The new dispensatory: containing I. The elements of pharmaceutical chemistry. II. The materia medica ... III. Pharmaceutical preparations. IV. Medicinal compositions ... Being an attempt to collect and apply the later discoveries to the Dispensatory published by W. Lewis ... / By gentlemen of the Faculty of Edinburgh [i.e. C. Webster and R. Irving].

Contributors

Lewis, William, 1708-1781.
Irving, Ralph.
Webster, Charles, 1750-1795.

Publication/Creation

Edinburgh : C. Elliot, 1786.

Persistent URL

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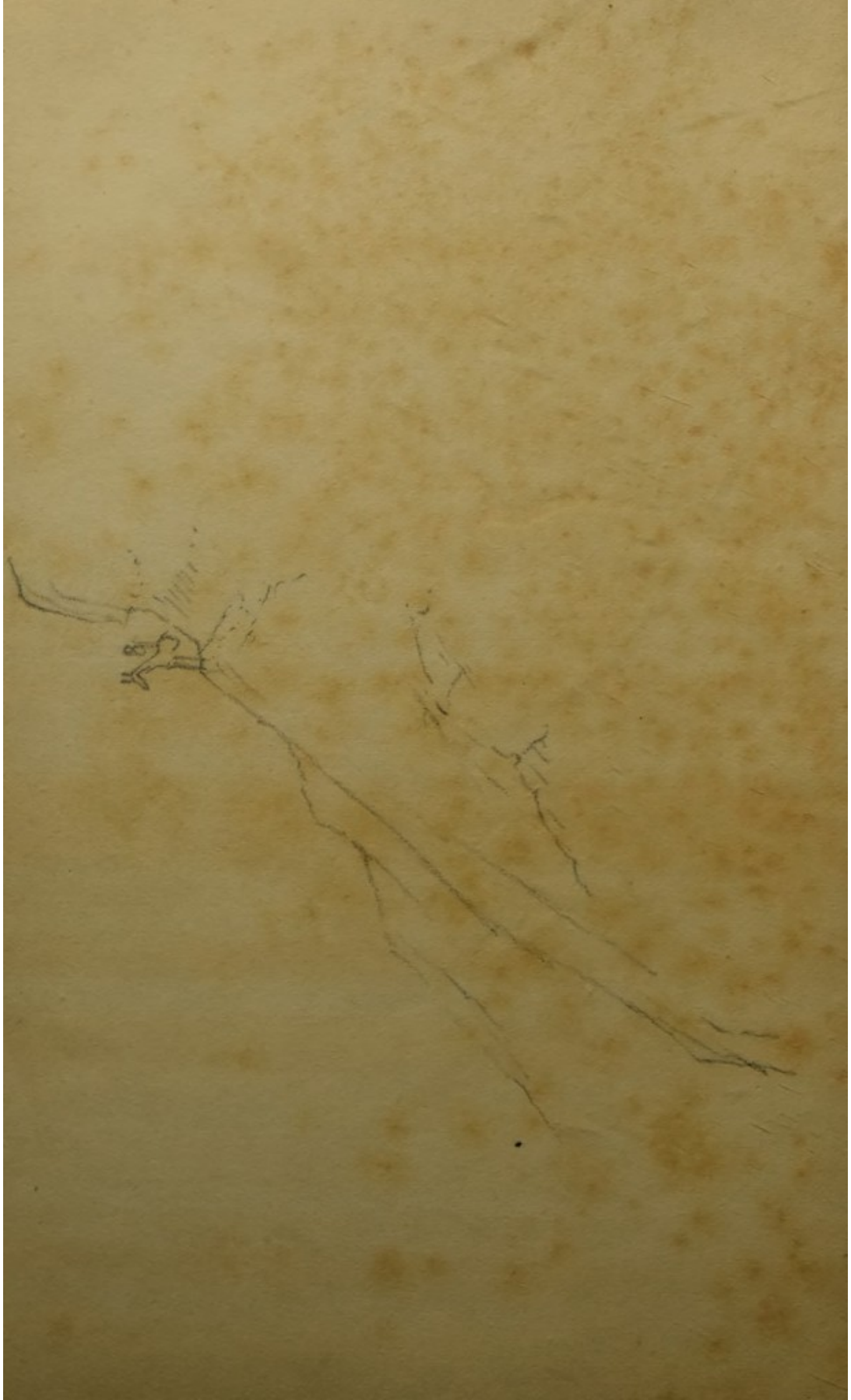

THE

NEW DISPENSATORY:

CONTAINING

I.
The ELEMENTS of PHARMACEUTICAL CHEMISTRY.

II.
The MATERIA MEDICA: or, An Account of the Subſtances employed in Medicine; with the Virtues and Uſes of each Article, ſo far as they are warranted by Experience and Obſervation.

III.
PHARMACEUTICAL PREPARATIONS.

IV.
MEDICINAL COMPOSITIONS.

THE TWO LATTER PARTS COMPREHENDING

The PREPARATIONS and COMPOSITIONS of the LAST LONDON and EDINBURGH PHARMACOPOEIAS, with ſuch of the old ones as are kept in the SHOPS;

Alſo

The moſt celebrated FOREIGN MEDICINES; the moſt uſeful of thoſe directed in the HOSPITALS; and ſundry elegant EXTEMPORANEOUS FORMS:

Digeſted

In ſuch a METHOD as to compoſe a Regular SYSTEM of PHARMACY;

With

REMARKS on their Preparation and Uſes; the Means of diſtinguiſhing Adulterations; of performing the more difficult and dangerous Proceſſes with eaſe and Safety, &c.

The whole interſperſed with

PRACTICAL CAUTIONS and OBSERVATIONS.

Being an ATTEMPT to collect and apply the

LATER DISCOVERIES

TO THE DISPENSATORY PUBLISHED

By W. LEWIS, M. B. F. R. S.

With

New TABLES *of* ELECTIVE ATTRACTIONS, *Single and Double; of* ANTIMONY, MERCURY, *&c.*

And

COPPERPLATES OF PHARMACEUTICAL INSTRUMENTS.

BY GENTLEMEN OF THE FACULTY AT EDINBURGH.

EDINBURGH:

Printed for CHARLES ELLIOT, EDINBURGH;
And G. G. J. and J. ROBINSON, LONDON.

M.DCC.LXXXVI.

Entered in Stationers-Hall.

303934



PREFACE

BY THE

EDITOR.

THE ſuperiority of Dr Lewis's Diſpenſatory has been ſo univerſally admitted, that it has almoſt ſuperſeded every other work of the kind. But when we conſider the many improvements which have been lately made in Chemiſtry, Natural Hiſtory, and Medicine; and that the edition of the Edinburgh Pharmacopœia on which Dr Lewis commented, was publiſhed ſo far back as 1756; it will be readily granted, that after a period of thirty years, much room muſt be left for altering and improving this Book. How far the preſent attempt is ſucceſsful, the Public muſt judge for themſelves.

The Materia Medica, ſo far as reſpects the ſeveral articles, was conducted by one perſon: The reſt of the Book was managed by another. Although the articles in the preſent edition of the Edinburgh Pharmacopœia appear ſufficiently numerous for any uſeful purpoſe; yet in compliance with thoſe who may think otherwiſe, or who have been long accuſtomed to uſe certain ſubſtances on Dr Lewis's authority, though expunged from that edition, moſt of them have been retained, being at the ſame time diſtinguiſhed by the mark † as obſolete. This plan may at the ſame time furniſh the Student with a key, to diſcover the reaſons for ſeveral alterations made by that College of late years.

In

In conſidering the Medicinal Effects of ſeveral Preparations and Compoſitions, the Author is aware, that his high eſteem for the writings of Dr Lewis may have led him to an appearance of aſſent deſerving ſome cenſure; but to ſay the truth, notwithſtanding the credulity of the times, Dr Lewis has been as wary in aſcribing virtues to remedies, as any writer of equal modeſty and deference to the opinions of others.

The Author, however, has been more eſpecially ſolicitous to improve the Pharmaceutical part of the Work; and his attempts to that purpoſe will be ſoon perceived by the Reader.

EDINBURGH,
Nov. 1785.

PREFACE

By Dr LEWIS.

THE New Diſpenſatory was intended as a regular book of practical and ſcientific pharmacy; compoſed on principles agreeable to thoſe on which the Colleges of London and Edinburgh have proceeded in the late reformation of their officinal Pharmacopœias; containing full and clear directions, drawn from actual experience, for the preparation of the ſeveral medicines, particularly where accompanied with any difficulty or danger; and aſſigning every where, as far as poſſible, their real virtues and uſes: intentions which, though of primary importance in a work of this kind, do not ſeem to have been at all regarded in the other Diſpenſatories that havehitherto appeared.

The author has had the ſatisfaction of finding that his endeavours have not been in vain; that though the work fell very far ſhort of the perfection which he wiſhed for, it was diſtinguiſhed with approbations even beyond his hopes; with approbations, which have induced the compilers of the other Diſpenſatories to borrow very conſiderable parts of it in their laſt editions; in one of which, beſides many paragraphs and entire pages here and there, the greateſt part of two hundred pages together is illiberally copied from this work.

In this edition I have made made many material corrections and additions, and retrenched ſundry exceptionable particulars, which, in compliance with common prejudices, had been admitted in the firſt attempt.

The firſt part contains the Elements of Pharmacy, or what is commonly called *Pharmaceutical Chemiſtry*. The general neglect of this intereſting and uſeful ſtudy as applied to medicinal ſubjects, has engaged me to greatly enlarge this part, and to labour it with more care and preciſion. I have endeavoured to give a conciſe and ſyſtematic view of the general properties and relations of vegetable, animal, and mineral bodies; the different medicinal principles they contain; the means of extracting and ſeparating their native component parts, without making any alteration in their qualities; and the different forms and powers which they aſſume, from different natural or artificial operations, or from the mixture and coalition of one with another; avoiding every where all hypothetical reaſonings, and delivering only the direct reſult of experiment and obſervation. To this hiſtory is added a practical account of the inſtruments and operations of the art; which, it is hoped, will give the reader a full idea of them, without the tediouſneſs of minute details.

The next part contains the Materia Medica, or Medicinal Simples; which, for reaſons aſſigned in the introduction to this part, are all ranged in alphabetic order. Rationales of the operations of medicines, which are at beſt but conjectural and unſatisfactory, have no place in this practical work: But ſome general obſervations, of the ſenſible effects of certain claſſes of medicines in Cartheuſer's manner, it has been thought expedient to retain, with ſome amendments from the former editions.

In

In treating of the ſeveral ſimples themſelves, I have given, where neceſſary, a deſcription of the ſimple, with the marks of its genuineneſs and goodneſs; and pointed out the diſtinguiſhing characters of ſuch as, from a reſemblance in external appearance, are liable to be confounded with others of different qualities. With regard to their virtues, particular care has been taken to reject the fabulous ones, which are ſtill preſerved in other books of this kind; and to give only thoſe which have either been confirmed by repeated experience, or may be rationally inferred from the ſenſible qualities of the ſubject, or from its agreement in ſmell, taſte, &c. with others of known virtue. Under each ſimple are mentioned all the preparations made from it, and all the compoſitions in which it is an ingredient, in the London and Edinburgh Pharmacopœias. Many of the capital articles I have examined pharmaceutically, and ſhown in what ſeparable part of the mixt its virtue reſides, by what means the active principle is beſt extracted or preſerved, and in what form the ſubſtance itſelf or its preparations are moſt commodiouſly and advantageouſly exhibited. At the end of this part, the directions for the collection and preſervation of medicinal ſubſtances are re-conſidered.

The third and fourth parts contain the Preparations and Compoſitions of the New London and Edinburgh Pharmacopœias; with a few of the old ones, which I am informed are ſtill kept in ſome ſhops, and occaſionally called for; ſeveral of the more celebrated medicines, which have come into eſteem in France and Germany; many from our hoſpitals; and ſome elegant extemporaneous preſcriptions, ſuch as are directed in practice.

In the diſtribution of theſe materials, it has been found neceſſary to depart from the order hitherto re-

received. In other Diſpenſatories, and in a former edition of this, medicines are divided into two general heads, Officinal and Extemporaneous. This diviſion is apparently faulty: for many of thoſe called *officinal*, are ſtrictly extemporaneous, being made only as they are wanted; and many of thoſe which are called *extemporaneous*, are very well fitted for keeping. If we ſhould appropriate the term *officinal* to thoſe which have the ſanction of public Colleges, then this abſurdity would follow, that medicines of as tedious preparation as any in the book, even Baumé's extract of opium, which requires ſeveral months continual boiling, would be extemporaneous preparations.

To avoid this impropriety, and that of repeating the ſame forms, and frequently almoſt the ſame compoſitions, in different parts of the book, I have ranged medicines of ſimilar preparation or compoſition in one claſs, without regard to the ineſſential circumſtances of their being uſed at London or at Edinburgh, at Paris or at Berlin, in the ſhops or in the hoſpitals; and have endeavoured to diſpoſe them in ſuch a manner, as to form, ſo far as could be done with ſuch materials, one regular whole, a connected ſyſtem of practical pharmacy: That the medicines of the London and Edinburgh Colleges may be the more readily known from the others, their titles are printed in a larger character. The diſtinction, indeed, between preparations and compoſitions, the former of which make the third part, and the latter the fourth, is not perhaps altogether unexceptionable, conſidering the great multiplicity and diverſity of the ſubjects, many of which partake of the nature of both, though ſome more of one, and others of the other. But this does not all affect the plan, or pro-

duce

duce any diſorder in the ſyſtem, which continues the ſame whether this diſtinction is retained or dropt.

The Edinburgh medicines are taken from the laſt edition of the *Pharmacopœia Edinburgenſis*, publiſhed in the year 1756, a complete tranſlation of which has not before appeared.

In tranſlating the ſeveral preſcriptions, wherever the originals appeared too conciſe or obſcure, the liberty has been taken of expreſſing the directions in a more full and clear manner, with care not to vary the ſenſe. The ingredients in the ſeveral compoſitions are, for the greater diſtinctneſs (a point which throughout the whole has been particularly aimed at), ranged in different lines, as in the originals. For want of ſome method of this kind, there are inſtances of ingredients being confounded, and two articles miſtaken for one.

To the ſeveral medicines is ſubjoined, where it ſeemed requiſite, an account of the principles on which they are built, together with their virtues, uſe, and doſe, and the cautions neceſſary to be obſerved in the exhibition of them. To the more difficult or dangerous operations is added a full deſcription of the method of performing them with advantage and ſafety; and to ſuch medicines as are liable to ſophiſtication, the means of diſtinguiſhing the genuine from the adulterated. In theſe practical remarks on the particular preparations, and on the general claſſes of them at the beginning of the reſpective chapters and ſections, the author has laboured with diligence; if he has ſucceeded in executing his intentions, the directions are ſuch as may enable every apothecary to prepare, as it is his duty to do, all his own medicines.

The tables, inſerted in a former edition, were ſo well received, that the other Diſpenſatories have copied

pied them entire. One of theſe tables however, that of ſpecific gravities, appears on re-examining it to be exceptionable: great part of it was drawn from Dr Freind's experiments in his *Prælectiones Chymicæ*, in which the numbers by ſome accident have been ſo faultily ſet down, that no dependence can be had upon them; and few other hydroſtatical experiments have been made on medicinal ſubſtances or their preparations. I have therefore now thrown out that table, but preſerved all that was valuable in it, reduced to a more uſeful form, in the table of the weights of certain meaſures of different fluids. I have likewiſe added ſeveral new ones, greatly enlarged the others, ſo as to render them of more utility in practice, and diſtributed them in the different parts of the work to which they belong. The facts on which they are built, where no authority is mentioned, are in all caſes (except only in the above mentioned table of weights) from my own experience.

The author is ſufficiently ſenſible, that there are ſtill many imperfections in this performance; but hopes it will appear, that he has every where conſulted the dignity of the art, the eaſe and advantage of the operator, and the health of the patient.

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*** The uſeful compoſitions of the *Pharmacopœia Pauperum*, which made a diſtinct part in a former edition, are here diſtributed in the two foregoing parts; all the medicines of ſimilar forms being now, for the convenience of the reader, placed together.

THE

INTRODUCTION.

Definition and Diviſion of PHARMACY.

PHARMACY is the art of preparing and compounding natural and artificial ſubſtances for medicinal purpoſes, in a manner ſuitable to their reſpective properties and the intentions of cure.

This art has been commonly divided into two branches, GALENICAL and CHEMICAL: but no rational principle of diſtinction between them has yet been fixed on. If it be a chemical proceſs to evaporate juice of plantane over a gentle fire till it becomes thick, it is ſurely not leſs chemical to evaporate the juice of ſloes in the ſame manner; and yet the former only is ranked among the Chemical, and the latter among the Galenical preparations. Frequently, alſo, one and the ſame preparationis in different pharmacopœias referred to the different branches: Thus diſtilled waters and diſtilled ſpirits, which mak the firſt of the Galenical articles in one Pharmacopœia, make the firſt of the Chemical in a nother.

It is agreed on both ſides, that eſſential oils, extracts, reſins, voiatile and fixt ſalts, the artificial neutral ſalts, metallic preparations, and other like productions, belong to the Chemical pharmacy; and pills, boluſes, troches, electaries, draughts, ointments, plaſters, poultices, &c. to the Galenical; as if the diſtinction was founded, neither on the nature of the operation, nor of the materials, nor of the effect produced, but merely on the form in which the medicine is intended to be taken or applied. Thus, the diſſolution of mercury in aquafortis is ranked among the Chemical preparations; while the very ſame proceſs, with the additional circumſtance of uniting an unctuous material, which renders it, if any thing, ſtill more chemical, is nevertheleſs reckoned a Galenical one, becauſe the product is uſed as an ornament. It cannot ſurely be ſuppoſed, that this is a juſt diviſion, or that the ſame proceſs or preparation can become chemical or not chemical, according to the intention to which they are applied, or the form in which the product is uſed.

If vitriiol of iron (that is, iron united with a certain acid) and any volatile alkaline ſalt, as that of hartſhorn or ſal ammoniac, be put together into water in due proportions; the pungent ſmell of the volatile ſalt will be immediately ſuppreſſed, this ſalt uniting with the acid of the vitriol into a new compound, while the iron is ſeparated and thrown out. This is undoubtedly a chemical effect; and this effect will happen wherever thoſe two ingredients meet together in a moiſt ſtate, whatever the form of the medicine be. It is obvious therefore, that the Galenical forms are by no means independent of chemiſtry; and that this ſcience extends to mixtures of the moſt ſimple kind.

The London College has very judiciouſly rejected this diviſion; a diviſion apparently derived from prejudice and ſuperficial knowledge, and which has been continued only in compliance with cuſtom. Pharmacy, in its full extent, is no other than a branch of chemiſtry; and the moſt ſimple pharmaceutical preparations are ſo far chemical, as they have any dependence upon the properties or relations of the materials.

PHAR-

PHARMACY, according to our definition, may be divided into THEORETICAL and PRACTICAL. The former teaches the knowledge of the medicinal ſubſtances themſelves, their various properties, qualities, and relations to one another, and their general effects on the human body: the latter, the ſkilful performance of the ſeveral proceſſes or operations by which they are adapted to particular uſes.

What is here called *theory*, is not to be underſtood as conſiſting of ſpeculative truths, or philoſophical inveſtigations, calculated for explaining the phenomena, or teaching the rationale of the effects produced. The theory of pharmacy is the direct reſult of experiment and obſervation, or rather a general and comprehenſive view of experiments and facts themſelves; it may be termed *Scientific Pharmacy*, in diſtinction from mere manual labour.

Scientific Pharmacy includes all thoſe facts which relate to—the reduction of medicinal ſubſtances into different forms, and the forms in which particular ſubſtances are moſt commodiouſly or advantageouſly uſed;—their relations to one another in regard to miſcibility, and the means by which thoſe, that of themſelves are not miſcible, may be made to unite;—the ſeparation of the medicinal from the inactive matter, and of different kinds of medicinal matter from one another when combined together in the ſame ſubject, on the principle of one being diſſoluble in liquors which will not diſſolve the other, of one being exhalable by heat, while the other remains fixt, &c.;—the alterations which the medicinal parts themſelves undergo, in different circumſtances, and by different methods of treatment;—the production of new properties and medicinal powers from the coalition of diſſimilar things;—with many other particulars analagous to theſe.

It is obvious, that a perfect acquaintance with pharmacy conſidered in this light, is eſſentially neceſſary to the due exerciſe of the art of phyſic. Without it, the preſcriber muſt often err in the choice of materials for the different forms of preparation or compoſition, or in adapting a manner of preparation to given materials; and often be deceived alſo in the medicinal effects which the known powers of the ingredients, ſeparately, gave room to expect.

It would be inconſiſtent with the nature of a diſpenſatory, to wholly detach the ſcientific part of pharmacy from that which is more directly practical; for the ſcience gradually reſults in the courſe of the practical details. In the firſt part of the work it has been thought expedient to premiſe a ſummary view of the general elements of the art, both practical and ſcientific, that the reader may be the better prepared for the particular ſubjects and proceſſes which follow in the ſecond and third parts.

We here ſubjoin an abſtract from the Syllabus of Dr Webſter's Lectures on Chemiſtry and Materia Medica. It will give the reader a method of arranging the ſubjects, and may at the ſame time be uſeful in ſupplying the want of ſynonymes in this work.

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

CHEMISTRY is the ſtudy of the *inviſible* actions of the *particles* of the *different* kinds of matter on one another; that is, the ſtudy of mixture.

That power by which ſuch particles unite is called *chemical attraction.*

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. *Waters;* 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 uninflammable. They are ſimple and compound.

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

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

The ſaline, ſyn. neutral, acido-alkaline, ſales ſalſi, 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. efflureſcent. 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 and barytes, are inſipid; difficultly ſoluble in water, difficultly fuſible becoming glaſs, uninflammable, 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 opake, 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 ſubtile fluid called *phlogiſton*, ſyn. principle of inflammability or metalliſation, ſulphureous, oleous, ſpirituous or inflammable

ſlammable 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.

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, air eminently reſpirable, principle 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 cohefion 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. Alteration 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 general 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

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 alkalis, the earths, and water.

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

ACIDS.

Acids have a ſour taſte; redden certain vegetable blues; unite with alkalis, 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.

* 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 orn arcotic ſalt of Homberg, Boracic acid.
7. *Acid of Chalk;* syn. Cretaceous, cretous, calcareous, chalky, aërial, 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.

ALKALIS.

Alkalis, 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 flinty earths, and render oil or ſulphur miſcible with water. The earthy are much leſs ſoluble in water; and, except lime and barytes, 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

* Theſe marked * thus are not uſed in medicine.

in ſome meaſure like the acids. They diſſolve animal concretions and mucus, are ſaid to correct animal poiſons, and out of the body they obviate putreſcence. The earthy alkalis, 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 ſcrophula. 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 alkalis 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 ALKALIS; ſyn. Alkaline or antacid ſalts.

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

   Aërated Vegetable Alkali: ſyn. Common or mild vegetable alkali: fixt nitre; ſalt of tartar; the impure, as that of wormwood, of plants, of woods, &c. potaſh, pearl-aſh, caſhub, 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. 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, ſoda, alkali of ſalt. Diſſolved in water, it is called ſoap ley.

   Aërated 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. Pure or cauſtic volatile alkali, alkali of bones, or oſcoli. Combined with water, it is called cauſtic volatile ſpirit, ſpirit of ſal ammoniac prepared by quicklime. It exiſts in form of alkaline air, which is capable of decompoſition.

   Aërated Volatile alkali: ſyn. Common mild concrete volatile alkali, ſalt of urine, volatile alkali, or ſalt of ſal ammoniac, volatile ſal ammoniac, ſalt of ſoot, of hartſhorn, volatile ſalt of bones, of ivory, of elkshoof, 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, &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 ALKALIS; ſyn. Alkaline, abſorbent, antacid earths.

1.* *Barytes:* ſyn. Pure ponderous, or heavy earth. Soluble in 900 waters at 60°; ſpec. grav. 4.
Aërated Barytes.

2. *Lime:* ſyn. Pure, calcined, burnt, cauſtic limeſtone, chalk, calcareous earth; quicklime. Soluble in 680 waters at 60°; ſpec. grav. 2.3.
Aërated Lime: ſyn. Mild calcareous earth, as limeſtone, chalk, marble, marle, gur; animal ſhells and concretions, as oyſter-ſhells; various ſpars, petrifactions, &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.
Aërated Magneſia; ſyn. Common magneſia, magneſia of nitre, of common ſalt, Count de Palma's powder, Valentini's laxative polychreſt. It often contains $\frac{7}{12}$ 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.
Aërated 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. The alkalis, in their ordinary aërated ſtate, might, to preſerve analogy, and diſtinguiſh their acid and its proportion, be called ſuberetiſed.

SALINE SALTS.

The ſtronger in attraction the ſimple ſalts are, the more eaſily do they ſeem to be ſaturated. 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;* 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;* 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. *Nitrated Vegetable Alkali;* ſyn. Nitre, ſaltpetre, priſmatic 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;* ſyn. Digeſtive 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:* 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 $2\frac{1}{2}$ waters at 212°, and in a little more at 60°. Cryſtals permanent and ſubaquated. Taſte ſalt and agreeable.
6. *Muriated Volatile Alkali:* ſyn. Crude, common, or ſimply ſal ammoniac, armoniac, armeniac, cyrenaic; 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 $3\frac{1}{2}$ at 60°. Cryſtals permanent. Taſte acrid.
7. *Supertartariſed Vegetable Alkali;* 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;* ſyn. Tartariſed tartar, ſoluble tartar, vegetable ſalt. Soluble in 4 waters at 60°; aqueſcent; taſte bitter.
9. *Tartariſed Fixed Alkali;* ſyn. Rochelle ſalt, Seignette's polycreſt 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. *Acetated Vegetable Alkali,* ſyn. diuretic ſalt, regenerated tartar, terra foliata tartari. It contains 19 of acid, 32 of alkali, and 49 of water; is very aqueſcent.
11. *Acetated Volatile Alkali;* ſyn. Mindererus's ſpirit, vegetable ammoniac. Very aqueſcent.
12. *Sub-boraxated Mineral Alkali;* ſyn. borax, tincal, cryſocolla. It contains

tains 34 of acid, 17 of alkali, and 47 of water; ſoluble in 6 waters at 212°, and in 12 at 60°; ſoluble by heat in its own water; and ſomewhat deaqueſcent.

13. *Lemonated Vegetable Alkali;* ſyn. Saline or anti-emetic mixture.

EARTHY SALTS.

1.* *Vitriolated Barytes,* ſyn. Ponderous ſpar or gypſum, Bononian ſtone, baroſelenite, marmor metallicum. Not ſoluble in 1000 waters at 212°.

2.* *Vitriolated Lime;* ſyn. Gypſum, ſelenite, plaſter of Paris. Soluble in 500 waters at 60°.

3. *Vitriolated Magneſia:* ſyn. Bitter ſalt, bitter purging ſalt; Engliſh, Epſom, Sedlitz or Seidſchutz ſalt. It contains 33 of acid, 19 of magneſia, and 48 of water; ſoluble in two-thirds of water at 212°, and in one water at 60°; ſoluble by heat in its own water; deaqueſcent; loſing, in both caſes, one half its weight. Taſte cool and very bitter

4. *Supervitriolated Clay;* ſyn. Alum. It contains 38 of acid, 18 of clay, 44 of water; ſoluble in two-thirds of water at 212°, and in 15 at 60°. Cryſtals permanent; ſoluble by heat in their own water, and loſe one half their weight.

Glutinous ſubſtances, whether inſipid or ſweet, are, like the ſalts, ſoluble in water; ſuſpend oil and heavier matters in water; are rendered miſcible in ſpirit by eſſential oil or reſin; defend from acrimony, and the ſweets render other medicines agreeable Glutinous ſubſtances, when pure, may be diluted; or ſweetened in form of lozenge.

The *inſipid* are——*Gummi Arabicum. Gummi* Tragacanthæ, *Althæa, Linum,* Malva, Convallaria, Lilium album, Satyrion, Lichen, Parietaria, Trichomanes, Fænum Græcum.——The *ſweet* are—*Saccharum, Manna,* Mel, *Glycyrrhiza,* Prunus Gallica, Uvæ paſſæ majores et minores, Carica, Caſſia fiſtularis, Ginſeng.

INFLAMMABLE BODIES.

Heat, from whatever ſource, as from condenſation, the ſun, electricity, chemical union, fermentation, animals, friction or percuſſion, or phlogiſtic bodies, has the following general effects: Calefaction; rarefaction, as expanſion, fluidity and vapour; ignition; and, with regard to phlogiſtic bodies expoſed to the air, inflammation, or combuſtion. The heat and phenomena of this laſt may be from the double chemical union and condenſation which take place, *viz.* the union betwixt the elementary bodies pure air and phlogiſton, and betwixt pure air and the reſiduum. The heat of fermentation and of animals may be explained in a ſimilar manner.

I. *Inflammable Air;* ſyn. Fire-damp.

II. *Alcohol;* ſyn. Ardent ſpirits, rectified ſpirit, ſpirit of wine, vinous ſpirit, pure ſpirit. It means a ſpirit free from all water, except what

enters

enters its compoſition as an ingredient. When its ſpecific gravity is to water as 13 to 14, it is called rectified ſpirit. This diluted with an equal weight of water, is called a proof-ſpirit, a brandy, weak ſpirit of wine. It is miſcible with water in any proportion 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 ſubtile oil containing its phlogiſton. It diſſolves the ſaline alkalis and more or leſs of the following compound ſalts, moſt of the ammoniacal ſalts, acetated 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, *vitriolo cohol* Stimulant.
2. *Dulcified Spirit:* ſyn. *Alcoholiſed acids* or *alkalis;* as *ſweet ſpirit of vitriol,* ſyn. vinous vitriolic acid, *alcoholiſed acid of vitriol.* Stimulant.
3. *Sweet Spirit of Nitre;* ſyn. Vinous nitrous acid, *alcoholiſed acid of nitre* Stimulant
4. *Sweet Spirit of Salt;* ſyn. Vinous muriatic acid, *alcoholiſed acid of ſalt.* Stimulant.
5. *Sweet Spirit of Sal Ammoniac;* ſyn. *Alcoholiſed volatile alkali.* Stimulant.

Oily Subſtances, whether the unctuous, eſſential, or foſſile, ſeem to owe their origin to organic matter, to conſiſt of phlogiſton, acid of chalk, 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 defend 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

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* The unctuous ſubſtances are, Amygdalæ amaræ et dulces, oliva, laurus, palma, ſevum 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.

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

V. *Foſſil*

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† In this, in a gummy or ſaline matter, reſide thoſe ſenſible qualities by which the following medicines are arranged. They are not uſed in active inflammatory or hemorrhagic 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 electary, 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 ruſticanus, cardamine; flammula Jovis, mezereon, ſarſparilla, bardana, lobelia ſyphilitica, pulſatilla nigricans; *ſcilla*, *allium*, colchicum, cinara, digitalis; iris paluſtris, ſeneka, ſambucus, bryonia, melampodium, veratrum, gambogia, ſcammonium, *jalapa*, *ſenna*, *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, hydrolapathum, ulmus, tuſſilago, verbaſcum, ſcolopendrium; *rheum*.

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

Odorous

† It might be of uſe to diſtinguiſh the ſolvent of the ſubſtance; as by the terms aquated, coholiſed, aquacoholiſed; and the extract, by the terms deaquated, decoholiſed, deaquacoholiſed.

* The articles of Cortex Peruvianus and Opium in the Diſpenſatory belong to this Syllabus.

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

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. Stimulant.

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 antipſoric. 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 pit-

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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, ſpaſm, 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, ſaſſafras, 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 Hiſpalenſia, Junipetus; *aniſum*, fæniculum dulce et vulgare, anethum, coriandrum, carvi, cardamomum minus, cuminum, petroſelinum, daucus ſylveſtris, angelica ſativa et ſylveſtris, liguſticum, imperatoria, mentha ſativa et *piperitis*, meliſſa, millefolium, pulegium, hedera terreſtris, hyſſopus, ſalvia, majorana, thymus, ſerpyllum, *lavendula*, roſmarinus, roſa pallida, arnica; terebinthina veneta balſamum Canadenſe, Gileadenſe, copaïbæ, peruvianum, tolutanum; benzoinum, maſtiche, ſtyrax calamita, *ſtorax liquida;* olibanum, myrrha.

Fetids. Gummi ammoniacum, ſagapenum, galbanum, *aſa fætida*, *camphora*, *moſchus*, caſtoreum, *guaiacum*, valeriana ſylveſtris, ſabina, atriplex fætida, ruta. The narcotic fetids are, *Opium*, cicuta, hyoſcyamus, belladona, aconitum, ſtramonium.

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

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 alkalis, 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.

METALS.

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; perhaps 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 $7\frac{1}{10}$: melts, inflames, and riſes at 700°; bluiſh.
Iron 8, 169°; bluiſh; capable of welding; magnetic.
Manganeſe $6\frac{8}{10}$; bluiſh.
Cobalt $7\frac{7}{10}$; bluiſh.
Nickel 9; whitiſh red: magnetic.
Lead $11\frac{4}{10}$; 585°; bluiſh.
Tin $7\frac{7}{10}$; 408°; white.
Copper 9; 1410°; pale-red; volatile.

Biſmuth

Biſmuth $9\frac{3}{10}$; 460°; whitiſh-red.
Antimony $6\frac{7}{10}$; 809°; riſes, white.
Arſenic $8\frac{1}{10}$; 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 SALTS.

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 deplogiſticated to a certain degree are ſoluble both in acids and alkalis.

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 alkalis, 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 Goslar; 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. *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°.
4. *Super-vitriolated Mercury;* syn. Vitriol of mercury; contains 19 of acid.
5. *Super-nitrated Mercury;* syn. Nitre of mercury; contains 28 of acid.
6. *Super-nitrated Silver;* syn. Salt of silver, lunar caustic or cathartic; contains 36 of acid.
7. *Super-muriated Antimony;* syn. Butter or caustic of antimony.
8. *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.
9. *Super-tartarised Antimony;* syn. Emetic tartar; soluble in 3 waters at 60°.
10. *Super-acetated Lead;* syn. Salt or sugar of lead, or of saturn; 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. Subcretised, or aërated iron.
2. *Submuriated Mercury;* syn. Sweet mercury sublimate, calomel, aquila alba. It contains 14 of acid and water, and 86 of mercury.
3. *Subacetated Lead;* syn. Cerusse, white lead.
4. *Subacetated 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. *Dealcalised Sulphurcaline Antimony;* syn. Precipitated sulphur of antimony, *golden sulphur of antimony.*

4. *Sulphurated*

4. *Sulphurated Mercury;* ſyn. Native and factitious cinnabar, ore of mercury, vermilion, Æthiops mineral, antimonial Æthiops.

WATER.

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 fixt alkalis, vitriolated, muriated, aërated; the vegetable, oftener nitrated; aërated volatile alkali; muriated barytes; lime, and ſometimes magaeſia, vitriolated, nitrated, and aërated; ſometimes clay, ſuper-vitriolated and muriated; iron, vitriolated, muriated, aërated; 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 alkalis; 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 aërated lime; aërated alkali for magneſia and clay; nitrated ſilver and muriated barytes for acids united with other ſubſtances; alcohol for acidated alkalis: any acid for ſaline or earthy hepar; &c.

AIRS.

Pure Air, ſpecific gravity 119.
Phlogiſticated Air 140.
Acid of Chalk 220.
Common Air 152.
Inflammable Air 10.
Nitrous Air 157.
Marine Acid Air 252.
Vitriolic Acid Air 309.
Alkaline Air 70.

Caſes

Cases of DOUBLE *Elective Attraction.*

BY WATER.

