhaave and some others were very fond of, that soap promoted the solution of resinous and several other substances in the stomach. This, however, seems to be a mistake; and, on the contrary, it is highly probable, that the alkaline part of the soap is in most instances separated from the oily by the acid in the stomach; by which decomposition the soap may come to retard instead of promoting the solution of the aloes. These pills have been much used as warming and stomachic laxatives: they are very well suited for the costiveness so often attendant on people of sedentary lives. Like other preparations of aloes, they are also used in jaundice, and in certain cases of obstructed menses. They are seldom used for producing full purging; but if this be required, a scruple or half a dram of the mass may be made into pills of a moderate size for one dose.

PILULÆ ex ALOE CUM MYRRHA.

*Lond.**Pills of aloes with myrrh.*

Take of

Socotorine aloes, two ounces;
 Myrrh,
 Saffron, of each one ounce;
 Syrup of saffron, as much as is sufficient.

Rub the aloes and myrrh separately

to powder; afterwards beat them all together.

PILULÆ COMMUNES, vulgo RUFÆ.

Edinb.

The common pills, vulgarly called Rufus's pills.

Take of

- Socotorine aloes, two ounces;
- Myrrh, one ounce;
- Saffron, half an ounce.

Beat them into a mass with a proper quantity of syrup.

THESE pills have long continued in practice, without any other alteration than in the syrup which the mass is made up with, and in the proportion of saffron. In our last Pharmacopœia, the syrup of wormwood was ordered, which is here judiciously exchanged for that of saffron; this preserving and improving the brightness of colour in the medicine, which is usually looked upon as the characteristic of its goodness. The saffron, in the composition which is attributed to Rufus, is equal in quantity to the myrrh; and in these proportions the pill was received in our first Pharmacopœia. As the diminution afterwards made in the saffron was grounded on very absurd reasons, (viz. "lest the former quantity should occasion a "spasmus cynicus,") the London College have now again increased it, and restored the pill to its original form. The virtues of this medicine may be easily understood from its ingredients. These pills, given to the quantity of half a dram or two scruples, prove considerably cathartic, but they answer much better purposes in smaller doses as laxatives or alteratives.

PILULÆ ex COLOCYNTHIDE cum ALOE, vulgo PILULÆ COCCIÆ.

Edinb.

Colocynth pills with aloes, commonly called Coccia.

Take of

- Socotorine aloes,
- Scammony, of each two ounces;
- Sal polychrest, two drams;
- Colocynth, one ounce;
- Oil of cloves, two drams.

Reduce the aloes and scammony into a powder with the salt; then let the colocynth, beat into a very fine powder, and the oil be added; lastly, make it into a proper mass with mucilage of gum arabic.

IN these pills we have a very useful and active purgative; and where the simple aloetic pill is not sufficient for obviating costiveness, this will often effectually answer the purpose. Little of their activity can depend upon the salt which enters the composition; but it may assist in dividing the active parts of the other articles, particularly the aloes and scammony. These pills often produce a copious discharge in cases of obstinate costiveness, when taken to the extent only of five or ten grains; but they may be employed in much larger doses. They are, however, seldom used with the view of producing proper catharsis. Half a dram of the mass contains about five grains of the colocynth, ten of the aloes, and ten of the scammony.

PILULÆ e CUPRO.

Edinb.

Copper pills.

Take of

- Cuprum ammoniacum, sixteen grains;
- Crumb of bread, four scruples;
- Spirit of sal ammoniac, as much as is sufficient to form them into a mass, which is to be divided into thirty-two equal pills.

THESE

THESE pills had formerly the name of *Pilulæ cæruleæ*, but they are now with greater propriety denominated from the metal which is their basis.

Each of these pills weigh about three grains, and contain somewhat more than half a grain of the cuprum ammoniacum. The above pills seem to be the best form of exhibiting this medicine; for the effects of which, see CUPRUM AMMONIACUM.

PILULÆ e GUMMI.

Lond.

Gum-pills.

Take of

Galbanum,
Opopanax,
Myrrh,
Sagapenum, of each one ounce;
Asafoetida, half an ounce;
Syrup of saffron, as much as is sufficient.

Beat them together.

PILULÆ GUMMOSÆ.

Edinb.

Gum-pills.

Take of

Asafoetida,
Galbanum,
Myrrh, each one ounce;
Rectified oil of amber, one dram.

Beat them into a mass with simple syrup.

THESE pills are designed for antihysterics and emmenagogues, and very well calculated for answering those intentions; half a scruple, a scruple, or more, may be taken every night or oftener. The fetid pills of our former pharmacopœia were considerably purgative: the purgative ingredients are now omitted, as the physician may easily, in extemporaneous prescription, compound these pills with cathartic medicines, in such proportions as particular cases shall require.

PILULÆ ex HYDRARGYRO.

Lond.

Quicksilver-pills.

Take of

Purified quicksilver,
Extract of liquorice, having the consistence of honey, of each two drams.

Liquorice, finely powered, one dram.

Rub the quicksilver with the extract of liquorice until the globules disappear; then, adding the liquorice-powder, mix them together.

PILULÆ e HYDRARGYRO, five MERCURIALES.

Edinb.

Mercurial pills.

Take of

Quicksilver,
Honey, each one ounce;
Crumb of bread, two ounces.

Grind the quicksilver with the honey in a glass mortar till the globules disappear, adding occasionally a little simple syrup; then add the crumb of bread, and beat the whole with water into a mass, which is to be immediately divided into four hundred and eighty equal pills.

THE quicksilver was formerly directed to be ground with resin of guaiacum and castile soap. The former was supposed to coincide with the virtues of the mercury, and the latter was used chiefly to divide the globules of mercury. For this last intention Doctor Saunders found that honey, the substance here ordered by the Edinburgh college, is of all he tried the most effectual: But we would suppose, with this gentleman, that something farther is done in this process than the mere division of the mercurial globules, and that part of the quicksilver is as it were amalgamated with

the

the honey, or brought to a state similar to that in Plenck's solution. The same effect will take place when the pills are prepared with extract of liquorice now directed by the London college.

The mercurial pill is one of the best preparations of mercury, and may in general supersede most other forms of this medicine. It is necessary to form the mass immediately into pills, as the crumb soon becomes too hard for that purpose. Soap was undoubtedly a very improper medium for triturating the mercury; it is not only too hard for that purpose, but when the preparation entered the stomach, the alkaline part of the soap being engaged by the acid in that viscus, the mercury would in all probability be immediately separated. The honey and bread can only be changed by the natural powers of digestion, and can never oppress the stomach. The dose of the pills is from two to four or six in the day, according to the effects we wish to produce.

PILULÆ e JALAPPA.

Edinb.

Jalap-pills.

Take of

Extract of jalap, two ounces;

Aromatic powder, half an ounce.

Beat them into a mass with simple syrup.

THIS is an useful and active purgative, either for evacuating the contents of the intestinal canal, or producing a discharge from the system in general.

One of the same kind, with powdered jalap in substance instead of the extract, is used in some of our hospitals, as a cheap and effectual purge.

PILULÆ PLUMMERI.

Edinb.

Plummer's pill.

Take of

Sweet mercury,

Precipitated sulphur of antimony, each six drams;

Extract of gentian,

White Spanish soap, each two drams

Let the mercury be triturated with the sulphur till they be thoroughly mixed, than add the extract, and form a mass with simple syrup.

THESE pills were recommended to the attention of the public about forty years ago by Dr Plummer, whose name they still bear. He represented them in a paper which he published in the Edinburgh Medical Essays, as a very useful alterative; and on his authority they were at one time much employed; but they are now less extensively used than formerly. And although they still retain a place in the Edinburgh pharmacopoeia, yet it is probable that every purpose to be answered by them may be more effectually obtained from the common mercurial pill, or from calomel in a more simple state.

PILULÆ ex OPIO.

Lond.

Opium pills.

Take of

Hard purified opium, powdered, two drams:

Extract of liquorice, one ounce.

Beat them until they are perfectly united.

PILULÆ THEBAICÆ, vulgo PACIFICÆ.

Edinb.

Thebaic, commonly called Pacific pills.

Take

Take of

Opium, half an ounce ;
 Extract of liquorice, two ounces ;
 Castile soap, an ounce and a half ;
 Jamaica pepper, one ounce.

Soften the opium and extract separately with proof-spirit, and having beat them into a pulp, mix them ; then add the soap, and the pepper beat into a powder ; and lastly, having beat them well together, form the whole into a mass.

THESE two compositions, altho' differing in several particulars, may yet be considered as at bottom very much the same. The first is a simple opiate, in which every five grains of the mass contains one of opium ; and in the opium alone can we suppose that the activity of the medicine depends.

Although some of the articles contained in the latter composition may perhaps be supposed to operate as corrigentia, yet the former composition, which is the most simple, is in general preferable.

Pills similar to the second were contrived by a chemical empiric, Starkey, and communicated by him to Matthews, under whose name they were some time ago greatly celebrated. The form here given differs considerable from the original, in omitting many ingredients of no great service. Nor indeed are any of the ingredients of much consequence, except the opium ; their quantity being too inconsiderable to answer any useful purpose. Nine grains of the composition contain nearly one of opium.

PILULÆ e SCILLA.

Lond.

Squill-pills.

Take of

Fresh dried squills, powdered, one dram ;

Ginger, powdered,
 Soap, of each three drams ;
 Ammoniacum, two drams ;
 Syrup of ginger, as much as is sufficient.

Beat them together

PILULÆ SCILLITICÆ.

Edinb.

Squill-pills.

Take of

Gum ammoniac.

Lesser cardamom seeds, in powder,

Extract of liquorice, each one dram ;

Dried root of squills, in fine powder, one scruple,

Mix, and form them into a mass with simple syrup.

THESE are elegant and commodious forms for the exhibition of squills, whether for promoting expectoration, or with the other intentions to which that medicine is applied. As the virtue of the compound is chiefly from the squills, the other ingredients are often varied in extemporaneous prescription : and probably no material difference takes place in the two forms here proposed, excepting in the proportion of the squills, which in the former constitutes one eighth, in the latter one ninth of the mass.

PILULÆ STOMACHICÆ.

Edinb.

Stomachic pills.

Take of

Rhubarb, one ounce ;

Socotorine aloes, six drams ;

Myrrh, half an ounce ;

Vitriolated tartar one dram ;

Essential oil of mint, half a dram ;

Syrup of orange-peel, a sufficient quantity.

Make them into a mass.

THIS pill is intended for moderately

rately warming and strengthening the stomach, and evacuating crude viscid humours. A scruple of the mass may be taken twice a-day.

PILULÆ BACHERI.

Gen.

Bacher's pill.

Take of

Extract of black hellebore,
Purified myrrh, each one ounce;
Powder of carduus benedictus,
two scruples.

Mix them into a mass according to art, to be dried in the air till it be fit for the formation of pills, each weighing one grain.

THESE pills have been strongly recommended as a most effectual remedy in dropical cases, and have been alleged to unite an evacuant and tonic power. Hence they have been considered as particularly suited to those cases where remarkable weakness and laxity occurs. Under the hands of Mr Bacher the inventor, they acquired so great reputation, that after a trial in the military hospitals at Paris, the receipt was purchased by the French king, and published by authority. But like many other nostrums since this publication, Bacher's pill has by no means supported the reputation which it had when kept a secret. The dose is varied according to circumstances, from one to thirty pills being taken in the course of the day.

PILULÆ ex ELATERIO.

Succ.

Pills of elaterium.

Take of

The purest gum ammoniac, two ounces,
Socotorine aloes,
Gamboge, each two drams;
Elaterium half a dram.

Mix them by means of bitter tincture, into a mass for the forma-

tion of pills, each weighing two grains.

THIS, as well as the former, is also a pill celebrated for the cure of dropical affections. And the elaterium from which it derives its name, is one of the most powerful evacuants in the way of catharsis. Here, however, it is united with such active articles, particularly the gamboge, as must make its effect somewhat doubtful. And we are inclined to think that a preferable formula for making the *Pilulæ ex Elaterio*, is to form it into a mass, with the extract of gentian. This is imagined to have some influence as correcting its effect, in exciting sickness at stomach. And when each pill is made to contain half a grain of the elaterium, the dose may be easily accommodated to the circumstances of the patient, one or two pills being taken every hour till they begin to operate;

The elaterium, whether under the form abovementioned, or in the more simple state, which has now been suggested, operates as a very powerful cathartic, often inducing the discharge of stagnant serum, when other remedies are found ineffectual. But it can be exhibited only in those cases where the patient still retains a considerable degree of strength.

PILULÆ FOETIDÆ.

Succ.

Fetid-pills.

Take of

Asafœtida.

Castor each a dram and a half;

Salt of amber, half a dram.

Oil of hartshorn, half a scruple;

Make them into a mass, with tincture of myrrh, to be divided into pills of two grains each.

THESE like the gum-pills formerly

merly mentioned, are chiefly used as an antihysterick and antispasmodic medicine; and they are particularly useful in counteracting spasmodic affections of the alimentary canal, especially those connected with flatulence. But the asafœtida is no less successful when exhibited in a more simple state, particularly when formed into pills with an equal quantity of soap, by the aid of simple syrup.

PILULÆ de GAMBOGIA.

Dan.

Gamboge pills.

Take of

Socotorine aloes,
Extract of black hellebore,
Sweet mercury,
Gamboge, each two drams;
Distilled oil of juniper, half a dram;
Syrup of buckthorn, as much as is sufficient for forming a mass of pills.

FROM the ingredients of which these pills are constituted, we need hardly remark, that they must prove a very powerful purgative. The gamboge, from which they derive their name, is unquestionably a very active one. But it is not more so than the mercurius dulcis; and perhaps from an union of these two, as much might be expected as from the more compounded formula here adopted. Yet it is not improbable, that the essential oil of juniper may in some degree operate as a corrigent.

PILULÆ e MERCURIO CORROSIVO ALBO.

Suec.

Pills of corrosive sublimate mercury.

Take of

Corrosive sublimate,

Purified sal ammoniac, each one scruple;

Distilled water, as much as is sufficient to melt them;

Powder of the root of althea, sixteen scruples;

Honey, two drams.

Mix them into a mass for the formation of pills, each weighing three grains.

CORROSIVE sublimate in substance was long considered as being so violent in its effects, that it could not with safety be taken internally; but for a considerable time it has been used with advantage under the form of solution, either in water or spirits. But to both these a considerable objection occurs from their disagreeable brassy taste. This objection is however entirely obviated, by reducing the solution after it is formed to a solid mass, by means of the crumb of bread, or any proper powder: And by the aid of a little sal ammoniac, the solution may be made in a very small quantity of water; so that less of any solid intermedium will be sufficient to bring it to the form of pills. The formula here directed seems well suited for the purpose intended. Each of the pills contains about an eighth of a grain of the corrosive; thus the dose may be easily regulated according to the intention in view. And these pills are not unfrequently employed with advantage, both in combating venereal and cutaneous affections, and for the expulsion of worms from the alimentary canal. With the latter of these intentions, a similar pill was particularly recommended by Dr Gardner, in a paper published in the Edinburgh Physical and Literary Essays. And although not received into our pharmacopœia, it has been frequently used at Edinburgh.