1. Phlogisticated iron with Vitriolated copper,		1. Phlogisticated 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 fixt alkali or earth,		3. Acidated fixt alkali or earth and Aërated volatile alkali.
4. Vitriolated alkali, magnesia, or clay, with Nitrated, muriated, or acetated lime,		4. Vitriolated lime, and Nitrated, muriated, or acetated alkali, magnesia, or clay.
5. Vitriolated or muriated alkali or earth with Nitrated or acetated lead, mercury, or silver,		5. Vitriolated or muriated lead, mercury, or silver, and Nitrated, or acetated alkali, or earth.
6. Vitriolated, nitrated, or acetated silver, with Muriated alkali, or earth,	Give	6. Vitriolated, nitrated, or acetatated alkali, or earth, and Muriated silver.
7. Vitriolated vegetable alkali with Muriated lime, or lead,		7. Vitriolated lime, or lead, and Muriated vegetable alkali.
8. Tartarised or acetated vegetable alkali, with Nitrated mercury,		8. Tartarised or acetated mercury and Nitrated vegetable alkali.
9. Vitriolated volatile alkali, with Nitrated, muriated, or acetated fixt alkali,		9 Vitriolated fixt alkali, and Nitrated, muriated, or acetated volatile alkali.
10. Vitriolated, nitrated, or muriated volatile alkali, with Acetated fixt alkali or lime,		10. Vitriolated, nitrated, or muriated fixt alkali or lime, and Acetated volatile alkali.
11. Vitriolated mercury with Muriated mineral alkali,		11. Vitriolated mineral alkali and Muriated mercury.

BY HEAT.

1. Muriated mercury with Sulphurated antimony,	Give	1. Muriated antimony and Sulphurated mercury.

THE 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 reproduced 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 like 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 matters employed in manure, or from the

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 remarkable 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 fetid ones weaker in ſmell, than in the oppoſite circumſtances. To theſe particulars therefore due regard ought to be had in the collecting of 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 one another. 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 above-mentioned, vegetables are alſo, like animals, obnoxious to diſeaſes and death. Theſe, whether occaſioned by paroxyſms of 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 ſhall be diſeaſed or dead, whilſt the reſt enjoy 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

the plants more evidently ſenſitive, the diſeaſes exhibit a very cloſe propinquity 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, ſhrivel 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. Thoſe changes we next proceed to examine.

1. *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 it by the admixture of thoſe that are; as by adding to them, along with a proper quantity of water, a portion of the yeſt 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 yeilds 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, but the 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 alkalis; and is therefore the gas ſylveſtre of Helmont, and the fixed air or aërial 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 lee 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 ſeveral 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 ſacharine, 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 obſerveable 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, and which liquors 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 ſubduable 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 theſe differ from wine properly ſo called.

1. 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 of all others 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 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 above mentioned.

"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 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. For the properties of this ſpirit, ſee ALCOHOL.

"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 aërial 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 therefrom by the addition of water: it ſeems therefore to be of a gum-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 be informed, 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 products of the vinous, 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 in a quieſcent ſtate, being 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 lee, 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 is allowed to remain with the unctuous feculent matter above mentioned. When thus ſituated, the vinegar quickly loſes its tranſparency, aſſumes a blackiſh colour, has loſt 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 to the laſt ſtage, viz.

3. The Putrefactive Fermentation.

"From the preceding phenomena, I think 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 is 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 depoſites 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 ſomewhat ſolid parts, its coheſion is now broke 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 is 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 aërial 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 all 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 aceſcence: and farther, theſe changes frequently happen notwithſtanding that the matter is under thoſe conditions which are favourable to the preceding ſtages.

"From the foregoing ſketch, the importance of the 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. It, however, preſents to us new products, the importance of which is well known in chemiſtry, in medicine, and in the arts. The neceſſity of being well acquainted with the ſeveral facts (for of theory we know none ſatisfactory),

tisfactory), will appear in the pharmaceutical hiſtory and preparation 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 to it 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 baſon containing the ſame: by this contrivance, the liquid matters are collected in the receiver, and the aëriform 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 now 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 thus analyſed in cloſe veſſels and in the 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. Independent alſo of this difference, the nature of the products themſelves is 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 aerial 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 fixed Salts of Vegetables.

"When vegetable charcoal has been burnt, there remains a quantity of ashes or cinders of a blackish gray 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 whatever 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.

"Alkalis 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 deliquate into a liquor. The fixed alkalis, 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 alkalis, viz. the volatile: they dissolve and form glass with

with all 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 nicely, 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. This alkali has acquired theſe names, becauſe it is the baſe of the common marine or ſea ſalt: it differs from the vegetable alkali in being more eaſily cryſtallizable; 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 alkalis in general, and alſo ſome of thoſe marks by which the vegetable and mineral alkalis are diſtinguiſhed from each other; but for a more particular hiſtory of their chemical and medicinal properties, we refer to the account of their 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 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 ſelenite 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 unmixed with one another, 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 with one another 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 what form they exiſted in, and what qualities they were endowed with, 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.

1. Groſs 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.

"Groſs 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 greatly 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 lohochs 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 watery 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 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 acride 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. Gross sebaceous Matter.

"From the kernels 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 subject 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 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 oleosaccharum 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 homogene 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 subtile 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 alkalis, they undergo various changes of colour, and some of the less odorous acquire considerable degrees of fragrance; whilst fixt alkalis universally impair 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, that naturally exiſt in vegetables, is exhalable by that degree of heat, except 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 a one 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 commixtures, the operator ought to be on his guard; for when a ſtrong acid, particularly that of nitre (of which hereafter) 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 roots, 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 ſubtility 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 intermedia 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.

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 ſpirit 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 render 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 uninflammable: 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 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 is 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 ſtillatitious oil may be tranſ-"formed 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 a variety of experi-

ments

ments is related, of 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 is 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 of 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 ſolutions 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 one another.

"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 thoſe which are the moſt 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 alkalis, 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, along 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 one another at different ages of the plant. Of the ſour 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 above mentioned 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 excellently freed from their impurities; and perfect ſaccharine concretions obtained from many of our indigenous ſweets.

There is another kind of ſaline matter obtained from ſome reſinous bodies, particularly from benzoine, of a different nature from the foregoing, and ſuppoſed by ſome of 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 concretes 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, ſalop, 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 of all others 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 amylum 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 indiſſufible, 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 appproaches perhaps nearer to the coagulable lymph of animal blood than to any other ſubſtance.

"The fixed alkalis, by means of heat, diſſolve the gluten vegeto-animale,

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, amylum, 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 no doubt 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.

11. 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, then, the *baſe* or *nidus*, in which the real colouring-matter is embodied, that chemiſtry has as yet reached to; 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 ſubtile 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 alkalis. 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, and camphor from a much ſmaller number: but groſs oil, reſin, gum, and ſaline mater, 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 contrarywiſe, when ſpirit is applied firſt, all that 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 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

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

6. The foregoing principles are, ſo 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 marſhmallow 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 another. 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 to nearly agree reſpectively among themſelves, in their medicinal qualities, as well as in their pharmaceutic properties.

10. But eſſential oils, reſins, and gum-reſins, differ greatly 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; which laſt quality the oil is entirely free from. 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 one another, the whole compound diſſolving almoſt equally in aqueous and ſpirituous menſtrua.

11. There are ſome ſubſtances alſo, which, from their being totally diſſoluble in water, and not at all 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 ſubtile 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 diffuſed through it a fragrant principle more ſubtile 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.

SECT. II.

ANIMALS.

"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 reſoluble into the ſame proximate principles which we found in vegetables, viz. water, air, earth, and the 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 pungency 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 alkalis, and quicklime, are alſo found to be powerful ſolvents of animal-

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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 a homogeneous fluid, is compoſed of ſeveral parts, eaſily ſeparable from each other, and which even the microſcope can 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 a third 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 Farenheit, it is converted into a jelly. This coagulation of the ſerum is alſo owing to its containing a matter of the ſame nature as that in the craſſamentum, viz. the coagulable lymph: whatever, then, coagulates animal-blood, produces that effect on this concreſcible 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 metalic 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 meaſure 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 ma

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. Cartheuſer 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 emunctories, from throwing off their more volatile and corruptible parts.

The doctrine of putrefaction, both in living and in dead animals, has lately received great light from the curious and intereſting experiments and obſervations of Dr Pringle. He obſerves, That if the corruption is great and ſudden, a fever or a flux enſue; but that if the accumulation of corrupted matter is ſo ſlow, that the body becomes habituated to the putrefaction, a ſcurvy prevails. Hence the frequency of this laſt diſtemper in long voyages, on board unventilated ſhips, from corrupted air and proviſions; in marſhy countries, from ſimilar cauſes; and in a leſs degree in all nothern countries, in moiſt ſituations, from a want of due perſpiration.

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

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 maliguant 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 putreſied 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 dinguiſhed 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 alſo found to reſiſt putrefaction. "Sugar and camphor are alſo found to be powerfully antiſeptic. Fixed air, or the aërial 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 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. Dr Pringle finds, 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. See the Appendix to his Obſervations on the Diſeaſes of the Army.

It was obſerved in the preceding ſection, that ſome few vegetables, in the reſolution of them by fire, diſcover ſome agreement in their matter with

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.

SECT. 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 that of 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 thoſe 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 reſinous 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 ſynop-

noptical 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 them into inſipid, or nearly inſipid 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, incruſtrates the ſides of the caverns, or hangs in iſicles 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 limewater. For a more full inquiry into this ſubject, ſee the articles FIXED AIR, LIME-WATER, and CAUSTIC LEYS."

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 their combinations therewith, ſaline concretes ſoluble in water.*

1. Magneſia alba: *compoſing with the vitriolic acid a bitter purgative liquor.* 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 li-

liquor which remains after the cryſtalliſation of ſea-ſalt from ſea-water; and from the fluid which remains uncryſtalliſed in the putrefaction of ſome 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 liquor.* This earth alſo has not been found naturally pure. It is obtained 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 digeſtion 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 ferrugineous 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.

3. 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 *ſelenitæ*; the fibrous ſtony maſſes improperly called *Engliſh talc*; and the granulated *gypſa*, or *ploſter 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. See the Characters of the Earths of the firſt Claſs.

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 claſtic to be eaſily pulveriſed; ſoft, ſo as to be cut with a knife. In theſe reſpects ſome of the gypſeous earths greatly 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 their flexibility, brightneſs, and unctuoſity.

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

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 the 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 dephlogiſticated by detonation with nitre." This change in their obvious properties is generally accompanied with a notable 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 chronical 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 metalic form and qualities again by the ſkillful 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 aërial 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 inquiry 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 of the whole it is not the leaſt unexceptionable. 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 is called *ſaccharum ſaturni*: and thus 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 vitriol, the *nitrous* from nitre or ſaltpetre, and the *marine* or *muriatic* 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. Notwithſtanding that heat is 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

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are all highly corroſive, inſomuch 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 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; emits no viſible vapours 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 are ſtopt 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 it was before combined with, 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 moderate ſtrong fire, the acid will unite with the directly inflammable part of the charcoal, and compoſe therewith a genuine ſulphur. Common brim-

brimſtone is no other than a combination of the vitriolic acid with a ſmall proportion of inflammable matter. With any kind of inflammable matter that 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 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 that was before combined with the acid, and the ſmall quantity of aſhes afforded by the coal.

This property of the nitrous acid deflagrating with inflammable ſubſtances, and that of the vitriolic of 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, as we ſpeak, a remarkable attraction to phlogiſton), ſuffers a change which renders it capable of diſſolving gold and platina. Whether this change is 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 eſſaying, 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 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 alkalis, with magneſia, and with quicklime. The ſalts reſulting from theſe combinations are very imperfectly known. This ſalt has been called *ſedative*, from its ſuppoſed virtues as an anodyne and refrigerant remedy; but phyſicians now-a-days 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 is a diſtinct acid; and as 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 above mentioned, 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 phamaceutical 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 ſylveſtre* 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 magneſia alba. Thus, if the vitriolic, or almoſt any other acid, is 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 is 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 alkalis*, &c.: and when deprived of this acid, they are called *cauſtic*; as *cauſtic calcareous earths*, *cauſtic alkalis*, &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 alkalis; 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 is added, the lime is redilſolved, and the liquor recovers its tranſparency. Water impregnated with aërial 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 is 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 aërial 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 alkalis*, whether fixed or volatile, are really neutral ſalts, compounded of the aërial acid and pure alkali: like other acids, it unites with theſe bodies, diminiſhes their cauſticity, and effects their cryſtallization. In ſpeaking therefore of *pure alkalis*, 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 aërial 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 the 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,

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, converſively, they ſay it has a greater affinity to fixt alkalis than to thoſe of the volatile kind, they mean only that it will 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.

I 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 earths 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,

Vi-

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. The Doctor's method is more short, and may be seen in the Syllabus alluded to, and which we have inserted in this work."

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 substances, Volatile alkali, Clay.			

TABLE *of* ATTRACTIONS *continued.*

BY WATER.

Fixed Air, or Aërial Acid.	Vegetable Alkali, Mineral Alkali, Volatile Alkali, Terra Ponderosa.	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 substances, Water,	Vitriolic acid, Tartarous acid, Nitrous acid, Muriatic acid, &c.	

BY HEAT.

	Acid of borax, Vitriolic acid, &c.		

TABLE *of* ATTRACTIONS *continued.*

BY WATER.

Phlogiſton.	Brimſtone.	Hepar Sulphuris.	Alcohol.
Nitrous acid, Vitriolic acid, Marine acid dephlogiſticated by manganeſe, Silver, Mercury, Antimony, Copper Tin, Lead, Iron, Zinc, Water.	Lead, Tin, Silver. Mercury, Antimony, Iron, Fixed alkalis, 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 alkalis, 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 alkalis, 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 alkalis, Unctuous oils.		Tartarous acid, Muriatic acid, Vitriolic acid, Nitrous acid, &c. Fixed alkalis, Volatile alkali, Unctuous oils.

TABLE *of* ATTRACTIONS *continued.*

BY WATER.

Antimony.	Mercury.	Silver.	Water.
Muriatic acid, Vitriolic 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 is 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

Cases of DOUBLE *Elective Attraction.*

BY WATER.

1. Phlogiſticated iron with Vitriolated copper,	Give	1. Phlogiſticated 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 alcali with Salited lime, lead, or ſilver,		7. Vitriolated lime, lead, or ſilver, and Salited vegetable alkali.
8. Tartariſed or acetated vegetable alcali, with Nitrated mercury,		8. Tartariſed 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 and Salited mercury.
4. Salited mercury with Sulphurated antimony,		4. Salited antimony and Sulphurated mercury.

Fa-

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

BY WATER.

1. Iron in its metallic ſtate with Vitriol 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 tartar 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 Factitious cinnabar.

CHAP.

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. I ſhall here endeavour to give a general idea of their ſtructure, and of the principles on which they are built.

Furnaces.

The moſt 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 this 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, parallelopipedal, 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 one another 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 one another; 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 fit 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 above mentioned; 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 ways 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

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 above mentioned, 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 choaked up by the ashes.

This furnace is designed only for heating bodies exterior to it. Its canal or flew, 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 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.

PLATE. III. Nº 1.

FIG. 1.



FIG. 2.



FIG. 3.

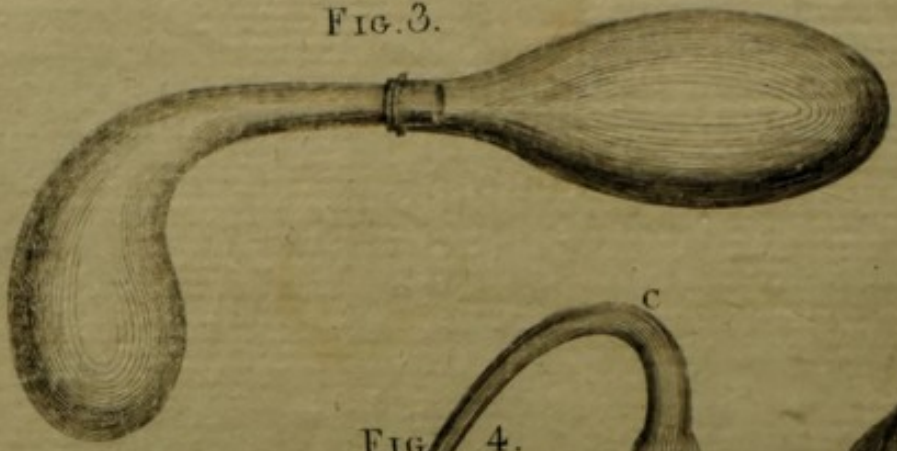


FIG. 4.

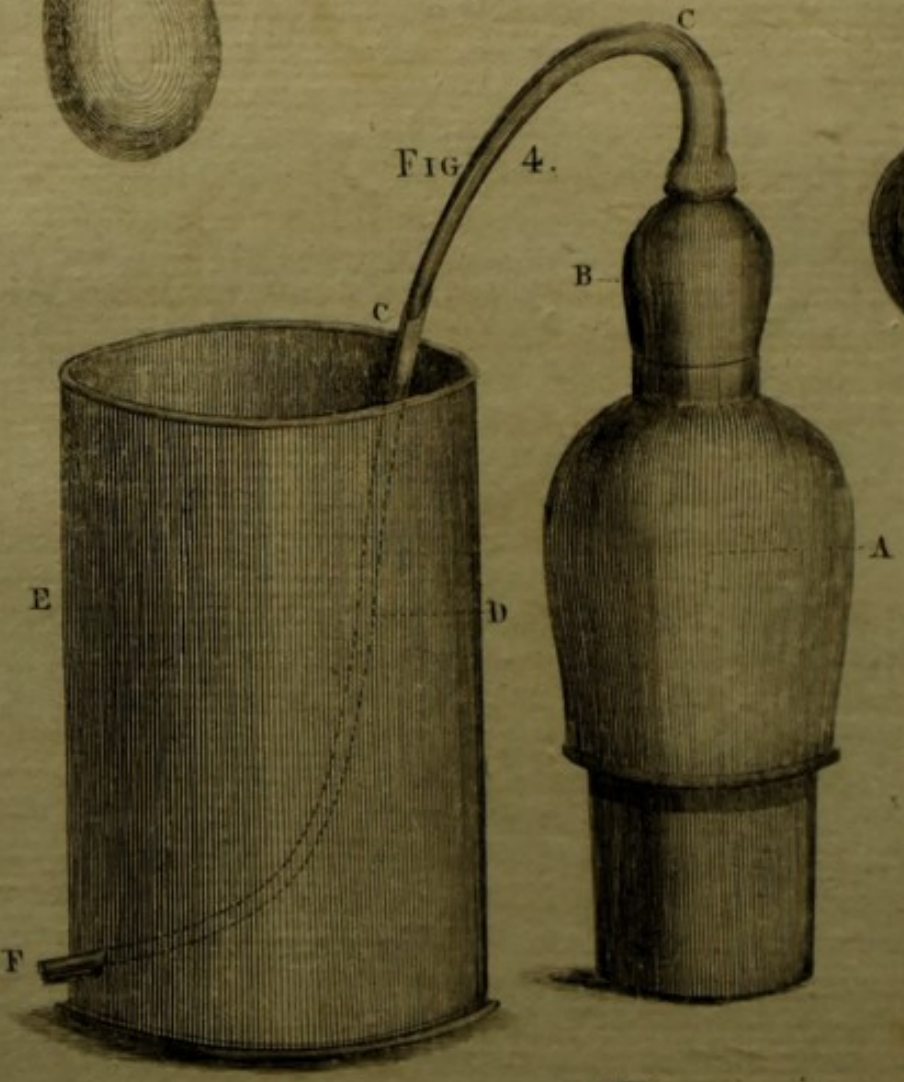




FIG. 5.

PLATE. III. Nº 2.

FIG. 6.



FIG. 7.

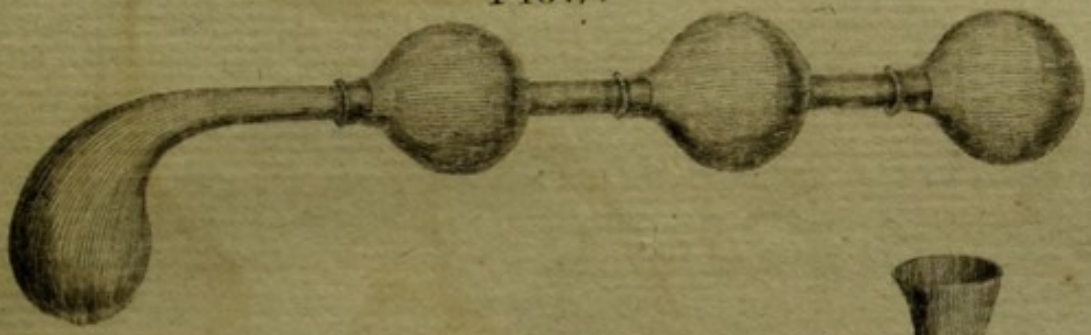


FIG. 8.

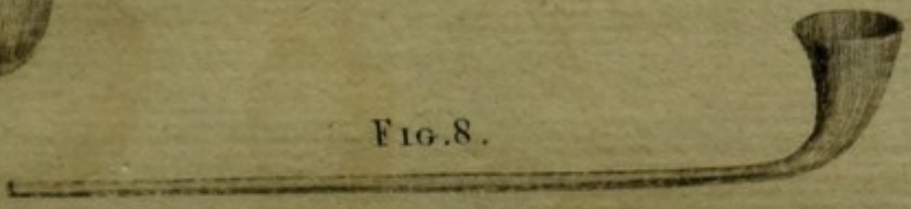
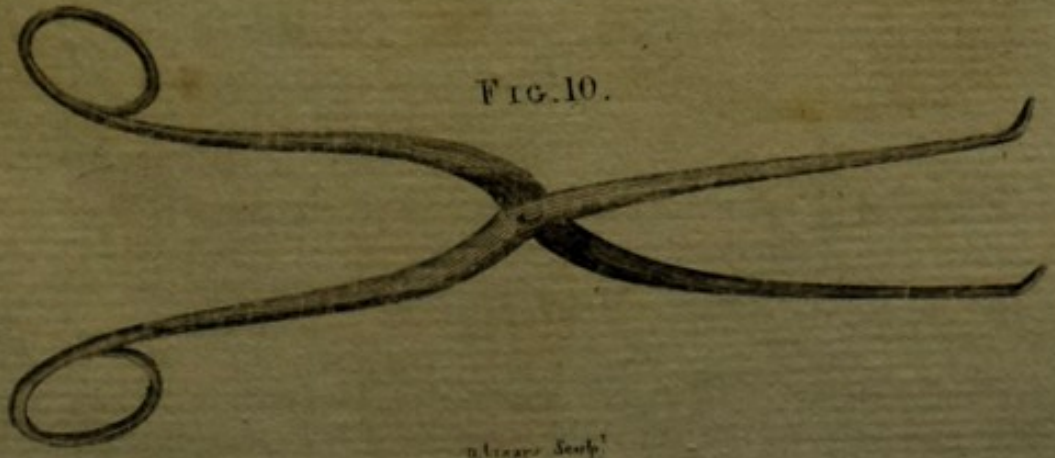


FIG. 9.



FIG. 10.



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, lately publiſhed: "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 that we are yet acquainted with. 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.

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 the 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,

* Thoſe who wish to be provided with Dr Black's furnace, may apply to Mr John Sibbald in College-wynd, Edinburgh. They may be procured, of different ſizes, from L. 1 : 10 s. to L. 2 : 10 s. price. This gentleman has had the advantage of making theſe inſtruments under the immediate inſpection of Dr Black.

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 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 exhibite 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 eſſaying; 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 eſſayed 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 phoſphrous 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, phoſphours 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.

"The

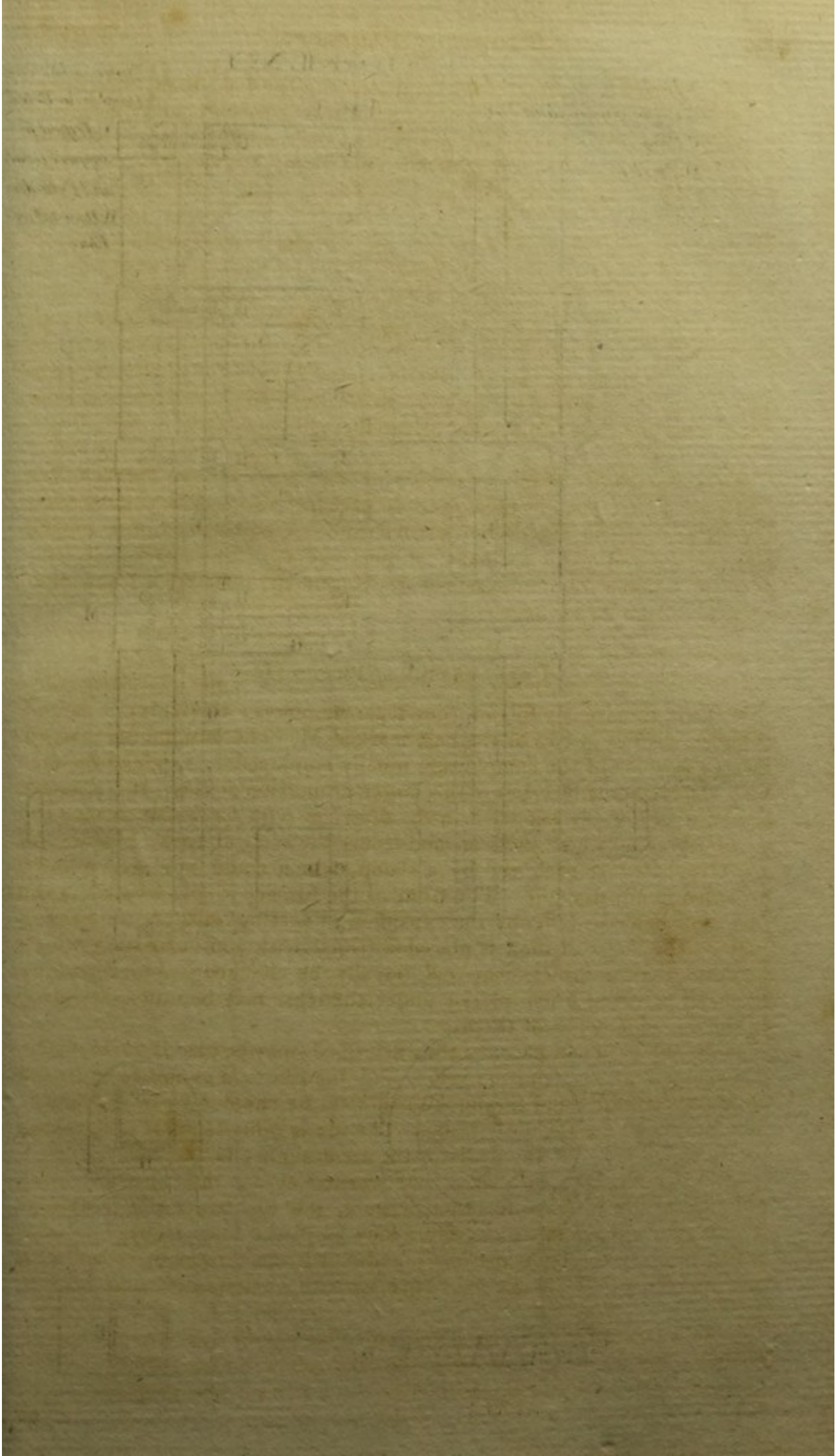
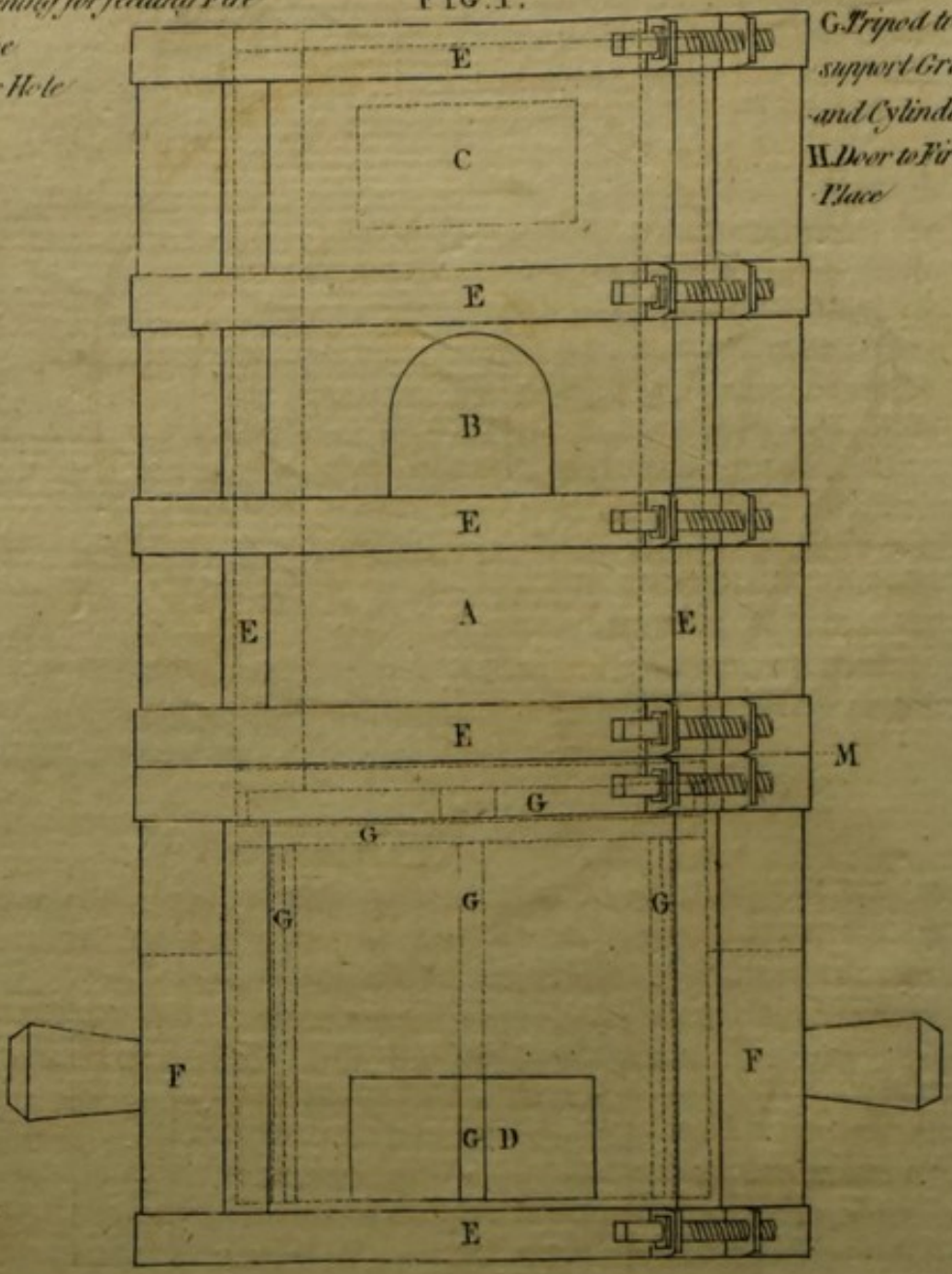


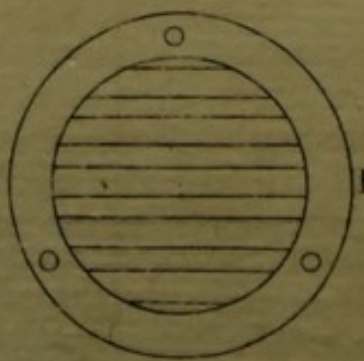
PLATE II. No 1.

FIG. 1.

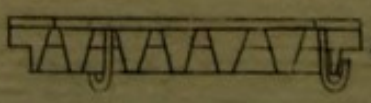
A. Body of Furnace
B. Opening for feeding Fire
C. Flue
D. Air Hole

E. Braces w^t Screws
F. Doors to Air Holes
G. Tripod to support Grate and Cylinder
H. Door to Fire Place









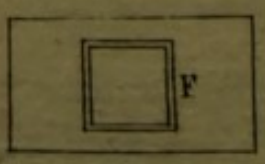


PLATE II. No. 2.

FIG. 2.

A. Thickn.s of outw.d Furnace
B — of y.e larger Cylinder
C — of y.e small D.o
D. Grate of large Cylinder
E. Braces
F. Doors to Air Holes

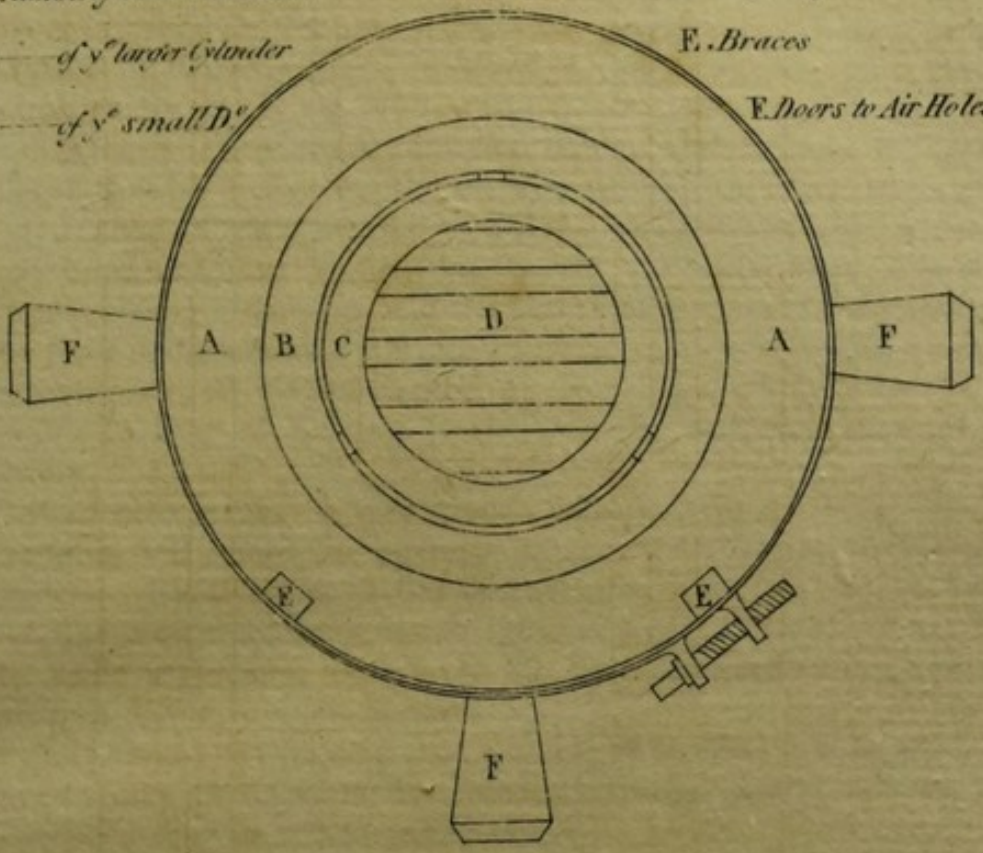
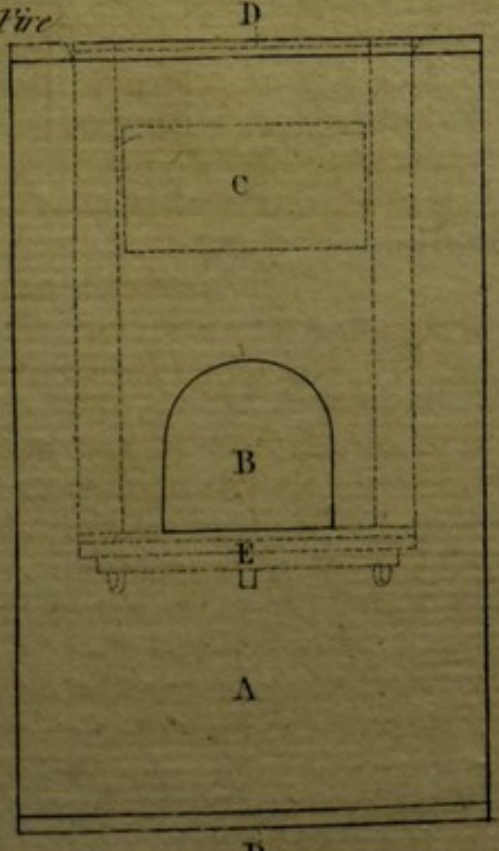


FIG. 3.

A. Body of the Cylinder
B. Opening for feeding Fire
C. Flue
D. Iron Braces
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 riveted.

"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, Sturbridge 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 fed 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 through 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, 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

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 readily explained to others. Their ſize is, however, *proper* on other accounts.

"It ſhould be further noticed, that if this kind of furnace is made on a ſmaller ſcale, it will 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 that of boiling water: but this advantage renders it uſeleſs for proceſſes which require a greater heat, and for which ſand or other like 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 adviſeable to expoſe the hot glaſs ſuddenly to the cold air, which will ſoon occaſion it to crack, than to endanger throwing down the ſublimed matter among the feces by a blow.

As

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 above mentioned.

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 incondenſible vapours, we receive them into a jar inverted under a baſon of water or quickſilver, as directed in our Analyſis of Vegetables by fire.

"Beſides theſe, there are 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 freeſt 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, the Doctor 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 operoſe compoſitions recommended for theſe intentions by the chemical writers.

Vessels.

In this place, I 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 ones 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 others, the most perfect kind of earthen ware 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; 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 saccharum saturni, that is, a salt composed of lead and the acetous acid; of which hereafter.

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

PLATE I. N°1.

FIG. 1.



FIG. 2.

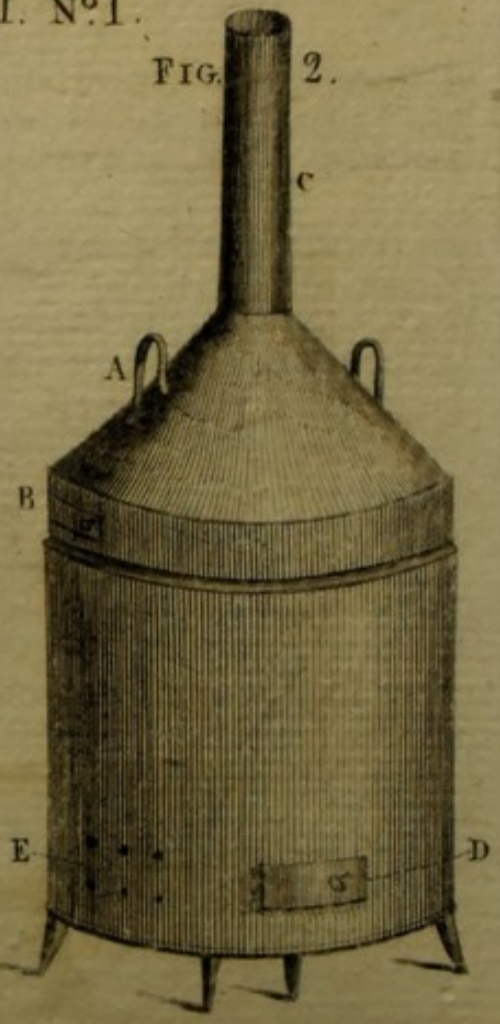


FIG. 1.

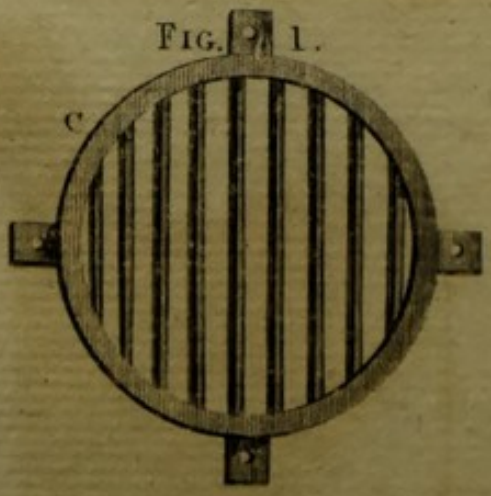


FIG. 4.

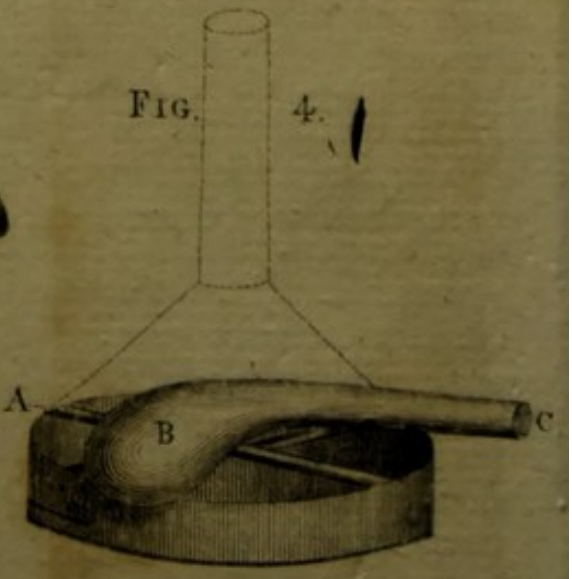


FIG. 3.

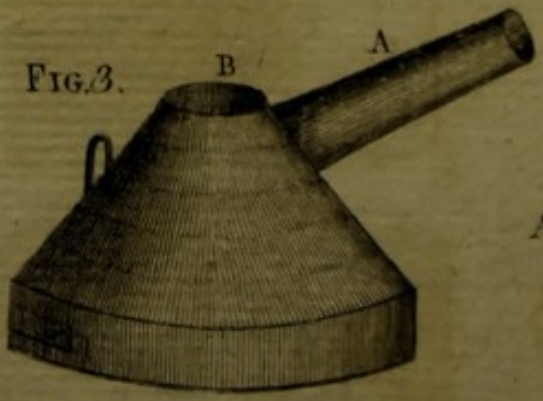
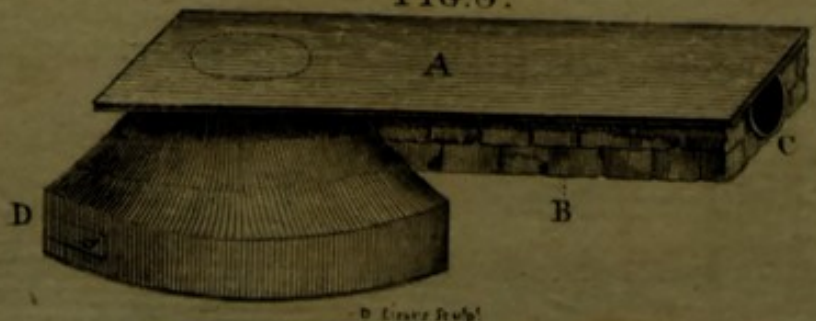


FIG. 5.



D. Lizars Sculp.

PLATE I. No. 2.

FIG. 6.

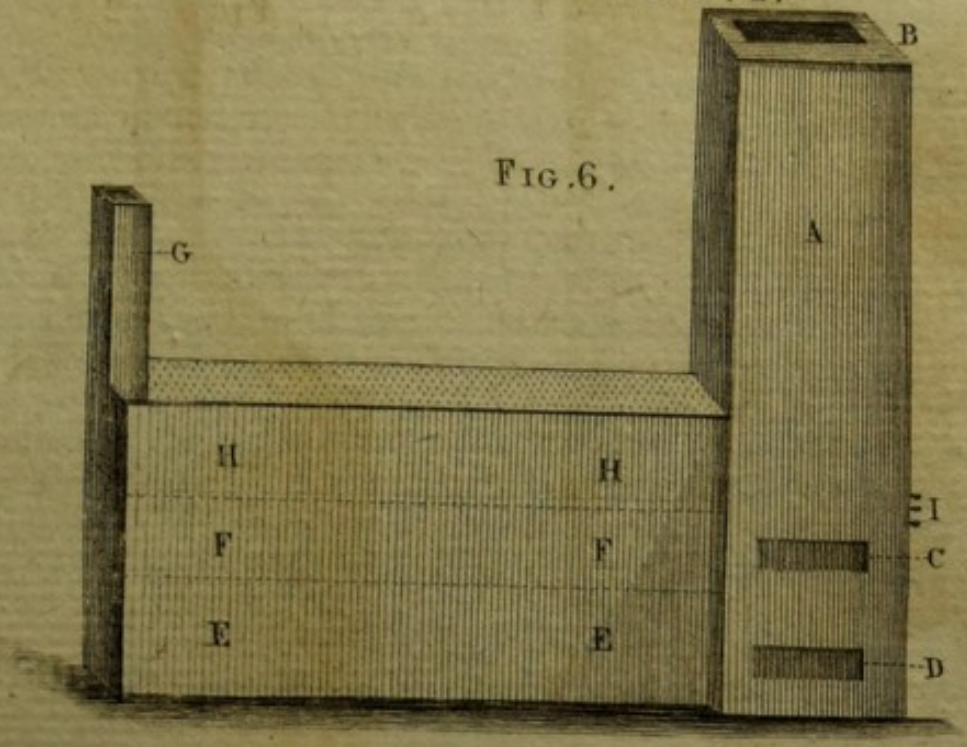


FIG. 7.

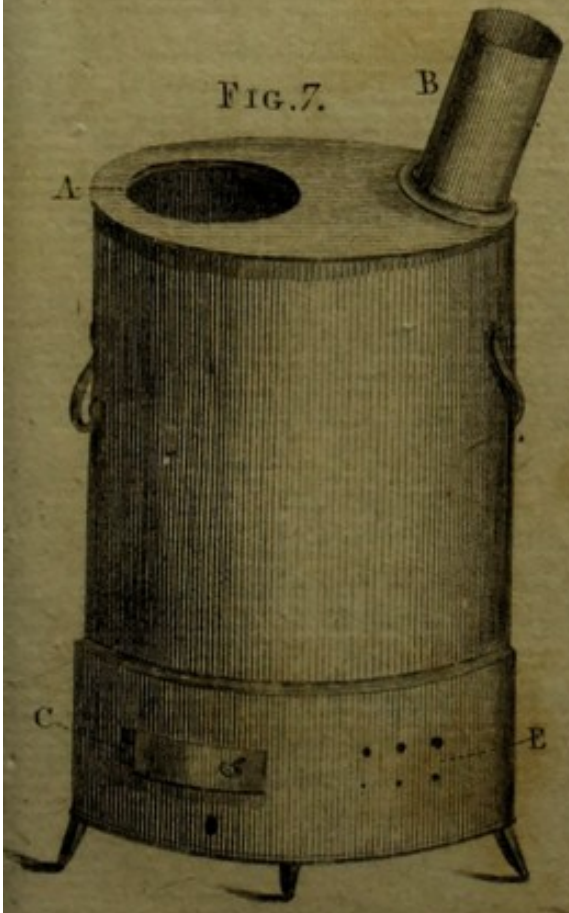


FIG. 8.

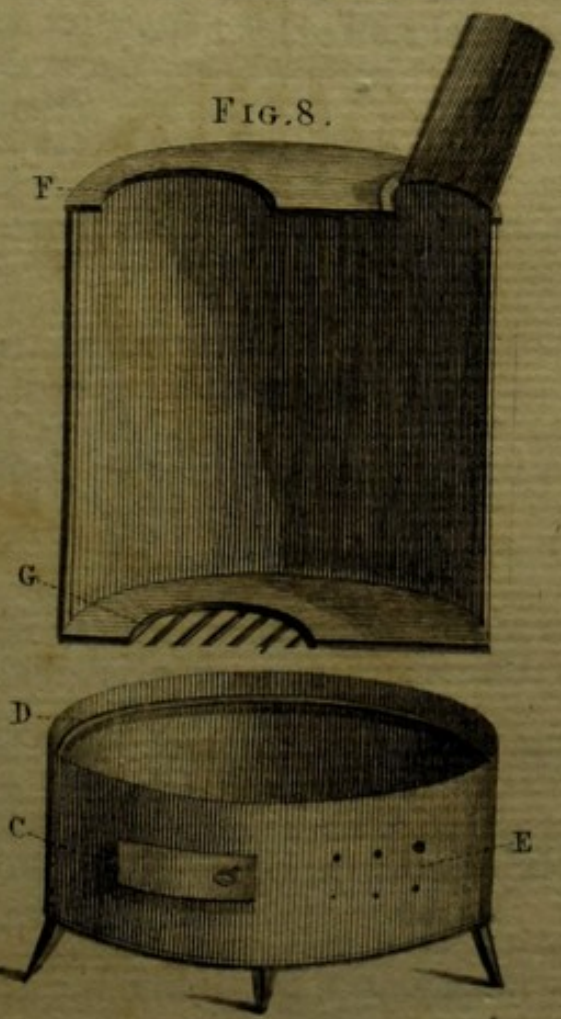


FIG. 9.

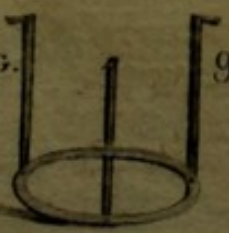


FIG. 10.



D Lizars Sculp.

in 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 pharmaceutic 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 matraſs, 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 of copper, 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. The Doctor finds it unneceſſary 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

" 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 puting 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 goods beſides. The firſt we call Troy, the latter Averdupois weight.

The

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 (which is the only one made uſe of in this, Dr Lewis's, work) 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 goldſmiths 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 437½. The Troy dram 60; the Adverdupois 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 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 any are directed in leſſer denominations than the ounce, as theſe ſubdiviſions, uſed by the apothecaries, are made to a different ounce. The mercurial plaſter of the late Pharmacopœia, and the mercurial cerate of the preſent, if compounded by the Averdupois weight, contain about one-ſixth leſs quickſilver than if made, as they ought to be, by the Troy. This error prevailed ſo far as to be received in ſome former editions of the London Pharmacopœia itſelf; but is now happily removed.

Measures.

The meaſures employed with us in pharmacy are the common wine meaſures.

A gallon	contains	eight pints (*libræ.*)
The pint		ſixteen ounces.
The ounce		eight drams.

By a ſpoonful is underſtood in the London diſpenſatory the meaſure of half an ounce; in the Edinburgh, it was half an ounce weight in ſyrups, and three drams in diſtilled waters.

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 promiſcuous uſe of weights and meaſures, and of different kinds of theſe, have in the laſt edition of their Pharmacopœia entirely rejected meaſures, and employ the Troy weight in directing the quantity either of ſolid or fluid ſubſtances. They have, however, taken all poſſible care that the proportion of the ſimples and ſtrength of the compound, ſhould neither be increaſed nor diminiſhed by this alteration. This change in the Edinburgh Pharmacopœia muſt be very particularly adverted to."

A table of the weights of certain meaſures of different fluids may on many occaſions be uſeful, both for aſſiſting the operator in regulating their proportions in certain caſes, and for ſhowing the comparative gravities of the fluids themſelves. I have therefore drawn up ſuch a table for a pint, an ounce, and a dram meaſure, of thoſe liquids, whoſe gravity has been determined by experiments that can be relied on. The wine gallon contains 231 cubic inches; whence the pint contains $28\frac{7}{8}$, the ounce $1\frac{103}{1152}$, and the dram $\frac{211}{1152}$ of a cubic inch.

	Pint weighs			Ounce meaſure weighs	Dram meaſure weighs
	ounces	drams	grains	grains	grains
Inflammable Spirits.					
Æthereal ſpirit of wine	11	1	36	336	42
Highly-rectified ſpirit of wine	12	5	20	380	$47\frac{1}{2}$
Common-rectified ſpirit of wine	13	2	40	400	50
Proof ſpirit	14	1	36	426	53
Dulcified ſpirit of ſalt	14	4	48	438	55
Dulcified ſpirit of nitre	15	2	40	460	$57\frac{1}{2}$
Wines.					
Burgundy	14	1	36	426	53
Red Port	15	1	36	456	57
Canary	15	6	40	475	$59\frac{1}{2}$
Expreſſed Oils.					
Oil olive	14	0	0	420	$52\frac{1}{2}$
Linſeed oil	14	2	8	428	$53\frac{1}{2}$
Eſſential Oils.					
Oil of turpentine	12	1	4	364	$45\frac{1}{2}$
of orange-peel				408	51
of juniper-berries				419	52
of roſemary				430	54
of origanum				432	54
of caraway-ſeeds				432	54
of nutmegs				436	$54\frac{1}{2}$
of ſavin				443	$55\frac{1}{2}$
of hyſſop				443	$55\frac{1}{2}$
of cummin-ſeed				448	56
of mint				448	56
of pennyroyal				450	$56\frac{1}{2}$

Oil

	Pint weighs			Ounce measure weighs	Dram measure weighs
	ounces	drams	grains	grains	grains
Essential Oils *continued.*					
Oil of dill-seed				457	57
of fennel-seed				458	57
of cloves				476	59½
of cinnamon				576	49½
of saffafras				503	63
Alkaline Liquors.					
Lixivium saponarium, *Pharm. Lond.*	16	0	0	480	60
Spirit of sal ammoniac	17	1	10	515	64½
Strong soapboilers ley	17	6	24	534	67
Lixivium tartari	24	0	0	720	90
Acid Liquors.					
Wine-vinegar	15	3	44	464	58
Beer-vinegar	15	6	56	476	59½
Glauber's spirit of salt	17	4	0	525	65½
Glauber's spirit of nitre	20	2	40	610	76
Strong oil of vitriol	28	5	20	860	107½
Animal Fluids.					
Urine	15	5	20	470	59
Cows milk	15	6	40	475	59½
Asses milk	16	0	0	480	60
Blood	16	1	4	484	60½
Waters.					
Distilled water	15	1	50	456	57
Rain-water	15	2	40	460	57½
Spring-water	15	3	12	462	58
Sea-water	15	5	20	470	59
Quicksilver	214	5	20	6440	805

CHAP

CHAPTER III.

Of the Pharmaceutical Operations.

SECT. I.

Solution.

Solution is an intimate commixture of ſolid bodies with fluids into one ſeemingly homogene 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, howevr, no danger from the words themſelves, if we do not derive them from a miſtaken theory. Solution cannot take place, except 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 is diſſolved in a ſolution of fixed alkali, the brimſtone is ſaid to be diſſolved in the *humid way*; but if the brimſtone is 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: 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 alkalis and calcareous earths in acids. But if the ſolution is 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 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 (ſee Part III. Chap. viii. Sect. 6.) 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 notable 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 great 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 Farenheit'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	0	0
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 that 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	Nitre	diſſolved afterwards	Sal ammoniac 10		
	Common ſalt		Nitre 10	Sal ammoniac	2
	Nitre		Fixed alkali 7	Common ſalt	2
	Common ſalt		Nitre, near 2	Fixed alkali	2½
	Volatile alkali		Nitre 4	Sugar	2
	Sal ammoniac		Common ſalt 2½		
	Soluble tartar		Nitre 2		
	Vitriolated tartar		Fixed alkali 2		
	Glauber's ſalt		Nitre 1	Sugar	1
	Epſom ſalt		Sugar 6		
	Borax		Fixed alkali 2		

In regard to the other claſs of bodies which water is a menſtruum for, 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 quantities liquors of different conſiſtencies. This fluid takes up likewiſe, when aſſiſted by trituration, the vegetable gummy reſins, as ammoniacum and myrrh; 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 more ſubtile parts of eſſential oils, ſo as to become impregnated with their ſmell and taſte.

Rectified *ſpirit of wine* is the menſtruum of the eſſential oils, reſins, and camphor 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 ſurperfluous 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 is previouſly calcined by fire, than in its metallic ſtate.

The *marine* acid diſſolves zinc, iron, and copper; and though it ſcarce 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 acuated,

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 alkalis."

Solutions made in water and in spirit of wine possess the virtues of the body dissolved; whilst oils generally sheathe its activity, and acids and alkalis 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. "This 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 aëreal moisture. This process is termed *deliquiation*.

SECT. II.

Extraction.

THE liquors which dissolve certain substances in their pure state, serve likewise to *extract* them from admixtures of other matter. Thus rectified spirit of wine, 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

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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 *ſteeping* 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 matraſs (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 matraſs, if its neck is 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 or 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, the moſt elegant ſtomachic of the ſhops.

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, depoſite in cold weather a part of their contents, and thus become proportionably weaker: a circumſtance which deſerves particular regard.

SECT. 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, woollen, or other cloth; and more perfectly by *filtration* through a ſoft bibulous kind of paper made for this uſe.

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 (as ſome have been accuſtomed to do), 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.

SECT. 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 like 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 exhaled 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 cryſtalliſation.

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 alkalis, eſpecially the mineral, when fully ſaturated with fixed air or the aërial acid, aſſume a cryſtalline form; but theſe cryſtals are not ſo perfect as when the ſame alkalis are united with the other acids. The volatile alkalis 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 exhibite 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 ſalts 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 cryſtralliſation, 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 from admixtures of one another; 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 (though by no means generally) 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 ſalpetre. 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 cryſtallized; 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 one another. 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 apart."

SECT. 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 one another.

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 lixivia 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, oftentimes, 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 ſeperates and throws down the ſulphur, only in virtue of the acid uniting with, and neutralizing the alkali by which the ſulphur was held diſſolved: conſequently, if the precipitation is made with the vitriolic acid, and the acid gradually dropt in till the alkali is 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 is 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*.

SECT. VI.

Evaporation.

THIS 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 for 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 in the Second Part.

SECT.

SECT. 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 the buſineſs of this is 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 by 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 greatly different from one another: 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. See Part II.

As the oils of many vegetables do not freely diſtill 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 throw a *worm*, or long ſpiral pipe, placed in a veſſel of cold water called a *refrigeratory*; and being their condenſed, runs down into a *receiver*. In the ſecond part of this work, we ſhall give ſome improve-

ments

ments in this apparatus for particular purpoſes; with directions for performing the ſeveral proceſſes to the greateſt advantage.

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 ſtreight-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 is allowed it, 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 ſtopt 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."

SECT. VIII.

SUBLIMATION.

AS all fluids are volatile by heat, and conſequently capable of being ſeparated, in moſt caſes, from fixed matters, by the foregoing proceſs; ſo various ſolid bodies are ſubjected to a ſimilar treatment. Fluids are ſaid to *diſtill*, 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 ſubjects of this operation are, volatile alkaline ſalts; neutral ſalts, compoſed of volatile alkalis 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*.

The fumes of ſolid bodies, in cloſe veſſels, riſe but little way, and adhere to that part of the veſſel where they concrete. 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. The moſt commodious apparatus for the ſublimation of particular ſubſtances, and the moſt advantageous method of conducting the ſeveral proceſſes, will be delivered in the Second Part.

SECT. 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 betwixt wooden plates, in the common ſcrew-preſs, as long as any juice runs from it. See Part III.

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 canvaſs 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 almond, the pungency of the muſtard remaining entire in the cake left after the expreſſion.

SECT. X.

Exsiccation.

THERE are two general methods of exſiccating or drying moiſt bodies; in the one, their humid parts are exhaled by heat; in the other, they are imbibed or abſorbed by ſubſtances, whoſe ſoft and ſpongy texture

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 only ſuperficially mixed, as when earthy or indiſſoluble powders are grounded 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 oftentimes 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 *fæculæ*: 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 before 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."

SECT. XI.

Comminution.

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 to be occaſionally added: this prevents the finer powder of the firſt from flying off, and the others from cohering under the peſtle. Camphor is commodiouſly powdered by rubbing it with a little rectified ſpirit of wine.

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Tough ſubſtances, as woods, the peels of oranges and lemons, &c. are moſt conveniently *raſped;* 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 it particles, disjoined by the fluid, from reuniting together into larger maſſes.

Powders are reduced to a great degree of fineneſs by *triturating*, 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 alterative 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 ſubtile parts from the groſſer, diſtinguiſhed by the name of *elutriation*, or *waſhing over.* See Part III.

SECT.

* 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 finely 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 that 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 alterative 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.

SECT. XII.

Fusion.

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 which ſulphur has no effect upon 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.

SECT. 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, runs 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 that 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 to melt in, 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, oftentimes 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 ſcoriæ 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 which the calx was made from.

PART

PART II.

THE

MATERIA MEDICA.

WRITERS on the Materia Medica have taken great pains in arranging the various articles of which it is compoſed into different diviſions and ſubdiviſions, according to their real or reputed medicinal powers.

It has been imagined, that "the whole Materia Medica is reducible "under the three diſtinctions of *Alteratives*, *Evacuants*, and *Reſtoratives*: "the firſt comprehending all that has any power to alter the conſtitution, "without ſenſibly increaſing or diminiſhing any of the natural evacua- "tions; the ſecond, whatever viſibly promotes thoſe diſcharges; and the "third, all that contributes to leſſen them, and make the increaſe greater "than the waſte." Theſe diviſions being too general, they are broken into ſubdiviſions; and theſe again are farther divided into different claſſes, under more reſtrained denominations, as *cardiac*, *carminative*, *hyſteric*, *ſtomachic*, &c.

Specious as this plan may appear to be, I am afraid that the execution of it, to any uſeful purpoſe, would require a far more extenſive knowledge of the nature and operation of medicines than has yet been attained to. A juſt and uſeful method of ſimples is ſcarcely to be expected, while thoſe properties, on which the method is founded, are imperfectly known, and in many articles only conjectural.

In all the arguments that have been hitherto contrived upon this plan, there

there appears a ſtriking incongruity among the ſeveral articles of which even the ultimate ſubdiviſions are compoſed: ſubſtances extremely diſſimilar being claſſed together, as cantharides and tea, tobacco and bran, hemlock and cowſlips, ſcurvygraſs and reſins, arum root and liquorice, wormwood and parſneps, cinnamon and nettles, raſberries and chalk, artichokes and alum, cloves and coffee, muſtard-ſeed and black cherries, &c. Nor are theſe incongruities to be laid always to the charge of the authors; the nature of the ſyſtem itſelf rendering them often unavoidable: for the particular effect which intitles a medicine to a particular claſs, may be produced by ſubſtances very diſſimilar and even oppoſite in their genera. powers. Thus the alvine excretions are reſtrained by ſtarch, wax, tormentil root, opium. Among the capital diuretics are cantharides, nitre, fixed alkaline ſalts, ſquills. It ſhould ſeem that the method of arrangement cannot be a juſt one, which requires ſubſtances ſo diſcordant to be ranked together; and which farther requires each of theſe ſubſtances to be ranked over again, in other claſſes, along with other ſubſtances to which they are equally diſcordant.

There is alſo a material imperfection in this ſcheme, even in the primary diviſions. Steel and its preparations act, in different circumſtances, both as evacuants and reſtoratives. Mercury and antimony afford, in their different preparations, both evacuants and alteratives; and there are many other drugs which are ſometimes uſed as alteratives, and ſometimes as evacuants. Indeed, all evacuants, in diminiſhed doſes, ſeem to act merely as alteratives. It ſhould ſeem therefore that 'the diviſion of the whole "Materia Medica into alteratives, evacuants, and reſtoratives,' is a diviſion not founded in nature, even if there was no objection to the vague meaning of the appellations themſelves.

Cartheuſer has divided the Materia Medica on a plan which appears more rational. Inſtead of the operations of medicines in the human body, which are precarious, complicated, and greatly diverſified according to the doſe, the preparation, and the circumſtances of the patient, he takes for the baſis of his arrangement their more ſimple, obvious, and conſtant properties, as bitterneſs, ſweetneſs, aſtringency, acidity, &c. Having conſidered the nature of bitterneſs, for inſtance, in general, he examines what effects medicines poſſeſſed of this property are capable of producing in the body, and in what circumſtances they may be expected to be ſerviceable; and then proceeds to an account of the particular bitters.

This method is of real uſe, but its uſe is limited to a ſmall part of the Materia Medica. There are many of the medicinal ſimples in which we can diſtinguiſh no prevailing qualities of this kind; there are many in which different qualities are blended together; and many which, though ſimilar in theſe kinds of qualities, are very diſſimilar in their operations in the human body. Thus though gentian and aloes agree in having a bitter taſte, and ſugar and manna in being ſweet, their medicinal virtues are reſpectively very different. Accordingly the author is obliged in ſome caſes to depart from his general plan, and found the diviſion on the medicinal effects: he makes one claſs of purgatives and emetics, and another of vaporoſe inebriants and narcotics. This laſt claſs conſiſts of tobacco, elder-flowers, ſaffron, opium, and poppy ſeeds; ſubſtances certainly very diſcordant in all their qualities that relate to medicinal intentions.

In

In this work, inſtead of attempting a medicinal diſtribution of the ſimples, which I apprehend not to be practicable to any good purpoſe, and which, as hitherto executed, ſeems more likely to miſlead the reader than to promote true knowledge, I ſhall take them in the order of the alphabet; and even in this order we ſhall ſeldom, perhaps, find ſubſtances more diſſimilar come together, than thoſe which have been joined into one claſs by ſome of the ſyſtematic writers. It may be proper, however, to premiſe ſome general obſervations on certain claſſes of medicines, in Cartheuſer's manner, and thus to preſerve the leſs exceptionable parts of his plan, with ſome amendments.

ACIDS.

Claſs 1. *Vegetable* { *native;* as ſorrel, wood ſorrel, juice of lemons, oranges, barberries, and other fruits. *produced by fermentation;* as vinegar and tartar.

Claſs 2. *Mineral:* the acids of vitriol, nitre, common ſalt, "borax, and the aërial acid."

THE medical effects of acids, duly diluted and given in proper doſes, are, to cool, quench thirſt, correct a tendency to putrefaction, and allay inordinate motions of the blood. By theſe qualities, in hot bilious temperaments and inflammatory diſorders, they frequently reſtrain immoderate hemorrhagies, and promote the natural ſecretions; in ſome kinds of fevers, they excite a copious diaphoreſis, where the warm medicines, called *alexipharmac*, tend rather to prevent this ſalutary diſcharge.

Vegetable acids, particularly the native juices of certain plants and fruits, have ſome degree of a ſaponaceous quality; by means of which they attenuate or diſſolve viſcid phlegm, and thus prove ſerviceable in ſundry chronical diſorders. Inveterate ſcurvies have often yielded to their continued uſe, eſpecially when given in conjunction with medicines of the acrid or pungent kind. Experience has ſhown, that the acrid antiſcorbutics have much better effects when thus managed, than when exhibited by themſelves; hence in the *ſucci ſcorbutici* of our diſpenſatory, Seville orange juice is uſefully joined to that of the *cochlearia* and *naſturtium*.

Mineral acids inſtantly coagulate the blood; and when injected into the veins of living animals, produce immediate death. It is therefore probable, that theſe ſalts do not enter the maſs of blood. The vegetable acids are ſaid to dilute the blood; and they ſeem capable of entering our circulating fluids: they are alſo poſſeſſed of a *refrigerant* power, by which they diminiſh the heat of the body and the ſpaſmodic tenſion of the veſſels. Hence in ſome fevers, they relax the conſtriction in the firſt paſſages, in the ſkin, and in the kidneys; whereby the

ſecretions of theſe ſeveral organs are reſtored or increaſed. The mineral acids, or their combinations with vinous ſpirits, when largely diluted with water, have a ſimilar, but perhaps a leſs certain effect. The muriatic acid, however much diluted, or in whatever form it is exhibited, ſeems always to poſſeſs a very conſiderably ſtimulating power.

'Though moſt of the mineral acids, when largely diluted, ſeem to poſſeſs a refrigerant power; yet ſome of them (eſpecially the vitriolic when taken in a leſs diluted ſtate) exert an aſtringent and tonic power; and are thereby uſeful in certain affections of the ſtomach proceeding from weakneſs and indigeſtion: it is often proper to cover their acrimony by combining them with mucilaginous matters; and when taken in this way, the vitriolic acid is an uſeful remedy in the *melæna* of the moderns, the diſeaſe ſuppoſed by the ancients to be a purging of their *atra-bilis*, or black bile.

'The acid of borax, or the ſedative ſalt of Homberg, was formerly in great reputation in the cure of many febrile affections: but, as we before obſerved, its fame has paſſed away, and no notice is now taken of it by practitioners. Fixed air, or the aërial acid, has alſo been highly extolled in the cure of ſcurvy and other putrid diſeaſes, in *phthiſis pulmonalis*, and in ill-conditioned ulcers: it ſeems indeed to poſſeſs very conſiderable antiſeptic powers; but it has alſo been alleged, that it has cured cancers, and diſſolved the ſtone in the bladder forſooth. It is frequently taken by throwing into the ſtomach a portion of mild or aërated alkali, and forthwith a quantity of any acid; or the acid and alkali are firſt mixed, and then taken in what is called the ſtate of effervеſcence. When exhibited in either of theſe forms, it has been ſuppoſed to ſhow a tonic power upon the ſtomach; and this indeed appears probable. Theſe are the famous anti-emetic mixtures; and indeed they may be uſed in any caſe where we wiſh to adminiſter fixed air: but ſaline mixtures have alſo proved anti-emetic after the effervеſcence had ceaſed; and it is remarkable, that in dyſpeptic affections, we often find it proper to uſe magneſia in its calcined ſtate in order to avoid the evolution of this very acid. Water impregnated with this acid, or the artificial Pyrmont waters, have been uſed for the ſame purpoſes as the effervеſcing mixtures. But, after all, the medical effects of fixed air have not yet been fully underſtood, or at leaſt explained to us.'

Vegetable acids are prejudicial in cold, pale, phlegmatic habits, where the veſſels are lax, the circulation languid, bile deficient, and the power of digeſtion weak. In theſe caſes, an acid is often generated in the ſtomach, from milk and moiſt vegetable food; which, whilſt it continues in the firſt paſſages, occaſions uneaſineſs about the ſtomach, flatulencies, ſometimes griping pains of the bowels, and vomitings.

Insipid Earths *capable of* absorbing Acids.

Oyſter-ſhells,
Crabs-claws, and eyes ſo called,
Coral, red and white,
Pearls,
Bezoar,
Chalk,
Some marles,
Magneſia,
Limeſtones,
Marbles,
Spars.

THE virtues of theſe ſubſtances are, to abſorb or deſtroy acidities in the firſt paſſages, and conſequently to remove ſuch diſorders as proceed from that cauſe. The cordial, alexipharmac, antifebrile, and other like virtues attributed to theſe medicines, appear to have little foundation; or at beſt are only ſecondary ones. 'In fevers, attended with a tendency to putrefaction of the fluids, theſe earths may do very much harm; as they are found, by the experiments of Sir John Pringle, to poſſeſs a ſeptic power.' When united with the acid, they form a neutral ſaline compound, poſſeſſing ſome degree of an aperient and detergent quality, though too inconſiderable to be in general regarded.

The abſorbent earths were all ſtrangers to medicine in the earlier times; and their uſe does not ſeem to have been eſtabliſhed before the laſt century; when ſome practitioners, from an opinion that moſt kinds of diſeaſes proceeded from a preternatural acid, introduced a great variety of antacid bodies, both of the earthy and ſaline kind; and very liberally exhibited them on almoſt every occaſion.

It is certain that in children, and adults of a weak conſtitution, and whoſe food is chiefly of the vegetable aceſcent kind, ſundry diſorders are occaſioned by acidities: theſe readily diſcover themſelves by ſour eructations, the pale colour of the face; and in children, by the ſour ſmell and green colour of the alvine feces, which are ſometimes ſo manifeſtly acid as to raiſe a ſtroug effervеſcence with alkaline ſalts. In theſe caſes, and theſe only, the uſe of abſorbent earths is indicated.

If there are really no acid juices in the ventricle, theſe earths are apt to concrete with the mucous matter uſually lodged there into hard indiſſoluble maſſes; which have ſometimes been thrown up by vomit, or found in the ſtomach upon diſſection. Hence indigeſtion, loſs of appetite, naufeæ, vomiting, obſtructions of the bowels, and other diſorders. Sometimes the ſtomach and inteſtines have been found lined with a cruſt, as it were, of theſe earthy bodies: which muſt not only have prevented the ſeparation of the gaſtric liquor, but likewiſe cloſed the orifices of the lacteal veſſels, ſo as to obſtruct the paſſage of the chyle into the maſs of blood.