PILULÆ PICEÆ.

*Dan.**Tar-pills.*

Take any quantity of tar, and mix with it as much powdered elecampane root as will reduce it to a proper thickness for being formed into pills.

THE powder here mixed with the tar, though of no great virtue, is nevertheless a very useful addition, not only for procuring it a due consistence, but likewise as it divides the resinous texture of the tar, and thus contributes to promote its solution by the animal juices. In the Edinburgh infirmary, half a dram of the mass, made into middle-sized pills, is given every morning and evening in disorders of the breast, scurvies, &c.

PILULÆ SAPONACEÆ.

*Succ.**Soap-pills.*

Take of

Hard white soap, two ounces ;

Extract of birch, one ounce.

Let them be formed into a mass, to be divided into pills, each containing three grains.

ALTHOUGH many virtues have been attributed to the birch, yet we are inclined to think, that it here serves little other purpose than to aid in giving the form of pills to the

soap. And this article, even when taken in small quantity with some constitutions, operates as a gentle laxative. But besides this, it has also been supposed to be highly useful both in cases of jaundice and of calculus. There can, however, be little doubt, that the theories on which it has been inferred, that it may be useful in such complaints, are not well founded ; and we may perhaps add, that the use of it even to a great extent, is by no means attended with those consequences which were once alleged to arise from it.

PILULÆ e STYRACE.

*Succ.**Storax-pills.*

Take of

Strained storax, five scruples ;

Extract of liquorice, three drams ;

Opium, one dram.

Let the opium, dissolved in wine, be added to the other ingredients, so as to form a mass of proper consistence, to be made into pills, each weighing three grains.

THESE pills are principally active in consequence of the opium which they contain. And they are chiefly meant with a view to a slow solution in the stomach, and consequently producing more gradual and lasting effects. One grain of opium is contained in six grains of the mass,

C H A P. XXVIII.

E L E C T U A R I A.

E L E C T U A R I E S.

ELECTUARIES are composed chiefly of powders mixed up with syrups, &c. into such a consistence, that the powders may not separate in keeping, that a dose may be easily taken up on the point of a knife, and not prove too stiff to swallow.

Electuaries receive chiefly the milder alterative medicines, and such as are not ungrateful to the palate. The more powerful drugs, as cathartics, emetics, opiates, and the like, (except in officinal electuaries to be dispensed by weight), are seldom trusted in this form, on account of the uncertainty of the dose; disgustful ones, acids, bitters, fetids, cannot be conveniently taken into it; nor is the form of an electuary well fitted for the more ponderous substances, as mercurials, these being apt to subside in keeping, unless the composition be made very stiff.

The lighter powders require thrice their weight of honey or syrup, boiled to the thickness of honey, to make them into the consistence of an electuary; of syrups of the common consistence, twice the weight of the powder is sufficient.

Where the common syrups are employed, it is necessary to add likewise a little conserve, to prevent the compound from drying too soon. Electuaries of Peruvian bark, for instance, made up with syrup alone, will often in a day or two grow too dry for taking.

Some powders, especially those of the less grateful kind, are more conveniently made up with mucilage than with syrup, honey, or conserve. The three latter stick about the mouth and fauces, and thus occasion the taste of the medicine to remain for a considerable time; whilst mucilages pass freely, without leaving any taste in the mouth. A little soft extract of liquorice, joined to the mucilage, renders the composition sufficiently grateful, without the inconveniences of the more adhesive sweets.

The quantity of an electuary directed at a time, in extemporaneous prescription, varies much according to its constituent parts, but it is rarely less than the size of a nutmeg, or more than two or three ounces.

General rules for making electuaries.

I.

The rules already laid down for decoctions and powders in general, are likewise to be observed in making decoctions and powders for electuaries.

II.

Gums, inspissated juices, and such other substances as are not pulverable, should be dissolved in the liquor prescribed: then add the powders by little and little, and keep the whole briskly stirring, so as to make an equable and uniform mixture.

III.

Astringent electuaries, and such as have pulps of fruits in their composition, should be prepared only in small quantities at a time: For astringent medicines lose greatly of their virtue on being kept in this form, and the pulps of fruits are apt to become sour.

IV.

The superfluous moisture of the pulps should be exhaled over a gentle fire, before the other ingredients are added to them.

V.

Electuaries, if they grow dry in keeping, are to be reduced to the due consistence, with the addition of a little Canary wine, and not with syrup or honey: by this means, the dose will be the least uncertain; a circumstance deserving particular regard, in those especially which are made up with syrup and contain a proportion of opium.

ELECTUARIUM e CASSIA.

Lond.

Electuary of Cassia.

Take of

The fresh extracted pulp of cassia, half a pound;

Manna, two ounces;

Pulp of tamarinds, one ounce;

Rose-syrup, half a pound;

Beat the manna, and dissolve it over a slow fire in the rose-syrup; then add the pulps; and with a continued heat, evaporate the whole to the proper thickness of an electuary.

ELECTUARIUM e CASSIA.

vulgo DIACASIA.

Edinb.

Electuary of cassia, commonly called Diacasia.

Take of

Pulp of casia fistularis, six ounces;

Pulp of tamarinds,

Manna, each an ounce and a half;

Syrup of pale roses, six ounces;

Having beat the manna in a mortar, dissolve it with a gentle heat in the syrup; then add the pulps, and evaporate them with a regularly continued heat to the consistence of an electuary.

THESE compositions are very convenient officinals, to serve as a basis for purgative electuaries and other similar purposes; as the pulping a small quantity of the fruits, for extemporaneous prescription, is very troublesome. The tamarinds give them a pleasant taste, and do not subject them, as might be expected, to turn sour. After standing for four months, the composition has been found no sourer than when first made up. They are likewise usefully taken by themselves, to the quantity of two or three drams occasionally, for gently loosening the belly in costive habits.

ELECTUARIUM e SCAMMONIO.

Lond.

Electuary of scammony.

Take

Take of

Scammony, in powder one ounce
and an half ;

Cloves,

Ginger, of each six drams ;

Essential oil of caraway, half a
dram ;

Syrup of roses, as much as is suffi-
cient.

Mix the spices, powdered together,
with the syrup ; then add the
scammony, and lastly the oil of
caraway.

THIS electuary is a warm, brisk
purgative. It is a reform of the
Electuarium caryocostinum of our
preceding dispensatories, a compo-
sition which was greatly complained
of, as being inconvenient to take,
on account of the largeness of its
dose. A dram and a half of this,
which contains fifteen grains of
scammony, is equivalent to half an
ounce of the other.

ELECTUARIUM e SEN- NA.

Lond.

Electuary of senna.

Take of

Senna, eight ounces ;

Figs, one pound ;

Pulp of tamarinds,

— of cassia,

— of prunes, of each half a
pound ;

Coriander-seeds, four ounces ;

Liquorice three ounces ;

Double-refined sugar, two pounds
and an half.

Powder the senna with the corian-
der-seeds, and sift out ten ounces
of the mixed powder. Boil the
remainder with the figs and li-
quorice, in four pints of distilled
water, to one half ; then press
out and strain the liquor. Eva-
porate this strained liquor to the
weight of about a pound and an

half: then add the sugar, and
make a syrup ; add this syrup by
degrees to the pulps, and lastly
mix in the powder.

ELECTUARIUM LENITI- VUM.

Edinb.

Lenitive electuary.

Take of

Pulp of French prunes, one
pound.

Pulp of cassia.

Pulp of tamarinds, each two oun-
ces and a half ;

Black syrup of sugar, commonly
called *molasses*, one pound and
a half ;

Senna leaves in fine powder, four
ounces ;

Coriander seeds in fine powder,
half an ounce.

Having boiled the pulps with the
syrup to the consistence of honey,
add the powders, and beat the
whole into an electuary.

THIS electuary, the name of which
is with propriety changed by the
London college, is now freed from
some superfluous ingredients which
were left in it at former revisals, viz.
polypody roots, French mercury
leaves, fenugreek seeds, and linseed.
Molasses is preferable to either
honey or sugar, as it coincides with
the intention, and is not only of it-
self inapt to ferment, but likewise
prevents such substances as are this
way disposed from running into
fermentation.

It is a very convenient laxative,
and has long been in common use
among practitioners. Taken to the
quantity of a nutmeg or more, as
occasion may require, it is an excel-
lent laxative for loosening the belly
in costive habits.

ELECTUARIUM JAPONI-
CUM, vulgo CONFECTIO
JAPONICA.*Edinb.**Japonic electuary, commonly called
Japonic confection.*

Take of

Japan earth, four ounces ;
Gum kino, three ounces ;
Cinnamon,
Nutmeg, each one ounce ;
Opium diffused in a sufficient
quantity of Spanish white
wine, one dram and a half ;Syrup of dried roses boiled to the
consistence of honey, two pounds
and a quarter.Mix and form them into an elec-
tuary.

THE ingredients in the electuary seem extremely well chosen, and are so proportioned to one another, that the quantity of opium is the same as in the diascordium of the former pharmacopœias of Edinburgh, viz. one grain in ten scruples. The gum kino, now substituted to the tormentil root, is an excellent improvement in the formula.

ELECTUARIUM JOVIALE.

*Brun.**Tin electuary.*

Take of

Pure tin,
Quicksilver, each one ounce.Let them be formed into an amal-
gam ; then add

Oyster shells, prepared, one ounce.

Reduce the whole to a powder.

Take of

This powder,
Conserve of wormwood, each one
ounce, and form an electuary
with syrup of mint.

TIN, as we have already had occasion to observe under the article *Stannum Pulveratum*, has long been

celebrated for the expulsion of tænia. And it is also well known, that in mercury we have one of the most powerful of the tribe of anthelmintics. Such a combination as the present, then, might be supposed well suited for the removal of that animal from the alimentary canal ; and accordingly it has been alleged, that this electuary has sometimes succeeded after other remedies have failed. It may be taken twice a day, to the extent of two or three drams for a dose.

ELECTUARIUM GINGI-
VALLE.*Suec.**Electuary for the gums.*

Take of

Powdered myrrh, three drams ;
Cream of tartar,
Cochineal, each a dram and a
half.Grind them together in a glass mor-
tar : then addMelted honey, four ounces ;
Cloves, in powder, one dram.

MYRRH, particularly under the form of tincture, has long been a favourite application to the gums, when in a spongy or ulcerated state. But the spirituous menstruum there employed, although sometimes favouring the intention in view, in other instances occurs as an objection to its use. In these cases, the benefit to be derived from the myrrh may be obtained from this electuary, which may always be applied with safety, and sometimes with advantage.

ELECTUARIUM e MANNA.

*Suec.**Electuary of manna.*

Take of

Manna.
Refined sugar, pounded,

Fennel-

Fennel-water, each two ounces.
Strain the mixture, using expreffion;
then add
Fine powder of the root of florentine orrice, one dram;
Fresh drawn almond oil, one ounce.

IN this electuary we have a gently emollient laxative, which is very useful in theſe caſes, where obſtipation either ariſes from indurated feces, or is ſupported by that cauſe. But its cathartic powers are by no means conſiderable.

ELECTUARIUM NITROSUM.

Gen.

Nitrous electuary.

Take of
Purified nitre, half an ounce;
Conſerve of roſes, four ounces.
Mix them.

UNDER this formula, nitre may be introduced to a conſiderable extent, without giving uneaſineſs at ſtomach, while at the ſame time its refrigerant power is combined with the aſtringency of the roſes. From theſe circumſtances it may be advantageouſly employed in different caſes, but particularly in inſtances of hæmoptiſis.

ELECTUARIUM TEREBINTHINATUM.

Suc.

Terebinthinate electuary.

Take of
Spirit of turpentine, half an ounce;
Honey, one ounce;
Powder of liquorice, as much as is ſufficient for the formation of an electuary.

UNDER this form, the oil of turpentine may be introduced with leſs uneaſineſs, than perhaps under almoſt any other. And it may thus be employed for different purpoſes, but particularly with a view to its diuretic power. But it has been eſpecially celebrated for the cure of obſtinate rheumatifms, and above all, for that modification of rheumatifm which has the name of *iſchias*, and which is found in many inſtances, obſtinately to reſiſt other modes of cure.

LINCTUS LENIENS.

Suc.

Lenient Linctus.

Take of
Gum arabic, bruifed, two drams;
Cherry-water, half an ounce.
By trituration in a mortar, mix with them
Almond oil, fresh drawn,
Syrup of almonds, each ſeven ounces.

IN this we have a very agreeable emollient linctus, highly uſeful in recent catarrhal affections, for lubricating the throat and fauces. It may be taken at pleaſure to any extent that the ſtomach will eaſily bear.

C H A P. XXIX.

C O N F E C T I O N E S.

C O N F E C T I O N S.

ALTHOUGH the London college have separated these from electuaries, yet they differ so little, that in most pharmacopœias they are ranked under the same head. And in that of Edinburgh, there are several articles which have promiscuously the name either of *confection* or *electuary*. But as no inconvenience arises from the separation; and as we have followed the order of the Edinburgh pharmacopœia in other particulars, it would be improper to deviate from it in this.

CONFECTIO AROMATICA.

Lond.

Aromatic confection.

Take of

Zedoary, in coarse powder,
Saffron, of each half an ounce;
Distilled water, three pints.

Macerate for twenty-four hours; then press and strain. Reduce the strained liquor, by evaporation, to a pint and a half, to which add the following, rubbed to a very fine powder:

Compound powder of crabs-claws, sixteen ounces;
Cinnamon,
Nutmegs, of each two ounces;
Cloves, one ounce;

Smaller cardamom-seeds, husked,
half an ounce;

Double-refined sugar, two pounds.
Make a confection.

THIS confection is composed of the more unexceptionable ingredients of a composition formerly held in great esteem, and which was called, from its author, CONFECTIO RALEIGHANA. The original confection was composed of no less than five and twenty particulars; each of which were examined apart, except one, *ros solis*, the flower of which is too small to be gathered in sufficient quantity for the general use of the medicine, and the plant is possessed of hurtful qualities, as is experienced in cattle that feed where it grows. In this examination, many of the extracts came out so very nauseous, that it was impossible to retain them, consistent with any regard to the taste of the composition. But some few, of equal efficacy with any of the rest, being of a tolerable taste and flavour, were compounded in different proportions; and when, after many trials, a composition was approved, the quantity of each material, that would yield the proportion of extract which entered that composition, was calculated,

ted, and from thence the proportions were collected as now set down: after which the compound extract was made, and found to answer expectation. The London college, in the present edition of their pharmacopoeia, have still farther simplified this formula, by rejecting the rosemary, juniper, and cardamoms, which formerly entered it.

The confection, as now reformed, is a sufficiently grateful and moderately warm cordial; and frequently given with that intention, from eight or ten grains to a scruple or upwards, in boluses and draughts. The formula might perhaps be still more simplified without any loss. The crabs-claw powder does not appear to be very necessary, and is inserted rather in compliance with the original, than from its contributing any thing to the intention of the medicine; and the following formula of the Edinburgh pharmacopoeia seems to us preferable to that of the London, even in its present improved state.

ELECTUARIUM CARDIACUM vulgo CONFECTIO CARDIACA.

Edinb.

Cordial electuary, commonly called Cordial confection.

Take of

- Conserve of orange-peel, three ounces;
- Preserved nutmegs, an ounce and a half;
- Preserved ginger, six drams;
- Cinnamon, in fine powder, half an ounce;
- Syrup of orange-peel, as much as will form the whole into an electuary.

IN the above simple and elegant formula, a number of trifling ingredients are rejected, and those substituted in their place are medicines

of approved efficacy. We therefore consider this preparation as an useful remedy for the purposes expressed in its title.

CONFECTIO OPIATA.

Lond.

Confection of opium.

Take of

- Hard purified opium, powdered, six drams;
- Long pepper,
- Ginger,
- Caraway seeds, of each 2 ounces;
- Syrup of white poppy, boiled to the consistence of honey, three times the weight of the whole.

Mix the purified opium carefully with the heated syrup: then add the rest rubbed to powder.

ELECTUARIUM THEBAICUM.

Edinb.

Thebaic electuary.

Take of

- Powder of aromatics, six ounces;
- Virginian snake-root, in fine powder, three ounces;
- Opium, diffused in a sufficient quantity of Spanish white-wine, three drams;
- Clarified honey thrice the weight of the powders.

Mix them, and form an electuary.

THESE compositions consist of very powerful ingredients, and are doubtless capable of answering every thing that can be reasonably expected from the more voluminous theriaca of Andromachus. The London college also had formerly their theriaca composed of the less exceptionable ingredients of Andromachus's. But as these medicines have for a long time been chiefly employed for external purposes, by the way of cataplasm, the *Theriaca Londinensis* is now omitted, and its place

place supplied by a cataplasm composed of a few well-chosen articles, under the name of *Cataplasmata e cymino*; of which hereafter. For internal use, none of the theriacs are at present so much regarded as they have been heretofore; practitioners having introduced in their room extemporaneous boluses of Virginian snake-root, camphor, contrayerva, and the like; which answer all their intentions, with this advantage, that they may be given either with or without opium; an ingredient which renders the others prejudicial, in cases where they might otherwise be proper.

With regard to the quantity of opium in the foregoing compositions, one grain thereof is contained in thirty-six grains of the *Confectio opiata*, and in five scruples of the *Thebaic electuary*. The proportion of opium will vary a little, according to the time that they have been kept; their moisture by degrees exhaling, so as to leave the remainder stronger of the opium than an equal weight was at first. A change of this kind is taken notice of by many writers, but falsely attributed to an imaginary fermentative quality of the ingredients; by which they were supposed, from their multiplicity and contrariety, to be continually exhaling and improving the virtues of each other.

A good deal of care is requisite in making these compositions, to prevent the waste which is apt to happen in the pounding, and which would render the proportion of opium to the other ingredients precarious. The intention of dissolving the opium in wine, for these and other electuaries, is, that it may be more uniformly mingled with the rest.

THESE compositions fully supply

the place of two articles, which though long banished from the shops, we shall here subjoin; as examples of the amazing height to which composition in medicine had at one time proceeded.

MITHRIDATIUM, five CON-FECTIO DAMOCRATIS.

Mithridate, or the confection of Democrates.

Take of

Cinnamon, fourteen drams;
 Myrrh, eleven drams;
 Agaric,
 Indian nard,
 Ginger,
 Saffron,
 Seeds of mithridate mustard,
 Frankincense,
 Chio turpentine, each ten drams;
 Camels hay,
 Costus, or in its stead zedoary,
 Indian leaf, or in its stead mace,
 Stechas,
 Long pepper,
 Hartwort seeds,
 Hypocistis,
 Storax strained,
 Opoponax,
 Galbanum strained,
 Opopobalsam, or in its stead ex-
 pressed oil of nutmegs,
 Russia castor each one ounce;
 Poley mountain,
 Scordium,
 Carpobalsam, or in its stead cu-
 bebs,
 White pepper,
 Candy carrot seed,
 Bdellium strained, each seven
 drams;
 Celtic nard,
 Gentian root,
 Dittany of Crete,
 Red roses,
 Macedonian parsley seed,
 Lesser cardamom seeds, husked,
 Sweet fennel seed,
 Gum arabic,

Opium strained, each five drams ;
 Calamus aromaticus,
 Wild valerian root,
 Aniseed,
 Sagapenum, strained, each three
 drams ;
 Meum athamanticum,
 St John's wort,
 Acacia, or in its stead terra Japo-
 nica,
 Bellies of skinks, each two drams
 and a half ;
 Clarified honey, thrice the weight
 of all the other ingredients.
 Warm the honey, and mix with it
 the opium dissolved in wine : melt
 the storax, galbanum, turpentine,
 and opobalsam (or expressed oil
 of nutmegs) together in another
 vessel, continually stirring them
 about to prevent their burning ;
 with these so melted, mix the hot
 honey, at first by spoonfuls, and
 afterwards in larger quantities at
 a time ; when the whole is grown
 almost cold, add by degrees the
 other species reduced into pow-
 der.

**THERIACA ANDROMA-
 CHI.**

*Theriaca of Andromachus, or Venice
 treacle.*

Take of
 Troches of squills, half a pound ;
 Long pepper,
 Opium, strained,
 Vipers, dried, each three ounces ;
 Cinnamon,
 Opobalsam, or in its stead ex-
 pressed oil of nutmegs, each
 two ounces ;
 Agaric,
 Florence oris root,
 Scordium,
 Red roses,
 Navew seeds,
 Extract of liquorice, each an
 ounce and a half ;
 Indian nard,

Saffron,
 Amomum,
 Myrrh,
 Costus, or in its stead zedoary,
 Camel's hay, each one ounce ;
 Cinquefoil root,
 Rhubarb,
 Ginger,
 Indian leaf, or in its stead mace,
 Dittany of Crete,
 Horehound leaves,
 Calamint leaves,
 Stechas,
 Black pepper,
 Macedonian parsley seed,
 Olibanum,
 Ohio turpentine,
 Wild valerian root, each
 drams ;
 Genian root,
 Celtic nard,
 Spiguel,
 Poley mountain }
 St John's wort } leaves,
 Groundpine }
 Germander tops, with the seed,
 Carpobalsam, or in its stead cu-
 bebs,
 Aniseed,
 Sweet fennel seed,
 Lesser cardamom seeds, husked,
 Bishops-weed }
 Hartwort } seeds,
 Treacle mustard }
 Hypocistis,
 Acacia, or in its stead Japan
 earh,
 Gum arabic,
 Storax, strained,
 Sagapenum, strained,
 Terra Lemnia, or in its stead bole
 armenic, or French bole,
 Green vitriol calcined, each half
 an ounce ;
 Small (or in its stead, the long)
 birthwort root,
 Lesser centaury tops,
 Candy carrot seed,
 Opopanax,
 Galbanum, strained,

Russia castor,
 Jews pitch, or in its stead white
 amber, prepared;
 Calamus aromaticus, each two
 drams;
 Clarified honey, thrice the weight
 of all the other ingredients.
 Let these ingredients be mixed to-
 gether, after the same manner as
 directed in making the mithri-
 date.

THESE celebrated electuaries are often mentioned by medical writers, and may serve as examples of the wild exuberance of composition which the superstition of former ages brought into vogue. The theriaca is a reformation of mithridate, made by Andromachus physician to Nero: the mithridate itself is said to have been found in the cabinet of Mithridates king of Pontus. The first publishers of this pompous arcanum were very extravagant in their commendations of its virtues; the principal of which was made to consist in its being a most powerful preservative against all kinds of venom; whoever took a proper quantity in a morning, was ensured from being poisoned during that whole day: this was confirmed by the example of its supposed inventor, who, as Celsus informs us, was by its constant use so fortified against the commonly reputed poisons, that none of them would have any effect upon him when he wanted their assistance. But the notions of poisons which prevailed in those ruder ages were manifestly erroneous. Before experience had furnished mankind with a competent knowledge of the powers of simples, they were under perpetual alarms from an apprehension of poisons, and busied themselves in contriving compositions which should counteract their effects, accumulating together all

those substances which they imagined to be possessed of any degree of alexipharmac power. Hence proceed the voluminous antidotes which we meet with in the writings of the ancient physicians: yet it does not appear that they were acquainted with any real poison, except the cicuta, aconitum, and bites of venomous beasts; and to these they knew of no antidote whatever. Even admitting the reality of the poisons, and the efficacy of the several antidotes separately, the compositions could no more answer the purposes expected from them, than the accumulating of all the medicinal simples into one form could make a remedy against all diseases.

Yet, notwithstanding the absurdity in the original intention of these medicines, and their enormity in point of composition, as they contain several powerful materials, whose virtues, tho' greatly prejudiced, yet are not destroyed, by their multiplicity and contrariety, the compounds have been found, from repeated experience, to produce very considerable effects, as warm opiate diaphoretics.

These compositions might without doubt be lopt of numerous superfluities, without any diminution of their virtues; yet as the effects of them, in their present form; are so well known, so much regard has been paid to ancient authority, as not to attempt a reformation of that kind. Altho' these forms were originally complex, yet subsequent additions had crept into them. Neither the description in verse of the elder Andromachus, nor the prose explanation of the younger, make any mention of the white pepper afterwards added to the theriaca; and the orris root, in the mithridate of our former pharmacopoeias, is also a supernumerary ingredient, not warranted by

by the original : these therefore are rejected. Nor is the *asarum* in the *mithridate* grounded on any good authority : the verse it is taken from, is mutilated and corrupt : and the word which some, upon conjecture only, suppose to have been *asarum*, others, also upon conjecture, choose to read differently : till some emendation shall be better founded than merely upon critical guesses, this single species may be safely passed over without any prejudice to the medicine. None of the ancient descriptions afford any other light in this particular ; for they either omit this ingredient, and others also, or abound with additions.

Another innovation on both these medicines also took place. In each of these compositions were found both *cinnamon* and *cassia lignea* ; and it is very evident, from several parts of *Galen's* works, that the latter was used by the ancients only upon account of the great difficulty of procuring the other ; so that to retain the *cassia*, now that *cinnamon* is so common, is a blind following of these writers, without any attention to their meaning : the *cassia* therefore is now rejected, and half the quantity of *cinnamon* put in its room ; which is the proportion that *Galen* directs to be observed in substituting the one for the other. It is probable, that the case is the same with regard to the *Celtic* and the *Indian* ; that the first had a place in these compositions, on account of the difficulty of procuring the *Indian* : for *Galen* expressly prefers the latter.

There is a material error in regard to the *theriaca*, which has passed through several editions of our *Pharmacopoeia* : this is, the substituting *Roman vitriol* to the ancient *chalchitis*, now not certainly known ; and, in the catalogue of simples describing the *Roman*

to be a *blue vitriol* ; whereas the *Italian* writers are unanimous it is a *green vitriol* ; and were it not, it would not answer to the effects of the *chalchitis*, which was certainly a *chalybeate*, and gives the medicine its black colour. What has chiefly occasioned *chalchitis* to be supposed a *cupreous vitriol*, seems to be its name, derived from *χαλυξ*, copper : but it is to be observed, that all *vitriols* were formerly imagined to proceed from copper, and were named accordingly : the *green* or *martial vitriols* are still called by the *Germans kupffer-wasser*, and by us *coperas*. It is probable, that the ancient *chalchitis* was no other than a native *martial vitriol*, calcined by the heat of those warm climates to a degree of yellowish red or coppery colour : and therefore the common *green vitriol*, thus calcined by art, very properly supplies its place.

The preparation of these medicines has been somewhat facilitated by omitting the *trochisci cyphæos* used in the *mithridate*, and the *hedychroi* and *viperini* for the *theriaca* ; and inserting their ingredients, after *Zwelffer's* manner, in the compositions they are intended for. This is done in the *theriaca* very commodiously ; the ingredients in these troches uniting with those in the *theriaca* itself into unbroken numbers. But to render the numbers equally simple in the *mithridate*, it was necessary to retrench a few odd grains from some of the articles, and make a small addition to some others. The proportions of the ingredients in the *trochisci cyphæos* are adjusted from the original description in *Galen* ; the numbers in our former *pharmacopoeia* being very erroneous.

Both the *London* and *Edinburgh* colleges ventured at length to discard these

these venerable reliques. The Edinburgh college at first substituted in their room an elegant and simple form, equivalent to them both in efficacy, under the title of *Theriaca Edinensis*, *Edinburgh Theria-*

ca. In latter editions, however, they have entirely banished the name of *theriaca* from their book, and have put in its place the more elegant composition already mentioned, the *Electuarium Thebaicum*.

C H A P. XXX.

AQUÆ MEDICATÆ.

MEDICATED WATERS.

WE have already taken notice of many articles which are either dissolved in water or communicate their virtues to it. And in one sense of the word, these may be called *medicated waters*. Sometimes this impregnation is effected by the aid of heat, sometimes without it: and thus are formed decoctions, infusions, and the like. But among those articles referred to in this chapter, there takes place mere watery solution only, and they are used solely with the intention of acting topically in the way of lotion, injection, or at the utmost of gargarism.

AQUA ALUMINIS COMPOSITA.

Lond.

Compound alum-water.

Take of
Alum,
Vitriolated zinc, of each half an ounce ;

Boiling distilled water, two pints.
Pour the water on the salts in a glass vessel, and strain.

THIS water was long known in our shops under the title of *Aqua aluminosa Batavana*.

Bates directed the salts to be first powdered and melted over the fire ; but this is needless trouble, since the melting only evaporates the aqueous parts, which are restored again on the addition of the water. This liquor is used for cleansing and healing ulcers and wounds ; and for removing cutaneous eruptions, the part being bathed with it hot three or four times a-day. It is sometimes likewise employed as a collyrium ; and as an injection in the gonorrhœa and fluor albus, when not accompanied with virulence.

AQUA

AQUA STYPTICA.

*Edinb.**Styptic water.*

Take of

Blue vitriol,
Alum, each three ounces ;
Water, two pounds.

Boil them until the salts be dissolved ; then filtre the liquor, and add one ounce and a half of vitriolic acid.