Some ſuppoſe the earthy powders capable (without the concurrence of any acid) of paſſing the lacteals along with the chyle; and allege, in ſupport of this opinion, that when triturated with water, they are in part taken up, and carried with it through a filtre of paper; the filtrated liquor leaving,

upon evaporation, a portion of whitiſh earthy matter. This experiment (allowing the conſequence to be juſtly drawn from it) is itſelf erroneous: the reſiduum proceeds from the earth naturally contained in the water, not from that employed in the experiment; for if pure diſtilled water be made uſe of, it will leave no reſiduum, though long triturated or digeſted with the earth.

All theſe bodies, particularly thoſe of the animal kind, contain, beſides their purely alkaline earth, a portion of glutinous matter. An inſtance of this we have in crabs-eyes; which, if macerated in the weaker acids, or the ſtronger ſufficiently diluted with water, the earthy part will be diſſolved, and the animal glue remain in form of a ſoft tranſparent mucilage. The glutinous ſubſtance increaſes their tendency to concrete in the ſtomach; and hence thoſe which contain leaſt thereof ſhould be preferred to the others. The mineral earths contain the leaſt of this kind of matter, and ſome of them are very eaſy of ſolution; chalk for inſtance; which may therefore be given with greater ſafety than the animal abſorbents. Theſe ſubſtances, diveſted of their conglutinating matter by means of fire, are reduced into acrimonious calces or limes, and thus become medicines of a different claſs. "They are alſo, however, uſed for the ſame purpoſes as the aërated earths, and in the form of lime-water, they are eſpecially adapted for thoſe caſes accompanied with much flatulence, where the evolution of fixed air is often hurtful: and this evolution will always take place when an aërated earth is preſented to the acid matter in the ſtomach."

The teeth, bones, hoofs, and horns of animals, conſiſt of ſomewhat ſimilar principles with the animal abſorbents above mentioned ("ſee *Cornu cervi calcinatio*"); the quantity of gelatinous matter is ſo large, as to defend the earthy part from the action of weak acids; whilſt the earth, in its turn, protects the gluten from being eaſily diſſolved by watery liquors. Hence theſe bodies, in their crude ſtate, though recommended as poſſeſſing ſingular virtues, are not found to have any virtue at all.

Experiments have been made for determining the degree of ſolubility, or comparative ſtrength of theſe earths; the principal of which are arranged in the two following tables, one taken from Langius, and the other from Homberg.

Table

Table of the quantity of Acid deſtroyed by different Abſorbents.

Ten grains of	Some kind of limeſtones	deſtroyed the acidity of	160	Drops of ſpirit of ſalt.
	Oyſter-ſhells		120	
	Chalk		100	
	Shells of garden-ſnails		100	
	Calcined cray-fiſh		100	
	Pearl		80	
	Tooth of the ſea-horſe		80	
	Volatile ſalts		80	
	Fixed ſalts		60	
	Coral, red and white		60	
	Crabs-eyes		50	
	Egg-ſhells		50	
	Mother of pearl		50	
	Crabs claws		40	
	Jawbone of the pike fiſh		30	

Table of the quantity of abſorbent Earths ſoluble in Acids.

		Grains.
576 Grains of ſpirit of ſalt, diſſolved of	Crabs-eyes	216
	Mother of pearl	144
	Pearls	128
	Oyſter-ſhells	156
	Hartſhorn	165
	Coral	186
	Oriental bezoar	118
	Occidental bezoar	123
	Quick-lime	199
	Slacked lime	193
576 Grains of ſpirit of nitre diſſolved of	Crabs-eyes	297
	Mother of pearl	202
	Pearls	219
	Oyſter-ſhells	236
	Hartſhorn	234
	Coral	233
	Oriental bezoar	108
	Occidental bezoar	144
	Quick-lime	180
	Slacked lime	216

Theſe experiments do not ſufficiently aſcertain the point intended by them; in the firſt ſett, the quantity of acid is too vague and indetermined: in the ſecond, we are not told whether the acid was perfectly ſa-

ſaturated: and in both, the acids made uſe of were ſo very different from any that can be ſuppoſed ever to exiſt in the human body, that little can be concluded from them with regard to the medical effects of theſe abſorbents. Trial ſhould have been made with the mild vegetable acids; as the juices of certain fruits, ſour fermented liquors, or rather with ſour milk. Nevertheleſs theſe tables, though not ſo perfect as could be wiſhed, have their uſe in the hands of ſuch as can make proper allowances.

EARTHS *not diſſoluble in Acids, or other Liquors.*

The earths of this kind may be ranged in two claſſes;

Claſs 1. *Hard cryſtalline Earths:* As the Ruby, Garnet, Emerald, Sapphire, Hyacinth, and other precious Stones; Cryſtal, Flint, &c.

THESE kinds of ſubſtances were introduced into medicine, and many fabulous virtues attributed to them, by the ſuperſtition of the earlier ages. Some of them are ſtill preſerved in foreign pharmacopœias, but at length very juſtly expunged from our's, notwithſtanding what ſome late writers of repute ſpeak of their medical virtue. Theſe indiſſoluble hard bodies are not capable of producing any other effect than by their rigid angular particles (which, though levigated with the utmoſt care, the microſcope ſtill diſcovers in them) to offend or wound the inteſtines. In levigation they wear off ſo much from the hardeſt marble inſtruments, as will equal or exceed their own weight: from this circumſtance we may account for their having ſometimes appeared to act as *abſorbents*. Some of theſe ſtones, expoſed to a vehement fire, become in ſome meaſure friable; but nevertheleſs remain indiſſoluble. Moſt of the coloured ones by this treatment loſe their colour, and in this ſtate prove nearly of the ſame quality with common cryſtal; ſuch are, the ſapphire, emerald, amethyſt, and cornelian: others melt into a blackiſh vitreous matter, from which a portion of iron is obtainable by proper fluxes; as the hyacinth and garnet. Geoffroy concludes from hence, that thoſe ſtones really poſſeſs ſome medical virtues, depending upon their metallic part: but the quantity of metallic matter, ſufficient to give them a conſiderable tinct, is ſo exceedingly ſmall, and ſo incloſed in a ſtony matter, not at all ſoluble by any of the known menſtrua, as ſcarce to admit of any poſſibility of its acting in the human body.

Claſs 2. *Softer Earths; the* talky, gypſeous, *and* argillaceous.

THE talcs and gypſums have rarely been uſed as medicines. Some of the former, from their unctuous ſoftneſs and ſilver hue, ſtand recommended externally as coſmetics; and ſome of the latter,

on little better foundation, internally as aſtringents. But they have long been deſervedly rejected by the judicious practitioners. They ſeem to poſſeſs the ill qualities of the alkaline earths (concreting with the mucus of the ſtomach, &c.) without any of their good ones.

Several of the clays, boles, and terræ ſigillatæ, were highly celebrated by the ancients as aſtringents and alexipharmacs, and ſome of them ſtill continue in eſteem; tho' it is certain they have no great claim to the virtues that have been attributed to them. Their real effects are, to give a greater degree of conſiſtency to the fluids in the firſt paſſages, and in ſome meaſure defend the ſolids from their acrimony.

Moſt of theſe bodies contain, beſides the tenacious indiſſoluble earth, which is their principal characteriſtic, (1) A portion of an earth ſoluble in acids, ſimilar to thoſe of the firſt ſection: (2) Of acid, ſeparable by diſtillation in a ſtrong fire; this acid is always of the ſame nature with that obtained from vitriol, ſulphur, and alum: (3) The coloured ones contain likewiſe ſmall quantities of iron, reducible, by inflammable fluxes, into its metallic form. In conſequence of the firſt of theſe ingredients, theſe earths may be looked upon in ſome meaſure as abſorbent: the acid appears to be united with a part of the abſorbent earth, into a ſaline compound, approaching to an aluminous nature: whence they have ſome degree of aſtringency: whether they receive any peculiar virtue from the iron, is greatly to be doubted; ſince it is in a very crude ſtate, and in quantity extremely ſmall.

Theſe earths unite with water into a turbid liquor, ſlippery and ſmooth to the touch, and remain for ſome time ſuſpended; the ſand, grit, or other groſſer matters which are often found naturally mingled with them, ſubſiding. They may be freed by means of acids from their alkaline earth; by coction in water, from their ſaline matter; and the coloured ones from their iron by digeſtion in aqua regis, the only menſtruum we are acquainted with that will extract the ferruginous matter of argillaceous and bolar earths. Thus purified, they have all nearly the ſame appearance and qualities. Expoſed to a ſtrong fire, they loſe their ſoft glutinous quality, and are reduced into hard maſſes indiſſoluble as at firſt.

GLUTINOUS *Vegetable and Animal Subſtances.*

Claſs 1. *Vegetable.*

Pure gums:
Tragacanth,
Seneca,
The gums of cherry, plum, and other European trees.

Vegetables abounding with mucilage:
Orchis roots,
Althæa root,
Quince-ſeeds, &c.

GUMS and mucilages are glutinous vegetable productions, of no particular taſte or ſmell, ſoluble in water, but not in vinous ſpirits, or in oils. (See page 15.) They differ from one another only in degree of tenacity: the more tenacious are called *gums*; thoſe which

which are leſs ſo, *mucilages*. The firſt naturally exude from certain trees and ſhrubs; the latter are extracted by art. Almoſt all vegetable ſubſtances contain ſome portion of theſe, which after the reſinous part has been extracted by ſpirit, may be ſeparated from the remaining matter by means of water.

'The general virtues of theſe kind of ſubſtances are, to ſheath acrimony, and to diminiſh irritation in general. Hence they are found uſeful in certain caſes of diarrhœa and ſtrangury.'

Claſs 2. *Animal.*

Most animal ſubſtances (the fat excepted) contain a viſcous matter, in many reſpects ſimilar to the foregoing, and capable of being extracted by ſtrong coction in water.

Animal glues and jellies have the general qualities of the vegetable gums and mucilages; with this difference, that the former are more nutrimental, and apt to run into a putrid ſtate. Conſidered as the ſubjects of chemiſtry, the difference betwixt them is very great: thoſe of the animal kind are changed by fire into a volatile alkaline ſalt, and a fetid oil; the vegetable into an acid liquor, and a very ſmall portion of oily matter, conſiderably leſs fetid than the former.

Soft UNCTUOUS *Subſtances.*

Claſs 1. *Inſipid vegetable Oils: and Subſtances abounding with them;* as almonds, and the kernels of moſt fruits; linſeed, and the medullary part of ſundry other ſeeds.

Claſs 2. *Animal Fats;* as ſpermaceti.

UNCTUOUS vegetables unite with water, by trituration, into a milky liquor: and give out their oil upon expreſſion.—Theſe kinds of oils and animal fats diſſolve not in any menſtruum except alkaline ones; which change their quality, and reduce them into a ſoap, diſſoluble in water, but more perfectly in vinous ſpirits: from this compound, the oil may, by a ſkilful addition of acids, be recovered in a purer ſtate than before, and rendered ſoluble, like eſſential oils, in ſpirit of wine. See p. 13.

The medical virtues of theſe ſubſtances are, to obtund 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, commonly called emulſions, though much leſs emollient than the oils themſelves or animals fats, have this advantage, that they may be given in acute or inflammatory diſtempers, without danger of the ill conſequences which the others might ſometimes produce: fats and oils, kept in a degree of heat no greater than that of the human body, ſoon become rancid and acrimonious; whilſt emulſions tend rather to grow ſour.

ASTRINGENTS.

Galls,
Tormentil root,
Biſtort root,
Balauſtines,
Terra Japonica,
Acacia, &c.

ASTringent ſubſtances are diſtinguiſhed by a rough auſtere taſte; and changing ſolutions of iron, eſpecially thoſe made in the vitriolic acid, of a dark purple or black colour.

Aſtringents yield their virtues by infuſion both to water and vinous ſpirits; generally in greateſt perfection to the former. Oils extract nothing from them; nor do they give over any of their virtue in diſtillation: nevertheleſs their aſtringency is conſiderably abated by evaporating decoctions of them to the conſiſtence of an extract; and totally deſtroyed by long keeping.

'The medical effects of theſe ſubſtances are, to increaſe the power of coheſion in various parts of the animal body, to increaſe what may be called the tonic power of the ſyſtem, to diminiſh the capacity of containing veſſels, to diminiſh irritablility, and perhaps, in ſome degree, ſenſibility:' hence they are uſed in diſorders proceeding from a debility or flaccid ſtate of the ſolids; in hæmorrhagies, from a thinneſs of the blood, laxity or rupture of the veſſels; in preternatural diſcharges of other kinds, after the offending matter has been duly corrected or evacuated; and in external relaxations: they are alſo uſed as antiſeptics.

In ſome caſes, they produce the effects of aperients; the veſſels, conſtringed and ſtrengthened by them, being enabled to protrude the circulating juices with greater force.

A good deal of caution is requiſite in the uſe of theſe medicines, eſpecially thoſe of the more powerful kind. In plethoric habits, inveterate obſtructions, critical evacuations, and in all kinds of fluxes in general before the morbific matter has been expelled, or where there is any ſtricture or ſpaſmodic contraction of the veſſels; aſtringents prove eminently hurtful. Where critical dyſenteries or diarrhœas are reſtrained by ſtyptics, the acrimonious matter, now confined in the inteſtines, corrodes or inflames them; and ſometimes occaſions a gangrene of the parts.

SWEETS.

Sugar,
Honey,
Raiſins,
Liquorice, &c.

THE vegetable ſweets are a very numerous tribe; almoſt every plant that has been examined, diſcovering in ſome of its parts a ſaccharine juice. The bottoms of flowers, and moſt kinds of ſeeds and grain when they begin to vegetate, are remarkably ſweet.

Vegetable ſweets are extracted both by water and vinous ſpirits; moſt readily by the firſt, but in greateſt perfection by the latter. Nothing of their taſte ariſes in diſtillation with either of theſe liquors: nevertheleſs, by long boiling with water they become ſomewhat leſs agreeable; but are not much injured by being treated in the

the ſame manner with rectified ſpirit.

The purer ſweets, as ſugar, promote the union of diſtilled oils with watery liquors, and prevent the ſeparation of the butyraceous part from milk: from this quality, they are ſuppoſed to unite the unctuous part of the food with the animal juices. Hence ſome have concluded, that they increaſe fat: others, that they have a contrary effect, by preventing the ſeparation of the unctuous matter which forms the fat from the blood: and others, that they render the juices thicker and more ſluggiſh, retard the circulation and cuticular excretion, and thus bring on a variety of diſorders. But ſweets have not been found to produce any of theſe effects in any remarkable degree: common experience ſhows, that their moderate, and even liberal, uſe is at leaſt innocent; that they reconcile, not only to the palate, but the ſtomach alſo, ſubſtances of themſelves diſguſtful to both; and thus render ſalutary what would otherwiſe be injurious to the body.

The unctuous and mucilaginous ſweets, as the impure ſugars, liquorice, &c. have a conſiderable degree of emollient and lubricating virtue.—Thoſe accompanied with a manifeſt acid, as in the juices of moſt ſweet fruits, are remarkably relaxing; and if taken immoderately, occaſion diarrhœæ and dyſenteries, which ſometimes have proved fatal.

Acrids.

Acrids are ſubſtances of a penetrating pungency. Applied to the ſkin, they inflame or exulcerate it; chewed, they occaſion a copious diſcharge of ſaliva: and ſnuffed up the noſe, provoke ſneezing.

Theſe ſubſtances, conſidered as the ſubject of pharmacy, may be divided into three claſſes;

yielding their acrimony
1. In diſtillation with water: as horſe-radiſh, muſtard, ſcurvy-graſs, &c.
2. By infuſion only: as the greater celandine, pyrethrum, &c.
3. Neither to infuſion, nor diſtillation: as arum and dracunculus.

The general effects of acrid medicines are, to ſtimulate the veſſels. In cold leucophlegmatic habits, and where the contractive power of the ſolids is weak, they prove powerful expectorants, deobſtruents, diuretics, and emmenagogues; and if the patient is kept warm, ſudorifics. In hot bilious conſtitutions, plethoric habits, inflammatory diſtempers, where there is already a degree of irritation, or where the viſcera are unſound; theſe ſtimulating medicines prove highly prejudicial, and never fail to aggravate the diſeaſe.

Certain acrid ſubſtances have been lately recommended in dry convulſive aſthmas; of the efficacy of the ſquill in particular, for the cure of this diſorder, ſeveral inſtances are related in the Commercium Literarium of Norimberg for the years 1737 and 1739. Cartheuſer thinks, that not the aſthma itſelf, but a particular effect of it, was removed by this medicine. He obſerves, that in all aſthmas, the free circulation of the blood through the pulmonary veſſels is impeded: and hence, during every paroxyſm, the lungs are

in

in a kind of œdematous ſtate: that if this œdema, becoming habitual, remains after the fit is over, it is either perpetually occaſioning freſh ones, or gives riſe to a dropſy of the breaſt: that acrid medicines, by removing the œdema, remove what was originally an effect of the aſthma, and in time a cauſe of its aggravation.

Aromatics.

Aromatics are ſubſtances of a warm pungent taſte, and a more or leſs fragrant ſmell. Some of the ſpices are purely aromatic, as cubebs, pepper, cloves; ſome ſubſtances have a ſweetneſs mixed with the aromatic matter, as angelica root, aniſeed, fennel ſeed; ſome an aſtringency, as cinnamon; ſome a ſtrong mucilage, as caſia lignea; ſome a bitterneſs, as orange peel. The aromatic matter itſelf, contained in different ſubjects, differs alſo not a little in its pharmaceutic properties. It is extracted from all by rectified ſpirit of wine; from ſome in great part, from others ſcarcely at all, by water. The aromatic matter of ſome ſubjects, as of lemon peel, riſes wholly in diſtillation both with ſpirit and water; that of others, as cinnamon, riſes wholly with water, but ſcarcely at all with ſpirit; while that of others, as pepper, is in part left behind after the diſtillation of water itſelf from the ſpice.

With regard to the general virtues of aromatics, they warm the ſtomach, and by degrees the whole habit, raiſe the pulſe, and quicken the circulation. In cold languid caſes, phlegmatic habits, and a weak flaccid ſtate of the ſolids, they ſupport the vis vitæ, and promote the ſalutary ſecretions. In hot bilious temperaments, plethoric habits, inflammatory indiſpoſitions, dryneſs and ſtrictures of the fibres, they are generally hurtful.

Bitters.

Gentian root,
Hops,
Leſſer centaury,
Carduus, &c.

Bitters for the moſt part yield their virtue both to watery and ſpirituous menſtrua; ſome more perfectly to one, and others to the other. None of the ſubſtances of this claſs give over any thing conſiderable of their taſte in diſtillation, either to water or to ſpirit; their bitterneſs remaining entire, and frequently improved, in the extracts. Such as are accompanied with flavour, as wormwood, may by this proceſs be reduced into ſimple flavourleſs bitters.

Theſe ſubſtances participate of the virtues of aſtringents and aromatics. Their general effects are, to conſtringe the fibres of the ſtomach and inteſtines, to warm the habit, and promote the natural evacuations, particularly of ſweat and urine. In weakneſs of the ſtomach, loſs of appetite, indigeſtion, and the like diſorders, proceeding from a laxity of the ſolids, theſe kinds of medicines do good ſervice. Where the fibres are already too tenſe and rigid, where there is any immoderate heat or inflammation, bitters very ſenſibly increaſe the diſtemper; and if their uſe is continued, communicate it to the kidneys: hence the urine becomes

comes high coloured, ſmall in quantity, and at lenghth ſuppreſſed; a dropſy ſoon ſucceeding.

Bitter ſubſtances deſtroy inſects, and prevent putrefaction. Hence they are recommended as anthelmintic; and both externally and internally as antiſeptics.

Emetics and Cathartics.

Hellebore,
Jalap.
Ipecacoanha,
Colocynth,
Scammony,
Gamboge, &c.

THESE ſubſtances conſiſt of a reſinous part, in which the purgative or emetic quality moſt frequently reſides; and a gummy ſaline one, which acts chiefly as a diuretic. The firſt is extracted or diſſolved by vinous ſpirits; the latter by water. Nothing ariſes in diſtillation from either.

The acrid reſins, exhibited by themſelves, tenaciouſly adhere to the coats of the inteſtines, by their ſtimulating power irritate and inflame them, and thus produce ſundry violent diſorders. Hoffman relates, that he has ſometimes obſerved convulſions, and a paralyſis of both ſides, from their uſe.

Theſe inconveniencies may be avoided, by previouſly triturating them with ſubſtances capable of dividing their tenacious texture, and preventing their adheſion; by this means, they become mild and ſafe, operate without diſturbance, and at the ſame time more effectually anſwer the purpoſes intended by them.

Some have endeavoured to correct the ill quality of the reſinous purgatives, by the addition of acids and aromatics oils. Acids weaken their power, but have no other effect than what a diminution of the doſe would equally anſwer. The pungent eſſential oils may ſerve to warm the ſtomach, make the medicine ſit eaſier, and thus prevent the nauſea, which ſometimes happens; but as ſoon as the reſin begins to exert itſelf in the inteſtines, theſe oils, inſtead of correcting, increaſe its virulence; being themſelves apt to occaſion the inconveniencies which they are here intended to prevent, an irritation and inflammation of the bowels. Alkaline ſalts or ſoaps have a better effect; as they diſpoſe the reſin to ſolution, and promote it operation.

The medicines of this claſs ſeem to act by ſtimulating the coats of the ſtomach and inteſtines. If the irritation is ſtrong and ſudden, their action is quick and upwards: if ſlower, downwards. Cathartics, given in a liquid form, or in very ſenſible habits, often prove emetic; and emetics where mucus abounds, cathartic. They operate more violently in robuſt conſtitutions than in thoſe of a contrary temperament; the veſſels being in the former more tenſe and rigid, and conſequently leſs capable of bearing an equal degree of irritation.

The action of theſe medicines is extended beyond the primæ viæ: This appears evident from the increaſe of the pulſe which always accompanies their operation; and from the common obſervation of children being purged by the milk, if the nurſe has taken a carthartic. Some of them, particularly helle-

bore,

bore, are ſaid to purge, if only applied externally in iſſues. Purgatives, even of the more powerful kind, exhibited in ſuitable ſmall doſes, in conjunction with the milder aperients, may be introduced into the habit, ſo as to prove notable deobſtruents, diuretics, and diaphoretics, without acting ſenſibly by ſtool.

The foregoing obſervations are inſerted, not with any view to a method of ſimples, but to give a general idea of the virtues of ſuch medicinal ſubſtances as are poſſeſſed of the qualities which make the objects of the reſpective articles. I ſhall dwell no longer on general reflections, but proceed to an account of each of the ſimples ſeparately.

ABIETIS *lignum, ſummitates, coni: Abietis conis ſurſum ſpectantibus ſive maris C. B. Pini piceæ Lin. vel Abietis tenuiore folio fructu deorſum ſpectante Tourn. Pinus abietis Lin.* The ſilver and the red fir; their wood, tops, and cones.

Theſe are large ever-green trees, frequent in the northern climates. The firſt is ſaid to be found wild in ſome parts of England, and the ſecond on the hills of Scotland. From theſe trees, in different parts of Germany, the Straſburgh turpentine is extracted, of which hereafter. The wood, and the fruit or cones gathered about the end of autumn, abound with reſinous matter, and yield, in diſtillation with water, an eſſential oil, not greatly different from that obtained by the ſame means from turpentine. —The wood and tops of the fir-trees, on account of their reſinous juices, are ſometimes employed in decoctions and diet-drinks for promoting urine and ſweat, purifying the blood and juices, and cleanſing and healing internal ulcerations, particularly thoſe of the urinary paſſages. See the article TEREBINTHINA.

ABROTANI MARIS *folia: Abrotani maris anguſtifolii majoris C. B. Artemiſiæ abrotani Lin.* Southernwood: the leaves [*E.*]

This is a ſhrubby plant, clothed with very finely divided leaves, of a greyiſh 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 a native of the warmer countries; in this it is cultivated in gardens; the leaves fall off every winter; the roots and ſtalks abide many years.

Southernwood has a ſtrong, not very diſagreeable ſmell; and a nauſeous, pungent, bitter taſte; which is totally extracted by rectified ſpirit, leſs perfectly by watery liquors. It is recommended as an anthelmintic; and in cold leucophlegmatic habits, as a ſtimulant, detergent, aperient, and ſudorific. The preſent practice has almoſt entirely confined its uſe to external applications. The leaves are frequently employed in diſcutient and antiſeptic fomentations; and have been recommended alſo in lotions and unguents for cutaneous eruptions, and the falling off of the hair.

ABROTANI FEMINÆ *folia: Abrotani feminæ foliis teretibus C. B. Santolinæ chamæcypariſſi, Lin.* Lavender-cotton; the leaves.

This plant is all over white and hoary: the leaves are compoſed of ſmall knobs ſet in rows along a middle rib; the flowers ſtand upright on the tops of the ſtalks. It is raiſed in gardens, flowers in June and July, and holds its leaves all the winter.

The *abrotanum femina* is ſuppoſed to poſſeſs the ſame virtues with the *mas*; but in a leſs degree. For external purpoſes, the medical difference betwixt them is not very great: hence in fomentations (which is the principal intention they are uſually applied to) the London College allows either to be taken inſtead of the other.——The *abrotanum femina* is recommended by ſome in hyſteric and other female complaints: it has been cuſtomary among the common people to uſe a decoction of it in milk againſt worms.

ABSINTHII VULGARIS *folia: Abſinthii vulgaris majoris J. B. Artemiſiæ abſinthii Lin.* Common wormwood; the leaves [*L. E.*]

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 England; 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. At preſent it is rarely employed in theſe intentions, 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.—An oil diſtilled from this plant [*L.*] and a tincture of the dried flowering tops [*E.*] are kept in the ſhops.

ABSINTHII MARITIMI *ſummitates: Abſinthii marini albi Gerard. Artemiſiæ maritimæ Lin.* Sea-wormwood, commonly, but falſely, called Roman wormwood; the tops [*L.*]

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 our 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 virtues of both are ſuppoſed to be of the ſame kind, and to differ only in degree.

The tops enter three of our diſtilled waters, and give name to a conſerve [*L.*] They are an ingredient alſo in the common fomentation and green oil [*L.*]

ABSINTHII ROMANI *folia: Abſinthii Pontici tenuifolii incani C. B. Artemiſiæ Ponticæ Lin.* Roman wormwood; the leaves and tops [*E.*]

This ſpecies is very different in appearance from the two foregoing: it is in all its parts ſmaller than either; the leaves are divided into fine filaments, and hoary on the lower ſide; the ſtalks, either entirely or in part, of a purpliſh hue. It is a native of the warmer countries, and at preſent difficult-

ly procurable in this, though as hardy and as eaſily raiſed as any of the other ſorts. Sea wormwood has long ſupplied its place in the markets, and been in general miſtaken for it.

Roman wormwood is leſs ungrateful than either of the others: its ſmell is tolerably pleaſant: the taſte, though manifeſtly bitter, ſcarce diſagreeable. It appears to be the moſt eligible of the three as a ſtomachic; and is likewiſe recommended by ſome in dropſies.

ACACIA [*L.*]: the inſpiſſated juice of the unripe fruit of a large prickly tree called by Caſpar Bauhine, *Acacia foliis ſcorpioidis leguminoſæ. Mimoſa nilotica Lin.*

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, in 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 quinſeys. Among us, it is little otherwiſe uſed than as an ingredient in mithridate and theriaca [*L.*], 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.

ACANTHI *folia: Acanthi ſativi vel mollis Virgilii C. B. Acanthi mollis Lin.* Brankurſine; the leaves.

This is a beautiful plant, growing naturally in Italy and other warm climates: from its leaves, the ancients took the patterns of their foliage works. All the parts of it have a ſoft ſweetiſh taſte, and abound with a mucilaginous juice: its virtues do not ſeem to differ from thoſe of althæa and other mucilaginous plants.

ACETOSÆ *vulgaris, ſive oxalidis, folia & radix: Rumicis acetoſæ Lin. Acetoſæ arvenſis C. B. Oxalidis vulgaris folio longo J. B. Rumicis acetoſellæ Lin.* Common ſorrel; the roots and leaves [*E.*]

Sorrel grows wild in fields and meadows throughout England. The leaves have a reſtringent 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 ſcurvygraſs.

The roots of ſorrel have a biteriſh auſtere taſte, without any acidity: they are ſaid to be deobſtruent and diuretic; and have ſometimes had a place in aperient apozems, to which they impart a reddiſh colour.

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: they have no remarkable ſmell, and ſcarcely any taſte.

ACETOSELLA [*E.*]; vide LUJULA.

ACETUM [*L. E.*] 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 ropyneſs and ſlimyneſs 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 Geoffroy to ſaturate above one thirty-fifth 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 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.'

'ACIDUM VITRIOLICUM. Vitriolic acid [*E.*]

'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, 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 in itch and other chronic eruptions, and likewiſe as a rubefacient in local palſy and rheumatiſm. Diluted with water, it ſhows conſiderable action on the human calculus out of the body; and therefore has been propoſed internally in that diſeaſe, particularly where the 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, gleets, 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. For further particulars, ſee Part I. and III.

'ACONITI *folia: Aconiti napelli*

pelli Lin. [*E.*] Blue Wolfsbane; the leaves.

'This is a perennial plant, growing naturally in various mountainous parts of Europe. The juice has a disagreeable smell and an acrid taste, becoming less acrid on inspissation. It is a very active poison, was introduced by Dr Stork, and recommended by him and others in glandular swellings, venereal nodes, anchylosis, spina ventosa, itch, amaurosis, gouty and rheumatic pains, intermittent fevers, and convulsive disorders. Stork'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 of one part of the dry leaf, and six parts of spirit of wine, in the dose of forty drops. From Stork's representation of the figure and taste of the plant, some are of opinion that he made his experiments with the aconitum cammorum Lin.'

ACORUS, vide CALAMUS AROMATICUS.

ADIANTHI VERI, *seu capilli Veneris, folia: Adianthi folio coriandri C. B.: Adianthi capilli Veneris Lin.* True maidenhair; the leaves.

This is a low evergreen herb, and one of those which, from the slenderness of their stalk, are called capillary. It is a native of Italy and the southern parts of France; from whence the leaves are sometimes brought to us. These have an agreeable, but very weak, smell; and a mucilaginous somewhat roughish taste, which they readily impart to boiling water.

Maidenhair has been greatly celebrated in disorders of the breast, proceeding from a thinness and acrimony of the juices; and likewise for opening obstructions of the viscera, and promoting the expectoration of tough phlegm. But modern practice pays little regard to it; nor is it often to be met with in the shops; the TRICHOMANES, or *English maidenhair*, which is of the same quality, generally supplying its place.

ÆRUGO [*L. E.*] Verdegris. This is a preparation of copper, made chiefly at Montpelier 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.

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 greatly 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. (See the article CUPRUM.)—Verdegris applied externally, proves a gentle detergent and escharotic, and serves to take down fungous flesh arising in wounds. In these intentions, it is an ingredient in the *mel ægyptiacum, unguentum basilicum viride* [*L.*], and *ung. ex ærugine* [*E.*].

AGALLOCHUM, *seu lignum aloes.* Aloes wood.

There have been different conjectures concerning this wood, but no satisfactory account of it has hitherto appeared. Authors distinguish

ſeveral ſorts of agallochum, moſt of which are ſtrangers to Europe. That which comes to us is in little hard ponderous pieces, of a yellowiſh-brown colour, with ſeveral black or purpliſh veins. It has a bitteriſh aromatic taſte; and a fragrant ſmell, eſpecially if reduced to powder, or ſet on fire. Diſtilled with water, it affords a very fragrant eſſential oil, but in ſmall quantity: digeſted in rectified ſpirit, it yields an elegant tincture, which loſes nothing valuable in being evaporated to the conſiſtence of an extract.

Agallochum is at preſent of very little uſe in medicine, and rarely to be met with in the ſhops: if it could be eaſily procured, at leaſt the better ſort of it bids fair to be a very uſeful cordial; Hoffman greatly recommends, in this intention, the diſtilled oil and ſpirituous tincture, and eſteems a mixture of this laſt with tincture of ſteel an excellent corroborant.

AGARICUS: *Agaricus ſive fungus laricis C. B.* Agaric; a fungus growing on old large trees [*L.*]

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 little while, 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 operates exceeding ſlowly, inſomuch 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 Neumann, to prove effectual and ſafe purgatives. Nevertheleſs, this is at beſt a precarious medicine, which we ſtand in no manner of need of; hence the college have juſtly rejected it from all the compoſitions which it formerly had a place in, except the mithridate and theriaca [*L.*]

AGARICUS *pedis equini facie Tourn. Boletus igniarius Lin.* Female agaric, or agaric of the oak, called, from its being very eaſily inflammable, Touchwood, or Spunk [*E.*]

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 the 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 of late greatly 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.

AGERATI *folia et flores: Agerati foliis ſerratis C. B. Ptarmicæ lúteæ*

luteæ ſuaveolentis Tourn. Achillæ agerati Lin. Maudlin; the leaves and flowers.

This is a ſlender plant, clothed all over with narrow ſerrated leaves. It is a native of Italy and other warm countries; with us, it is raiſed in gardens, and flowers in July and Auguſt.

Maudlin has a light agreeable ſmell; and a roughiſh, ſomewhat warm and bitteriſh taſte. Theſe qualities point out its uſe as a mild corroborant; but it has long been a ſtranger to practice, and is now omitted both by the London and Edinburgh colleges.

AGNI CASTI *ſemen: Agni folio non ſerrato J. B. Viticis agni caſti 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 antiphrodiſiacs; but experience does not warrant their having any ſuch virtues.

AGRIMONIÆ *folia: Eupatorii veterum ſeu agrimoniæ C. B. Agrimoniæ eupatoriæ Lin.* Agrimony; the leaves.

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 is ſaid to be aperient, detergent, and to ſtrengthen the tone of the viſcera: hence it is recommended in ſcorbutic diſorders, in debility and laxity of the inteſtines, &c. Digeſted in whey, it affords an uſeful diet-drink for the ſpring ſeaſon, not ungrateful to the palate or ſtomach.

ALCANNA, vide ANCHUSA.

ALCEÆ *folia: Alceæ vulgaris majoris C. B. Malvæ verbenacæ Ger.* Vervain mallow; the leaves.

This is eaſily diſtinguiſhable from the common and marſhmallow, by its leaves being jagged or cut in about the edges. It grows in hedges, and flowers greateſt part of the ſummer. *Alcea* agrees in quality with the ALTHÆA and MALVA VULGARIS; but appears to be leſs mucilaginous than either.

ALCHEMILLÆ *folia: Alchemillæ vulgaris C. B. & 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 alchimilla 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.

ALCIS UNGULA: Elks hoof. The elk is a large animal of the ſtag kind, met with in Muſcovy and other cold countries. The hoof of one of the hinder feet has been celebrated againſt epilepſies, from a ridiculous opinion, that the elk is himſelf ſubject to diſorders of this kind, and prevents or removes them by ſcratching his ear with his hoof.

ALKEKENGI *ſeu halicacabi fructus: Solani veſicarii C. B. Phyſalidis alkekengi Lin.* Winter-cherry; the fruit.

This is a low, branched ſhrub, bearing leaves like thoſe of night-ſhade; 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 are ſaid 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 ſtand 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.

ALLIARIÆ *folia: Heſperidis allium redolentis Tourn. Eryſimi alliariæ Lin.* Sauce-alone, or jack-by-the-hedge; the leaves.