THIS water, though made with the blue in place of the white vitriol, cannot be considered as differing very much from the former. It is formed upon the styptic, recommended by Sydenham, for stopping bleeding at the nose, and other external hæmorrhagies: for this purpose cloths or dossils are to be dipt in the liquor, and applied to the part.

AQUA CUPRI AMMONIATI.

*Lond.**Water of ammoniated copper.*

Take of

Lime-water, one pint ;
Sal ammoniac, one dram.

Let them stand together, in a copper vessel, till the ammonia be saturated.

AQUA SAPHARINA.

*Edinb.**Sapphire coloured water.*

Take of

Lime-water, newly made, eight ounces ;
Sal ammoniac, two scruples ;
Verdegris, beat, four grains.

Mix them, and after twenty-four hours strain the liquor.

THIS is a much more elegant and convenient method than the preceding.

This water is at present pretty much in use as a detergent of foul and obstinate ulcers, and for taking away specks or films in the eyes.

The copper contributes more to its colour than to its medicinal efficacy ; for the quantity of the metal dissolved is extremely small.

AQUA LITHARGYRI ACETATI COMPOSITA.

*Lond.**Compound water of acetated litharge.*

Take of

Acetated water of litharge, two drams ;

Distilled water, two pints ;
Proof-spirit of wine, two drams.

Mix the spirit of wine with the acetated water of litharge ; then add the distilled water.

THIS liquor is of the same nature with solutions of *saccharum saturni*, and is analogous to the Vegeto-mineral water of Mr Goulard. It is only used externally, as a cosmetic against cutaneous eruptions, redness, inflammation, &c. But even here, it is alleged that it is not altogether void of danger ; and that there are examples of its continued employment having occasioned sundry ill consequences. But at the same time the very frequent use that is made of it with perfect impunity, would lead us to conclude, that in these observations there must be some mistake.

AQUA ZINCI VITRIOLATI CUM CAMPHORA.

*Lond.**Water of vitriolated zinc with camphor.*

Take of

Vitriolated zinc, half an ounce ;
Camphorated spirit, half an ounce ;
Boiling water, two pints.

Mix, and filter through paper.

THIS is an improved method of forming the Aqua vitriolica camphorata of the former editions of the

Lond.

London pharmacopoeia. It is used externally as a lotion for some ulcers, particularly those in which it is necessary to restrain a great discharge. It is also not unfrequently employed as a collyrium in some cases of ophthalmia, where a large discharge of watery fluid takes place from the eyes with but little inflammation. But when it is to be applied to this tender organ, it ought at first, at least, to be diluted by the addition of more water.

AQUA VITRIOLICA.

Edinb.

Vitriolic water.

Take of

White vitriol, sixteen grains;

Water, eight ounces;

Weak vitriolic acid, sixteen drops.

Dissolve the vitriol in the water, and then adding the acid, strain through paper.

WHERE the eyes are watery or inflamed, this solution of white vitriol is a very useful application: the slighter inflammations will frequently yield to this medicine, without any other assistance: in the more violent ones, venæsection and cathartics are to be premised to its use.

C H A P. XXXI.

E M P L A S T R A.

P L A S T E R S.

PLASTERS are composed chiefly of oily and unctuous substances, united with powders into such a consistence, that the compound may remain firm in the cold without sticking to the fingers; that it may be soft and pliable in a low degree of heat, and that by the warmth of the human body it be so tenacious as readily to adhere both to the part on which it is applied, and to the substance on which it is spread.

There is, however, a difference in the consistence of plasters, according to the purposes they are to be applied to: Thus, such as are intended for the breast and stomach should be very soft and yielding; whilst those designed for the limbs are made firmer and more adhesive. An ounce of expressed oil, an ounce of yellow wax, and half an ounce of any proper powder, will make a plaster of the first consistence; for a hard one, an ounce more of wax, and

and half an ounce more of powder may be added. Plasters may likewise be made of resins, gummy-resins; &c. without wax, especially in extemporaneous prescription: for officinals, these compositions are less proper, as they soon grow too soft in keeping, and fall flat in a warm air.

It has been supposed, that plasters might be impregnated with the specific virtues of different vegetables, by boiling the recent vegetable with the oil employed for the composition of the plaster. The cotion was continued till the herb was almost crisp, with care to prevent the matter from contracting a black colour: after which the liquid was strained off, and set on the fire again, till all the aqueous moisture had exhaled. We have already observed, that this treatment does not communicate to the oils any very valuable qualities even when to be used in a fluid state: much less can plasters, made with such oils receive any considerable efficacy from the herbs.

Calces of lead, boiled with oils, unite with them into a plaster of an excellent consistence, and which makes a proper basis for several other plasters.

In the boiling of these compositions, a quantity of water must be added, to prevent the plaster from burning and growing black. Such water, as it may be necessary to add during the boiling, must be previously made hot; for cold liquor would not only prolong the process, but likewise occasion the matter to explode, and be thrown about with violence, to the great danger of the operator: this accident will equally happen upon the addition of hot water, if the plaster be extremely hot.

EMPLASTRUM AMMONIACI CUM HYDRARGYRO.

Lond.

Ammoniacum plaster with quicksilver.

Take of

Strained ammoniaem, one pound;
Purified quicksilver, three ounces;

Sulphurated oil, one dram, or what is sufficient.

Rub the quicksilver with the sulphurated oil until the globules disappear; then add, by a little at a time, the melted ammoniacum, and mix them.

THIS is a very well contrived mercurial plaster. The ammoniacum in general affords a good basis for the application of the mercury. In some cases, however, it is not sufficiently adhesive. But this inconvenience, when it does occur, may be readily remedied by the addition of a small quantity of turpentine.

EMPLASTRUM CANTHARIDIS.

Lond.

Plaster of Spanish flies.

Take of

Spanish flies, one pound;

Plaster of wax, two pounds;

Prepared hog's lard, half a pound.

Having melted the plaster and lard, a little before they coagulate, sprinkle in the flies, reduced to a very fine powder.

EMPLASTRUM VESICATORIUM.

Edinb.

Blistering plaster, or Epispastic plaster.

Take of

Hog's lard,

Yellow wax,

White resin,

Cantharides, each equal weights. Beat the cantharides into a fine powder, and add them to the other ingredients, previously melted, and removed from the fire.

BOTH these formulæ are very well suited to answer the intention in view, that of exciting blisters; for both are of a proper consistence and sufficient degree of tenacity, which are here the only requisites. Cantharides of good quality, duly applied to the skin, never fail of producing blisters. When, therefore, the desired effect does not take place, it is to be ascribed to the flies either being faulty at first, or having their activity afterwards destroyed by some accidental circumstance; such as too great heat in forming, in spreading the plaster, or the like. And when due attention is paid to these particulars, the simple compositions now introduced answer the purpose better than those compound plasters with mustard-seed, black pepper, vinegar, verdegriis, and the like, which had formerly a place in our pharmacopœias. It is not however improbable, that the pain of blistering-plasters might be considerably diminished by the addition of a proportion of opium, without preventing the good effects otherwise to be derived from them.

EMPLASTRUM CERÆ.

Lond.

Wax-plaster.

Take of

Yellow-wax,

Prepared mutton-suet, of each three pounds;

Yellow resin, one pound.

Melt them together, and strain the mixture whilst it is fluid.

EMPLASTRUM CEREUM.

Edinb.

Wax-plaster.

Take of

Yellow wax, three parts;

White resin,

Mutton-suet, each two parts.

Melt them together into a plaster; which supplies the place of melilot plaster.

THIS plaster had formerly the title of *Emplastrum attrahens*, and was chiefly employed as a dressing after blisters, to support some discharge.

It is a very well contrived plaster for that purpose. It is calculated to supply the place of melilot plaster; whose great irritation, when employed for the dressing of blisters, has been continually complained of. This was owing to the large quantity of resin contained in it, which is here on that account retrenched. It would seem that, when designed only for dressing blisters, the resin ought to be entirely omitted, unless where a continuance of the pain and irritation, excited by the vesicatory, is required. Indeed plasters of any kind are not very proper for this purpose: their consistence makes them sit uneasy, and their adhesiveness renders the taking them off painful. Cerates, which are softer and less adhesive, appear much more eligible: the *Ceratum spermatis cæti* will serve for general use; and for some particular purposes, the *Ceratum resinæ flavæ* may be applied.

EMPLASTRUM CUMINI.

Lond.

Cummin-plaster.

Take of

The seeds of cummin,

————— caraway,

Bay-berries, of each three ounces;

Burgundy pitch, three pounds;

Yellow wax, three ounces.

Mix, with the melted pitch and wax,
the

the rest of the ingredients, powdered, and make a plaster.

THIS plaster stands recommended as a moderately warm discutient; and is directed by some to be applied to the hypogastric region, for strengthening the viscera, and expelling flatulencies: but it is a matter of great doubt, whether it derives any virtue either from the article from which it is named, or from the caraway or bay-berries which enter its composition.

EMPLASTRUM FOETIDUM,
vulgo ANTIHYSTERICUM.

Edinb.

Fetid, commonly called *Antihysterical plaster*.

Take of

Common plaster.

Asafoetida, strained, each two parts;
yellow wax.

Strained galbanum, each one part.

Mix, and make them into a plaster.

THIS plaster is applied to the umbilical region, or over the whole abdomen, in hysteric cases; and sometimes with good effect; but probably more from its effect as giving an additional degree of heat to the part, than from any influence derived from the fetid gums. It has indeed been alleged, that from the application of this plaster to the abdomen, the taste of asafoetida can be distinctly perceived in the mouth; and it is not improbable, that some absorption of its active parts may take place by the lymphatic vessels of the surface; while, at the same time, the asafoetida thus applied must constantly, in some degree, act on the nerves of the nose. But, in both these ways, its influence can be inconsiderable only; and much more

effect may be obtained from a very small quantity taken internally. And we are upon the whole inclined to think that the addition of the fetid gums to the common plaster is here more disagreeable than useful.

EMPLASTRUM LADANI.

Lond.

Ladanum-plaster.

Take of

Ladanum, three ounces;

Frankincense, one ounce;

Cinnamon, powdered,
Expressed oil, called oil of mace,
of each half an ounce;

Essential oil, of spearmint, one dram.

To the melted frankincense add first the ladanum, softened by heat; then the oil of mace. Mix these afterwards with the cinnamon and oil of mint, and beat them together in a warm mortar, into a plaster. Let it be kept in a close vessel.

THIS has been considered as a very elegant stomach plaster. It is contrived so as to be easily made occasionally (for these kinds of compositions, on account of their volatile ingredients, are not fit for keeping), and to be but moderately adhesive, so as not to offend the skin, and that it may without difficulty be frequently taken off and renewed; which these sorts of applications, in order to their producing any considerable effect, require to be. But after all, it probably acts more from the mere covering which it gives to the stomach, than from any of the articles abounding with essential oil which it contains.

EMPLASTRUM LITHARGYRI.

Lond.

Litharge-plaster.

P p 2

Take

Take of
Litharge, in very fine powder,
five pounds.

Olive-oil, a gallon.

Boil them with a slow fire, in about two pints of water, constantly stirring until the oil and litharge unite, and have the consistence of a plaster. But it will be proper to add more boiling water, if the water that was first added be nearly consumed before the end of the process.

EMPLASTRUM COMMUNE.

Edinb.

Common plaster.

Take of
Oil olive, two parts ;
Litharge, one part.

Boil them, adding water, and constantly stirring the mixture till the oil and litharge be formed into a plaster.

THE heat in the processes should be gentle, and the matter kept continually stirring, otherwise it swells up, and is apt to run over the vessel. If the composition proves discoloured, the addition of a little white lead and oil will improve the colour.

These plasters, which have long been known under the name of *Diachylon*, are the common application in excoriations of the skin, slight flesh wounds, and the like. They keep the part soft, and somewhat warm, and defend it from the air, which is all that can be expected in these cases from any plaster. Some of our industrious medicine-makers have thought these purposes might be answered by a cheaper composition, and accordingly have added a large quantity of common whiting and hogs-lard : this, however, is by no means allowable, not only as it does not stick so well, but likewise as the lard is apt to grow rancid

and acrimonious. The counterfeit is distinguishable by the eye.

EMPLASTRUM LITHARGYRI CUM GUMMI.

Lond.

Litharge-plaster with gum.

Take of
Litharge-plaster, three pounds ;
Strained galbanum, eight ounces ;
Turpentine, ten drams ;
Frankincense, three ounces.

The galbanum and turpentine being melted with a slow fire, mix with them the powdered frankincense, and afterwards the litharge-plaster, melted also with a very slow fire, and make a plaster.

EMPLASTRUM GUMMOSUM.

Edinb.

Gum-plaster.

Take of
Common plaster, eight parts ;
Gum ammoniacum, strained,
Strained galbanum,
Yellow wax, each one part.

Make them into a plaster according to art.

BOTH these plasters are used as digestives and suppuratives ; particularly in abscesses, after a part of the matter has been matured and discharged, for suppurating or discharging the remaining hard part ; but it is very doubtful whether they derive any advantage from the gums entering their composition.

EMPLASTRUM LITHARGYRI CUM HYDRARGYRO.

Lond.

Litharge-plaster with quicksilver.

Take of
Litharge-plaster, one pound ;
Purified quicksilver, three ounces ;

Sulphurated oil, one dram, or what is sufficient.

Make the plaster in the same manner as the ammoniacum-plaster with quicksilver.

EMPLASTRUM e HYDRARGYRO, five COERULEUM.

Edinb.

Mercurial, or blue plaster.

Take of

Olive oil,
White resin, each one part;
Quicksilver, three parts;
Common plaster, six parts.

Let the quicksilver be ground with the oil and resin, melted together, and then cooled till the globules disappear; then add by degrees the common plaster, melted, and let the whole be accurately mixed.

THESE mercurial plasters are looked on as powerful resolvents and discutients, acting with much greater certainty with these intentions than any composition of vegetable substances alone; the mercury exerting itself in a considerable degree, and being sometimes introduced into the habit in such quantity as to affect the mouth. Pains in the joints and limbs from a venereal cause, nodes, tophi, and beginning indurations of the glands, are said sometimes to yield to them.

EMPLASTRUM LITHARGYRI CUM RESINA.

Lond.

Litharge plaster with resin.

Take of

Litharge-plaster, three pounds;
Yellow resin, half a pound.

Mix the powdered resin with the litharge-plaster, melted with a very slow fire, and make a plaster.

EMPLASTRUM ADHÆSIVUM.

Edinb.

Sticking-plaster.

Take of

Common plaster, five parts;
White resin, one part.

Melt them together, so as to make a plaster.

THESE plasters are used chiefly as adhesives for keeping on other dressings, &c.

EMPLASTRUM PICIS BURGUNDICÆ.

Lond.

Plaster of Burgundy Pitch.

Take of

Burgundy pitch, two pounds;
Ladanum, one pound;
Yellow resin,
Yellow wax, of each four ounces;
The expressed oil, commonly called the oil of mace, one ounce.

To the pitch, resin, and wax, melted together, add first the ladanum, and then the oil of mace.

THIS plaster was at one time much celebrated under the title of *Emplastrum cephalicum*, the name which it formerly held in our pharmacopœias. It was applied in weakness or pains of the head, to the temples, forehead, &c. and sometimes likewise to the feet. Schulze relates, that an inveterate rheumatism in the temples, which at times extended to the teeth, and occasioned intolerable pain, was completely cured in two days by a plaster of this kind (with the addition of a little opium) applied to the part, after many other remedies had been tried in vain. He adds, that a large quantity of liquid matter exuded under the plaster in drops, which were so acrid as to corrode the cuticle: but it is probable, that this

was much more the effect of the Burgundy pitch than of any other part of the composition ; for when applied to very tender skin, it often produces even vesication, and in most instances operates as a rube-facient or emplastrum callidum : and as far as it has any good effect in headach, it is probable that its influence is to be explained on this ground.

EMPLASTRUM SAPONIS.

Lond.

Soap-plaster.

Take of

Soap, half a pound ;

Litharge-plaster, three pounds ;

Mix the soap with the melted litharge-plaster, and boil them to the thickness of a plaster.

EMPLASTRUM SAPONACEUM.

Edinb.

Saponeous plaster.

Take of

Common plaster, four parts ;

Gum plaster, two parts ;

Castile soap, sliced, one part.

To the plasters, melted together, add the soap ; then boil for a little, so as to form a plaster.

THESE plasters have been supposed to derive a resolvent power from the soap ; and in the last, the addition of the gums is supposed to promote the resolvent virtue of the soap : but it is a matter of great doubt, whether they derive any material advantage from either addition.

EMPLASTRUM THURIS.

Lond.

Frankincense-plaster

Take of

Frankincense, half a pound ;

Dragon's blood, three ounces ;

Litharge-plaster, two pounds.

To the melted litharge-plaster add the rest, powdered.

THIS plaster had formerly in the London pharmacopœia the title of *Emplastrum roborans*, and is a reformation of the complicated and injudicious composition described in former pharmacopœias, under the title of *Emplastrum ad herniam*. Though far the most elegant and simple, it is as effectual for that purpose as any of the medicines of this kind. If constantly worn with a proper bandage, it will, in children, frequently do service ; though, perhaps, not so much from any strengthening quality of the ingredients, as from its being a soft, close, and adhesive covering. It has been supposed that plasters composed of styptic medicines constringe and strengthen the part to which they are applied, but on no very just foundation ; for plasters in general relax rather than astringe, the unctuous ingredients necessary in their composition counteracting and destroying the effect of the others.

EMPLASTRUM DEFENSIVUM, five ROBORANS.

Edinb.

Defensive, or Strengthening plaster.

Take of

Common plaster, twenty-four parts ;

White resin, six parts ;

Yellow wax,

Oil olive, each three parts ;

Colcothar of virriol, eight parts.

Grind the colcothar with the oil, and then add it to the other ingredients when they are melted.

THIS plaster is laid round the lips of wounds and ulcers over the other dressings, for defending them from inflammation and a fluxion of humours ; which, however, as Mr Sharp very justly observes, plasters, on

on account of their consistence, tend rather to bring on than to prevent. It is also used in weaknesses of the large muscles, as of the loins; and its effects seem to proceed from the artificial mechanical support given to the part; which may also be done by any other plaster which adheres with equal firmness.

EMPLASTRUM de BELLA-
DONNA.

Brun.

Deadly night-shade plaster.

Take of

The juice of the recent herb of belladonna,

Linseed oil, each nine ounces;

Yellow wax, six ounces;

Venice turpentine, six drams;

Powder of the herb of belladonna, two ounces.

Let them be formed into a plaster according to art.

THERE can be no doubt, that the belladonna, externally applied, has a very powerful influence, both on the nerves and blood-vessels of the part; and thus it has very considerable effect both on the circulation and state of sensibility of the part; and when applied under the form of this plaster, especially in affections of the mammæ and scrotum, it has been said to have very powerful influence in alleviating pain, in discussing tumours, and in promoting a favourable suppuration. It has however been but little employed in this country; and we can say nothing of it from our own experience.

EMPLASTRUM ad CLAVOS
PEDUM.

Dan.

Plaster for corns in the feet.

Take of

Galbanum, dissolved in vinegar,

and again inspissated, one ounce;

Pitch, half an ounce;

Diachylon, or common plaster, two drams.

Let them be melted together; and then mix with them,

Verdigris, powdered,

Sal ammoniac, each one scruple;

And make them into a plaster.

OF this plaster, as well as the former, we can say nothing from our own experience. It has been celebrated for the removal of corns, and for alleviating that pain which they occasion; and it is not improbable that it sometimes may have a good effect from the corrosive articles which it contains; but in other cases, from this very circumstance, it may tend to aggravate the pain, particularly in the first instance.

EMPLASTRUM e CONIO.

Succ.

Hemlock-plaster.

Take of

Yellow wax, half a pound;

Oil olive, four ounces;

Gum ammoniacum, half an ounce;

After they are melted together, mix with them,

Powdered herb of hemlock, half an ounce.

THIS corresponds very nearly with the Emplastrum de cicuta cum ammoniaco, which had formerly a place in our pharmacopœias, and was supposed to be a powerful cooler and discutient, and to be particularly serviceable against swellings of the spleen and distentions of the hypochondres. For some time past, it has been among us entirely neglected; but the high resolvent power which Dr Stoerk has discovered in hemlock, and which he found it to exert in this as well as in other

forms, intitle it to further trials. The plaster appears very well contrived, and the additional ingredients well chosen for assisting the efficacy of the hemlock.

EMPLASTRUM CORROSI- VUM:

Gen.

Corrosive-plaster.

Take of

Corrosive sublimate mercury, half a dram ;

Hog's-lard, half an ounce ;

Yellow wax, two drams.

Mix them according to art.

THERE can be no doubt that the hydrargyrus muriatus here employed is a very powerful corrosive ; and there may be some cases in which it is preferable to other articles of the tribe of caustics: But this would seem to be a very unœconomical mode of applying it, as but a very small portion of what enters the plaster can act ; and even that portion must have its action much restrained by the unctuous matters with which it is combined.

EMPLASTRUM e FOENU- GRÆCO, vulgo de MUCI- LAGINIBUS.

Gen.

Plaster of Fœnugreek, or of Mucilages.

Take of

Fœnugreek-feed, two ounces ;

Linseed-oil, warm, half a pound.

Infuse them according to art, and strain ; then,

Take of

Yellow wax, two pounds and a half ;

Gum ammoniacum, strained, six ounces ;

Turpentine, two ounces.

Melt the gum ammoniacum with the turpentine, and by degrees add the oil and wax, melted in

another vessel, so as to form a plaster.

THIS plaster had formerly a place in our pharmacopœias, but was rejected: and although still held in esteem by some, it is probably of no great value ; at least, it would seem to derive but little either from the fœnugreek-feed, with which it is now made, or from the oil of mucilages which formerly entered its composition.

EMPLASTRUM ex HYOSCI- AMI.

Suec.

Henbane-plaster.

This is directed to be prepared in the same manner as the emplastrum e conio, or hemlock-plaster.

FROM the well known sedative power of this plant, as affecting the nervous energy of the part to which it is applied, we might reasonably conclude that good effects may be obtained from it when used under the form of plaster ; and accordingly it has been with advantage employed in this manner, for allaying pain and resolving swelling, in cases of scirrhus and cancer.

EMPLASTRUM PICEUM.

Rofs.

Pitch-plaster.

Take of

White resin, six ounces ;

Ship-pitch, seven ounces ;

Yellow wax, five ounces.

Melt them, and form them into a plaster.

PITCH, applied externally, has been supposed to act upon two principles, by its warmth and by its adhesive quality. In the former way it may have some effect ; but it has much more influence in the latter ; and particularly it has thus been

been found to produce a cure in cases of tinea capitis. When a pitch plaster is applied to the affected part of the hairy scalp, and allowed to remain there for a few days, it becomes so attached to the parts, that it cannot be removed without bringing with it the bulbs of the hair in which the disease is seated: and by this means a radical cure is not unfrequently obtained, after every other remedy has been tried in vain. But the cure is both a painful one, and not without danger, for in some instances, inflammations, even of an alarming nature, have been excited by the injury

thus done to the parts. Hence this mode of cure is rarely had recourse to till others have been tried without effect: and when it is employed, if the disease be extensive, prudent practitioners direct its application only to a small portion at a time, the size of a crown-piece or so; and after one part is fully cured, by application to another in succession, the affection may in no long time be completely overcome. With this intention it is most common to employ the pitch in its pure state: but the plaster here directed, while it is no less adhesive, is more manageable and flexible.

C H A P. XXXII.

UNGUENTA ET LINIMENTA.

OINTMENTS AND LINIMENTS.

OINTMENTS and liniments differ from plasters little otherwise than in consistence. Any of the officinal plasters, diluted with so much oil as will reduce it to the thickness of stiff honey, forms an ointment: by farther increasing the oil, it becomes a liniment.

In making these preparations, the Edinburgh college direct, that fat and resinous substances are to be melted with a gentle heat; then to be constantly stirred, sprinkling in at the same time the dry ingredients, if any such are ordered, in the form

of a very fine powder, till the mixture on diminishing the heat becomes stiff.

It is to be understood that the above general directions are meant to apply to each particular composition contained in the present edition of the Edinburgh Pharmacopoeia. It is also to be observed, that where any compositions are ordered, as bases or ingredients of others; the College always refer to those made according to their own formula.

UNGUENTUM ADIPIS SU-
ILLÆ.

Lond.

Ointment of hog's lard.

Take of

Prepared hog's lard, two pounds ;
Rose-water, three ounces.

Beat the lard with the rose-water until they be mixed ; then melt the mixture with a slow fire, and set it apart that the water may subside ; after which pour off the lard from the water, constantly stirring until it be cold.

IN the last edition of the London pharmacopœia, this was styled *Unguentum simplex*, the name given by the Edinburgh college to the following.

UNGUENTUM SIMPLEX.

Edinb.

Simple ointment.

Take of

Olive oil, five parts ;
White wax, two parts.

BOTH these ointments may be used for softening the skin and healing chaps. The last is, however, preferable, as being more steadily of one uniform consistence. For the same reason it is also to be preferred as the basis of other more compounded ointments.

UNGUENTUM ex AERU-
GINE.

Edinb.

Ointment of verdegris.

Take of

Basilicon ointment, fifteen parts ;
Verdegris, one part.

THIS ointment is used for cleansing sores, and keeping down fungous flesh. Where ulcers continue to run from a weakness in the vessels of the part, the tonic powers of copper promise considerable advantage.

It is also frequently used with advantage in cases of ophthalmia, depending on scrophula, where the palpebræ are principally affected ; but when it is to be thus applied, it is in general requisite that it should be somewhat weakened by the addition of a proportion of simple ointment or hog's lard. An ointment similar to the above, and celebrated for the cure of such instances of ophthalmia, has long been sold under the name of *Smellon's eye-salve*.

UNUEGNTUM CALCIS HY-
DRARGYRI ALBÆ.

Lond.

Ointment of the white calx of quicksilver.

Take of

The white calx of quicksilver,
one dram ;
Ointment of hog's lard, one ounce
and a half.

Mix, and make an ointment.

THIS is a very elegant mercurial ointment, and frequently made use of in the cure of obstinate cutaneous affections. It is an improvement of the *Unguentum e mercurio precipitate* of the last London pharmacopœia ; the precipitated sulphur being thrown out of the composition, and the quantity of mercury increased.

UNGUENTUM e CALCE
ZINCI.

Edinb.

Ointment of calx of zinc.

Take of

Simple liniment, six parts ;
Calx of zinc, one part.

THIS ointment is chiefly used in affections of the eye, particularly in those cases where redness arises rather from relaxation than from active inflammation.

UNGUENTUM CANTHARIDIS.

Lond.

Ointment of the Spanish flies.

Take of

Spanish flies, powdered, two ounces ;

Distilled water, eight ounces ;

Ointment of yellow resin, eight ounces.

Boil the water with the Spanish flies to one half, and strain. To the strained liquor add the ointment of yellow resin. Evaporate this mixture in a water-bath, saturated with sea-salt, to the thickness of an ointment.

UNGUENTUM EPISPASTICUM ex INFUSO CANTHARIDUM.

Edinb.

Epispastic ointment from infusion of cantharides.

Take of

Cantharides,

White resin,

Yellow wax, each one ounce ;

Hog's-lard,

Venice turpentine, each two ounces ;

Boiling water, four ounces.

Infuse the cantharides in the water, in a close vessel, for a night ; then strongly press out and strain the liquor, and boil it with the lard till the watery moisture be consumed ; then add the resin, wax, and turpentine, and make the whole into an ointment.

THESE ointments, containing the soluble parts of the cantharides, uniformly blended with the other ingredients, are more commodious, and in general occasion less pain, though not less effectual with its intention than the compositions with the fly in substance. This, however, does not uniformly hold ; and accordingly the Edinburgh college,

with propriety, still retain an ointment containing the flies in substance.

UNGUENTUM EPISPASTICUM e PULVERE CANTHARIDUM.

Edinb.

Epispastic ointment, from powder of cantharides.

Take of

Basilicon ointment, seven parts ;

Powdered cantharides, one part.

THIS ointment is employed in the dressings for blisters, intended to be made *perpetual* as they are called, or to be kept running for a considerable time, which in many chronic, and some acute cases, is of great service. Particular care should be taken, that the cantharides employed in these compositions be reduced into very subtile powder, and that the mixtures be made as equal and uniform as possible. But with these precautions, there are some particular habits in which this ointment operates with even less pain than the former, while at the same time it is generally more effectual.

UNGUENTUM CERÆ.

Lond.

Wax-ointment.

Take of

White wax, four ounces ;

Spermaceti, three ounces ;

Olive-oil, one pint.

Stir them, after being melted with a slow fire, constantly and briskly, until cold.

THIS ointment had formerly the title of *Unguentum album* in the London pharmacopœia. It differs very little from the *Unguentum simplex* of the Edinburgh pharmacopœia, and in nothing from the *Unguentum spermatis cæti* of the London pharmacopœia, excepting that in this ointment the proportion

of spermaceti is somewhat less. It is an useful cooling ointment for excoriations and other frettings of the skin.

UNGUENTUM CERUSSÆ
ACETATÆ.

Lond.

Ointment of acetated cerusse.

Take of

Acetated cerusse, two drams ;

White wax, two ounces ;

Olive-oil, half a pint,

Rub the acetated cerusse, previously powdered, with some part of the olive-oil ; then add it to the wax, melted with the remaining oil. Stir the mixture until it be cold.

UNGUENT. SATURNINUM.

Edin.