This is common in hedges and ſhady waſte places, flowering in May and June. The leaves have a biteriſh acid taſte; and, when rubbed betwixt the fingers, a ſtrong ſmell, approaching to that of garlick. They are 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.

ALLII *radix: Allii ſativi C. B. & Lin.* Garlick; the roots [*L. E.*]

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 one another. 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 emmenagogue; and, if the patient is kept warm, ſudorific. In humoral aſthmas, and catarrhous diſorders of the breaſt, in ſome ſcurvies, flatulent colics, hyſterical and other diſeaſes proceeding from laxity of the ſolids and cold ſluggiſh indiſpoſition of the fluids, 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

uſe of garlick alone; he recommends it chiefly as a warm ſtrengthening medicine in the beginning of the diſeaſe.

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; where the juices are too thin and acrimonious, or the viſcera unſound; this ſtimulating medicine is manifeſtly improper, and never fails to aggravate the diſtemper.

The moſt commodious form for the taking of 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 are kept in the ſhops.

Garlick made into an unguent 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. Sydenham aſſures us, that among all the ſubſtances which occaſion a derivation or revulſion from the head, none operate 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.

ALNI VULGARIS *folia & cortex: Alni rotundifoliæ glutinoſæ viridis C. B. Betulæ alni 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.

ALNI NIGRÆ *ſeu frangulæ cortex: Alni nigræ bacciferæ J. B. Rhamni frangulæ Lin.* The black or berry-bearing alder; its bark.

This tree is common in moiſt woods in divers parts of England. The internal bark of the trunk or root of the tree, given to the quantity of a dram, purges violently, occaſioning gripes, naſeæ, and vomiting. Theſe may be in good meaſure prevented by the addition of aromatics; but as we have plenty of ſafer and leſs precarious purgatives, practitioners have deſervedly rejected this.

ALOE. 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 the ſpecies of the plants, or from ſome differences in the juices themſelves. Theſe may be all ranged in three claſſes.

(1) ALOE SOCOTORINA [*L. E.*] Socotorine aloes, brought from the iſland Socotora in the Indian ocean, wrapt in ſkins; it is obtained from the *aloe Succotorina auguſtifolia ſpinoſa, flore purpureo Breyn. & Commelin. 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

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 HEPATICA [*E.*] Hepatic, Barbadoes, or common Aloes; the juice of the *Aloe C. B. Aloe vera vulgaris Munting. Aloe perfoliata Lin.* 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; the produce of the *aloe Guineensis caballina vulgari similis sed tota maculata Commelin.*—This sort is easily distinguished from both the foregoing, by its strong rank smell; although, 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, which it cannot be divested of, readily betrays it.

All the sorts of aloes dissolve in pure spirit, proof spirit, and proof 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 the 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 attenuate and dissolve viscid juices in the remoter parts, 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 blood, and inflaming the bowels.

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

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.

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

Socotorine aloes, as already obſerved, contains more gummy matter than the hepatic; and hence it is 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.

The Edinburgh college directs the hepatic aloes in the *balſamum traumaticum*, deſigned for external uſe; and the Socotorine in thoſe preparations or compoſitions which are to be taken internally, as the *tinctura ſacra*, *elixir ſacrum*, *pilulæ aloeticæ*, *pilulæ Ruſi*, *pilulæ ſtomachicæ*, *pilulæ coccíæ*, &c.

The London college uſes the Socotorine only. In the *vinum aloeticum*, *tinctura ſacra*, *elixir aloes*, *balſamum traumaticum*, *pilulæ aromaticæ*, and the other pills wherein aloes is an ingredient, the Socotorine kind in ſubſtance is directed. In the powder of *hiera picra*, only the pure gummy part of the Socotorine aloes is employed, the ſeparation of which from the reſinous matter is given in a diſtinct proceſs.

ALSINES *folia: Alſines vulgaris ſive morſus gallinæ J. B. Alſines mediæ Lin.* Chickweed; the leaves.

This plant was employed by the ancients externally againſt eryſipelatous, and other inflammatory diſorders. Later times have given it internally in hæmoptoes, as a reſtorative in atrophies and conſumptions, and likewiſe as an antiepileptic. Some recommend for theſe purpoſes the expreſſed juice, to be taken to the quantity of an ounce; others the dried leaves, in the doſe of a dram; and others, a water diſtilled from them. But if any real benefit is expected from *alſine*, it ought to be uſed liberally as food; though even then, its effects would not perhaps be ſuperior to thoſe of more approved culinary herbs.

ALTHÆÆ *folia, radix: Althææ Dioſcoridis & Plinii C. B. Althæa*

Althæa officin. Lin. Marſh-mallows; the leaves and root [*L. E.*]

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 in a thin acrimonious ſtate of the juices, and 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 maturating hard tumors: chewed, it is ſaid to give eaſe in difficult dentition of children.

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

ALUMEN [*L. E.*] 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 ſweetiſhneſs. It diſſolves in about twelve times its weight of water; and concretes again, upon duly evaporating the ſolution, into ſemitranſparent 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 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 adviſeable; large ones being apt to nauſeate the ſtomach, and occaſion violent conſtipations of the bowels. It is uſed alſo externally, in aſtringent and repellent lo-

tions and collyria. 'Burnt alum has been uſed in ſcruple doſes as a laxative in colic.'

Its officinal preparations are, for internal uſe, the *ſerum aluminoſum* [*L.*] and *pulvis ſtypticus*, *aqua ſtyptica* [*E.*] for external applications, the *aqua aluminoſa*, *coagulum aluminoſum* [*L.*] and *alumen uſtum* [*L. E.*] 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. It is employed alſo as an ingredient in the *lapis medicamentoſus* and the *aqua vitriolica* [*L.*]

AMARACUS, vide MAJORANA.

AMBRAGRISEA.

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 betwixt 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 is 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 Hoffman as one of the moſt efficacious corroborants of the nervous ſyſtem. The 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.

AMMEOS VERI *ſemen: Ammeos odore origani J. B. Siſonis ammeos Lin.* The ſeeds of the true ammi or biſhopſweed, brought from Egypt.

Theſe are ſmall ſtriated ſeeds, of a reddiſh brown colour, a warm pungent taſte, and a pleaſant ſmell approaching to that of origanum. They are recommended as ſtomachic, carminative, and diuretic; but have long been ſtrangers to the ſhops: their place has been generally ſupplied by the ſeeds of a plant common in our own country, though not a native of it, viz.

AMMEOS VULGARIS *ſemen: Ammeos vulgaris majoris, latioribus foliis, ſemine minus odorato J. B. Ammeos majoris Lin.* Common biſhopſweed ſeeds [*L.*]

The ſeeds of common biſhopſweed are ſomewhat larger and paler coloured than the foregoing: their ſmell and taſte is weaker, and without any thing of the origanum flavour of the true ammi. They are ranked among the four leſſer hot

ſeeds, but are ſcarce otherwiſe made uſe of than as an ingredient in the theriaca.

AMMONIACUM GUMMI [*L. E.*] 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. 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 meaſure 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 deterge the pulmonary veſſels; and proves of conſiderable ſervice in ſome kinds of aſthmas, where the lungs are oppreſſed by viſcid phlegm: in 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 ſoftens and ripens hard tumours: a ſolution of it in vinegar ſtands recommended by ſome for reſolving even ſcirrhous 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* [*L*]. It is an ingredient alſo in the *pil. ſcillit.* [*E.*]

AMOMI VERI *ſemen: Amomi racemoſi C. B.* The ſeeds of the true amomum brought from the Eaſt Indies [*L.*]

The true amomum is a round fruit, about the ſize of a middling grape; containing, under a membranous cover, a number of ſmall, rough, angular ſeeds, of a blackiſh brown colour on the outſide, and whitiſh within: the ſeeds are lodged in three diſtinct cells; thoſe in each cell are joined cloſely together, ſo as that the fruit, upon being opened, appears to contain only three ſeeds. Ten or twelve of theſe fruits grow together in a cluſter,

and

and adhere, without any pedicle, to a woody ſtalk about an inch long; each ſingle fruit is ſurrounded by ſix leaves, in form of a cup; and the part of the ſtalk void of fruit is clothed with leafy ſcales.

The huſks, leaves, and ſtems, have a light grateful ſmell, and a moderately warm aromatic taſte: the ſeeds freed from the huſks, are in both reſpects much ſtronger; their ſmell is quick and penetrating, their taſte pungent, approaching to that of camphor. Notwithſtanding amomum is an elegant aromatic, it has long been a ſtranger to the ſhops.

It is directed as an ingredient in the theriaca. The college of Edinburgh has expunged that compoſition; and as the true amomum is not at preſent to be procured in this country, they have dropped its name: that of London allows the ſeeds of the following plant of our own growth to be ſubſtituted to thoſe of the oriental amomum.

AMOMI VULGARIS *ſemen: Siſonis quod amomum officinis noſtris C. B. Sii aromatici Tourn. Siſonis amomi Lin.* The ſeeds of the common amomum, or baſtard ſtone-parſley [*L.*]

Theſe are very different in their appearance and manner of growth from the foregoing: they ſtand in form of umbels, and are joined two together without any common covering: they are ſmall, ſtriated, of an oval figure and brown colour. Their taſte is warm and aromatic; but conſiderably different from that of the amomum verum, and very far weaker. Water extracts little of their flavour by infuſion, but elevates the whole in diſtillation; rectified ſpirit extracts the whole, but elevates very little: hence the watery extract has no taſte or ſmell of the ſeeds; whilſt the ſpirituous poſſeſſes their flavour in great perfection. It is obſervable, that the tincture drawn from them with pure ſpirit is of a green colour. Theſe ſeeds have been recommended as carminative, aperient, diuretic, and emmenagogue; but they are at preſent little regarded in practice.

AMYGDALÆ AMARÆ et DULCES: *Nuclei fructûs Amygdali amaræ Tournſ. amygdali communis var. γ Lin. et Amygdali ſativæ Baub. amygdali communis var. β Lin.* Sweet and bitter almonds [*L. E.*]

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 greatly 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

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 obtund 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 like 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 the emollient virtue thereof; 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 are 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. 'A bitter-almond emulſion, in the quantity of a pint or two daily, is ſaid to have been given in obſtinate intermittents with ſucceſs.'

ANACARDIA: *Fructus Avicenniæ germinantis Lin.* Anacardium, or Malacca bean.

This is the fruit of a tree growing in Malabar and other parts of the Eaſt-Indies. It is of a ſhining black colour, of the ſhape of a heart flattened, about an inch long, terminating at one end in an obtuſe point, and adhering by the other to a wrinkled ſtalk: it contains within two ſhells a kernel of a ſweetiſh taſte: betwixt the ſhells is lodged a thick and acrid juice.

The medicinal virtues of anacardia have been greatly diſputed. Many have attributed to them the faculty of comforting the brain and nerves, fortifying the memory, and quickening the intellect: and hence a confection made from them has been dignified with the title of *confectio ſapientum*; others think it better deſerves the name of *confectio ſtultorum*, and mention inſtances of its continued uſe having rendered people maniacal. But the kernel of anacardium is not different in quality from that of almonds. The ill effects attributed to this fruit belong only to the juice contained betwixt the kernels, whoſe acrimony is ſo great, that it is ſaid to be employed by the Indians as a cauſtic. This juice is recommended externally for tetters, freckles, and other cutaneous

cutaneous deformities; which it removes only by exulcerating or excoriating the part, so that a new skin comes underneath.

ANAGALLIDIS *folia: Anagallidis phœnicio flore C. B. et Anagallidis flore cæruleo C. B. Anagallidis arvensis Lin.* Common male and female pimpernel; the leaves.

Pimpernel is a low plant, in appearance resembling chickweed; but easily distinguishable by its leaves being spotted underneath, and joined immediately to the stalk. The male and female pimpernels differ no otherwise than in the colour of their flowers; they are both found wild in the fields, but the male or red-flowered sort is most common. Both the pimpernels have an herbaceous roughish taste, with little or no smell. Many extraordinary virtues have been attributed to them. Geoffroy esteems them cephalic, sudorific, vulnerary, antimaniacal, antiepileptic, and alexeterial. Tragus, Caspar Hoffman, Michaeli, and others, are also very liberal in their praises; one of these gentlemen declares, that he has known numerous instances of the singular efficacy of a decoction and tincture of pimpernel, in maniacal and melancholic deliria. But later practitioners have not been so happy as to meet with the like success. Pimpernel is not unfrequently taken as food; it makes no unpleasant salad; and in some parts of this kindom, is a common pot-herb. A spirituous tincture of it contains nothing valuable: the only preparation that promises utility, is an extract made with water, or the expressed juice depurated and inspissated.

ANAGALLIS AQUATICA, vide BECABUNGA.

ANCHUSÆ *radix: Buglossi radice rubra Tourn. Anchusæ tinctoriæ Lin.* Alkanet root [*E.*]

Alkanet is a rough hairy plant, much resembling the vipers buglos: 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 Montpelier, 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, unguents, and plasters. As the colour is confined to the cortical part, the small roots are best, these having proportionably more bark than the large.

ANETHI *semen: Anethi hortensis C. B. Anethi graveolentis Lin.* Dill seed [*L. E.*]

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 proceeding from a cold cauſe or a viſcidity of the juices. The moſt efficacious preparations of them are, the diſtilled oil, and a tincture or extract made with rectified ſpirit. The oil and ſimple water diſtilled from them are kept in the ſhops [*L.*]

ANGELICÆ *radix, folia, ſemen: Angelicæ ſativæ C. B. Imperatoriæ ſativæ Tourn. Angelicæ archangelicæ Lin.* Garden angelica; the roots, leaves, and ſeeds [*L. E.*] *Angelica ſylveſtris Lin.* [*E.*] Wild Angelica. This is ſimilar in its qualities, but weaker than the other.

Garden angelica is a large umbellifevous 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. The London college direct the roots brought from Spain to be alone made uſe of. 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, on being barely dried, loſe 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 moleculæ, which on cutting it longitudinally, appear diſtribnted 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 [*E.*] The leaves are ingredients in the three alexeterial waters [*L.*]; the ſeeds, in the compound aniſeed water [*L.*] The ſtalks make an agreeable ſweetmeat.

ANGUILLÆ HEPAR. The liver of the eel.

The liver and gall of the eel are extremely acrid. They have been held a ſpecific in difficult births; and enter the principal compoſitions for that intention in foreign pharmacopœias; although it appears, that, in moſt caſes of this kind, acrid irritating medicines are really injurious. Boerhaave obſerves, that no fiſh has a more acrid gall than the eel; and ſays, that with pills made of the gall of the eel and pike, he has cured pale rickety children with ſwelled bellies; the gall powerfully promoting urine, and occaſioning the belly to ſubſide.

ANIME; a reſin exuding from the trunk of a large American tree, called by Piſo *jetaiba*, by the Indians *courbaril*. *Hymenæa courbaril Lin.*

This reſin is of a tranſparent amber colour, a light agreeable ſmell, and little or no taſte. It diſſolves entirely, but not very readily, in rectified

rectified ſpirit of wine; the impurities, which are often in large quantity, remaining behind. The Brazilians are ſaid to employ anime in fumigations for pains and aches proceeding from a cold cauſe: with us, it is rarely, if ever, made uſe of for any medicinal purpoſes.

ANISI *ſemen: Apii aniſi dicti ſemine ſuaveolente Tourn. Pimpinell aniſi Lin.* Aniſe, the ſeed [*L. E.*]

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 cold flatulent diſorders, where tenacious phlegm abounds, and in the gripes to which young children are ſubject. Frederick Hoffman ſtrongly recommends them in weakneſs of the ſtomach, diarrhœas, and for ſtrengthening the tone of the viſcera in general; and thinks they well deſerve the appellation given them by Helmont, *inteſtinorum ſolamen.*

The officinal preparations of theſe ſeeds are an *eſſential oil* [*L. E.*] and a ſpirituous *compound water* [*L.*] They are ingredients in *mithridate* and *theriaca*; and the eſſential oil in the *paregoric elixir.* [*L. E.*]

ANONIS, vide ONONIS.

ANSERINA, vide ARGENTINA.

ANTIMONIUM [*L. E.*] *ſtibium.* 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 others 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 leaves is conſiderably leſs pure than the lower.

The goodneſs of antimony is judged of from its weight; from the leaves not being ſpongy or blebby; from the largeneſs of the ſtriæ; 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 whereby 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. See the preparations of antimony, Part III.

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 antimon. Sine addito.
Vitrum antimonii. Ed. et Lond.
Vitrum antimonii ceratum. Ed.

III. By the action of fixed alkalis.
1. Joined with it by fusion. HEPARS of antimony.
Hepar antim. mitissimus, vulgo Regulus antim. medicinalis.
Hepar for the Kermes mineral of Geoffroy.
Hepar for the tinctura antimonii. Lond.
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.
Antimonii 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. Klaunig.
Antimon. cathartic. Wilson.
Causticum antimoniale, vulgo Butyrum Antim. Ed.
Causticum antimoniale. Lond.
Mercurius vitæ, sive pulvis Algarotti.
Bezoardicum minerale.
Flores antim. cum sale ammoniaco.
Tartarus antimonialis, vulgo emeticus. Ed. et
Tartarus emeticus. Lond.
Vinum antimoniale. Ed. et Lond.
Vinum e tartaro antimoniali. L.

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, sive nix 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 alledge that antimonials are of most use in fevers when they do not produce any sensible evacuation, as is said

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.'

ANTHORÆ *ſive anthithoræ radix: Aconiti ſalutiferi C. B. Aconiti anthoræ Linnæi.* Wholeſome wolfſbane; the roots.

This plant may be diſtinguiſhed from the poiſonous aconites by its leaves being more finely divided, and not at all bright or ſhining: it grows wild on the Alps. The root has been ſuppoſed uſeful againſt poiſons, particularly that of the *thora* (whence its name.) Some nevertheleſs look upon this pretended antidote itſelf as unſafe: Fred. Hoffman ſays it is cathartic, and has produced dangerous diſorders of the ſtomach, accompanied with heat, thirſt, and anxiety. On the other hand Geoffroy relates, that he has never obſerved any purgative quality in this root, or any ill conſequence from its uſe; that he has frequently exhibited it, and always with good ſucceſs, againſt worms, and in malignant fevers, eſpecially ſuch as were occaſioned by viſcidities in the ſtomach and inteſtines; the doſe from a ſcruple to a dram. A competency of experiments to fully determine this point, is as yet wanting, the root never having come into general practice. Its taſte is acrid and bitter.

APARINES *folia: Aparines vulgaris C. B. Galii aparinæ Lin.* Gooſegraſs, or clivers; the leaves [*E.*]

This is a ſlender rough plant, common in hedges, &c. It is recommended as an aperient, and in chronic eruptions; but practice has little regard to it.

APES. Bees; their bodies, honey, and wax.

Bees, dried and pulveriſed, are ſaid to cure the alopecia; and given internally, to promote urine: but they have been for a long time ſtrangers to the ſhops. The honey and wax ſhall be treated of under the reſpective heads.

APII *ſeu eleoſelini radix: Apii graveolentis Linnæi.* Smallage, the roots.

This plant is larger than the garden *apium* (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; in which intention they are, doubtleſs, capable of doing ſervice, though the other warm ſeeds, which the ſhops are furniſhed with, render theſe unneceſſary.

APIUM HORTENSE, vide PETROSELINUM.

AQUILEGIÆ *folia, flores, ſemen: Aquilegiæ flore ſimplici Raii Syn. Aquilegiæ vulgaris Lin.* Columbines; the leaves, flowers, and ſeeds.

This plant grows wild in woods, but is not very common. It has been looked upon as aperient; and was formerly in great eſteem among the common people for throwing out the ſmall-pox and meaſles. A diſtilled water, medicated vinegar, and conſerve, were prepared from the flowers; but they have long given place to medicines of greater efficacy.

ARANEARUM TELÆ. Cobwebs.

Theſe are never met with in preſcription; but are ſometimes applied by the common people to ſtop the bleeding of ſlight wounds: this they ſeem to effect by adhering to the part, ſo as to cloſe the orifices of the veſſels, and prevent the effuſion of their contents.

ARESTA BOVIS, vide Ononis.

ARGENTINÆ *potentillæ anſerinæ ſolia: Pentaphylloides minoris ſupini ſeu procumbentis foliis alatis argenteis et ſerratis flore luteo Mor. Hiſt. Ox. Potentillæ anſerinæ Lin.* Silverweed, or wild tanſey; the leaves.

This plant grows wild about the ſides of rivulets and other moiſt places: it has no ſtalk, the leaves lying flat on the ground. The writers on the materia medica in general look upon argentina as a very ſtrong aſtringent: miſled probably by its agreement in botanic characters with tormentil, which is known to be a powerful ſtyptic. The ſenſible qualities of *argentina* promiſe no great virtue of this kind; for to the taſte it diſcovers only a ſlight roughiſhneſs, from whence it may be preſumed to be entitled to a place only among the milder corroborants. As the aſtringency of tormentil is confined chiefly to its root, it might be thought that the *argentina* alſo has an aſtringent root: the root of this plant, however, is found to have no other than a pleaſant ſweetiſh taſte, like that of parſnips, but not ſo ſtrong.

ARGENTUM. Silver [*L. E.*]

Abundance of virtues have 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, &c. See the preparations of ſilver.

ARGENTUM VIVUM: *Hydrargyrus; Mercurius.* Mercury or quickſilver [*L. E.*]

Mercury is an opake ſilver-coloured 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; but the greateſt quantities come from the Eaſt-Indies.

The uſe of mercury in medicine ſeems to have been little known before the fifteenth 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 through the inteſtines unchanged, and has not been found to produce any conſiderable effect. It has indeed

deed been recommended in aſthmas and diſorders of the lungs; but the virtues attributed to it in theſe caſes have not been warranted by experience.

Notwithſtanding the mildneſs and activity of crude quickſilver undivided; 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, that we are acquainted with.

The mercurial preparations, either given internally or introduced into the habit by external application, ſeem to liquefy all the juices of the body, even thoſe in the minuteſt and moſt remote veſſels; and may be ſo managed as to promote excretion through all the emunctories. Hence their common uſe in inveterate chronic diſorders proceeding from a thickneſs and ſluggiſhneſs of the humours, and obſtinate obſtructions of the excretory glands; in ſcrophulous and cutaneous diſeaſes; and in the venereal lues. If their power is not reſtrained by proper additions to certain emunctories, they tend chiefly to affect the mouth; and occaſion a plentiful evacuation from 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.

'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 queckſilber; *Gallis*, Mercure pure.

II. PREPARATIONS in which the Mercury is only divided.

1. By gums or mucilages; ſuch as gum arabic, tragacanth, &c.

* *Hydrargyrum gummoſum.*
Mercurius gumminoſus of *Plenck*, (the inventor).

COMPOSITA.

* *Pilulæ ex hydrargyro gummoſo.*
Pilulæ ex mercurio gummoſo. *Plenck. Pharm. Chir.*
Solutio mercurialis gummoſa. *Ibid.*
Mixtura mercurialis. *Pharm. Noſcom. Sti Georgii.*
Potio mercurialis. *Diſpenſatorii Novi Brunſwicenſis.*
Lac mercuriale. *Plenck.*
Syrupus hydrargyri. *Pharmac. Succ.*

2. By reſins or balſams; ſuch as turpentine, balſamum copaiva, &c.

* *Hydrargyrum terebinthinatum*, &c.

COMPOSITA.

* *Pilulæ ex hydrargyro terebinthinato.*
Pilulæ mercuriales. *L.*
Pilulæ mercuriales laxantes. *G.*
Pilulæ mercuriales ſialagogæ. *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 cœruleum. *E.*
Unguentum mercuriale, ſeu unguentum Neapolitanum. *Pharmac. Auſtriaco-Provincialis.*

COMPOSITA.

α Unguentum cœruleum fortius. *L.*
Unguentum cœruleum mitius. *L.*
Unguentum mercuriale. *D.*
β Ceratum mercuriale. *L.*
γ Emplaſtrum mercuriale. *O.*
Emplaſtrum ex hydrargyro. *E.*
Emplaſtrum ex gummi ammoniaco 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 alkaliſatus.
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. Noſoc. Sti Thomæ.*
Pilulæ ex mercurio calcinato. *G.*
Pilulæ ex mercurio calcinato anodynæ. *G.*

IV. PREPARATIONS where the Mercury is partly divided and diſſolved.

1. By ſugar candy, or ſaccharine compoſitions; ſuch as conſerva roſarum, cynoſbati, &c.

* *Saccharum hydrargyratum.*

COMPOSITA.

* *Bolus ex hydrargyro ſaccharato.*
Bolus cœruleus. *Th.*
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. *G.*

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 metallic ſalt or calx by acids.

1. 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.

1. Mercury combined with acid of ſuet (acidum ſebi.)
   Hydrargyrum ſebinum.
2. Mercury combined with the muriatic acid; or acid of common ſalt.
   * a. *Hydrargyrum muriatum.*
   * *Hydrargyrum muriatum fortius* { By ſublimation, 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. *Th.*
   Solutio ſublimati baiſamica. *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 mitius.*
   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. *Th.*
   Pulvis Plummeri. *O.*
   Pilulæ mercuriales purgantes. *A.*
   Pilulæ catarrhales purgantes. *D.*
   Pilulæ laxantes cum mercurio. *Ibid.*
   Pulvis e ſcammonio cum mercurio. *Th.*
   * *Lotio ſyphilitica nigra, (lotio ex hydrargyro muriato mitiori.)*
   Lotio mercurialis. *G.*

   By precipitation.
   a. From its ſolution in nitrous acid by common ſalt.
   * *Calx hydrargyri muriata Scheelii.*
   Mercurius præcipitatus 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 the 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. *Bergman.*
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 oxalinum. *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 the vitriolic acid.
   * a. *Hydrargyrum vitriolatum.*
   Vitriolum mercurii. *O.*

Oleum

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. tartariſatum. *Bergman.*

b. With purified tartar, commonly called *cream of tartar, (veg. alkali ſuperſaturated with the acid of tartar).*

* *Tartarus hydrargyratus.*
Terre fuilletee mercurielle of Dr *Preſſavin*, (the inventor.)

c. Mercury precipitated from its ſolution in nitrous acid by the acid of tartar.

* *Calx hydrargyri tartariſata flava; vulgo*, Pulvis Conſtantinus.

d. Mercury precipitated from its ſolution in muriatic and tartarous acid by fixed vegetable alkali.

* *Calx hydrargyri tartariſata 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. O.*
Arcanum corallinum.
Panacea mercurii rubra. *O.*

COMPOSITA.
Balſamus mercurialis. *Plenck.*
Unguentum ophthalmicum. *St Yves.*
Balſamum ophthalmicum rubrum. *D.*
Unguentum præcipitatum. *G.*
Unguentum ad lippitudinem. *Th.*
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 ſal ammoniac).
Vegetable ſyrup.
Syrup de *Bellet.*

b. By vinous volatile alkali, (ſpiritus ſalis 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 acetatum. *Bergman.*

14. With the acid of vinegar.
Hydrargyrum fluoratum. *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 aërial acid, (fixt air).
Hydrargyrum aëratum. *Bergman.*

* The marks of pure mercury are, its globules not loſing their ſpherical figure when poured on wood; its not communicating a tinge to water,

ter, 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.

'Some uſe it in its metallic ſtate in intumeſcentia, from its weight, but ſeldom with good effect; and ſometimes it muſt do harm. There ſeems to be no uſeful medical purpoſe which may not be ſerved by it, in the beſt and ſafeſt manner, in its divided ſtate in the form of the mercurial ointment and pill of the Edinburgh pharmacopœia. Its evacuant effects are commonly referred to its ſtimulant power exerted occaſionally on the bowels, the ſkin, and the ſalivary glands; and thus ſome ſuppoſe it expels venereal virus from the body; while others are of opinion that it neutraliſes the virus. In virulent gonorrhœa, it is doubted whether mercury be neceſſary. It 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 gleets, 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.'

ARISTOLOCHIA. Birthwort. Three roots of this name are directed for medicinal uſe:

(1) ARISTOLOCHIA LONGA *Lin.* [*L.*] 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 clematitis Lin.* [*L. E.*] 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;

gent: 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 medical virtues are, to heat, ſtimulate, attenuate viſcid phlegm, and promote the fluid ſecretions in general; 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, and in cutaneous diſeaſes.—The *ariſtolochia tenuis*, is an ingredient in theriaca; and in want of this ſpecies, the *longa* is allowed to be ſubſtituted to it by the London college.

ARMORACIA, vide RAPHANUS RUSTICANUS.

ARNICA, vide DORONICUM.

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 which 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 common *yellow* arſenic. On doubling the quantity of ſulphur, the compound proves more opake 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, ſublimates 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 *riſigal* 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 notable 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 proves a moſt violent poiſon. Beſides the effects which it has in common with other corroſives, it remarkably attenuates 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 hectics ſucceed. The remedies recommended againſt 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 of a little iron in the ſolution. The dry hepar may alſo be made into pills, and warm water drank above them.

'White arſenic, in very minute doſes, mixt with ſyrup and milk, has been ventured on, and recommended internally in caſes of cancer. A very dilute application of arſenic is alſo made to the part; but even this is ſometimes dangerous.'

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.

ARTEMISIÆ *folia: Artemiſiæ vulgaris majoris C. B. Artemiſiæ vulgaris Lin.* Mugwort; the leaves [*L. E.*]

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 are principally celebrated as uterine and antihyſteric: an infuſion of them is ſometimes drank, 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.

ARTHANITÆ *ſive cyclaminis radix: Cyclaminis orbiculato folio inferne purpuraſcente C. B. Cyclaminis Europæi 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 ſcirrhous and ſcrophulous tumours; and internally as a cathartic, detergent, and aperient: it operates very ſlowly, but with great virulence, inflaming the fauces and inteſtines.

ARI *radix: Ari maculati maculis nigris C. B. Ari maculati Lin.* Wake-robin; the root [*L. E.*]

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

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 a load of viſcid phlegm, and in ſuch diſorders in general as proceed from a cold ſluggiſh indiſpoſition of the ſolids and lentor of the fluids. I have experienced great benefit from it in rheumatic pains, particularly thoſe of the fixt kind, and which were ſeated deep. In theſe caſes I have 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 on the tongue. It generally excited a ſlight tingling ſenſation through the whole habit, and, when the patient was kept warm in bed, produced a copious ſweat.

The only officinal preparation in which this root is an ingredient, is a compound *powder*; in which form its virtues are very precarious. Some recommend a tincture of it drawn with wine; but neither wine, water, nor ſpirits, extract its virtues.

ASAFOETIDA. Aſafetida [*L. E.*] the concrete juice of a large umbelliferous plant growing in Perſia. *Ferula aſafœtida Lin.*

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 various little ſhining lumps or grains, which are partly of a whitiſh colour, partly reddiſh, and partly of a violent 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.

Aſafetida 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, *compound powder of myrrh* [*L.*] fetid tincture, tincture of ſoot, fetid volatile ſpirit [*L. E.*] antihyſteric plaſter, and compound tincture of caſtor [*E.*]

ASARI *folia*: *Aſari C. B. Aſa-*

ri Europæi Lin. Aſarabacca: the leaves.

Aſarum is a very low evergreen plant, growing naturally in France, Italy, and other warm countries: the dried roots have been generally brought from the Levant; thoſe of our own growth being ſuppoſed weaker.

Both the roots and leaves have a nauſeous, bitter, acrimonious, hot taſte; their ſmell is ſtrong, and not 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 vomit, 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 notable diaphoretics, diuretics, and 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, white 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 an ingredient in the *pulvis ſternutatorius* of the ſhops [*L. E.*]

ASCLEPIAS, vide VINCETOXICUM.

ASELLI, vide MILLEPEDÆ.

ASPALATHUS, vide RHODIUM.

ASPARAGI *radix: Aſparagi ſativi C. B. Aſparagi officinalis Lin.* Aſparagus; the root.

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. Stahl is of opinion, that none of them have any great ſhare of the virtues uſually aſcribed to them. 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.

ASPERULÆ *flores: Aſperulæ aut aſpergulæ odoratæ noſtratis Lob. Aſperulæ odoratæ Lin.* Woodroof; the flowers.

This is a low umbelliferous plant, growing wild in woods and copſes, and flowering in May. It has an exceed-

exceeding pleaſant ſmell, which is improved by moderate exſiccation: the taſte is ſubſaline, and ſomewhat auſtere. It imparts its flavour to vinous liquors. Aſperula is ſuppoſed to attenuate viſcid humours, and ſtrengthen the tone of the bowels; it is recommended in obſtructions of the liver and biliary ducts, and by ſome in epilepſies and palſies; modern practice has nevertheleſs rejected it.

ASPHALTUS, vide BITUMEN JUDAICUM.

ASPLENIUM, vide CETERACH.

ATRIPLICIS OLIDÆ *folia: Atriplicis fœtidæ C. B. Chenopodii fœtidi Tourn. Chenopædii vulvariæ Lin.* Stinking orach, or arach; the leaves [*L. E.*]

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, which the hand, by a light touch, becomes ſo impregnated with, as not to be eaſily freed from. Its ſmell has gained it the character of an excellent antihyſteric; 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.

ATRIPLEX SATIVA. Garden orach, or arach.

The garden oraches (which are either of a pale greeniſh, or purpliſh red colour, and hence named *atriplex alba* and *rubra*) are chiefly employed for culinary purpoſes. They are cooling, and gently laxative; a decoction of the leaves is recommended in coſtiveneſs, where the patient is of a hot bilious diſpoſition.

AVENA. Oats.

This grain is an article rather of food than of medicine. It is ſufficiently nutritive and eaſy of digeſtion. 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.

AURANTIORUM HISPALENSIUM *ſuccus, cortex, et flores: Fructus Mali aurantiæ majoris C. B. Citri aurantii Lin.* Seville oranges; the juice, yellow rind, and flowers [*L. E.*] The Edinburgh college uſes alſo the flowers of the tree.

The orange is a beautiful evergreen tree, or rather ſhrub, bearing flowers and fruits all the year: it is a native of the warmer climates, and does not well 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. The diſtilled water is ordered to be kept in the ſhops by the Edinburgh college: it is called by foreign writers *aqua naphæ*. An oil diſtilled from theſe flowers is brought from Italy under the name of *oleum* or *eſſentia neroli*.

The outer yellow rind of the fruit is a grateful aromatic bitter; and, in cold phlegmatic conſtitutions, 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

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 two diſtilled waters are for the ſame reaſon prepared from the rind of oranges in preference to that of lemons.

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 ſcurvies, and given in conjunction with the *cochlearia*, *naſturtium*, or other acrid antiſcorbutics, as in the *ſucci ſcorbutici* of the ſhops.

AURANTIA CURSLAVENSIA. Curaſſao oranges.

Theſe are the ſmall young fruit of the Seville orange dried. They are moderately warm bitteriſh aromatics, of a flavour ſufficiently agreeable.

AURICULA JUDÆ: *Fungus auricula Judæ, coloris ex cineraceo nigricantis, pernicioſus, in ſambuci caudice naſcens J. B. Peziæ auriculæ Lin.* Jews-ear, a fungus growing on old alder trees. This fungus is ſaid by ſome to be a ſtrong purgative; by others an aſtringent. The more judicious medical writers have declared its internal uſe dangerous.

AURICULÆ MURIS *folia: Piloſillæ majoris repentis hirſutæ C. B. Silenes rupeſtris Lin.* Mouſe-ear; the leaves.

This is a low creeping plant, covered with a kind of hairs: it grows wild in dry paſture grounds, and flowers in June and July. The leaves have a ſomewhat rough bitteriſh taſte: they are recommended as aſtringents, but practice pays no regard to them.

AURIPIGMENTUM. Orpiment; a mineral compoſed of ſulphur and arſenic. See ARSENICUM.

AURUM. 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 potabiles, 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.

AUXUNGIA. Fat.