Saturnine ointment.

Take of

Simple ointment, twenty parts ;

Sugar of lead, one part.

BOTH these ointments are useful coolers and desiccatives ; much superior both in elegance and efficacy to the *nutritum* or *tripharmacum*, at one time very much celebrated.

UNGUENTUM e CERUSSA
vulgo ALBUM.

Edinb.

Ointment of cerusse, commonly called White ointment.

Take of

Simple ointment, five parts ;

Cerusse, one part.

THIS is an useful, cooling, emollient ointment, of great service in excoriations and other similar frettings of the skin. The cerusse has been objected to by some, on a suspicion that it might produce some ill effect, when applied, as these unguents frequently are, to the tender bodies of children. Though there

does not seem to be much danger in this external use of cerusse, the addition of it is the less necessary here, as we have another ointment containing a more active preparation of the same metal, the *unguentum saturninum* just mentioned ; which may be occasionally mixed with this, or employed by itself, in cases where saturnine applications are wanted.

UNGUENTUM ELEMI.

Lond.

Ointment of elemi.

Take of

Elemi, one pound ;

Turpentine, ten ounces ;

Mutton-suet, prepared, two pounds ;

Olive-oil, two ounces.

Melt the elemi with the suet ; and having removed it from the fire, mix it immediately with the turpentine and oil, after which strain the mixture.

THIS ointment, perhaps best known by the name of *Linimentum arcei*, has long been in use for digesting, cleansing, and incarnating ; and for these purposes is preferred by some to all the other compositions of this kind.

These, however, are much more processes of nature than of art ; and it is much to be doubted, whether it has in reality any influence.

UNGUENTUM HELLEBORI
ALBI.

Lond.

Ointment of white hellebore.

Take of

The root of white hellebore, powdered, one ounce ;

Ointment of hog's lard, four ounces ;

Essence of lemons, half a scruple.

Mix them, and make an ointment.

WHITE

WHITE hellebore externally applied has long been celebrated in the cure of cutaneous affections; and this is perhaps one of the best formulæ under which it can be applied, the hog's-lard ointment serving as an excellent basis for it, while the essence of lemons communicates to it a very agreeable smell.

UNGUENTUM HYDRARGYRI FORTIUS.

Lond.

Stronger ointment of quicksilver.

Take of

Purified quicksilver, two pounds;
Hog's lard, prepared, twenty-three ounces;

Mutton-suet, prepared, one ounce.

First rub the quicksilver with the suet and a little of the hog's-lard, until the globules disappear; then add what remains of the lard, and make an ointment.

UNGUENTUM HYDRARGYRI MITIUS.

Lond.

Weaker ointment of quicksilver.

Take of

The stronger ointment of quicksilver, one part;

Hog's lard, prepared, two parts.

Mix them.

UNGUENTUM ex HYDRARGYRO, five CÆRULEUM.

Edinb.

Quicksilver, or blue ointment.

Take of

Quicksilver,

Mutton suet, each one part;

Hog's-lard three parts.

Rub them carefully in a mortar till the globules entirely disappear.

THIS ointment may also be made with double or treble the quantity of quicksilver.

These ointments are principally employed, not with a view to their

topical action, but with the intention of introducing mercury in an active state into the circulating system. And this may be effected by gentle friction on the sound skin of any part, particularly on the inside of the thighs or legs. For this purpose, these simple ointments are much better suited than the more compounded ones with turpentine and the like, formerly employed. For by any acrid substance topical inflammation is apt to be excited, preventing farther friction, and giving much uneasiness. To avoid this, it is necessary, even with the mildest and weakest ointment, somewhat to change the place at which the friction is performed. But by these ointments properly managed, mercury may in most instances be as advantageously introduced, either for eradicating syphilis, or combating other obstinate diseases, as under any form whatever. But to obtain these effects, it is requisite that the ointment should be prepared with very great care; for upon the degree of triture which has been employed, the activity of the mercury must entirely depend. The addition of the mutton-suet, now adopted by both colleges, is an advantage to the ointment, as it prevents it from running into the state of oil, which the hog's lard alone in warm weather, or in a warm chamber is sometimes apt to do, and which is followed by a separation of parts. We are even inclined to think that the proportion of suet directed by the London college is too small for this purpose, and indeed seems to be principally intended for more effectual triture of the mercury: But it is much more to be regretted, that in a medicine of such activity, the two colleges should not have directed the same proportion of mercury to the fatty matter. For although both have directed

oint-

ointments of different strength, neither the weakest nor the strongest by no means agree in the proportion of mercury which they contain.

UNGUENTUM HYDRARGYRI NITRATI.

Lond.

Ointment of nitrated quicksilver.

Take of

Purified quicksilver, one ounce
Nitrous acid, two ounces;

Hog's lard, prepared, one pound.

Dissolve the quicksilver in the nitrous acid; and whilst it is yet hot, mix it with the hog's lard, previously melted, and now growing cold.

UNGUENTUM CITRINUM.

Edinb.

Yellow ointment.

Take of

Quicksilver, one ounce;
Spirit of nitre, two ounces;

Hog's-lard, one pound.

Dissolve the quicksilver in the spirit of nitre, by digestion in a sand-heat; and, whilst the solution is very hot, mix with it the lard, previously melted by itself, and just beginning to grow stiff. Stir them briskly together, in a marble mortar, so as to form the whole into an ointment.

THESE ointments differ only in name; and that employed by the London college is certainly the preferable appellation: For here the quicksilver, previous to its union with the lard, is brought to a saline state by means of the nitrous acid. And although its activity be very considerably moderated by the animal fat with which it is afterwards united, yet it still affords us a very active ointment; and as such it is frequently employed with success in cutaneous and other topical affections. In this condition, how-

ever, the mercury does not so readily enter the system, as in the preceding form. Hence it may even be employed in some cases with more freedom; but in other instances it is apt to excoriate and inflame parts. On this account a reduction of its strength is sometimes requisite; and it is often also necessary, from the hard consistence which it acquires, in consequence of the action of acid on the lard.

UNGUENTUM PICIS.

Lond.

Tar ointment.

Take of

Tar,

Mutton-suet, prepared, of each
half a pound.

Melt them together and strain.

UNGUENTUM e PICE.

Edinb.

Ointment of tar.

Take of

Tar, five parts;

Yellow wax, two parts.

THESE compositions, though the one be formed into an ointment by means of suet, the other by wax, cannot be considered as differing essentially from each other. As far as they have any peculiar activity, this entirely depends on the tar. And this article, from the empyreumatic oil and saline matters which it contains, is undoubtedly, as well as turpentine, of some activity. Accordingly, it has been successfully employed against some cutaneous affections, particularly those of domestic animals. At one time, as well as the black basilicon, it was a good deal employed as a dressing even for recent wounds. But altho' it still retains a place in our pharmacopoeias, it is at present little used with any intention.

UN-

UNGUENTUM RESINÆ
FLAVÆ.

Lond.

Ointment of yellow resin.

Take of

Yellow resin,
Yellow wax, of each one pound;
Olive oil, one pint.

Melt the resin and wax with a slow fire; then add the oil, and strain the mixture whilst hot.

UNGUENTUM BASILICUM
FLAVUM.

Edinb.

Yellow basilicon ointment.

Take of

Hog's-lard, eight parts;
White resin, five parts;
Yellow wax, two parts.

THESE are commonly employed in dressings, for digesting, cleansing, and incarnating wounds and ulcers. They differ very little, if at all, in their effects, from the *Linimentum arcei*, or unguentum elemi, as it is now more properly styled. But it is probable that no great effect is to be attributed to either. For there can be no doubt that the suppurative and adhesive inflammations are processes of nature, which will occur without the aid of any ointment.

UNGUENTUM SAMBUCI.

Lond.

Elder ointment.

Take of

Elder-flowers, four pounds.
Mutton-suet, prepared, three pounds;
Olive-oil, one pint.

Boil the flowers in the suet and oil, first melted together, till they be almost crisp; then strain with expression.

THIS ointment does not seem superior to some others, which are

much neater, and preparable at less expence. It can scarcely be supposed to receive any considerable virtue from the ingredient which it takes its name from. And, accordingly, it is not without propriety that it is rejected from the pharmacopœia of the Edinburgh college.

UNGUENTUM SPERMATIS
CETI.

Lond.

Ointment of spermaceti.

Take of

Spermaceti, six drams;
White wax, two drams;
Olive-oil, three ounces.

Melt them together over a slow fire, stirring them constantly and briskly until they be cold.

THIS had formerly the name of *Linimentum album*, and it is perhaps only in consistence that it can be considered as differing from the unguentum simplex, already mentioned, or the ceratum simplex, afterwards to be taken notice of.

UNGUENTUM SULPHURIS.

Lond.

Sulphur ointment.

Take of

Ointment of hog's-lard, half a pound;
Flowers of sulphur, four ounces.

Mix them, and make an ointment.

UNGUENTUM e SULPHU-
RE, five ANTIPSO-
RICUM.

Edinb.

Ointment of sulphur, or antipsoric ointment.

Take of

Hog's-lard, four parts;
Sulphur, beat into a very fine powder, one part.

To each pound of this ointment, add
Essence of lemons, or
Oil of lavender, half a dram.

SULPHUR is a certain remedy for the itch, more safe than mercury. Sir John Pringle observes, that unless a mercurial unctiōn was to touch every part of the skin, there can be no certainty of success; whereas from a sulphureous one, a cure may be obtained by only partial unctiōn, the animalcula, which are supposed to occasion this disorder, being, like other insects, killed by the sulphureous steams which exhale by the heat of the body. As to the internal use of mercury, which some have accounted a specific, there are several instances of men undergoing a complete salivation for the cure of the lues venerea, without being freed from the itch: but there are also a multitude of instances of men undergoing a long course of sulphur without effect, and who were afterwards readily cured by mercury.

The quantity of ointment, above directed, serves for four unctiōns: the patient is to be rubbed every night; but to prevent any disorder that might arise from stopping too many pores at once, a fourth part of the body is to be rubbed at one time. Though the itch may thus be cured by one pot of ointment, it will be proper to renew the application, and to touch the parts most affected, for a few nights longer, till a second quantity also be exhausted; and in the worst cases, to subjoin the internal use of sulphur, not with a view to purify the blood, but to diffuse the steams more certainly thro' the skin; there being reason to believe, that the animalcula may sometimes lie too deep to be thoroughly destroyed by external applications.

UNGUENTUM TUTIÆ.

Lond.

Tutty ointment.

Take of

Prepared tutty, one dram;

Ointment of spermaceti, what is sufficient.

Mix them so as to make a soft ointment.

UNGUENTUM e TUTIA.

Edinb.

Ointment of tutty.

Take of

Simple liniment, five parts;

Prepared tutty, one part.

THESE ointments have long been celebrated, and are still much employed against affections of the eyes. But they cannot, we imagine, be esteemed elegant.

Both calamine and tutty act only by means of the zinc they contain, and calamine appears to contain the most of the two, and likewise to be the least variable in its contents. But the pure flowers prepared from zinc itself are doubtless preferable to either. Hence the ointment of tutty may be considered as inferior both to the Unguentum e lapide calaminari, and to the Unguentum e calce zinci, which have also a place in our pharmacopœia.

LINIMENTUM SIMPLEX.

Edinb.

Simple liniment.

Take of

Olive oil, four parts;

White wax, one part.

THIS consists of the same articles which form the Unguentum simplex of the Edinburgh pharmacopœia, but merely in a different proportion, so as to give a thinner consistence; and where a thin consistence is requisite, this may be considered as a very elegant and useful application.

LINIMENTUM AMMONIÆ.

Lond.

Liniment of ammonia.

Take

Take of

Water of ammonia, half an ounce ;

Olive-oil, one ounce and an half.

Shake them together in a phial, till they are mixed.

THIS has long been known in the shops under the title of *Linimentum volatile*, but is now more properly denominated from the principal active article which enters its composition. It has been much employed in practice, particularly on the recommendation of Sir John Pringle in his *Observations on the Diseases of the army*. He observes, that in the inflammatory quinsy, or strangulation of the fauces, a piece of flannel, moistened with this mixture, applied to the throat, and renewed every four or five hours, is one of the most efficacious remedies. By means of this warm stimulating application, the neck, and sometimes the whole body, is put into a sweat, which, after bleeding, either carries off, or lessens the inflammation. Where the skin cannot bear the acrimony of this mixture, a larger proportion of oil may be used.

LINIMENTUM AMMONIÆ FORTIUS.

Lond.

Stronger liniment of ammonia.

Take of

Water of pure ammonia, one ounce ;

Olive-oil, two ounces.

Shake them together in a phial.

THIS article differs from the foregoing in strength only. This arises both from its being formed of a more acrid spirit, and from its containing that spirit in a larger proportion to the oil. It is used to supply the place of the *Epithema et Emplastrum volatile* of our former phar-

macopœias, and is a very acrid stimulating composition. When largely applied, it often excites inflammation, and even vesication, on tender skin. It is often, however, successfully employed against obstinate rheumatic and ischiadic pains.

LINIMENTUM CAMPHORÆ.

Lond.

Camphor liniment.

Take of

Camphor, two ounces ;

Water of ammonia, six ounces ;

Simple spirit of lavender, sixteen ounces.

Mix the water of ammonia with the spirit, and distil from a glass retort, with a slow fire, sixteen ounces. Then dissolve the camphor in the distilled liquor.

THIS formula, which has now for the first time a place in the London pharmacopœia, approaches to the volatile essence of that celebrated empyric the late Dr Ward : But the above is a more elegant and active formula than either of the receipts published by Mr Page, from Dr Ward's book of receipts ; and there is no reason to doubt that it will be equally effectual in removing some local pains, such as particular kinds of headache, in consequence of external application.

LINIMENTUM SAPONIS.

Lond.

Soap-liniment.

Take of

Soap, three ounces ;

Camphor, one ounce ;

Spirit of rosemary, one pint.

Digest the soap in the spirit of rosemary until it be dissolved, and add to it the camphor.

THIS is the linimentum saponaceum of the former edition of the London pharmacopœia, without any alteration; and it differs very little from the balsamum saponaceum of the Edinburgh college already mentioned. Though a less active and penetrating application than the preceding, it is perhaps no less useful; and it is often successfully employed for external purposes against rheumatic pains, sprains, bruises, and similar complaints.

UNGUENTUM ÆGYPTIACUM.

Gen.

Egyptian ointment.

Take of

Honey, one pound;
Strong vinegar, half a pound;
Verdegris, powdered, five ounces.

Let the ingredients be boiled together till the verdegris be dissolved, so that the ointment may have a due degree of thickness and a purple colour.

THIS preparation had formerly a place in our pharmacopœias under the title of *Mel Ægyptiacum*: and a similar preparation has now a place under the title of *Oxymel æruginis*. But in that formula the proportion is much less than in the above. It may justly be considered as a very powerful application for cleansing and detaching foul ulcers, as well as for keeping down fungous flesh. But these purposes may in general be answered by articles less acrid and exciting less pain. Besides this, the above preparation is also liable to considerable uncertainty with respect to strength; for a large proportion of the verdegris will in a short time subside to the bottom: thus, what is in the top of the pot is much less active than that in the bottom.

UNGUENTUM ANODYNUM.

Gen.

Anodyne ointment.

Take of

Olive-oil, ten drams;
Yellow wax, half an ounce;
Crude opium, one dram.

Mix them according to art, so as to form an ointment.

OPIUM thus externally applied, will in some degree be productive of the same effect as when used under the form of the anodyne balsam. In that state it produces its effects more immediately; but under the present form its effects are more permanent. Besides this, the present ointment furnishes us with an useful dressing for sores attended with severe pain; to which opium when dissolved in spirit cannot be applied. Hence the present, or some analogous formula, is well intitled to a place in our pharmacopœias.

UNGUENTUM ad CANCRUM EXULCERATUM.

Brun.

Ointment for an ulcerated cancer.

Take of

The recently expressed juice of the ricinus, one pound.

Let it be exposed to the rays of the sun in a leaden vessel till it acquire the consistence of an oil; then to one pound of this inspissated juice, add

Calcined lead,
White precipitate mercury, each one pound.

Let them be properly mixed.

THIS acrid application must possess a considerable degree of corrosive power. And in some cases of cancer, by the proper application of corrosives, much benefit may be done:

done: But where the disease has made any considerable, progress, these will in general have the effect rather of hastening its progress than of removing it; particularly if there be a large indolent tumour below the ulcer.

UNGUENTUM DIGESTIVUM.

Rose.

Digestive ointment.

Take of

Venice turpentine, one pound;
The yolks of eight eggs.

Mix them together, according to art.

THIS warm stimulating application is well suited to promote the suppurative inflammation, and may be advantageously had recourse to, where it is necessary to encourage a large discharge of pus.

UNGUENTUM HÆMORRHOIDALE.

Hæmorrhoidal ointment.

Take of

Saturnine ointment, six drams;
Oil of Hyosciamus, obtained by boiling, two drams;
Camphor, powdered, two scruples;
Saffron, one scruple.

Mix them into an ointment.

THE name affixed to this ointment expresses the purpose for which it is applied. From the articles of which it consists, it may be concluded, that it possesses a gently emollient and anodyne powder; and may therefore afford considerable relief, where much pain arises from external hæmorrhoidal tumours.

UNGUENTUM NERVINUM.

Succ.

Nervine ointment.

Take of

Prepared mutton-suet, eight ounces.

After it is melted and removed from the fire, add to it

Oil of bays, one pound;

Ætherial oil of turpentine, one ounce;

Rectified oil of amber, half an ounce.

Let them be mixed and rubbed together till they form an ointment.

THIS is an improved mode of forming an ointment which had formerly a place in our pharmacopœias under the same title. And it furnishes a warm stimulating nervine application, which may be in some degree instrumental in restoring sense and motion to paralytic limbs. And while it at least serves to lead to the careful use of frictions, it may somewhat increase the benefit which would result from it.

UNGUENTUM de NICOTIANA.

Dan.

Ointment of tobacco.

Take of

The leaves of tobacco, cut down, three pounds;

Juice of tobacco, nine ounces;
Hog's-lard, a pound and a half.

Let them be macerated for the space of a night, and then boiled over a gentle fire till the humidity be consumed. Having strained the fluid obtained by expression, add to it

Resin, three ounces;

Yellow wax, half an ounce;

Powder of the root of birthwort, three ounces.

Mix them into an ointment.

THERE can be no doubt that tobacco externally applied has very

powerful effects upon the human body; and that not merely from its topical action, but sometimes even as affecting the system in general. From this last circumstance it requires to be used with great caution. It has, however, been found under proper management, to afford an effectual cure in obstinate cutaneous affections. But were it to be used with this intention, we would have a more elegant formula, by merely impregnating either hog's-lard, or the unguentum simplex, with the active qualities extracted by the aid of heat, from the leaves of the prepared tobacco in the state in which it is usually brought to us from America, than by having recourse to the recent juice, and to the aristolochia and other additions here directed.

UNGUENTUM e STYRACE.

Succ.

Ointment of storax.

Take of

Olive-oil, a pound and a half;

White resin;

Gum elemi,

Yellow wax, each seven ounces.

After they are melted together and strained, add

Liquid storax, seven ounces.

Mix them together, and agitate the mixture till it concretes into an uniform ointment.

AN ointment supposed to derive its activity from the storax, altho' it have no place in our pharmacopoeias is received into most of the foreign ones. And it has been much celebrated not only as a strengthening application to weakly children, but even for the removal of affections of the bones, as in cases of rickets and the like. It is, how-

ever, very doubtful how far these properties depend upon the storax. If it have really any good effect, it is probable that this is more the consequence of the friction merely, than of any of the articles which enter the composition of the ointment. But there is reason to believe that the virtues attributed to this ointment are more imaginary than real.

UNGUENTUM SUPPURANS.

Succ.

Suppurative ointment.

Take of

Yellow wax,

Resin, each half a pound.

To these melted, add

Onion roasted under the ashes;

Honey, each two pounds and a half;

Black soap, half a pound.

Let them be gently boiled together till all the moisture be consumed, then strain the liquor, expressing it from the materials, and afterwards agitate it with a wooden pestle that it may unite into one uniform mass.

THIS ointment is applied with the intention of promoting suppuration. And it has long been supposed, that the onion, especially in its roasted state, has a remarkable influence in this way: but there is reason to think, that the powers attributed to it have been greatly over-rated. And there is even ground to presume that these effects totally depend on heat and moisture. Hence no application is perhaps better suited for promoting suppuration than a poultice of bread and milk, applied of such a degree of warmth as can be borne with ease, and frequently repeated.

C H A P. XXXIII.

G E R A T A.

C E R A T E S.

CERATES are substances intended for external application, formed of nearly the same materials which constitute ointments and plasters. And they differ principally from these in being merely of an intermediate consistence between the two. Accordingly, they are seldom the subject of a separate chapter by themselves, but are classed either with the one or the other. In the Edinburgh pharmacopoeia they are classed among the ointments: But as the London college have referred them to a separate head, we shall here also consider them by themselves.

CERATUM SIMPLEX.

*Edinb.**Simple cerate.*

Take of

Olive oil, six parts;

White wax, three parts;

Spermaceti, one part.

Unite them according to art.

THIS differs from the simple ointment in containing a greater proportion of wax to the oil, and in the addition of the spermaceti. But by these means it obtains only a more firm consistence, without any essential change of properties.

CERATUM CANTHARIDIS.

*Lond.**Cerate of cantharides, or Spanish flies.*

Take of

Cerate of spermaceti, softened with heat, six drams;

Spanish flies, finely powdered, one dram.

Mix them.

UNDER this form cantharides may be made to act to any extent that is requisite. It may supply the place either of the blistering plaster or ointment; and there are cases in which it is preferable to either. It is particularly more convenient than the Emplastrum cantharidum, where the skin to which the blister is to be applied is previously much affected, as in cases of small pox; and in supporting a drain under the form of issue, it is less apt to spread than the softer ointment.

CERATUM LAPIDIS CALAMINARIS.

*Lond.**Calamine-cerate.*

Take of

Calamine, prepared,

Yellow wax, of each half a pound;

Olive-oil, one pint.

Q̄q ʒ

Melt

Melt the wax with the oil; and, as soon as the mixture begins to thicken, mix with it the calamine, and stir the cerate until it be cold.

CERATUM e LAPIDE CALAMINARI.

Edinb.

Cerate of calamine.

Take of

Simple cerate, five parts;

Calamine prepared, one part.

THESE compositions are formed upon the cerate which Turner strongly recommends in cutaneous ulcerations and excoriations, and which has been usually distinguished by his name. They appear from experience to be excellent epulotics, and as such are frequently made use of in practice.

CERATUM LITHARGYRI ACETATI.

Lond.

Cerate of acetated litharge.

Take of

Water of acetated litharge, two ounces and an half;

Yellow wax, four ounces;

Olive-oil, nine ounces;

Camphor, half a dram.

Rub the camphor with a little of the oil. Melt the wax with the remaining oil, and as soon as the mixture begins to thicken, pour in by degrees the water of acetated litharge, and stir constantly until it be cold; then mix in the camphor before rubbed with oil.

THIS application has been rendered famous by the recommendations of Mr Goulard. It is unquestionably in many cases very useful. It cannot, however, be considered as varying essentially from the saturnine ointment, or Unguentum e

cerussa acetata, formerly mentioned. It is employed with nearly the same intentions, and differs from it chiefly in consistence.

CERATUM RESINÆ FLAVÆ.

Lond.

Cerate of yellow resin.

Take of

Ointment of yellow resin, half a pound;

Yellow wax, one ounce.

Melt them together, and make a cerate.

THIS had formerly the name of *Unguentum citrinum*. It is no otherwise different from the yellow basilicum, or Unguentum resinæ flavæ, than being of a stiffer consistence, which renders it for some purposes more commodious.

CERATUM SAPONIS.

Lond.

Soap cerate.

Take of

Soap, eight ounces;

Yellow wax, ten ounces;

Litharge, powdered, one pound;

Olive oil, one pint;

Vinegar, one gallon.

Boil the vinegar with the litharge, over a slow fire, constantly stirring until the mixture unites and thickens; then mix in the other articles, and make a cerate.

THIS, notwithstanding the name, may rather be considered as another saturnine application than one whose activity depends upon soap. And it may be held as varying in little else but consistence from the Emplastrum lythargyri. It can hardly be thought to differ in its properties from the cerate of acetated litharge just mentioned. For neither the small proportion of camphor which enters the composition

tion of the one, nor the soap which gives name to the other, can be considered as having much influence.

CERATUM SPERMATIS CETI.

Edinb.

Cerate of spermaceti.

Take of

Spermaceti, half an ounce;

White wax, two ounces.

Olive-oil, four ounces.

Melt them together, and stir until the cerate be cold.

THIS had formerly the name of *Ceratum album*, and it differs in nothing from the *Unguentum spermatis ceti*, or *Linimentum album*, as it was formerly called, excepting in consistence, both the wax and the spermaceti bearing a greater proportion to the oil.

CERATUM LABIALE.

Rofs.

Lip salve.

Take of

Olive oil, eighteen ounces;

White wax, one pound;

Spermaceti, an ounce and a half;

Oil of rhodium, half a dram.

Form a cerate, tinging it with alkanet, so as to give a red colour.

THE name affixed to this cerate points out the use for which it is intended. It is chiefly employed against those chaps and excoriations of the lips, which are often the consequence of cold weather; and it is very well suited for removing affections of that kind. But excepting in the colour and smell which it derives from the alkanet and rhodium,

it differs in nothing from the cerate of spermaceti, and cannot be considered as more effectually answering the intention in view.

CEREI MEDICATI.

Succ.

Bougies.

Take of

Yellow wax, melted, one pound;

Spermaceti, three drams;

Vinegar of litharge, two drams.

Mix them, and upon removal from the fire immerse into the mixture slips of linen, of which bougies are to be formed according to the rules of art.

These may also be made with double, triple, or quadruple, the quantity of the vinegar.

It is perhaps rather surprising, that no formula for the preparation of bougies has a place in our pharmacopoeias: For there can be no doubt, that although the preparation of them has hitherto been principally trusted to empirics; yet in the hand of the skilful practitioner they are of great service in combating obstinate affections. Although it has been pretended by some that their influence is to be ascribed to certain impregnations; yet it is on better grounds contended, that they act entirely upon mechanical principles. The great object is therefore to obtain the union of a proper degree of firmness and flexibility. These qualities the above composition possesses; and it does not probably derive any material benefit from being prepared with an additional proportion of the *Acetum lithargyrites*.

C H A P. XXXIV.

E P I T H E M A T A.

E P I T H E M S.

BY epithems, or cataplasms, are in general understood those external applications, which are brought to a due consistence or form for being properly applied, not by means of oily or fatty matters, but by water or watery fluids. Of these not a few are had recourse to in actual practice; but they are seldom prepared in the shops of the apothecaries; and in some of the best modern pharmacopoeias, no formulæ of this kind are introduced. The London college, however, although they have abridged the number of epithems, still retain a few. And it is not without some advantage that there are fixed forms for the preparation of these:

CATAPLASMA CUMINI.

*Lond.**Cataplasma of cummin.*

Take of

Cummin-seed, one pound;
 Bay-berries,
 Dry leaves of water-germander,
 or scordium,
 Virginian snake-root, of each
 three ounces;

Cloves, one ounce.

Rub them all together; and, with the addition of three times the weight of honey, make a cataplasma.

THIS is adopted into the present edition of the London pharmacopoeia with very little alteration from the last. It was then intended as a reformation of the THERIACA LONDINENSIS, which for some time past has been scarce otherwise made use of than as a warm cataplasma. In place of the numerous articles which formerly entered that composition, only such of its ingredients are retained as contribute most to this intention: But even the article from which it now derives its name, as well as several others which still enter it, probably contribute very little to any medical properties it may possess.

CATAPLASMA SINAPEOS.

*Lond.**Mustard cataplasma.*

Take of

Mustard-seed, powdered,

Crumb

Crumb of bread, of each half a pound ;

Vinegar, as much as is sufficient.

Mix, and make a cataplasim.

EPITHEMS of this kind are commonly known by the name of *Sinapisms*. They were formerly not unfrequently prepared in a more complicated state, containing garlic, black soap, and other similar articles ; but the above simple form will answer every purpose which they are capable of accomplishing. They are employed only as stimulants : they often inflame the part and raise blisters, but not so perfectly as cantharides. They are frequently applied to the soles of the feet in the low state of acute diseases, for raising the pulse and relieving the head. The chief advantage they have depends on the suddenness of their action.

2

COAGULUM ALUMINIS.

Lond.

Alum-curd

Take

The white of two eggs ;

Shake them with a piece of alum till they be coagulated.

THIS preparation is taken from Riverius. It is an useful astringent epithem for sore, moist eyes, and excellently cools and represses thin disfluxions. Slighter inflammations of the eyes, occasioned by dust, exposure to the sun, or other similar causes, are generally removed by fomenting them with warm milk and water, and washing them with solutions of white vitriol. Where the complaint is more violent, this preparation, after the inflammation has yielded a little to bleeding, is one of the best external remedies. It is to be spread on lint, and applied at bed-time.

A TABLE showing in what Proportions MERCURY or OPIUM enter different Formulæ.