A great variety of fats were introduced into medicine by the Ara-

bians, and recommended as poſſeſſing diſtinct virtues. The college of Wirtemberg, in the edition of their diſpenſatory, publiſhed in 1741, direct no leſs than twenty-eight different fats to be kept in the ſhops: ſome of theſe, they inform us, are attenuating and reſolvent; ſuch are thoſe of the heron, wild cat, ſtork, partridge, coney, hare, fox, Alpine mouſe, the badger, boar, wolf, ſerpents, and vipers: others are heating, detergent, and ſeptic; thoſe of the eel, the pike, and the umber: a third claſs is emollient; the fat of the ox, the deer, and the goat: and a fourth, emollient, digerent, and lenient; this laſt comprehends the fat of the duck, gooſe, dog, capon, beaver, horſe, hen, and human fat. Experience, however, does not countenance theſe different virtues aſcribed to different fats. They have all one common emollient quality, relax the part to which they are applied, and prevent perſpiration: theſe effects, with the conſequences of them, may be expected in a greater or leſs degree from fats of every kind. The London college has therefore retained only three fats, of different conſiſtences, for different mixtures, viz. viper's fat, hog's lard, and mutton ſuet. 'The Edinburgh college retains only the two laſt.' Theſe are certainly ſufficient for anſwering all the intentions that ſubſtances of this kind are employed for.

BALAUSTIA: *Flores balauſtiæ flore pleno majore C. B. Punicæ granati var. β Lin.* Balauſtines: the flowers of the balauſtine or double-flowered pomegranate tree [*L. E.*]

The balauſtine is a low tree, or rather ſhrub, growing wild in Italy, &c. The flowers are of an elegant red colour, in appearance reſembling a dried red roſe. Their taſte is bitteriſh and aſtringent.

Balauſtines are recommended in diarrhœas, dyſenteries, and other caſes where aſtringent medicines are proper.

BALSAMITÆ MARIS *ſive coſti hortorum folia: Menthæ hortenſis corymbiferæ C. B. Tanaceti balſamitæ 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.

BALSAMUM CANADENSE [*E.*] vide TEREBINTHUM ARGENTORATENSIS.

BALSAMUM COPAIBA [*L. E.*] Balſam of Copaiba: a liquid reſinous juice, flowing from inciſions made in the trunk of a large tree (*Copaifera officinalis Lin.*) which grows in the Spaniſh Weſt-Indies.

The juice is clear and tranſparent, 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: long kept, it becomes nearly as thick as honey, retaining it 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 Copaiba, which is not at all tranſparent, or much leſs ſo than the foregoing, and generally has a portion of turbid watery liquor at the

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 Copaiba diſſolves entirely in rectified ſpirit, eſpecially if the menſtruum be previouſly alkalized: 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 Copaiba 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 paſſage, 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 turpentines do.

This balſam has been principally celebrated in gleets and the fluor albus, and externally as a vulnerary. The author above mentioned, 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, notwitſtanding its being hot and bitter, it has good effects even in hectic caſes. 'Moſt phyſicians ſeem now to conſider balſams and reſins too ſtimulant to be ventured on in phthiſical affections.'

The doſe of this medicine rarely exceeds twenty 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.

The only officinal preparation of this balſam is an empyreumatic oil diſtilled with the addition of gum guaiacum [*L.*] 'A balſam of Rakaſiri, got from an unknown American tree, ſaid to be uſed by the Indians like balſam of capivi in gleets, fluor albus, &c. is recommended by ſome authors.'

BALSAMUM GILEADENSE, vide OPOBALSAMUM.

BALSAMUM PERUVIANUM [*L. E.*] Balſam of Peru.

The common Peruvian balſam is ſaid to be extracted by coction in water, from an odoriferous ſhrub (*Myroxylon perniferum Lin.*) 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 hotter and more acrid than Copaiba. 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, gonorrhœas, 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, as alſo 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 Copaiba. Alkaline lixivia diſſolve great part of it; and rectified ſpirit the whole.

This balſam is an ingredient in the *balſamum guaiacinum*, *pilulæ aromaticæ* [*L.*] *elixir guaiacin. ambo*, *elix. traumatic.* and *trochiſci bechici cum opio* [*E.*]

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.

BALSAMUM TOLUTANUM [*L. E.*] Balſam of Tolu.

This flows from a tree, *toluifera balſamum Lin.* 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 fragrant, 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 gleets and ſeminal weakneſſes, is ſuppoſed to be more efficacious. It is an ingredient in the *vulnerary balſam* [*L.*] *tinctura Tolutana*, and *ſyrupus balſamicus* [*E.*]

BARDANÆ MAJORIS, *ſeu lappæ majoris, radix: Lappæ majoris, arcii Dioſcoridis C. B. Arctii lappæ Lin.* Burdock; the roots [*E.*]

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 ſubacrid 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.

BDELLIUM [*L.*] Bdellium.

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 tranſparent, and, as Geoffroy juſtly obſerves, like glue. It grows ſoft and tenacious 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 maturating tumors, &c. In the preſent practice, it is ſcarce

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otherwiſe made uſe of than as an ingredient in the theriaca.

BECABUNGÆ, *ſeu Anagallidis aquaticæ, folia: Veronicæ aquaticæ folio ſubrotundo Moriſ. hiſ. Veronicæ becabungæ Lin.* Brooklime; the leaves [*L.*]

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 bitteriſhneſs.

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 *cochleariæ*, and other acrid antiſcorbutics, were ſuppoſed to be leſs proper. It is now uſed only in compoſition with thoſe plants, as in the *ſucci ſcorbutici* [*L.*] but does not perhaps add much to their efficacy. If any virtue is expected from becabunga, it ſhould be uſed as food.

BELLADONA [*E.*] vide Solanum lethale.

BELLIDIS MAJORIS *folia: Bellidis majoris ſylveſtris caule folioſo C. B. Chryſanthemi leucanthemi Lin.* Greater or ox-eye daiſy; the leaves.

This plant is frequent in fields, and among corn, flowering in May and June. The leaves have a mucilaginous, ſubſaline, roughiſh taſte. They are ſaid to be detergent, reſolvent, aperient, and alſo moderately aſtringent. Geoffroy relates, that the herb, gathered before the flowers have come forth, and boiled in water, imparts an acrid taſte, penetrating and ſubtile like pepper; and that this decoction is an excellent vulnerary and diuretic; but this account ſeems to belong more properly to the following plant.

BELLIDIS MINORIS *ſive conſolidæ minimæ folia: Bellidis minoris ſylveſtris C. B. Bellidis perennis Lin.* Common daiſy; the leaves.

This is common almoſt every where, and flowers early in the ſpring.—The leaves have a ſubtile ſubacrid taſte, and are recommended as vulneraries, and in aſthmas and hectic fevers, and ſuch diſorders as are occaſioned by drinking cold liquors when the body has been much heated. Ludovici prefers the *bellis minor* to the plants commonly uſed as antiſcorbutics, and reſolvents of coagulated blood in hypochondriacal diſorders.

BENZOINUM [*L. E.*] Benzoine.

Benzoine is a concrete reſinous juice, obtained from a large tree (*Terminalia benzoin Lin.*) growing naturally in both the Indies, and hardy enough to bear the winters of our own climate. The reſin 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.

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.

The principal uſe of benzoine is in perfumes, and as a coſmetic: it is rarely met with in extemporaneous preſcription, and enters in ſub-

ſtance only one officinal compoſition, the *balſamum traumaticum*, 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 in this intention they are made an ingredient in the *paregoric elixir* [*L. E.*] and in the *troches of ſulphur* [*E.*]

BERBERIS, *ſeu oxycanthæ Galeni, cortex et fructus: Berberis dumetorum C. B. Berberis vulgaris Lin.* Barberry; the bark and fruit.

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 reſtringent, 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 liquor 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 diarrhœa.

BETÆ *folia: Betæ albæ vel palleſcentis quæ ſicula et cicla officinarum Mor. et Betæ rubræ vulgaris C. B. et Betæ rubræ radice rapæ C. B. Betæ vulgaris Lin.* White and red beets; and the turnep-rooted red beet, or beetrave.

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 errhine.

BETONICÆ *folia: Betonicæ purpureæ C. B. Betonicæ officinalis Lin.* Common or wood betony; the leaves.

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

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.

BETONICA AQUATICA, vide SCROPHULARIA AQUATICA MAJOR.

BETONICA PAULI, vide VERONICA MAS.

BETULÆ *cortex et lachryma: Betulæ C. B. Betulæ albæ Lin.* The birch tree; the bark and ſap.

This tree grows wild in moiſt 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 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 *lapis.* 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 the like ſubſtances.

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 univerſally moſt eſteemed, and is the only ſort now retained by the London college.

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 Slare 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 Neumann 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 notice 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 on 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 (on account of its great price) is only a few grains.

BISMALVA, vide ALTHÆA.

BISMUTHUM. 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.

BISTORTÆ *radix: Biſtortæ majoris radice minus intorta C. B. Polygoni biſtortæ Lin.* Biſtort, or ſnakeweed; the root [*L. E.*]

This plant grows wild in moiſt meadows in ſeveral parts of England, but is not very common about London. 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 intended 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 indi-

cation.

cation. It is certainly a very powerful ſtyptic, and is to be looked on ſimply as ſuch; the ſudorific, antipeſtilential, and other like virtues attributed to it, it has no other claim to, 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. It enters only one officinal compoſition, the *ſpecies e ſcordio* [*L.*]

BITUMEN JUDAICUM [*L.*] *Aſphaltus.* Jews pitch.

This is a light, ſolid bitumen, of a duſky colour on the outſide, and a deep ſhining black within; of very little taſte, and ſcarcely any ſmell, unleſs heated, when it emits a ſtrong pitchy one. It is found plentifully in the earth in ſeveral parts of Egypt, and on the ſurface of the Dead Sea; but is very rarely brought to us. In its room, the ſhops employ other bituminous ſubſtances found in France, Germany, and Switzerland: theſe have a much ſtronger pitchy ſmell; but in other reſpects agree pretty much with the true aſphaltus. Sometimes pitch itſelf, or the caput mortuum remaining after the diſtillation of amber, are ſubſtituted. Abundance of virtues are attributed to this bitumen, as reſolvent, diſcutient, glutinant, ſudorific, emollient, emmenagogue, &c. but it has not for a long time been any otherwiſe uſed than as an ingredient in theriaca.

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. Armenian bole, or bole-armenic [*L.*] 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. French bole [*L. E.*] 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 effervesing with acids.

(6) TERRA SILESIACA. Sileſian earth, 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 *terræ ſigillatæ*.

The boles of Armenia and Blois, and the Lemnian earth, are rarely met with genuine in the ſhops; the coarſer

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 of their parts; the genuine yellow boles retain their colour, or have it deepened, in the fire; whilſt the counterfeit ſorts burn red.

'Theſe earths have been recommended as aſtringent, ſudorific, and alexipharmac; in diarrhœas, 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 pharmacopœia bole is an ingredient in the *pulvis e bolo, e ſcordio, tabellæ cardialgicæ, theriaca*, and in one compoſition for external uſe, viz. the *lapis medicamentoſus*. No earth of this kind is employed in any of the compoſitions of the Edinburgh pharmacopœia, 'and the preſent practice hardly takes any notice of them.'

BOMBYX, vide SERICUM.

BONI HENRICI, *ſive lapathi unctuoſi, folia: Lapathi unctuoſi olidi perennis ſpinachiæ facie Moriſ. Chenopodii boni Henrici Lin.* Engliſh herb mercury; the leaves.

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.

BORAGINIS *flores: Boraginis flore cæruleo J. B. Boraginis officinalis Lin.* Borage; the flowers.

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 [*L. E.*] Tincar, or Borax.

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 diſſoluble 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, inſomuch 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 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. There are ſtrong reaſons to believe, that the virtues of borax are much greater than they

are in general ſuppoſed to be. See Part I.

BOTRYOS *folia: Chenopodii ambroſioidis folio ſinuato Tourn. Atriplicis odoræ ſeu ſuaveolentis Moriſ. Chenopodii botrys Lin.* Jeruſalem oak; the leaves.

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. Infuſions of it may be drank as tea.

BRASSICA SATIVA: *Braſſica capitata alba C. B. et Braſſica capitata rubra C. B. et Braſſica rubra C. B. et Braſſica alba capite oblongo non penitus clauſo C. B. Braſſica ſubauda Ger. et Park. et Braſſica cauliflora C. B. Braſſica oleracea Lin.* White and red cabbages, coleworts, Savoy cabbages, and cauliflower.

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. A decoction of them is ſaid to looſen the belly. 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 for ſoftening acrimonious humours 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 ſourcrout, and in the army and navy as an antiſcorbutic.'

BRASSICÆ MARINÆ *ſeu ſoldanellæ folia: Convolvuli maritimi ſoldanellæ dicti Raii, Convolvuli ſoldanellæ Lin.* Sea coleworts, Scotch ſcurvygraſs, 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.

BRUNELLA, vide PRUNELLA.

BRUSCUS, vide RUSCUS.

BRYONIÆ ALBÆ *radix: Bryoniæ aſperæ ſive albæ baccis rubris C. B. Bryoniæ albæ Lin.* White bryony, or wild vine; the roots [*E.*]

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; their ſmell, when freſh, is ſtrong and diſagreeable; the taſte naufeouſly 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,

fies, and in ſeveral chronical 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.

BUFO. The toad.

This animal has been generally looked upon as poiſonous, particularly its ſaliva, and a certain acrid liquor, ſuppoſed to be the urine, which it throws out, when irritated, to a conſiderable diſtance. It was firſt introduced into medicine upon occaſion of a cure performed on a hydropic perſon, to whom powdered toads were given in order to diſpatch him, but who voided a large quantity of urine after taking them, and ſoon recovered of his diſorder: ſince this time, the toad, dried by a gentle heat and pulverized, has been greatly eſteemed as a diuretic. This preparation is ſaid likewiſe, applied externally to the navel, to reſtrain hæmorrhagies, particularly thoſe from the uterus.

BUGLOSSI *radix, folia, flores: Bugloſſi anguſtifolii majoris C. B. Anchuſæ officinalis Lin.* Garden bugloſs; the roots, leaves, and flowers.

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. Theſe qualities point out its uſe in hot bilious or inflammatory diſtempers, and a thin acrimonious ſtate of the fluids. The flowers are one of the four called cordial flowers: the only quality they have that can entitle 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.

BUGULÆ *ſive conſolidæ mediæ folia: Bugulæ ſylvaticæ vulgaris cæruleæ Morriſon, Ajugæ reptantis Lin.* Bugle or middle conſound; the leaves.

This grows wild in woods, hedges, and moiſt meadows. The leaves have at firſt a ſweetiſh taſte, which gradually becomes bitteriſh and roughiſh. They are recommended as vulnerary medicines, and in all caſes where mild aſtringents or corroborants are proper.

BUNIAS, vide NAPUS.

BURSÆ PASTORIS *folia: Thlaſpis ſatui, burſæ paſtoris dicti, Raii; Thlaſpis burſæ paſtoris Lin.* Shepherdſpurſe; the leaves.

This plant is common in waſte places; and is found in flower all the ſummer. Shepherdſpurſe 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 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 ſhepherdſpurſe diſcover little foundation for either of theſe opinions; it has no perceptible heat, acrimony, pungency,

gency, and ſcarcely any aſtringency: the taſte is almoſt merely herbaceous, ſo as ſufficiently to warrant the epithet given this plant by Mr Ray, *Fatuum.*

BUXI *lignum: Buxi arboreſcentis C.B. Buxi ſempervirentis Lin.* The box tree; the leaves and wood [*L.*]

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 nauſcous 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 other medicinal purpoſe than for the diſtillation of an empyreumatic oil [*L.*]; and an oil of nearly the ſame quality is obtainable by the ſame treatment from almoſt all woods.

CACAO [*E.*] Chocolate nuts.

Theſe are the fruit of an American tree reſembling the almond, *Theobroma cacao Lin.* 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.

CALAMINARIS LAPIS [*L. E.*] 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.*

CALAMINTHÆ *folia: Calaminthæ pulegii odore ſeu nepetæ C.B. Calaminthæ foliis ovatis, obtuſis, caule procumbente Halleri; Meliſſæ nepetæ Lin.* Field calamint; the leaves [*L.*]

This is a low plant, growing wild about hedges and highways, and in dry ſandy ſoils. The leaves have a quick warm taſte, and ſmell ſtrongly of pennyroyal: as medicines, they differ little otherwiſe from ſpearmint, than in being ſomewhat hotter, and of a leſs pleaſant odour; which laſt circumſtance has procured calamint the preference in hyſteric caſes.

CALAMINTHÆ MONTANÆ *folia: Calaminthæ flore magno vulgaris J. B. Meliſſæ calaminthæ Lin.* Common calamint; the leaves.

This plant, notwithſtanding its name, is, among us, much leſs common than the former, which has generally ſupplied its place in the markets: hence the London college have now dropt this *montana*, and received the other. The *calamintha mon-*

montana is alſo leſs efficacious than the foregoing ſort: the taſte is weaker; the ſmell approaches to that of the wild mints, without any thing of the ſtrong pennyroyal flavour of the other.

CALAMI AROMATICI *radix: Acori veri ſive calami aromatici officinarum C. B. Acori calami Lin.* Sweet-ſcented flag; the roots [*L. E.*]

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 flatted 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 ſuch as I have had an opportunity of examining, fell ſhort, in this reſpect, of ſeveral of our common plants. It is, nevertheleſs, a ſufficiently elegant aromatic. It is an ingredient in the mithridate and theriaca of the London pharmacopœia; and in the aromatic and ſtomachic tinctures, and compound arum powder, of the Edinburgh. The freſh root candied after the manner directed in our diſpenſatory 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 weaker, than that of the roots.

CALENDULÆ *flores: Calendulæ ſativæ Raii: Calendulæ flore ſimplici J. B. Calendulæ officinalis Lin.* Garden marigold; the flowers.

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; as alſo cardiac, alexipharmac, and ſudorific: they are principally celebrated in uterine obſtructions, 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 ſweetiſhneſs accompanied with a more durable ſaponaceous pungency and warmth: theſe ſeem capable of anſwering ſome uſeful purpoſes, as a ſtimulating, aperient, antiſcorbutic medicine.

CALX VIVA [*L. E.*] Quicklime. Quicklime is uſually prepared among us, 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

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 [*L.*]; 'and for depriving alkalies of their fixt air, thus increaſing their power,' either for the purpoſes of a cauſtic [*L. E.*], or to enable them more readily to diſſolve oils for making ſoap [*L.*] 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 ſweetiſhneſs. This liquor does not effervеſce with acids, but is rendered 'by fixt air' turbid and milky: as it preventing the coagulation of milk, it is ſometimes made uſe of along with milk diets: agitated with expreſſed oils, it unites with them into a thick compound, recommended by Dr Slaire, 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 titles of ſimple and compound lime-waters [*L.*] 'The Edinburgh college retains only the ſimple.'

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 ſcrophulous 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, 'as fluor albus, chronic menorrhagia, and gleets,' it is particularly recommended. Care muſt be had 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. Its principal uſe is in cold, moiſt, ſluggiſh, and corpulent habits. 'It has been uſed as a lithontriptic. In the form of injection, it is very effectual in killing and bringing off aſcarides.'

CAMPECHENSE LIGNUM,

vide LIGNUM CAMPECHENSE.

CAMPHORA [*L. E.*]

Camphor is a ſolid concrete, extracted from the wood and roots of a tree (*Laurus camphora Lin.*) 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 ſpi-

rits,

rits, 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 deliria, where opiates fail of procuring ſleep, and oftentimes aggravate the ſymptoms, this medicine frequently ſucceeds.

'The late Mr Alexander of Edinburgh, on taking a ſcruple of camphor, 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 wrote an expreſs diſſertation *De Camphoræ uſu interno ſecuriſſimo et præſtantiſſimo.* The ſubſtance of his obſervation is, that camphor ſeems to penetrate very quickly through the whole body, and notably 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 notably diminiſhed: that in malignant fevers, and all diſorders, whether acute or chronical, proceeding from an acrid or putreſcent ſtate of the juices, camphor has excellent effects, correcting the acrimony, expelling the putrid morbific matter through the cutaneous pores, and preventing an inflammation of ſphacelus, where there is previouſly any diſpoſition thereto: that, by ſtrengthening the veſſels, it reſtrains hæmorrhagies 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 canthariides, 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. Its officinal preparations are, a julep [*L.*] for internal uſe; and a ſolution in rectified ſpirit [*L. E.*] and in expreſſed oil [*E.*] for external applications. It is an ingredient alſo in the paregoric elixir, camphorated vitriolic water, camphorated white ointment, and ſaponaceous liniment [*L.*], 'ſaponaceous and anodyne liniments [*E.*]'

'In modern practice, it is externally employed chiefly to diminiſh inflammation, to diſcuſs tumor, to ob-

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 typhous kind. Some recommend it as ſingularly uſeful in caſes of ardor urinæ; and others find it efficacious in what are called nervous head-achs.'

CANCRORUM CHELÆ [*L.*] Crabs claws: the black tips of the claws of the common ſea crab, or *cancer marinus*.

CANCRORUM OCULI *dicti* [*L. E.*] Crabs eyes ſo called: ſtony concretions found in the head, or rather ſtomach, of the *aſtacus fluviatilis*, (*Cancer aſtacus Lin.*) or craw fiſh.

The only virtue of theſe ſimples is to abſorb acidities in the primæ viæ. The claws enter an officinal lozenge, and give name to a powder, for this intention. They are ingredients alſo in ſome other officinal compoſitions, in which they do not ſeem to be of much advantage: viz. the compound arum powder, contrayerva powder, and cordial confection.

Crabs eyes 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 unhurt.

CANELLA ALBA: *Cinnamomum ſive canella tubis minoribus alba C. B.* Canella alba.

This is a bark 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, called by Sir Hans Sloane *arbor baccifera laurifolia aromatica, fructu viridi calyculato racemoſo; Winterania canella Lin.* 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 one another 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. It is lately ſometimes met with in extemporaneous preſcription, and is an ingredient in the officinal *hiera picra* and *tinctura ſacra* [*L.*], and in the *vinum amarum*, or *tinct. ad ſtomachicos*, *vinum rhei*, and the *tinctura amara*, or *elixir ſtomachicum*. [*E.*]

CANNABIS *ſemen: Cannabis ſativæ C. B. & 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.

CANTHARIDES, *Meloe veſicatorius Lin.* [*L. E.*] Spaniſh flies. 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 excoriate the part, raiſing a more perfect bliſter than any of the vegetable acrids, 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 is 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 cold phelgmatic ſluggiſh 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. Groenveltemployedcantharideswith 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, or other emollient liquids; by this means the exceſſive irritation which they would otherwiſe have occaſioned, was in 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 [*L. E.*]; 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, leucorrhœa, amenorrhœa, &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 in indolent ſwellings, or in form of weak plaſter, but moſt commonly in form of full 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* [*E.*]

CAPILLUS VENERIS, vide ADIANTHUM.

CAPPARIS *radicis cortex, et florum gemmæ: Capparis ſpinoſæ fructu minore, folio rotundo C. B. Capparis ſpinoſæ 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 betwixt 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 biteriſh 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 more upon the ſaline matter introduced into them, than on the caper buds.

CAPRIFOLII *folia et flores: Periclymeni non perfoliati Germanici C. B. Loniceræ periclymeni Lin.* Woodbind, or honeyſuckle; the leaves and flowers.

This is a climbing ſhrub, common in hedges; the beauty of its flowers has gained it a place alſo in gardens. The leaves have a diſagreeable ſmell; the flowers a very pleaſant one; the taſte of both is herbaceous and roughiſh. They are ſaid to be diuretic and aperient; but practice has not for a long time paid any regard to them.

CAPSICUM, vide PIPER INDICUM.

CARABE, vide SUCCINUM.

CARANNA, Caranna.

This is a reſinous ſubſtance brought from New Spain, and other parts of America, in little maſſes, rolled up in leaves of flags: it is ſaid to exude from a ſpecies of palm-tree. This reſin is very rarely made uſe of in medicine, or met with in the ſhops; whence the London and Edinburgh colleges have rejected it from their catalogue.

'CARDAMINES *petala, folia: Cardamines pratenſis Lin.* Ladies Smock, or Cuckow Flower; the petals and leaves [*E.*]

'It is a perennial plant, grows in meadow grounds, ſends forth purpliſh flowers in the ſpring; and in its ſenſible qualities it 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.'

CARDAMOMI MAJORIS *ſemen Lin.* Greater Cardamom ſeed.

The greater cardamom is a dried fruit or pod, about an inch long, containing under a thick ſkin two rows of ſmall triangular ſeeds of a warm aromatic flavour.

CARDAMOMI MINORIS *ſemen; Amomi cardamomi Lin.* Leſſer cardamom [*L. E.*]

This fruit is ſcarce half the length of the foregoing; the ſeeds 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 diſtilled 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 a ſpirituous water and tincture: they are employed alſo as a ſpicy ingredient in ſeveral of the officinal compoſitions.

CARDIACÆ *folia: Marubii cardiacæ dicti, ſorte primi Theophraſti C. B. Leonuri cardiacæ 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.

CARDUI BENEDICTI *folia, ſemen: Cnici ſylveſtris hirſutioris ſive cardui*

cardui benedicti C. B. Cardui lutei procumbentis, ſudorifici et amari Moriſon. Centaureæ benedictæ Lin. Bleſſed thiſtle; the leaves [*L.*] and ſeed [*E.*]

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 is 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 in the ſame intention as the leaves.

CARICÆ [*L. E.*] Figs; the dried fruit of the *ficus communis C. B. Ficus carica Lin.*

The principal uſe of theſe is as a ſoft, emollient ſweet; in 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 the maturating cataplaſm.

CARLINÆ, *ſeu Chamæleontis albi, radix: Carlinæ acaulæ magno flore albo C. B. Carlinæ acaulis Lin.* Carline 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 Swiſſerland; 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 ſubacrid, bitteriſh, weakly aromatic taſte. Carlina is looked on as a warm diaphoretic and alexipharmac; and has been for ſome time greatly eſteem- 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. Frederick Hoffman the elder relates, that he has obſerved a decoction of it in broth to occaſion vomiting.

CARPOBALSAMUM: *Fructus balſami Syriaci rutæ ſolio C. B.* Carbobalſam.

This is the fruit of the tree (*Amyris Gileadenſis Lin.*) that yields the opobalſam or balm 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 is of no other uſe in this country than as an ingredient in the mithridate and theriaca; in both which the college directs cubebs as a ſubſtitute to it.

CARTHAMI *ſemen: Cartami officinarum flore croceo Tourn. Carthami tinctorii Lin.* Baſtard ſaffron, or ſafflower; 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.

CARUI, *carvi, ſeu cari, ſemen: Cumini pratenſis carui officinarum C. B. Cari carvi Lin.* Caraway; the ſeeds [*L. E.*]

Caraway is an umbelliferous plant, cultivated with us in gardens, both for culinary and medicinal uſe. The ſeeds have an 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. Their officinal preparations are an eſſential oil and a ſpirituous water [*L.*]; they are ingredients alſo in the compound juniper water, tincture of ſena, ſtomachic tincture, oxymel of garlic, electuary of bayberries and of ſcammony, philonium, and the cummin ſeed plaſter [*L.*]

CARYOPHYLLA AROMATICA [*L. E.*] Cloves.

Cloves are the fruit of the *Caryophillus aromaticus Lin.* 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 [*L. E.*]

[*L. E.*] Both the cloves themſelves and their oil are ingredients in many officinal compoſitions.

CARYOPHYLLA RUBRA: *Flores Caryophylli altilis majoris C. B. Dianthi caryophylli Lin.* Clove July-flowers [*L. E.*]

A great variety of theſe flowers are met with in 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.

CARYOPHYLLATÆ *radix: Caryophyllatæ vulgaris flore parvo luteo J. B. Gei urbani Lin.* Avens, or herb benet; 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.

CASCARILLA, vide ELEUTHERIA.

CASSIA FISTULARIS [*L. E.*] the fruit of an oriental tree (*Caſſia fiſtula Lin.*) 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 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 too dry nor too 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 lax-

ative 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 is 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 tension of the belly which sometimes follows 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 much 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: the bark of an Indian tree called by Breynius *arbor canellifera Indica, cortice acrimo viscido seu mucilaginoso, qui cassia lignea officinarum; Laurus cassia Lin.* [*E.*]

This bark, in appearance and aromatic flavour, approaches to cinnamon; from which it is easily distinguishable by its remarkable viscidity: chewed, it seems to dissolve in the mouth into a slimy substance; boiled in water, it gives out a strong mucilage, the aromatic part exhaling; the water obtained by distillation, unless drawn with great care, has an unpleasant smell, somewhat of the empyreumatic kind: nevertheless the distilled oil proves nearly of the same quality with that of cinnamon. Cassia possesses the aromatic virtues of cinnamon; but in an inferior degree; and its effects are less durable. Its glutinous quality renders it useful in some cases where simple aromatics are less proper.

CASTOREUM [*L. E.*] 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 (*Castor fiber Lin.*) frequent in several parts of Europe and America. 'It is also got from a few other animals.' 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 that from the Bay of Honduras is reckoned much better.'

Russia 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 antihysteric medicines: some celebrated practitioners have nevertheless doubted its virtues; and Neumann and Stahl declare it insignificant. Experience, however, has shown, that the virtues

of

of caſtor are conſiderable, though they are certainly far leſs than they have been generally ſuppoſed to be. Its officinal preparations are a ſimple water [*L.*], a ſpirituous tincture [*L. E.*], and a compound tincture of caſtor [*E.*] It is an ingredient in ſundry other compoſitions, as the compound elixir and powder of myrrh [*L.*]

CASUMUNAR [*L.*]

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.

CAUDA EQUINA, *ſeu Equiſetum: Equiſetum paluſtre longioribus ſetis C. B. Equiſetum arvenſe Lin.* Horſetail; the herb.

This plant is common in watery places. It is ſaid to be a very ſtrong aſtringent: it has indeed a manifeſt aſtringancy, but in a very low degree.

CENTAURII MAJORIS, *ſeu Rhapontici vulgaris, radix: Centaurii majoris folio in lacinias plures diviſo C. B. Centaureæ centaurii Lin.* Greater centaury; the root.

The greater centaury is a large 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 in any intention.

CENTAURII MINORIS *ſummitates: Centaurii minoris flore purpureo J. B. Gentianæ centaurii Lin.* Leſſer centaury; the tops [*L. E.*]

This grows wild in many parts of England, in dry paſture grounds, and amongſt corn. The tops are an uſeful aperient bitter.

CENTINODIUM: *Polygonum latifolium C. B. Polygonum aviculare Lin.* Knotgraſs; the herb.

This is ſaid to be vulnerary and aſtringent, but on no very good foundation.

CEPA [*L.*] *Cepa vulgaris C. B. Allium cepa Lin.* Onions.

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, headachs, 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 [*L. E.*] Yellow bees wax.

This is a ſolid concrete obtained from the honeycombs after the honey

ney 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 [*L. E.*]—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 diarrhœas, dyſenteries, &c. mixed with oily ſubſtances, as in the *balſamum Locatelli* [*L.*]

CERASA: *Fructus Ceraſi majoris et ſylveſtris fructu ſubdulci, nigro colore inficiente C. B. et Ceraſi ſativæ, fructu rotundo rubro et acido Tourn. et Ceraſi acidiſſimæ ſanguineo ſucco C. B. Pruni cerofi, var. ζ, α, ν, Lin.* 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 in this intention, in hot bilious, or febrile diſtempers. Boerhaave was extremely fond of theſe and the other fruits called *horæi*, as aperients in ſome chronic caſes; and declares himſelf perſuaded, that there is no kind of obſtruction of the viſcera capable of being removed by medicine, which will not yield to the continued uſe of theſe.

CERUSSA [*L. E.*] Ceruſſe, or white lead.

This is prepared by expoſing lead to the ſteam of vegetable acids till it is corroded into a white powdery ſubſtance. It is ſometimes adulterated with a mixture of common whiting; this, if in any conſiderable quantity, may be eaſily diſcovered by the ſpecific lightneſs of the compound: the ſort called flake lead is not ſubject to abuſe. See the article PLUMBUM; and *Ceruſſa* in the third part.

CETERACH: *Ceterach officinarum C. B. Aſplenii ceterach Lin.* Spleenwort, or miltwaſte.

This is a ſmall buſhy plant growing upon rocks and old walls. It has an herbaceous, ſomewhat mucilaginous, roughiſh taſte: it is recommended as a pectoral and for promoting urine in nephritic caſes. The virtue which it has been moſt celebrated for, is that which it has the leaſt title to, diminiſhing the ſpleen.

CHÆREFOLII *folia: Chærophylli ſativi C. B. Scandicis chærefolii Lin.* Chervil; the leaves.

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

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.

CHAMÆCYPARISSUS, vide ABROTANUM FOEMINA.

CHAMÆDRYOS, *seu Trissaginis summitates cum semine: Chamædryos minoris repentis C. B. Teucrii chamædryos Lin.* Germander; the tops with the seed [*L.*]

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; as also in scrophulous and other chronic disorders.

CHAMÆLEON ALBUS, vide CARLINA.

CHAMÆMELI *folia, flores: Chamæmeli nobilis seu leucanthemi odoratioris C. B. Anthemis nobilis Lin.* Single-flowered chamomile (the trailing sort with larger leaves and flowers, and the disk of the flower not very convex); the leaves and flowers [*L. E.*]

These have a strong not ungrateful aromatic smell, and a very bitter nauseous taste. They are accounted carminative, aperient, emollient, and in some measure 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 the nephritis. These flowers are frequently also used externally in discutient and antiseptic fomentations, and in emollient glysters: they enter the *fotus communis*, *decoctum commune pro clysmate*, and *oleum viride* of our dispensatory: an essential oil [*L.*] is likewise prepared from them in the shops.

CHAMÆMELUM *flore multiplici C. B.* Double-flowered chamomile; the flowers.

These differ from the foregoing in having several rows of the white petala set thick together about the middle disk, which is much smaller. In this disk the medicinal qualities of the flower chiefly reside; and hence the double or small disked sort is inferior in efficacy to the single.

CHAMÆPITYOS *sive Ivæ arthriticæ folia: Chamæpityos luteæ vulgaris sive folio trifido C. B. Teucrii Chamæpityos Lin.* Ground pine; the leaves.

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, as also in gouty and rheumatic pains.

CHEIRI, *seu Leucoii lutei, flores: Leucoii lutei vulgaris C. B. Cheiranthi 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 subacrid, bitterish, not agreeable taste: they are said to be cordial, anodyne, aperient, and emmenagogue, but are wholly neglected by practice.

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CHELIDONII MAJORIS *folia radix: Chelidonii majoris vulgaris C. B. & 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. Juice of celandine has long been celebrated in diſorders of the eyes; but it is greatly 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 recommended 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 the freſh root.

CHELIDONII MINORIS *folia, radix: Chelidoniæ rotundifoliæ minoris C. B. Ranunculi ficariæ Lin.* Pilewort; the leaves and root.

This is a very ſmall plant, found in moiſt meadows and by hedgeſides: the roots conſiſt of ſlender fibres, with ſome little tubercles among them, which are ſuppoſed to reſemble the hæmorrhoids; from whence 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.

CHERMES, vide KERMES.

CHINÆ *radix.* China root.

There are two ſorts of this root in the ſhops, one brought from the Eaſt Indies (*Smilax China Lin.*), the other from the Weſt (*Pſeudo-China ſmilax Lin.*) 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 of a ſpecific againſt venereal and cutaneous diſorders; and as ſuch was made uſe of for ſome time, but at length gave place to medicines of a more powerful kind. It is generally ſuppoſed to promote inſenſible perſpiration and the urinary diſcharge; and by its unctuous quality to obtund acrimonious juices.

CHINA CHINÆ, vide PERUVIANUS CORTEX.

CICERIS RUBRI *ſemen: Ciceris floribus et ſeminibus ex purpurâ rubeſcentibus C. B.* Red chiches, or chich peas.