- PULVIS e creta compositus cum opio. Lond.* In about forty-three grains, one grain of opium is contained,
- Pulvis ipecacuanhæ compositus. Lond.* In ten grains, one grain of opium.
- Pulvis sudorificus. Ed.* In eight grains one grain of opium.
- Pulvis opiatus. Lond.* In ten grains, one grain of opium.
- Pulvis e scammonio cum calomelane. Lond.* In four grains, one grain of calomel.
- Pilulæ ex opio. Lond.* In five grains, one grain of opium.
- Pilulæ thebaicæ. Ed.* In ten grains, one grain of opium.
- Pilulæ ex hydrargyro. Lond.* In two grains and a half, one grain of mercury.
- Pilulæ ex hydrargyro. Ed.* In four grains, one grain of mercury.
- Pilulæ plummeri. Ed.* In three grains and a half, one grain of calomel.
- Confectio opiata. Lond.* In thirty-six grains, one grain of opium.
- Electuarium Japonicum. Ed.* In about one hundred and ninety-three grains, one grain of opium.
- Electuarium thebaicum. Ed.* In seventy-three grains, one grain of opium.
- Trochisci bechici cum opio. Ed.* In fifty-five grains, one grain of opium.
- These trochisci are not unfrequently ordered *cum duplici opio*, and under this form are kept in many shops.
- Emplastrum ammoniaci cum hydrargyro. Lond.* In five ounces, one ounce of mercury.
- Emplastrum lithargyri cum hydrargyro. Lond.* In five ounces, one ounce of mercury.
- Emplastrum e hydrargyro. Ed.* In about three ounces and a half, one ounce of mercury.
- Unguentum hydrargyri fortius. Lond.* In two drams, one dram of mercury.
- Unguentum hydrargyri mitius. Lond.* In five drams, one dram of mercury.
- Unguentum ex hydrargyro. Ed.* In five drams, one dram of mercury.
- Unguentum hydrargyri nitrati. Lond.* In one dram, twelve grains of nitrated quicksilver.
- Unguentum citrinum. Ed.* In one dram, twelve grains of nitrated quicksilver.
- Unguentum calcis hydrargyri albæ. Lond.* In one dram, four grains and an half of the calx hydrargyri alba.
- Tinctura opii. Lond.* is made with opium, in the proportion of one grain to about eleven of the menstruum.
- Tinctura thebaica, Ed.* is made with opium, in the proportion of one grain to about eleven and a half of the menstruum.
- Tinctura opii camphorata, Lond.* is made with opium in the proportion of one grain to about one hundred of the menstruum.
- Elixir paregoricum, Ed.* is made with opium in the proportion of one grain to sixty-four of the menstruum.
- Balsamum anodynum, Ed.* is made with opium in the proportion of one grain to about twenty-five of the menstruum.

TABLE of NAMES *changed in the LONDON and
EDINBURGH PHARMACOPOEIAS.*

Names in former Pharmacopoeias.

New Names.

A CETUM scilliticum.	Acetum scillæ. Lond.
Æthiops mineralis.	Hydrargyrus cum sulphure. Lond.
Aqua aluminosa Bateana.	Aqua aluminis composita. Lond.
calcis simplex.	calcis. Lond.
cinnamomi simplex.	cinnamomi. Lond.
———— spirituosa.	Spiritus cinnamomi. Lond.
hordeata.	Decoctum hordei. Lond.
juniperi composita.	Spiritus juniperi compositus. Lond.
menthæ piperitidis simplex.	Aqua menthæ piperitidis. Lond.
———— spiritu-	Spiritus menthæ piperitidis. Lond.
ofa.	
vulgaris simplex.	Aqua menthæ fativæ. Lond.
———— spirituosa.	Spiritus menthæ fativæ. Lond.
nucis moschatæ.	nucis moschatæ. Lond.
piperis Jamaicensis.	Aqua pimento. Lond.
pulegii simplex.	pulegii. Lond.
pulegii spirituosa.	Spiritus pulegii. Lond.
raphani composita.	raphani compositus. Lond.
rosarum damascenarum.	Aqua rosæ. Lond.
sapphirina.	cupri ammoniati. Lond.
feminum anethi.	anethi. Lond.
———— anisi composita.	Spiritus anisi compositus. Lond.
———— carui.	carui. Lond.
Aqua vitriolica camphorata.	Aqua zinci vitriolati cum campho- ra. Lond.
Argenti vivi purificatio.	Hydrargyri purificatio. Lond.
Axungię porcine curatio.	Adipis suillæ præparatio. Lond.

B.

Balsam sulphuris barbadense.	Petroleum sulphuratum. Lond.
simplex.	Oleum sulphuratum. Lond.
traumaticum.	
anodynum.	Tinctura benzoes composita. Lond.
saponaceum.	Linimentum anodynum. Ed.
Butyrum antimonii.	Linimentum saponaceum. Ed.
	Causticum antimonale. Ed.

*Names in former Pharmacopoeias.**New Names.*

C.

Calx antimonii.
 Causticum antimoniale.
 commune fortius.
 lunare.
 Ceratum album.
 citrinum.
 epuloticum.
 Chalybis rubigo præparata.
 Cinnabaris factitia.
 Confectio cardiaca.
 Confectio Japonica.
 Cornu cervi calcinatio.
 Crocus metallorum.

Antimonium calcinatum. Lond.
 muriatum. Lond.
 Calx cum kali puro. Lond.
 { Argentum nitratum. Lond.
 { Sal argenti. Ed.
 Ceratum spermatis ceti. Lond.
 resinæ flavæ. Lond.
 lapidis calaminaris. Lond.
 Ferri rubigo. Lond.
 Hydrargyrus sulphuratus ruber. L.
 { Confectio aromatica, Lond.
 { Electuarium cardiacum, Ed.
 Electuarium Japonicum. Ed.
 Cornu Cervi ustio. Lond.
 Crocus antimonii, Ed.

D.

Decoctum album.
 commune pro clystere
 peccorale.

Decoctum cornu cervi. Lond.
 pro enemate. Lond.
 hordei compositum. L.

E.

Electuarium lentivum.
 Elixir aloes.
 myrrhæ compositum.
 paregoricum.
 proprietas.
 sacrum.
 salutis.
 Emplastrum ex ammoniaco cum
 mercurio.
 antihystericum.
 atrahens.
 cephalicum.
 commune.
 — adhesivum.
 — cum gummi,
 — cum mercurio.
 e cymino.
 roborans.
 e sapone.
 stomachicum.
 vesicatorium.

Electuarium e fenna. Lond.
 Tinctura aloes composita. Lond.
 sabinæ composita. Lond.
 opii camphorata. Lond.
 Elixir aloes. Ed.
 ex aloe et rheo. Ed.
 Tinctura fennæ composita. Ed.
 Emplastrum ammoniaci cum hy-
 drargyro. Lond.
 fœtidum. Ed.
 ceræ. Lond.
 picis burgundicæ. L.
 lithargyri. Lond.
 — cum resina. Lond.
 — cum gummi. L.
 — cum hydrargyro. L.
 cumini. Lond.
 thuris Lond.
 saponis. Lond.
 ladani. Lond.
 cantharidis. Lond.
 Emulsio

*Names in former Pharmacopæias.**New Names.*

Emulsiõ communis.
 Ens veneris.
 Extracticum catharticum.
 thebaicum.

F.

Ferri rubigo.
 Flores benzoini.
 martiales.
 zinci.
 Fõtus communis.

H.

Hiera picra.

I.

Infusum amarum simplex.
 fennæ commune.
 Julepum e camphora.
 e creta.
 e moscho.

L.

Laudanum liquidum.
 Linimentum album.
 saponaceum.
 volatile.
 Lixivium saponarium.
 tartari.

M.

Mel Ægyptiacum.
 rosaceum.
 Mercurius calcinatus.
 corrosivus sublimatus.
 ——— ruber.
 dulcis sublimatus.
 emeticus flavus.
 præcipitatus albus.
 ——— ruber.

Lac amygdalæ. Lond.
 Flores martiales. Ed.
 Extractum e colocynthide compositum. Lond.
 Opium purificatum. Lond.

Ferri limatura præparata. Ed.
 Flores benzoës. Lond.
 Ferrum ammoniacale. Lond.
 Calx zinci. Lond.
 Decoctum pro fõmento. Lond.

Pulvis aloeticus. Lond.

Infusum gentianæ compositum. L.
 fennæ tartarifatum. Lond.
 Mistura camphorata. Lond.
 cretacea. Lond.
 moschata. Lond.

Tinctura thebaica. Ed.
 Unguentum spermatis ceti. Lond.
 Linimentum saponis. Lond.
 ammoniacæ. Lond.
 Aqua kali puri. Lond.
 kali. Lond.

Oxymel æruginis. Lond.
 Mel rosæ. Lond.
 Hydrargyrus calcinatus. Lond.
 muriatus. Lond.
 nitratu8 ruber. Lond.
 Calomelas. Lond.
 Hydrargyrus vitriolatus. Lond.
 Calx hydrargyri alba. Lond.
 Mercurius corrosivus ruber. Edin.
 Nitrum

Names in former Pharmacopœias.

New Names.

N.

Nitrum vitriolatum.

Kali vitriolatum. Lond.

O.

Oleum animale.
petrolei barbadensis.
terebinthinæ æthereum.Oleum e corubus rectificatum. Ed.
petrolei. Lond.
terebinthinæ rectificatum. L.

Opium colatum.

Opium purificatum. Lond.

Oxymel scilliticum.

Oxymel scillæ. Lond.

P.

Philonium Londinense.

Confectio opiata. Lond.

Pilulæ aromaticæ.

Pulvis aloeticus cum guaiaco. Lon.

coccia.

Pilulæ ex colocynthide cum aloë. E.

mercuriales.

ex hydrargyro. Edin.

pacificæ.

thebaicæ. Edin.

rufi.

ex aloë cum myrrha. Lond.

Pulvis e bolo compositus.

Pulvis e creta compositus. Lond.

———— cum opio.

———— cum opio. Lond.

cephalicus.

sternutatorius. Edin.

Pulvis e cerussa compositus.

Pulvis e cerussa. Lond.

Doveri.

fudorificus. Edin.

sternutatorius.

afari compositus. Lond.

R.

Rob baccarum sambuci.

Succus baccæ sambuci spissatus.
Lond. Ed.

S.

Saccharum saturni.

{ Cerussa cetata, Lond.

{ Sal plumbi, Edin.

Sal absinthii.

Kali, Lond.

ammoniacus volatilis.

Alcali volatile ex sale ammoniaco.
Edin.

catharticus glauberi.

{ Natron vitriolatum, Lond.

{ Soda vitriolata, Edin.

diureticus.

Kali acetatum. Lond.

martis.

Ferrum vitriolatum

rupellenlis.

Soda tartarizata. Edin.

tartari.

Kali. Lond.

vitrioli.

Zincum vitriolatum. Lond.

volatilis falis ammoniaci.

Ammonia. Lond.

Species aromaticæ.

Pulvis aromaticus. Lond.

Spiritus cornu cervi.

Liquor volatilis cornu cervi. Lond.

Spiritus

*Names in former Pharmacopœias.**New Names.*

Spiritus lavendulæ compositus.
 ——— simplex.
 nitri dulcis.
 ——— glauberi.
 falis ammoniaci.
 falis ammoniaci cum calce
 vivo.
 falis ammoniaci dulcis.
 falis marini glauberi.
 Vinosus camphoratis.
 vitrioli dulcis.
 ——— tenuis.
 volatilis aromaticus.
 ——— foetidus.
 Succus scorbutici.
 Sulphur auratum antimonii.
 Syrupus ex althæa.
 e corticibus aurantiorum.
 balsamicus.
 e meconio.
 rosarum solutivus.

T.

Tabellæ cardialgiæ.
 Tartarum emeticum.
 regeneratum.
 solubile.
 vitriolatum.
 Tinctura amara.
 antiphthifica.
 aromatica.
 foetida.
 guaiacina volatilis.
 ipecacuanhæ.
 japonica.
 martis in spiritu falis.
 melampodii.
 rhabarbari spirituosa.
 ——— vinosa.

Tinctura lavendulæ. Lond.
 Spiritus lavendulæ. Lond.
 { Spiritus ætheris nitrosi. Lond.
 { Acidum nitri vinosum. Edin.
 Acidum nitrosum. Lond. Edin.
 Aqua ammoniæ. Lond.
 Alkali volatile causticum. Edin.
 Spiritus ammoniæ. Lond.
 Acidum muriaticum. Lond.
 Spiritus camphoratus. Lond.
 { Spiritus ætheris vitriolici, Lond.
 { Acidum vitriolicum vinosum, Ed.
 { Acidum vitriolicum dilutum, L.
 { Acidum vitriolicum tenue, Ed.
 Spiritus ammoniæ compositus. L.
 ——— foetidus. Lond.
 Succus cochleariæ compositus. Lon.
 Sulphur antimonii præcipitatum. E.
 Syrupus althææ. Lond.
 corticis aurantii. Lond.
 toltanus. Lond.
 papaveris albi. Lond.
 rosæ. Lond.

Trochisci e creta. Lond.
 { Antimonium tartarifatum. Lond.
 { Tartarus antimonialis. Edin.
 Alkali fixum vegetabile acetatum.
 Edin.
 { Kali tartarifatum. Lond.
 { Alkali fixum vegetabile tartari-
 fatum. Edin.
 { Kali vitriolatum. Lond.
 { Alkali fixum vegetabile vitriola-
 tum, Edin.
 Tinctura gentianæ composita. L.
 saturnina. Edin.
 cinnamomi composita. L.
 asæ foetidæ. Lond.
 guaiaci. Lond.
 Vinum ipecacuanhæ. Edin.
 Tinctura catechu. Lond.
 ferri muriati. Lond.
 Tinctura hellebori nigri. Lond.
 rhabarbari. Lond.
 Vinum rhabarbari. Lond.

Tinctura

*Names in former Pharmacopœias.**New Names.*

Tinctura rosarum.	{ Infusum rosæ, Lond. rosarum, Edin.
sacra.	{ Vinum aloes, Lond. Vinum aloeticum, Edin.
stomachica.	Tinctura cardamomi composita. L.
Trochisci bechici albi.	Trochisci amyli. Lond.
———— nigri.	glycyrrhizæ. Lond.
Turpethum minerale.	Mercurius flavus. Edin.

V. U.

Vinum antimoniale.	Vinum antimonii. Lond.
chalybeatum.	ferri. Lond.
Unguentum album.	Unguentum ceræ. Lond,
album.	e cerussa. Edin.
antipforicum.	e sulphure. Edin.
basilicum flavum.	resinæ flavæ. Lond.
cæruleum.	ex hydrargyro. Edin.
———— fortius.	hydrargyri fortius. L.
———— mitius.	———— mitius. Lond.
e mercurio præcipitato.	calcis hydrargyri albæ. Lond.
saturinum.	cerussæ acetatæ. Lond.
simplex.	adipis suillæ. Lond.
ad vesicatoria.	cantharidis. Lond.

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