This is a ſort of pulſe cultivated in the warmer climates, where our finer peas do not thrive ſo well. They are a ſtrong flatulent food, hard of digeſtion. Lithontriptic and diuretic virtues are attributed to them on no good foundation.

CHICHOREI *folia, radix: Cichorei ſylveſtris ſive officinarum C. B. Cichorii intybi Lin.* Wild ſuccory; the roots and leaves.

The root has a moderately bitter taſte,

taſte, with ſome degree of roughneſs; the leaves are ſomewhat leſs bitter: the roots, ſtalks, and leaves yield, on being wounded, a milky ſaponaceous juice. By culture this plant loſes its green colour and its bitterneſs, and in this ſtate is employed in ſalads: the darker coloured and more deeply jagged the leaves, the bitterer is their taſte. Wild ſuccory is an uſeful detergent, aperient, and attenuating medicine; acting without much irritation, tending rather to cool than to heat the body, and at the ſame time corroborating the tone of the inteſtines. The juice taken in large quantities, ſo as to keep up a gentle diarrhœa, and continued for ſome weeks, has been found to produce excellent effects in ſcorbutic and other chronical diſorders.

CICUTÆ *folia et ſemen: Cicutæ majoris C. B. Conii maculati Lin.* Hemlock; the leaves and ſeed [*E.*]

This is a large umbelliferous plant, common about the ſides of fields, under hedges, and in moiſt ſhady places: the leaves are winged, divided into a great number of ſmall fern-like ſections, of a dark or blackiſh green colour, and appearing as it were rough; the ſtalk is hollow (as is likewiſe great part of the root after the ſtalk has ariſen), and ſpotted with ſeveral blackiſh, red, or purple ſpots. Hemlock is ſometimes applied externally 'in the form of decoction, infuſion, or poultice, as a diſcutient. Theſe are apt to excoriate, and their vapour is to ſome particularly diſagreeable and hurtful. The ſtalks are inſignificant, and the roots very virulent' With regard to its virtue when taken internally, it has been generally accounted poiſonous; which it doubtleſs is, in a high degree, when uſed in any conſiderable quantity. But Dr Storck has lately found, that in certain ſmall doſes it may be taken with great ſafety; and that, without at all diſordering the conſtitution, or even producing any ſenſible operation, it ſometimes proves a powerful reſolvent in many obſtinate diſorders. 'In ſcirrhus, the internal and external uſe of hemlock has been found uſeful, but then mercury has been generally uſed at the ſame time. In open cancer, it often abates the pains, and is free from the conſtipating effects of opium. It is likewiſe uſed in ſcrophulous tumours and ulcers, and in other ulcers that are only defined by the term ill-conditioned. It is alſo recommended by ſome in chincough, and various other diſeaſes. Its common, and perhaps beſt form, is that of the powdered leaves, in the doſe at firſt of two or three grains a-day, which in ſome caſes has been gradually increaſed to upwards of two ounces a-day, without producing giddineſs. An extract from the ſeeds is ſaid to produce giddineſs ſooner than that from the leaves.' See *Extractum cicutæ* in the third part of this work.

CIMOLIA ALBA, *ſeu Argilla alba.* Tobaccopipe-clay.

This is a pure white clay, nearly of the ſame general nature with the boles already ſpoken of, but more viſcous when moiſtened with water, and hence probably more effectual for obtunding and incraſſating acrimonious thin humours. It is ſcarcely ever uſed for any medicinal purpoſe.

CIMOLIA PURPURASCENS. Fullers earth.

This earth is more viſcous than the boles, and leſs ſo than the tobaccopipe-clay. It is wholly neglected in practice.

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'CINARÆ *folia. Cynaræ ſcolymi Lin.* Artichoke; the leaves [*E.*]

'Beſides its uſe at table, the bitter juice of the leaf, mixt with an equal part of Madeira wine, is recommended in an ounce doſe night and morning, as a powerful diuretic in dropſy. 'An infuſion of the leaf may likewiſe be uſed.'

CINNABARIS NATIVA. 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 greatly improves upon grinding the maſs into fine powder; this is imported by the Dutch from the Eaſt-Indies. 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 nauſeæ, 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, like which it is not diſſoluble in the animal fluids, and is commonly found of little activity. See Part III. chap. iv. ſect. 7.

CINERES RUSSICI. Ruſſia potaſh [*L.*]

'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* [*E.*]. If lime is 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 in, and from which it is called potaſh. A deal of it is brought to us from America, Ruſſia, and other places. Other kinds of impure vegetable alkali appear in commerce, under the names of caſhub, marcoſt aſhes,' &c.

CINNAMOMUM: *Cinnamomum ſive canella Zeylanica C. B. Laurus cinnamomum Lin.* Cinnamon [*E.*]

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;

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 ſimple and ſpirituous diſtilled water, and a tincture of it, are kept in the ſhops: it is likewiſe employed as a ſpicy ingredient in a great number of compoſitions.

CITREORUM *cortex et ſuccus: Fructus mali medicæ C. B. Citrus medicæ Lin.* Citrons; the yellow rind 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.

CITRULLI *ſemen: Anguriæ citrulli dictæ C. B. Cucurbitæ citrulli Lin.* Citruls; the ſeed.

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.

CNICUS, vide CARTHAMUS.

COCCINELLA, *ſeu Cochinella; Coccus cacti Lin.* Cochineal [*L. E.*]

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 has long been ſuppoſed to be the ſeed of a plant: 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 alexipharmac; 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 pharmacopœia three tinctures, in the Edinburgh two, receive from this drug a fine red colour.

COCHLEÆ TERRESTRES, vide LIMACES TERRESTRES.

COCHLEARIÆ HORTENSIS *folia: Cochleariæ folio ſubrotundo C. B. Cochleariæ officinalis Lin.* Garden ſcurvy-graſs; the leaves [*L. E.*]

COCHLEARIÆ MARINÆ *folia: Cochleariæ folio ſinuato C. B. Cochleariæ Anglicæ Lin.* Sea ſcurvy-graſs; 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.

Scurvy graſs 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 cele-

celebrated in ſcurvies, and is the principal herb employed in theſe kinds of diſorders in the northern countries.

COFFEA. Coffee: the fruit of an oriental ſhrub called by Juſſieu *jaſminum Arabicum lauri folio, cujus ſemen apud nos caffé dicitur. Coffæa Arabica Lin.*

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.'

'COLCHICI *radix: Colchici autumnalis Lin.* Meadow ſafron; 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 [*E.*], 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.'

COLOCYNTHIDIS *medulla.* Coloquintida, or bitter apple; the medullary part of the dried fruit [*L. E.*]

This is the produce of a plant of the gourd kind (*Cucumis colocynthis Lin.*) 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 alterative 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 ſtriking 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 extract of the ſhops.

'COLOMBÆ *radix.* Colombo; the root [*E.*]

'It is the root of a certain vegetable; and 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

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.'

CONSOLIDÆ MAJORIS, *seu Symphyti majoris, radix: Symphyti consolidæ majoris C. B. Symphyti officin. 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.

CONSOLIDA MEDIA, vide BUGULA.

CONSOLIDA MINIMA, vide BELLIS MINOR.

CONTRAYERVA. *Dorstenia contrayerva Lin.* [*L. E.*]

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, tough, 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.

'CONVALLARIÆ *radix* [*E.*] *Convallariæ polygonati 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 doubted. 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, supposed by some a mineral, 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 within the shops.

CORALLINA: *Muscus maritimus sive corallina officinarum C. B.* Coralline, or sea moss.

This is a branched cretaceous substance 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 founda-

tion I know not: to the taſte it is entirely inſipid.

CORALLIUM RUBRUM. Red coral [*L.*]

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.

CORIANDRI *ſemen: Coriandri majoris C. B. Coriandri ſativi Lin.* Coriander; the ſeed [*L. E.*]

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 are an ingredient in the officinal compound lime-water and electuary of bayberries [*L.*]

CORNU CERVI [*L.*] 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 which 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. See Part I.

The horns boiled in water, give out an emollient nutritious *gelly*. Burnt to whiteneſs, they yield an earth, employed in the officinal white decoction [*L.*]

CORNI *fructus: Corni hortenſis maris C. B. Corni maris Lin.* The Cornel tree; its fruit.

This fruit is moderately cooling and aſtringent, but not regarded as an article of the materia medica.

COSTUS [*L.*] *Coſtus Arabicus Lin.* A root brought from the Eaſt-Indies.

Authors mention two ſorts of coſtus, ſweet and bitter: in the ſhops we ſeldom meet with any more than one, the *coſtus dulcis officinarum C. B.* The root is about the ſize of the finger; and conſiſts of a yellowiſh woody part incloſed within a whitiſh bark: the former is very tough, of no ſmell, and very little taſte; the cortical part brittle, of a warm, bitteriſh, aromatic taſte, and an agreeable ſmell, ſomewhat reſembling that of violets or Florentine orris. Coſtus is ſaid to attenuate viſcid humours, to promote expectoration, perſpiration, and urine. At preſent it is rarely met with in preſcription, and not often in the ſhops; in mithridate, theriaca, and the confectio paulina, the only officinal compoſitions it is directed in, zedoary ſupplies its place.

COSTUS HORTORUM, vide BALSAMITA MAS.

COTULÆ FOETIDÆ *folia: Chamæmeli fœtidi C. B. Anthemis cotulæ Lin.* Mayweed, or wild chamomile; the leaves.

This plant is common among corn, and in waſte places. In appearance it reſembles ſome of the garden chamomiles, but is eaſily diſtinguiſh-

ſtinguiſhable from them by its ſtrong fetid ſcent. It is rarely or never uſed in the preſent practice.

CRASSULÆ *ſive Telephii folia: Telephii vulgaris C. B. Sedi Telephii Lin.* Orpine; the leaves.

This is a very thick-leaved juicy plant, not unlike the houſeleeks. It has a mucilaginous roughiſh taſte, and hence is recommended as emolient and aſtringent, but has never been much regarded in practice.

CREPITUS LUPI, vide LYCOPERDON.

CRETA [*L. E.*] 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 ſatiated with acid, with which it compoſes a ſaline concrete manifeſtly ſubaſtringent. It gives name to an officinal julep [*L.*], a powder and potion [*E.*], and is an ingredient in the cardialgic troches. It is employed alſo for extricating the volatile ſalt of ſal ammoniac [*L. E.*]

CRITHMI *folia: Crithmi ſive fœniculi maritimi minoris C. B.* Samphire; the leaves.

This plant grows wild on rocks, and in maritime places; the leaves are ſomewhat like thoſe of fennel, but the ſegments much thicker and ſhorter: their ſmell reſembles that of ſmallage; the taſte is warm, bitteriſh, not agreeable. They are ſaid to be ſtomachic, aperient, and diuretic.

CROCUS: *Crocus ſativus C. B. et Lin.* Saffron; the chives, or fleſhy capillaments growing at the end of the piſtil of the flower, carefully picked and preſſed together into cakes [*L. E.*]

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 greatly 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 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 particularly ſerviceable in hyſteric depreſſions proceeding from a cold cauſe 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 pefection for many years. Its officinal preparations are, a ſpirituous tincture [*E.*], a

vinous tincture, and syrup [*L.*] It is an ingredient in the cordial confection [*L.*] the *pectoral* and *paregoric* elixirs [*E.*], and several of the aloetic compositions. '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.'

CUBEBÆ [*L. E.*] *Piper cubeba Lin.* Cubebs.

Cubebs 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, cubebs are far inferior to pepper. They are an ingredient in mithridate and theriaca, [*L.*]

CUCUMERIS HORTENSIS, *semen: Cucumeris sativæ 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.

CUCUMERIS AGRESTIS *fructus: Cucumeris sylvestris asinini dicti C. B. Momordicæ elaterii Lin.* Wild cucumber; the fruit [*L. E.*]

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 [*E.*], 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.' Elaterium is a strong cathartic, and very often operates also upwards. Two or three grains are accounted in most cases a sufficient dose. Simon Paulli relates some instances of the good effects of this purgative in dropsies: 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.

CUCURBITÆ *semen: Cucurbitæ oblongæ, flore albo, folio molli C. B. Cucurbitæ lagenariæ Lin.* The gourd; its 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, vide CYMINUM.

CUPRESSI *fructus: Cupressi sempervirentis Lin.* The cypress tree; its fruit.

This is a tall tree growing wild in the warmer climates. The fruit is a strong astringent; and in some places frequently used as such: Among us it is very rarely employed, and

ond not often met with in the ſhops.

CUPRUM [*L. E.*] Copper.

The 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 good 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 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 commendable, or even ſafe. 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 that had been dreſt in copper veſſels not well cleaned from the ruſt which they had contracted by lying in the air.

Great care ought to be had 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 metals 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.

'The chief preparations of copper are, the blue vitriol, verdigris, and cuprum ammoniacum. The blue vitriol is recommended by ſome as a uſeful emetic, particularly in caſes of incipient phthiſis with a view of reſolving tubercles. It is ſometimes employed as an aſtringent and eſcharotic; and verdigris is uſed in form of ointment in certain ulcerations, as tinea, &c. The cuprum ammoniacum is recommended in epilepſy.'

CURCUMA [*E.*] *Curcuma longa Lin.* Turmeric.

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, &c.' 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 emmanagogue, and of ſingular efficacy in the jaundice. It tinges the urine of a ſaffron colour.

CUSCUTA. *Cuſcuta Europæa Lin.* Dodder.

This is of the claſs of plants call-

ed paraſitical, or which grow out from the body of others: it has no leaves, conſiſting only of a number of juicy filaments matted together. There are two ſorts of it, *cuſcuta major C. B.* which grows commonly in heaths on furzes, nettles, &c. and likewiſe in fields of flax and other manured plants; and the *cuſcuta minor*, or *epithymum* of the ſame author, ſo called from its being found only upon thyme. This laſt is preferred for medicinal uſe, and is uſually brought from Leghorn and Turkey, with tops and ſtalks of thyme amongſt it. Epithymum has a pretty ſtrong ſmell, and roughiſh ſomewhat pungent ſubtile taſte. Its virtues remain as yet to be determined: the ancients ranked it among cathartics; but thoſe who have given it in that intention have been generally diſappointed.

'CURSUTÆ *radix:* Yellow gentian; the root.

'This foreign root has a very bitter taſte, ſeems to be a mere variety of the gentian, and is uſed by ſome in dyſpepſia.'

CYANI *flores: Cyani ſegetum C. B. Centureæ cyani Lin.* Blue-bottle; 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.

CYCLAMEN, vide ARTHANITA.

CYDONIA MALA, *eorumque ſemina: Fructus Cotoneæ mali J. B. Pyri cydoneæ Lin.* The quince-tree; the fruit and its ſeeds [*L. E.*]

Quinces have a very auſtere acid taſte: taken in ſmall quainttiy, 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 ſyrup of the fruit and mucilage of the ſeeds [*L.*] are kept in the ſhops.

CYMINI *ſemen: Cymini ſemine longiore C. B. Fœniculi orientalis cumini dicti Tourn. Cumini cymini Lin.* Cummin; the ſeeds [*L. E.*]

This is an umbelliferous plant, in appearance reſembling fennel, but much ſmaller; the ſeeds 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. They are accounted good carminatives, but not very often made uſe of. An eſſential oil of them is kept in the ſhops, and they give name to a plaſter and cataplaſm [*L.*]

CYNOGLOSSI *radix: Cynogloſſi majoris vulgaris C. B. Cynogloſſi 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 ſweetiſhneſs. 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

mere glutinous aſtringent. The preſent practice takes no notice of it in any intention.

CYNOSBATI *fructus: Roſæ ſylveſtris vulgaris flore odorato incarnato C. B. Roſæ caninæ Lin.* The wild briar, dog-roſe, or hip-tree; its fruit [*L.*]

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 ſouriſh ſweetiſh pulp; with a rough prickly matter incloſing the ſeeds, from which the pulp ought to be carefully ſeparated before it is 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 I have known the conſerve of it to excite violent vomiting. The conſerve is the only officinal preparation of this fruit.

CYPERI LONGI *radix: Cyperi odorati radice longa, ſive cyperi officinarum C. B. Cypari longi Lin.* Long 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 ſmell are improved by moderate exſiccation. Cyperus is accounted a good ſtomachic and carminative, but at preſent very little regarded.

DACTYLI: *Fructus Palmæ majoris C. B. Phœnicis dactyliferæ Lin.* Dates: a half-dried fruit, about the ſhape of 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.

DAUCI CRETICI *ſemen: Dauci foliis fœniculi tenuiſſimis C. B. Athamantæ Creteñſis Lin.* Candy carrot, or carrot of Crete; the ſeeds [*L.*]

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 a not diſagreeable aromatic ſmell. They are carminative, and ſaid to be diuretic, but at preſent little otherwiſe uſed than as ingredients in the mithridate and theriaca.

DAUCI SYLVESTRIS *ſemen: Paſtinacæ ſylveſtris tenuifoliæ Dioſcoridis, vel dauci officinarum C. B. Dauci carotæ Lin.* Wild carrot; the ſeed [*E.*]

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.

DENTIS LEONIS *ſive Taraxaci folia: Dentis leonis latiore folio, et auguſtiore folio C. B. Leontodontis taraxaci Lin.* Dandelion; the leaves [*E.*]

This plant is common in fields and uncultivated places; it has ſeveral narrow dentated leaves lying on the ground, with a ſlender naked

ſtalk ſuſtaining a yellow flower. The root, leaves, and ſtalk, contain a bitter milky juice: they promiſe to be of uſe as aperient and detergent medicines, and have ſometimes been directed in this intention with good ſucceſs. Boerhaave eſteems them capable, if duly continued, of reſolving almoſt all kinds of coagulations, and opening very obſtinate obſtructions of the viſcera.

DIAPENSIA, vide SANICULA.

DICTAMNUS ALBUS, vide FRAXINELLA.

DICTAMNI CRETICI *folia: Origani Cretici latifolii tomentoſi Tourn. Origani dictamni Lin.* Dittany of Crete [*L.*]

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. They are ingredients in the *pulvis è myrrha*, *ſpecies è ſcordio*, *mithridate*, and *theriaca* [*L.*]

DIGITALIS *folia: Digitalis purpureæ folio aſpero C. B. Digitalis purpureæ Lin.* Fox glove; the leaves.

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, we have no experience. Several examples are mentioned by medical writers of their occaſioning violent vomiting, hypercatharſes, and diſordering the whole conſtitution; inſomuch that Boerhaave accounts them poiſonous. Their taſte is bitter and very nauſeous.

'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.'

'DOLICHI PRURIENTIS *Lin. pubes leguminis rigida.* Cowhage; the rigid down of the pod [*E.*]

'The dolichos, on account of the ſpiculæ of the ſeed-bag, 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. No bad conſequence from this remedy is taken notice of.'

DORO-

DORONICI ROMANI *radix: Doronici radice ſcorpii C. B. Doronici pardalianches Lin.* Roman wolfsbane; the root.

This grows ſpontaneouſly on the Alps, and in ſundry places of Germany. It has been greatly diſputed whether this plant is to be ranked among the poiſonous or ſalutary ones: we ſhall not here enter into this controverſy; obſerving only, that all the intentions it has been recommended for may certainly be anſwered by other medicines of no leſs efficacy, and known to be innocent; and that therefore the uſe of doronicum may be very reaſonably laid aſide: if this we are warranted by common practice, which has not for a long time paid any regard to it.

DORONICI GERMANICI, *ſeu Arnicæ* [*E.*] *flores et radix: Doronici plantaginis alterius C. B. Arnicæ montanæ Lin.* German leopardſbane; the flowers and root [*E.*]

'This plant grows in different parts of Europe. It has an acrid bitter taſte; and when bruiſed emits a pungent odour, that excites ſneezing; on which account the country people in ſome parts of Germany uſe it in ſnuff, and ſmoke it like tobacco. It has been called *panacea lapſorum*, from its alleged efficacy in effuſions and ſuffuſions of blood from falls, bruiſes, &c. It has been mentioned in certain ſymptomatic ſtates of dyſpnœa, amenorrhœa, and jaundice, as likewiſe in gout, nephritis calculoſa, &c. It is ſaid to poſſeſs conſiderable antiſeptic powers. Of late it has been chiefly taken notice of in paralytic affections, as hemiplegia and amauroſis, and in various convulſive and ſpaſmodic diſorders. A pint of the infuſion from a dram to half an ounce of the flowers is taken in the day. It ſometimes pukes, ſweats, and proves diuretic. Frequently, however, it produces no ſenſible evacuations. Some patients are ſaid to feel, during its uſe, ſhooting pains and electric like ſhocks in the parts affected.'

DRACONTIUM: *Dracunculus polyphyllus C. B. Arum polyphyllum Ricini. Ari dracunculi Lin.* Dragon's or the many-leaved arum.

This is cultivated in gardens. It has ſcarce any other medical difference from the common *arum*, than being in all its parts ſomewhat more pungent and acrimonious.

DRAKENA, vide CONTRAYERVA.

DULCAMARÆ, *ſeu amaradulcis, ſolani lignoſi, herba, radix: Solani ſcandentis ſeu dulcamaræ C. B. Solani dulcamaræ Lin.* Bitterſweet, or woody nightſhade; the herb and roots [*E.*]

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. They are commended as deobſtruents, for reſolving coagulated blood, &c. and are ſaid to occaſion generally ſome conſiderable evacuation by ſweat, urine, or ſtool, particularly the latter.

EBULI *folia, cortex, radix: Sambuci humilis ſive ebuli C. B. Sambuci ebuli Lin.* Dwarf elder, or danewort; the root, bark, and leaves.

This plant grows wild in ſome counties of England; but about London is rarely met with, unleſs in gardens: the eye diſtinguiſhes little difference betwixt it and the

elder

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 churliſh 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 to the quantity of an ounce as a cathartic; and in ſmaller ones as an aperient and deobſtruent in chronic diſorders: in this laſt intention, it is ſaid by Haller to be frequently uſed in Swiſſerland, in the doſe of a dram.

ELATINES *folia: Linariæ ſegetam nummulariæ folio non villoſo Tourn. Antirrhini elatines Lin.* Fluellin, or female ſpeedwell; the leaves.

This is a low creeping plant, growing wild in corn-fields. The leaves have a very bitter roughiſh taſte. They were formerly accounted excellent vulneraries, and of great uſe for cleanſing and healing old ulcers and ſpreading cancerous ſores: ſome have recommended them internally in leprous and ſcrophulous diſorders; as alſo in hydropic caſes. It gives name to one of the officinal honeys [*L.*]; but the plant itſelf is never uſed in the preſent practice, and this preparation of it is in no great eſteem.

ELEMI: *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 greeniſh, 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.

ELEOSELINUM, vide APIUM.

ELEUTHERIÆ *ſeu Caſcarillæ cortex* [*L. E.*] *Crotontis Caſcarillæ Lin.* Caſcarilla; a bark ſaid to be imported into Europe from one of the Bahama iſlands called *Elatheria*, in curled pieces, or rolled up into ſhort quills, about an inch in width, pretty much reſembling in appearance the *Peruvianus cortex*, but of a paler brown colour on the inſide, leſs compact, and more friable.

Its taſte is bitterer, yet leſs diſagreeable, and leſs rough than that of the Peruvian bark; with a conſiderably greater ſhare of aromatic pungency and heat: the thin outward ſkin, which is of a whitiſh colour, has no taſte. It is eaſily flammable, and yields whilſt burning a very fragrant ſmell: this peculiar

property

property diſtinguiſhes the *eleutheria* from all other known barks.

Stiſſerus ſeems to have been the firſt that employed the *cortex eleutheriæ* as a medicine, in Europe He relates (in his *Act. laborat. chym.* publiſhed in the year 1693) that he received this aromatic bark from England; and that ſome time after it was ſold at Brunſwick for Peruvian bark: that a tincture of it in alkalized vinous ſpirits, or dulcified alkaline ones, proved carminative and diuretic, and did conſiderable ſervice in arthritic, ſcorbutic, and calculous caſes; and that, if taken immediately after meals, it affected the head a little. Eleutheria was ſoon after employed by Apinus in an epidemic fever which raged in ſome part of Norway in 1694 and 1695; this diſeaſe, which at firſt had the appearance of an ordinary intermittent, at length was accompanied with petechial ſpots. The common alexipharmacs and ſudorifics were found ineffectual; but the powder or extract of this bark, joined with them, proved ſucceſsful, even after petechiæ had come forth: dyſenteries ſucceeding the fever, were removed by the ſame medicine. During the uſe of the eleutheria, the patient generally ſweated plentifully, without loſs of ſtrength, or other inconvenience: the belly was likewiſe kept open; thoſe who did not ſweat, had three or four ſtools a-day: where the menſtrual or hæmorrhoidal fluxes were ſuppreſſed at the beginning of the diſorder, they generally, upon the uſe of this medicine, re-appeared. Among the Germans, the eleutheria is at preſent in very great eſteem, and frequently employed againſt common intermittents, 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 given, with good ſucceſs, in flatulent colics, internal hæmorrhagies, dyſenteries, the diarrhœæ of acute fevers, and other like diſorders. The gentlemen of the French academy found this bark of excellent ſervice in an epidemic dyſentery in the year 1719; in which ipecacuanha proved ineffectual: Mr Boulduc obſerved, that this laſt left a lowneſs and weakneſs of ſtomach, which continued for a long time, whilſt eleutheria ſoon raiſed the ſtrength, and promoted appetite. Among us the uſe of this bark is not yet ſo general as it ſeems to deſerve: infuſions of it are ſometimes directed for promoting expectoration.

ENDIVÆ *radix, folia: Intybi ſativæ latifoliæ C. B. Cichorei endiviæ Lin.* Endive; the roots and leaves.

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.

ENULÆ CAMPANÆ *ſeu Helenii radix: Aſteris omnium maximi Tourn. Enulæ Helenii Lin.* Elecampane; the root [*L. E.*]

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

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 (a preparation now kept in the ſhops) poſſeſſes the bitterneſs and pungency of the root, but in a leſs degree than one made with ſpirit.

EQUISETUM, vide CAUDA EQUINA.

ERIGERI *ſeu Senecionis folia: Senecionis minoris vulgaris C. B. Senecionis vulgaris, Lin.* Groundſel; the leaves.

This is a common weed, which notwithſtanding its being annual is met with at all times of the year. The juice, or an infuſion of it in ale, is generally ſaid to be a mild and ſafe emetic; but unleſs taken in very large quantity, it has no effect this way. The freſh herb, beaten into a very coarſe pulp, and applied externally, cold, to the pit of the ſtomach, is ſaid to have occaſioned ſtrong vomiting: but, as Haller juſtly ſuſpects, there was probably ſome fallacy in the obſervation.

ERUCÆ *ſemen: Erucæ latifoliæ albæ, ſativæ Dioſcoridis C. B. Braſſicæ erucæ 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 long been celebrated as aphrodiſiacs; and may, probably, have in ſome caſes a title to this virtue, in common with other acrid plants.

ERVUM, vide OROBUS.

ERYNGII *radix: Eryngii maritimi C. B. et Lin.* Eryngo, or ſea-holly; the root [*L.*]

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. The candied root is ordered to be kept in the ſhops.

ERYSIMI *folia: Eryſimi vulgaris C. B. Eryſimi officin. Lin.* Hedge-muſtard; the leaves.

This is a low hairy plant, common in waſte places and by way-ſides. The leaves are ſaid to promote expectoration, excite urine and the other fluid ſecretions, 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.

ESULA MAJOR et MINOR, vide TITHYMALUS.

EUPATORII CANNABINI *folia:*

folia: Eupatorii cannabini C. B. et Lin. Hemp agrimony, water agrimony, or water hemp; the leaves.

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 greatly 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, which they are ſubject to. The root of this plant is ſaid to operate as a ſtrong cathartic.

EUPATORIUM MESUES, vide AGERATUM.

EUPATORIUM GRÆCORUM, vide AGRIMONIA.

EUPHORBIUM, a gummy reſin exuding from a large oriental ſhrub, *Euphorbia officin. Lin.*

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 withinſide: they eaſily break betwixt 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 pulverize; the finer part of the powder, which flies off, affecting the head in a violent manner. The acrimony 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 from the catalogue of internal medicines.

EUPHRASIÆ *folia: Euphraſiæ officinarum C. B. et Lin.* Eyebright; 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.

FABÆ *flores & ſemen: Fabæ flore candido lituris nigris conſpicuo Tourn. Viciæ ſabæ Lin.* Garden beans; the flowers and ſeed.

Beans are of greater uſe for culinary than medicinal 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.

FARFARA, vide TUSSILAGO.

FERRUM *et* CHALYBS [*L.*] 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

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 conſtringe 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.

Where 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 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 indigeſtible preparations, as the calces made by fire, have ſcarce any effect at all. If alkaleſcent juices are 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. For the different preparations of iron, ſee the firſt and third part of this work.

'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; and theſe are uſed principally in caſes of weakneſs and relaxation, whether attended with morbid diſcharges or morbid ſuppreſſions.'

FILIPENDULÆ *radix: Filipen-*

pendulæ vulgaris, an Moli Plinii C. B. Spireæ filipendulæ, 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 fluors, &c. others as a diuretic; and others as an aperient and deobſtruent in ſcrophulous habits. At preſent it is wholly diſregarded.

FILICIS MARIS *radix: Filicis non ramoſæ dentatæ C. B. Polypodii filicis maris Lin.* Common male fern; the root [*E.*]

FILICIS FŒMINÆ *radix: Filicis ramoſæ majoris pinnulis obtuſis non dentatis C. B.* Female fern, or brakes; the root.

FILICIS FLORIDÆ, *ſeu Oſmundæ regalis, radix: Filicis ramoſæ non dentatæ, floridæ, C. B.* Oſmund royal, or the flowering fern; the root.

The roots of theſe plants (which are the only part directed for medicinal uſe) have, when firſt chewed, ſomewhat of a ſweetiſh glutinous taſte, which ſoon becomes bitteriſh, ſubaſtringent, and nauſeous. They are ſaid to be aperient and anthelmintic. Simon Paulli tells us, that they have been the grand ſecret of ſome empirics againſt the broad kind of worms called *tænia*; and that the doſe is one, two, or three drams of the powder. The third ſort is ſuppoſed to be the weakeſt, and the ſecond the ſtrongeſt; this, therefore, has been generally made choice of; practice has, however, at length expunged them all except the firſt [*E.*]

'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.'

'FLAMULÆ JOVIS: *Clematis rectæ Lin. folia, flores.* Upright virgin's bower; the leaves and flowers [*E.*]

'Its leaves and flowers are ſo acrid as to bliſter. Dr Storck recommends it in venereal, cancerous, and other cutaneous affections, in thoſe headachs, 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.'

FŒNICULI DULCIS *ſemen: Fœniculi dulcis C. B. Anethi fœniculi Lin.* Sweet fennel; the ſeeds [*L. E.*]

FŒNICULI VULGARIS *folia, radix, ſemen: Fœniculi vulgaris Germanici C. B. Anethi fœniculi var. β. Lin.* Common fennel; the ſeeds, roots, and leaves [*E.*]

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, flattiſh 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:

dens: the common is a perennial plant: the ſweet 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 ſweetiſhneſs; hence our college 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 [*L.*] is prepared from them in the ſhops; they are ingredients alſo in the compound juniper-water, garlic-oxymel, mithridate, theriaca, and decoction for glyſters [*L.*]

The root is far leſs warm, but has 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.

FŒNI GRÆCI *ſemen: Fœni græci ſativi C. B. Trigonellæ fœni græci Lin.* Fœnugreek; the ſeeds [*L. E.*]

This plant is cultivated chiefly in the ſouthern parts of France, Germany, and in 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 enter the *oleum è mucilaginibus* of the ſhops; to which they communicate a conſiderable ſhare of their ſmell.

FOLIUM INDUM, vide MALABATHRUM.

FORMICÆ. Ants; their bodies and eggs.

Theſe inſects are at preſent of no uſe with us in medicine, though formerly much celebrated for aphrodiſiac virtues, and ſtill employed in the *aquæ magnanimitatis*, and other like compoſitions of foreign diſpenſatories. 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.

FRAGARIÆ *folia, fructus: Fragariæ ſerentis fragra rubra J. B. Fragariæ veſicæ Lin.* The 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 nou-

nouriſhment. Geoffroy obſerves, that the urine of thoſe who eat liberally of this fruit, becomes impregnated with its fragrant ſmell.

FRANGULA, vide ALNUS NIGRA.

FRAXINELLÆ, *ſeu Dictamni albi Lin. radix: Dictamni vulgo ſive fraxinellæ C. B.* White or baſtard dittany; the root [*E.*]

This plant grows wild in the mountainous parts of France, Italy, and Germany; from whence the cortical part of the root, dried and rolled up into quills, is ſometimes brought to us. This is of a white colour; a weak, not very agreeable ſmell; and a durable bitter, lightly pungent taſte. It is recommended as an alexipharmac; but not regarded by common practice, nor often kept in the ſhops.

FRAXINI *cortex et ſemen: Fraxini excelſioris C. B. Fraxini vulgatioris J. B. et 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: 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 *lignorum combuſtorum.* Wood ſoot [*L. E.*]

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. Its virtues are extracted both by watery and ſpirituous liquors, each of which, if the ſoot is of a good kind, diſſolve about one-ſixth. Soot is ſaid to differ greatly in quality according to the wood it was produced from: 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.

FUMARIÆ *folia: Fumariæ officinarum Dioſcoridis C. B. et Lin.* Fumitory; the leaves [*E.*]

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 ſecretions. 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 great opinion of it as a purifier of the blood; and aſſures us, that in this intention ſcarce any plant exceeds it. Both watery and ſpirituous menſtrua extract its virtues.

GALANGÆ MINORIS *radix.* Galangal; the root of *Kæmpferia galanga Lin.* brought from China.

This root 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 [*L. E.*]

This is the concrete juice of an African plant (*Bubon galbanum Lin.*)

The juice, as brought to us, is ſemipellucid, ſoft, tenacious; of a ſtrong, and, to ſome, unpleaſant 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 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, ſpecies è ſcordio, mithridate, theriaca, confectio Paulina, maturating cataplaſm [*L.*], gum-pills and antihyſteric plaſter [*E.*]

GALEGÆ *folia: Galegæ vulgaris floribus cæruleis C. B. Galegæ officinalis Lin.* Goats rue; the herb.

This is 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.

GALLÆ [*L. E.*] 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 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, and 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 hogs-lard as very effectual in certain painful ſtates of hæmorrhois; and it is alleged, that the internal uſe of galls has cured intermittents after the bark has failed. A mixture of galls with a bitter and aromatic has been propoſed as a ſubſtitute for the bark.'

GALLII *folia: Gallii lutei C. B. Galii veri Lin.* Ladies bed-ſtraw, or cheeſe-rennet; 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 [*L. E.*]

Gamboge; a ſolid concrete juice (of the *Cambogia gutta Lin.*) 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; Geof-

froy

froy 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; Hoffman and ſome others 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 it, 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. The 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, as is ſaid, even in delicate habits.'

GENISTÆ *ſummitates: Cytiſogeniſtæ ſcopariæ vulgaris flore luteo Tourn. Spartii ſcoparii Lin.* Broom; the tops [*E.*]

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 cathartic 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 half; whilſt the author abovementioned 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 lately 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 other day, or once in three days, till the cure is compleated.'

GENTIANÆ *radix: Gentianæ majoris luteæ C. B. Gentianæ luteæ Lin.* Gentian; the root [*L. E.*]

This plant is found wild in ſome parts of England: but the dried roots are moſt commonly brought from Germany, &c. 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 uſed in powder, as it loſes conſiderably by the drying which it requires.'

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 internally of a white colour, and void of bitterneſs. This poiſonous ſimple ſeems to be the root of the *thora valdènſis* of Ray, the *aconitum primum pardalianches* of Geſner; a plant which Lobel informs us the inhabitants of ſome parts of the Alps uſed formerly to empoiſon darts with.

'GEOFFRÆÆ *cortex: Geoffrææ inermis Phil. Tranſ. vol.* 67. *tab.* x. Cabbage-bark, or worm-bark tree; the bark [*E.*]

'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 the drinking of 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.'

GERANII BATRACHOIDIS *folia. Geranii pratenſis Lin.* Crowfoot craneſbill; the leaves.

GERANII ROBERTIANI *Lin. folia.* Herb Robert; the leaves.

Theſe plants are found wild, the firſt in hedges, the ſecond in moiſt meadows. The leaves have an auſtere taſte, and have hence been recommended as aſtringents; but they have long been diſregarded in practice.

GINSENG [*E.*] *Panax quinquefolium Lin.* A ſmall root brought from North America, and ſometimes from China; an inch or two in length, taper, finely ſtriated, of a whitiſh or yellowiſh colour. It has a very ſweet taſte, accompanied with a ſlight bitteriſhneſs 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 its 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.

GITH, vide NIGELLA.

GLASTI *folia: Iſatidis ſativæ vel latifoliæ C. B.* Woad; the leaves.

This plant is cultivated for the uſe

uſe of the dyers; but is never employed for any medicinal purpoſes. The virtues attributed to it are thoſe of an aſtringent.

GLADIOLI LUTEI *radix*: *Iridis paluſtris luteæ, ſive acori adulterini J. B. Acori vulgaris pharm. Auguſt. et Wirt. Iridis paluſtris* [*E.*] *Iridis pſeudacori Lin.* Yellow water-flag, baſtard acorus, or water flower-de-luce; the roots [*L.*]

This grows common by the brinks of rivers, and in other watery places. The root has a very acrid taſte, and proves, when freſh, a ſtrong cathartic: its expreſſed juice, given to the quantity of eighty drops every hour or two, and occaſionally increaſed, has occaſioned a plentiful evacuation, after jalap, gamboge, &c. had proved ineffectual: (See the Edinburgh eſſays, vol. v. art. 8. Abridg. vol. i. page 202.) By drying, it loſes its acrimony and purgative virtue. The *pulvis ari* of our diſpenſatory contains about one fifth of the dry root.

GLYCIRRHIZÆ *radix*. *Glycyrrhizæ ſiliquoſæ vel Germanicæ C. B. Glycyrrhizæ glabræ Lin.* Liquorice; the root [*L. E.*]

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 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 I fear 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 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 was called by the Greeks *adipſon*. Galen takes notice, that it was employed in 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, though the foreign extract is not equal to ſuch as is made with proper care among ourſelves.

GRAMINIS CANINI *radix*: *Graminis canini arvenſis, ſive graminis Dioſcoridis C. B. Tritici repentis 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: *Cardamomum majus ſemine piperato Geoffroii; Amomum grana paradiſi Lin.* Grains of paradiſe: a fruit brought from the Eaſt-Indies.

This fruit 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 pharma-

ceutical properties; their pungency reſiding, not in the diſtilled oil, as that of cardamom ſeeds does, but in the reſin extracted by ſpirit of wine.

GRANATI *cortex: Fructûs Mali punicæ ſativæ C. B. Punicæ granati var. β. Lin.* The rind of the pomegranate called *malicorium* [*L. E.*]

The pomegranate tree 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.

GRATIOLÆ *folia: Gratiolæ centauricidis C. B. Gratiolæ officinalis Lin.* Hedge hyſop; the leaves [*E.*]

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 (*Tentam. botanic.* p. 18.) that he has found the *root* of this plant a medicine ſimilar in virtue to ipecacuanha

'This herb has been mentioned as uſeful in the venereal diſeaſe.'

GUAIACI *lignum, cortex, gummi: Guaiaci Americani primi fructu aceris, ſive legitimi Breyn. prodr. Guaiaci officinalis Lin.* Guaiacum, a tree growing in the warmer parts of the Spaniſh Weſt Indies; its wood, bark, and reſin called gum guaiacum [*L. E.*]

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 a 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 defedations, 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 active 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 [*L.*], a ſolution of the gum in rectified ſpirit of wine [*L.*], and a ſolution in volatile ſpirit [*L. E.*], as alſo an empyreu-

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matic oil diſtilled from the wood. The wood is an ingredient in the compound lime-water [*L.*], the gum in the aromatic pills [*L.*], ecphractic pills [*L.*], and ethiopic pills [*E.*], and the compound oil of balſam of Copaiba [*L.*]

'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 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 [*L.E.*] Gum Arabic; a concrete gum, exuding from the Egyptian acacia tree (*Mimoſa nilotica Lin.*) This is brought to us from Turky, in ſmall irregular maſſes or ſtrings, of a pale yellowiſh colour. The true gum Arabic is rarely to be met with in the ſhops; gum ſenega or ſenica, which comes from the coaſts 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 betwixt 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 juices, and where the natural mucus of the inteſtines is abraded. It is an ingredient in the white decoction, chalk julep, the compound powders of bole, ſcordium, amber, gum tragacanth, the common emulſion, mithridate, theriaca, and ſome of the troches.

GUMMI CERASORUM. Cherry-tree gum.

There is not any medical difference betwixt this and the preceding. Some have ſuppoſed that all the gum brought to us from the Eaſt, under the name of *Arabic*, is no other than the gum of cherry, plum, and other trees common among ourſelves. This opinion is nevertheleſs erroneous: for theſe trees, as Geoffroy obſerves, do not grow in the countries from whence gum Arabic is brought; whilſt the *acaciæ* are very common there.

GUMMI ELEMI, vide ELEMI.

GUMMI TRAGACANTHÆ [*L.E.*] *Aſtragali tragacanthæ Lin.* The gum of the tragacanth, 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 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 powders of ceruſs and amber.

GUTTA GAMBA, vide GAMBOGIA.

HÆMATITES *lapis* [*L.*] Hematites, 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; as of its curing ulcers of the lungs, which Geoffroy says the hæmatites dries and heals.

HELICACABUM, vide ALKEKENGI.

HEDERÆ ARBOREÆ *folia, baccæ, et gummi seu resina: Hederæ communis majoris Raii; Hederæ helicis Lin.* Ivy; the leaves, berries, and resin called gum hederæ.

This is a climbing shrubby plant, growing commonly from the trunks of trees, or on old walls. The leaves have very rarely been given internally; notwithstanding they are recommended (in the *Ephem. natur. curios.* vol. ii. obs. 120.) 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 τυ κισσυ was the same with our *gummi hederæ*) among the depilatories; from this class, which it certainly had no title to, it has since been removed to that of conglutinaters of wounds, to which it has no very just one.

HEDERÆ TERRESTRIS *folia: Hederæ terrestris vulgaris C. B. Glechomatis hederacei Lin.* Ground-ivy; the leaves [*E.*]

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 cleansing and healing 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 ENULA CAMPANA.

HELLEBORI ALBI *radix: Hellebori albi flore subviridi C. B. Veratri albi Lin. Veratri* [*E.*] White hellebore; the root [*L. E.*]

This plant grows spontaneously in Swisserland, and the mountainous parts of Germany. The root has a nauseous, bitterish, acrid taste, burning the mouth and fauces: 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

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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 I am informed that ſome have lately ventured upon ſo large a doſe as a ſcruple, in maniacal caſes, and have found good effects from it after the ſtronger antimonial preparations had been given in vain. A tincture and honey of it are kept in the ſhops [*L.*]

HELLEBORI NIGRI *radix: Hellebori nigri flore roſeo C. B. et Lin. Melampodii* [*E.*] Black hellebore; the roots [*L. E.*]

This plant grows wild in the mountainous parts of Swiſſerland, 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 black hellebore of *C. B.* called in England, where it grows wild, ſetterwort, 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 meaſure deprived the ſhops of the benefit of this criterion: but the London college have directed the darkeſt coloured of all the roots of this claſs. 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 which they iſſue from. 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 which caſes, medicines of this kind are doubtleſs occaſionally of uſe, though they are by no means poſſeſſed of any ſpecific power. It does not how-

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 prælto, 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 preparation of it: this operates sufficiently, without occasioning the irritation which the pure resin is accompanied with. A tincture drawn with proof spirit [*E*], 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 and 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.'

HELXINE, vide PARIETARIA.

HEPATICÆ NOBILIS *foliae Ranunculi tridentati verni, flore simplici cæruleo Tourn. Anemones Hepaticæ Lin.* Noble liverwort; the leaves.

This herb has a place in our gardens on account of the beauty and early appearance of its flowers. It is a cooling, gentle restringent herb; and hence recommended in a lax state of the fibres as a corroborant.

HEPATICA TERRESTRIS, vide LICHEN.

HERBÆ PARIS *folia et fructus: Solani quadrifolii bacciferi C. B. Paridis quadrifoliæ Lin.* Herb Paris, truelove, or oneberry; the leaves and fruit.

This is a low plant growing wild in shady woods. It is said, but on no good grounds, to be alexipharmac: Gesner relates, that its juice has killed poultry; and its smell and taste manifestly agree with those of the narcotic herbs.

HERMODACTYLUS. *Iris tuberosæ Lin. radix.* Hermodactil; a root brought from Turkey. It is of the shape of a heart flatted, of a white colour, compact, yet easy to cut or powder; of a viscous 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 pur-

purgative virtue; Neumann declares he never found them to have any effect at all.

HENRIARIÆ *folia: Polygoni minoris ſive millegranæ majoris glabræ C. B. Herniariæ glabræ Lin.* Rupturewort; the leaves.

This is a low herb, growing wild in ſandy and gravelly grounds. It is a very mild reſtringent, and may, in ſome degree, be ſerviceable in diſorders proceeding from a weak flaccid ſtate of the viſcera: the virtue which it has been moſt celebrated for, it has little title to, that of curing hernias.

'HIPPOCASTANI. *Æſculi hippocaſtani Lin. fructus.* Horſe-cheſtnut; the fruit [*E.*]

The 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, head-ach, &c. in which errhines are indicated. The bark is mentioned as a cure for intermittents.'

HIPPOGLOSSI *folia: Ruſci anguſtifolii, fructu folio innaſcente Tourn. Ruſci hypogloſſi Lin.* Double-tongue; the leaves.

This is met with only in gardens, where plants are cultivated for curioſity. It has rarely been taken notice of by medicinal writers.

HIPPOSELINI, *ſeu Smyrnii, folia, radix, ſemen: Hippoſelini Theophraſti, vel Smyrnii Diſcoridis, C. B. Smyrnii oluſatri Lin.* Alexanders; the leaves, root, and ſeeds.

This is an umbelliferous plant, differing from the others of that claſs, in bearing a large tumid black ſeed: it grows by the ſea-ſide, upon rocks. In medical qualities it agrees with *apium* (ſmallage) except that the *hippoſelinum* is ſomewhat ſtronger.

HIRUNDINARIA, vide VINCETOXICUM.

HORDEI *ſemen: Hordei diſtichi, quod ſpica binas ordines habeat Plinio C. B. Hordei vulgaris Lin.* Common barley [*L.*]

HORDEUM GALLICUM *ſive* MUNDATUM. French barley, or the common barley freed from the ſhell.

HORDEUM PERLATUM *dictum* [*L.*] Pearl barley; prepared in Germany and Holland, by grinding the ſhelled barley into little round granules, which appear of a kind of 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. The London college direct a decoction of pearl barley, and make common barley an ingredient in the pectoral decoction.

HORMINI SATIVI, *ſeu Sclareæ, folia, ſemen: Horminis ſclareæ dicti C. B. Salviæ ſclareæ 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 fluor albus, and other female weakneſſes, in hyſteric diſorders, and in flatulent collics.

HYBERNICUS LAPIS: *Tegula vel ardeſia Hybernica.* Iriſh ſlate.

This is a blackiſh foſſile ſtone brought from Ireland. It ſeems to conſiſt of an argillaceous or bolar earth,

earth, ſlightly impregnated with ſulphur and iron; and may be preſumed to poſſeſs in a low degree the virtues of the other ferrugineous minerals.

HYDRARGYRUS, vide ARGENTUM VIVUM.

HYDROLAPATHUM, vide LAPATHUM.

HYOSCYAMI *folia: Hyoſcyami albi majoris vel tertii Dioſcoridis et quarti Plinii C. B. Hyoſcyami albi Lin.* White henbane; the leaves.

This is met with only in botanic gardens.

HYOSCYAMI NIGRI *herba, ſemen: Hyoſcyami vulgaris vel nigri C. B. Hyoſcyami nigri Lin.* The common wild or black henbane; the herb and ſeeds [*E.*]

Theſe plants ſtand recommended for ſundry external purpoſes, and by ſome likewiſe internally againſt dyſenteries and hemorrhagies: but there are ſo many examples of their pernicious effects, that common practice has very deſervedly rejected them. They are ſtrong and virulent narcotics, greatly diſorder the ſenſes, occaſioning deliria and madneſs, either deadly, or of long duration. Haller tells us of one who eat of all the poiſons of the phyſic garden, the napelli, apocyna, bella donna, without injury; but was maſtered by this: that after its common effects as a narcotic had abated, a paralyſis of one of the legs remained; and that Boerhaave had his ſenſes diſordered by only making a plaſter from this plant. There are other examples alſo, though from leſs unexceptionable authorities, of henbane proving narcotic, though none of it was received into the body.

'Some employ the hyoſcyamus niger externally for ſoftening and allaying pain in caſes of ſcirrhus, in form of cataplaſm of the leaves; of plaſter, made by boiling the oil of the ſeeds with the juice of the herb, and adding wax, turpentine, and powder of the herb; and in form of ointment made of the leaves and hogslard. In open ulcers, a powder of the leaves is alſo ſprinkled on the part. Internally, it is chiefly uſed in form of an extract from the leaves, which appears to be much ſtronger than that from the ſeeds. It has been given in various nervous affections, as mania, melancholia, epilepſy, hyſteria, colic, &c.; alſo in obſtinate dry coughs, glandular tumours, hemorrhagies, and in ulcers of the urinary paſſages. It commonly produces ſweat, and ſometimes an eruption of puſtules over the body, generally found ſleep ſucceeded by a ſerenity of mind and an increaſed vigour of body; though ſometimes, inſtead of theſe, vertigo, headach, and weakneſs. In ſome it occaſions vomiting, colic-pains, a copious flow of urine, and purging. It is anodyne like opium; and like cicuta, is free from its conſtipating effect. Its doſe has been increaſed from half a grain to half a dram in the day.'

HYPERICI *folia, flores, ſemen: Hyperici vulgaris C. B. Hyperici perforati Lin.* St John's wort; the leaves and flowers [*L.*]

This plant grows wild in woods and uncultivated places throughout England. Its taſte is rough and bitteriſh; the ſmell diſagreeable. Hypericum has long been celebrated as a corroborant, diuretic, and vulnerary; but more particularly in hyſterical and maniacal diſorders: it has been reckoned of ſuch efficacy in theſe laſt, as to have thence received the name of *fuga dæmonum*. It is obſervable, that the flowery tops tinge expreſſed oils of a red colour (which very few vegetable ſub-

fubſtances will do) and communicate a blood red to rectified ſpirit. The oil tinged by them is kept in the ſhops. [*L.*]

HYPOCISTIDIS *ſuccus inſpiſſatus: Hypociſtidis ſub ciſto C. B. Aſari Hypociſtidis Lin.* Juice of hypociſtis [*L.*]

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, viz. mithridate, theriaca, and the compound powder of of amber [*L.*]

HYSSOPI *folia, herba: Hyſſopi officinarum, cæruleæ ſive ſpicatæ C. B. Hyſſopi officinalis Lin.* Hyſſop; the leaves [*L.*], and the herb [*E.*]

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 notably promote expectoration.

JACOBÆÆ *folia: Jacobææ vulgaris laciniatæ C. B. Senecionis Jacobææ Lin.* Ragwort, or ſegrum; the leaves.

This ragged leaved plant grows wild by road-ſides and uncultivated places. Its taſte is roughiſh, bitter, pungent, and extremely unpleaſant: it ſtands ſtrongly recommended by Simon Paulli againſt dyſenteries; but its forbidding taſte has prevented its coming into practice.

JALAPII [*L.*] JALAPÆ [*E.*] *radix: Convolvuli jalapæ Lin.* Jalap.

Jalap is the root of an American convolvulus, brought to us in thin tranſverſe ſlices, from Xalapa, a province of New Spain. 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 terrible ſymptoms, but ſcarce proves at all cathartic: triturated with ſugar, or with 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

ſpirit, a ſimple tincture [*L. E.*], and and a compouud powder [*E.*]

Frederick Hoffman particularly cautions againſt giving this medicine to children; and aſſures us, that it will deſtroy appetite, weaken the body, and perhaps occaſion even death. In this point, this 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 innoculators 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, *ſive catechu* [*L. E.*] Japan earth, improperly ſo called; being neither an earth, nor the produce of Japan; but an inſpiſſated vegetable juice, prepared in the Eaſt-Indies from the *mimoſa catechu Lin.* It is dry and pulverable, outwardly of a reddiſh colour, inwardly of a ſhining dark brown, almoſt black, with ſome caſt of red. When pure, it diſſolves totally in water, and almoſt totally in rectified ſpirit: as we uſually meet with it, a conſiderable quantity of ſandy matter is left by both theſe menſtrua. This medicine is a mild aſtringent, and frequently employed as ſuch in alvine fluxes, uterine profluvia, in laxity and debility of the viſcera in general, and in coughs proceeding from thin acrid defluxions. Its taſte is more agreeable than that of moſt other ſubſtances of this claſs; chewed for ſome time, it leaves a kind of ſweetiſhneſs in the mouth. The troches and tincture, kept in the ſhops, are very elegant preparations of it. It gives name to an officinal confection and tincture [*E.*]; and is an ingredient in the compound powder of amber, mithridate, and theriaca [*L.*]

JASMINI *flores: Jaſmini vulgatioris flore albo C. B. Jaſmini officinalis Lin.* Jaſmine; the flowers.

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, notwithſtanding they have been recommended for promoting delivery, curing ulcerations of the uterus, &c.

IBERIDIS *folia: Lepidii graminco folio ſive iberidis Tourn. Liguſtici leviſtici Lin.* Sciatica creſſes; the herb.

This is met with in botanic gardens: in taſte, ſmell, and medical virtues, it agrees with the naſturtium. It has been particularly recommended in external applications againſt the ſciatica, whence the Engliſh name of the plant.

ICHTHYOCOLLA. Fiſh-glue, or iſinglaſs.

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 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,

ſhapes. 'Some allege it conſiſts of certain membranous parts of fiſhes, as the air-bladder, inteſtines, &c. only cleanſed, dried, and rolled up or twiſted.' This glue is more employed for mechanic purpoſes than in medicine. It may be given in a thin acrimonious ſtate of the juices, after the ſame manner as the vegetable gums and mucilages; regard being had to their different diſpoſition to putreſcence.

IMPERATORIÆ, *ſeu Magiſtrantiæ radix: Imperatoriæ majoris C. B. Imperatoriæ oſtruthii Lin.* Maſterwort; the root [*E.*]

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 ſimple, though undoubtedly an elegant aromatic, is not regarded in the preſent practice: Its flavour is ſimilar to that of angelica, but ſtronger.

IPECACOANHÆ *radix: Pſychotriæ emeticæ Lin.* [*L. E.*] A root 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 ipecacoanha 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 ſubacrid, 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 ipecacoanha) 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 ipecacoanha, and complains that it is an impoſition upon the public. Geoffroy, Neumann, Dale, and Sir Hans Sloane, inform us, that the roots of a kind of apocynum (dogs-bane) are too frequently brought over inſtead of it; and inſtances are given of ill conſequences following from the uſe of theſe 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.

Ipecacoanha 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 we are acquainted with; 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; as alſo in diſorders proceeding from

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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 ipecacoanha 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 morbific 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 ipecacoanha 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 ipecacoanha, 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 ipecacoanha, 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 indeed 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, [*L. E.*]

'The active gummy reſin is almoſt entirely in the bark of the root. It is found to loſe conſiderably by keeping; and boiling deprives it of its emetic power altogether. The full doſe of the powder is a ſcruple or half a dram, and double that in form of watery infu-

ſion

ſion. The full doſe is recommended in the paroxyſm of ſpaſmodic aſthma, and a doſe of three or four grains every morning in habitual aſtmatic indiſpoſition. A doſe of $\frac{1}{3}$ or $\frac{1}{2}$ grain rubbed with ſugar and given every four hours or oftener is recommended in uterine hemorrhagy, cough, pleuriſy, hæmoptoë, &c. Ipecuanha is alſo found to be antiſeptic.'

IRIDIS FLORENTINÆ *Lin. radix: Iridis Florentinæ albæ C.B.* Florentine orris; the root [*E.*]

IRIDIS PURPUREÆ NOSTRATIS *radix: Iridis vulgaris Germanicæ ſive ſylveſtris C. B. Iridis Germanicæ Lin.* Flower-deluce; the root.

Both theſe appear to be the ſame ſpecies of plant: ſeveral varieties of it are cultivated in our gardens on account of the elegance of their flowers. The roots, when recent, have a bitter, acrid, nauſeous taſte, and taken into the body 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 [*L.*], and as an ingredient in the theriaca [*L.*]

IRIS PALUSTRIS, vide GLADIOLA.

IVA ARTHRITICA, vide CHAMÆPITYS.

JUGLANDIS *cortex et fructus:* The walnut, and its outer ſhell.

The kernel of the fruit is ſimilar in quality to almonds: the ſhell is aſtringent: but neither of them is at preſent employed in medicine.

JUJUBÆ. *Rhamni zizyphi Lin. fructus.* Jujubes; a half-dried fruit brought from France.

Jujubes have a pleaſant ſweet taſte. They are recommended in an acrimonious ſtate of the juices; in coughs from thin ſharp defluxions; and in heat of urine: but they are at preſent, among us, a ſtranger to medicinal practice, and to the ſhops.

JUNCUS ODORATUS: *Juncus odoratus ſive aromaticus C.B. Andropogon ſchœnanthus Lin.* Sweet ruſh, or camels hay [*L.*]

This is a dry ſmooth ſtalk, brought to us along with the leaves, and ſometimes the flowers, from Turky and Arabia, tied up in bundles about a foot long. The ſtalk, in ſhape and colour, ſomewhat reſembles a barley ſtraw: it is full of a fungous pith, like thoſe of our common ruſhes: the leaves are like thoſe of wheat, and ſurround the ſtalk with ſeveral coats, as in the reed: the flowers are of a carnation colour, ſtriped with a lighter purple. The whole plant, when in perfection, has a hot, bitteriſh, not unpleaſant, aromatic taſte, and a very fragrant ſmell; by long keeping, it loſes greatly of its aromatic flavour. Diſtilled with water, it yields a conſiderable quantity of eſſential oil. It was formerly often uſed as an aromatic, and in obſtructions of the viſcera, &c. but at preſent is ſcarce otherwiſe employed than as an ingredient in mithridate and theriaca.

JUNIPERI *baccæ. Juniperi vulgaris fruticoſæ C. B. Juniperi communis, Lin.* Juniper; the berries [*L. E.*]

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, where this ſhrub is very plentiful.

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 bitter 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 ſtomachics, and are diuretic: for theſe purpoſes, a ſpirituous water [*L.*] a compound ſpirituous water [*E.*] and eſſential oil diſtilled from them [*L. E.*] are kept in the ſhops: they are ingredients alſo in the mithridate and theriaca [*L.*], 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 itſelf: 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.

KALI: *Kali majus cochleato ſemine C. B. Salſola ſoda Lin.* Glaſswort.

'This is an annual, and grows wild on the ſouthern ſea-coaſts of Europe. The ſaline juice has been uſed in dropſy; but the plant is chiefly taken notice of as yielding copiouſly, when burnt, the mineral alkali which all marine plants do in ſome degree. An impure kind of this alkali is prepared from the kali cultivated in the ſalt marſhes about Montpelier, and a purer kind at Alicant from the *ſalſola ſativa Lin.* The impure kinds are called *ſoda* or *barilla*. The purified ſalt has been uſed in ſcrophula.'

KERMES [*L.*] A round grain about the bulk of a pea, found (in Spain, Italy, and in the ſouthern parts of France) adhering to the branches of the *ilex aculeata cocciglandifera C. B. Quercus coccifera Lin.*

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 rough and pungent taſte, and a not unpleaſant 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 a 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 exhila-

rating

rating the ſpirits, and againſt palpitations of the heart: but more particularly 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 twice 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, or its auxiliaries, are to be much depended on. The kermes gives name to an officinal confection, which appears to be greatly ſuperior to the above compoſition.

KINO GUMMI. Red aſtringent gum from Gambia, *Lond. Med. Obſ.* vol. i. art. 28. [*E.*]

'It has a great reſemblance to catechu. It is indeed 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 diarrhœa, &c. In proof ſpirit it forms an elegant tincture [*E.*]'

LABDANUM [*L.*] This is a reſinous ſubſtance exuding upon the leaves of the *ciſtus ladaniſera Cretica flore purpureo Tourn. Ciſtus Cretica Lin.*

This reſin is ſaid to have been formerly collected from the beards of goats who brouzed 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 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 labdanum, examined by the French academy, made up three-fourths of the maſs. Rectified ſpirit of wine almoſt entirely diſſolves pure labdanum, 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 and cephalic plaſters of the ſhops.

LAC. 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 theſe liquors, and that of aſſes next to it: this laſt is the moſt dilute 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	$1\frac{1}{2}$
Goats milk	$12\frac{1}{2}$	$1\frac{1}{2}$
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 proceeding from thick phlegm and obſtructions of the viſcera.

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 ſpurges, 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

of the foregoing obſervations are taken, carries this point ſo far, as to direct the animal to be dieted according to the diſeaſe which its milk is to be drank for.

LACCA, *gummi-reſina.* Lac, improperly called gum lac.

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 flat cakes: the firſt is called ſtick lack, 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 ſponginеſs 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.

LACTUCÆ *folia, ſemen: Lactucæ ſativæ C. B. et 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.

There are two wild ſorts of lettuce, not unfrequently met with under hedges, &c. One of theſe differs greatly in quality from the foregoing; as may be judged from its ſtrong ſoporific ſmell: it is called by Moriſon, *Lactuca ſylveſtris opii odore vehementi ſoporifero et viroſo; Lactuca viroſa Lin.* The upper leaves of this are jagged about the edges, the lower ones not. 'It ſmells ſtrongly of opium, and reſembles it in 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. Collin of Vienna aſſerts, that out of 24 dropſical patients, all but one were cured by this medicine.' All the leaves of the other wild ſort are very deeply jagged: hence this is by the ſame author diſtinguiſhed by

the name *Lactuca ſylveſtris laciniata; Lactuca ſcariola Lin.*

LAMII ALBI *folia, flores: Lamii albi non fœtentis folio oblongo C. B. et Lin.* White archangel, or dead nettle; the flowers [*L.*]

This grows wild in hedges; and flowers in April and May. The flowers have been particularly celebrated in uterine fluors and other female weakneſſes, as alſo in diſorders of the lungs; but they appear to be of very weak virtue.

LAPATHUM, Dock; the roots.

We have ten or eleven docks growing wild in England, the roots of moſt of which are brought to market promiſcuouſly; though two have been generally directed by phyſicians in preference to the others: theſe are,

OXYLAPATHUM: *Lapathum folio acuto plano C. B. Rumex acutus Lin.* The dock with long, narrow, ſharp-pointed leaves, not curled up about the edges.

HYDROLAPATHI *ſive Herbæ Britannicæ radix: Lapathi aquatici folio cubitali C. B. Rumicis aquatici Lin.* The great water-dock; the root [*E.*]

The leaves of the docks gently looſen the belly, and have ſometimes been made ingredients in decoctions for removing a coſtive habit. The roots form an ink with iron, and are celebrated for the cure of ſcorbutic and cutaneous diſorders, both exhibited internally, and applied externally in ointments, cataplaſms, lotions, and fomentations. Muntingius publiſhed a treatiſe on theſe plants in the year 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, does not ill agree to the former. This author therefore attributes to the *hydrolapathum* all the virtues aſcribed of old to the *Britannica*, particularly recommending it in the ſcurvy and all its ſymptoms. Where this diſorder is of very long ſtanding, ſo as not to yield to the *hydrolapathum* alone, he directs a compoſition, by the uſe of which, he ſays, even the venereal lues will in a ſhort time be effectually cured. 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 the pepper is improper, ſix ounces of liquorice), 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; and the whole 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 ſtomach, for fourteen or twenty days, or longer.

LAPATHUM UNCTUOSUM, vide BONUS HENRICUS.

LAPIS BEZOAR, CALAMINARIS, HÆMATITES, LAZULI; vide BEZOAR, CALAMINARIS, &c.

LAPPA MAJOR, vide BARDANA MAJOR.

LAVENDULÆ *flores: Lavendulæ anguſtifoliæ C. B. Lavendulæ ſpicæ Lin.* Common, or narrow-leaved lavender, or ſpike; the flowers [*L. E.*]

LAVENDULÆ *flores: Lavendulæ latifoliæ C. B. var β Lin.* Greater

Greater or broad-leaved lavender; the flowers.

These plants 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 only is 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, and therefore alone directed by the colleges.

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, proceeding from a weakness of the solids, and lentor or sluggishness of the juices. 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 and compound spirit [*L. E.*], and a conserve [*L.*] The flowers in substance are an ingredient in the sternutatory powder [*L.*]

LAUREOLÆ *folia, baccæ: Laureolæ sempervirentis flore viridi, quibusdam laureolæ maris, C. B. Daphnes laureolæ.* Spurge laurel; the leaves and berries.

This is a small shrub, growing wild in some of our woods. The leaves, berries and bark, both of the stalks and roots, have an extremely acrid, hot taste, which last for a long time, burning and inflaming the mouth and fauces. Taken internally, they operate with great violence by stool, and sometimes by vomit; so as scarce to be exhibited with any tolerable degree of safety, unless their virulence be previously abated by boiling.

LAURI *folia, baccæ, et baccarum oleum expressum: Lauri vulgaris C. B. Lauri nobilis Lin.* The bay tree; its leaves and berries [*L. E.*], and expressed oil of the berries [*E.*]

These are generally brought from the Streights, though 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 in 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 and cataplasm of cummin: they also give name to an electary, which is little otherwise used than in glysters.

LAZULI LAPIS: A compact ponderous fossil, of an opake blue colour, met with in the eastern countries, and in some parts of Germany. It is a strong emetic, rarely or never used in the present practice. It is found to consist of calcareous

earth, gypſum, iron, ſparry acid, and flint. It is diſtinguiſhed from other blue ſtones by obſtinately retaining its colour in a ſtrong heat.'

LENTIS VULGARIS *ſemen: Lentis vulgaris ſemine ſubruſo C. B.* Lentile; the ſeed.

This is a ſtrong, flatulent food, very hard of digeſtion: it is never, at leaſt with us, uſed for any medicinal purpoſe.

LENTISCUS: *Lentiſcus verus ex inſula Chio, cortice et foliis fuſcis Commelin. Lentiſcus vulgaris C. B. Piſtachia lentiſcus Lin.* The lentiſc, or maſtich 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 potabile*, and ſtrongly recommended in catarrhs, nauſeæ, 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 maſtich. See the article MASTICHE.

LEPIDII *folia: Lepidii latifolii C. B. et Lin.* Common broad diſander, pepperwort, or poor man's pepper; the leaves.

This plant is ſometimes found wild by the ſides of rivers, and in other moiſt places. The leaves have an aromatic, pungent, biting taſte, ſomewhat approaching to that of pepper, but going off ſooner than that of moſt other ſubſtances of this claſs. They are very rarely employed in medicine, though ſtrongly recommended as antiſcorbutics, and for promoting the urinary and cuticular ſecretions; virtues, which they have undoubtedly a good title to.

'The *lepidium iberis Lin.* has much the ſame properties. Externally, it has been ſuppoſed uſeful in ſciatica, hence called ſciatica creſſes.'

LEUCOIUM LUTEUM, vide CHEIRI.

LEVISTICI *ſeu Liguſtici ſemen: Angelicæ montanæ perennis, paludapii folio, Tourn. Liguſtici vulgaris C. B. Liguſtici leviſtici Lin.* Lovage; the ſeed [*E.*]

This is a large unbelliferous 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 the root enters no officinal compoſition.

LICHEN: *Lichen petræus cauliculo pileolum ſuſtinente C. B. Marchantia polymorpha Lin.* Liverwort; the herb.

This grows wild in moiſt ſhady places, and by the ſides of rivers. It has a faint not diſagreeable ſmell; and an herbaceous, roughiſh, and ſomewhat bitteriſh taſte. Great virtues have been attributed to this ſimple in obſtructions of the liver,

jaun-

jaundice, &c. which practitioners do not now expect from it.

LICHEN CINEREUS TERRESTRIS: *Lichen terreſtris cinereus Raii. Lichen caninus Lin.* Aſh-coloured ground liverwort [*L.*]

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 commons 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, n° 237. This powder was afterwards inſerted (in the year 1721) into the London pharmacopœia, 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 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 nine or ten ounces; "and afterwards take a dram and a "half of the powder every morn-"ing faſting, for four mornings "ſucceſſively, in half a pint of "cows milk, warm. After theſe "four doſes are taken, the patient "muſt go into the cold bath, or a "cold ſpring or river, every morn-"ing faſting for a month; he muſt "be dipt all over, but not ſtay in "(with his head above water) "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 begun. It is greatly to be wiſhed, that the efficacy of this medicine in preventing theſe terrible diſorders, was abſolutely certain, and 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.

'LICHEN ISLANDICUS *Lin.* Eryngo-leaved or eatable Iceland liverwort [*E.*]

'Its leaves 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

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 potage with milk or water. This diet is recommended in phthiſis and ſcorbutus; and is ſaid to be very nouriſhing, antiſeptic, and gently laxative.

LIGNUM ALOES, vide AGALLOCHUM.

LIGNUM RHODIUM [*L.*] Roſewood, a wood or root brought from the Canary iſlands; and aſpalathus, a ſimple of conſiderable eſteem among the ancients, but which has not come to the knowledge of latter times.

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 are the ſame; whence different woods brought into Europe for the unknown aſpalathus were ſold again by the name of rhodium.

As to aſpalathus, the ancients themſelves diſagree; Dioſcorides requiring 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, 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 pomatums and the like. But if we may reaſon from analogy, this odoriferous ſimple might be advantageouſly applied to nobler purpoſes; a 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.

LIGNUM TINCTILE CAMPECHENSE [*L.E.*] *Lignum Braſilio ſimile, cæruleo tingens, J. B. Hæmatoxylum Campechianum Lin.* Campeachy or logwood; a wood brought from Campeachy in the bay of Honduras.

This 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 frequently

quently tinges the ſtools, and ſometimes the urine.' The extract is now received into the ſhops.

LILII ALBI *radix: Lilii albi flore erecto et vulgaris C. B. Lilii candidi, Lin.* White lily; the root [*E.*]

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.'

LILII CONVALLIUM *radix, flores: Lilii convallium albi C. B. Convallariæ muralis Lin.* Lily of the valey, or May lily; the roots and flowers. This grows wild in woods and ſhady places, flowering in May.

The flowers of theſe plants 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 garden-lily abound with a ſoft mucilage, and hence they have been uſed externally in emollient and maturating cataplaſms. Thoſe of the wild lily are very bitter: dried, they are ſaid to prove a gentle errhine; as alſo are the flowers.

LIMONIORUM MALORUM, *ſeu*

LIMONUM *ſuccus, cortex: Fructûs mali limoniæ acidæ C. B. Citrus medicæ Lin.* Lemon; their juice, yellow rind, and its eſſential oil called eſſence of lemons, [*L.E.*]

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, bitter wine, and both the peel and juice in one of the infuſions of ſena; the eſſential oil in the volatile aromatic ſpirit, ſaponaceous pills, and ointment of ſulphur [*L.*]

LINARIÆ *folia: Linariæ vulgaris luteæ flore majore C. B. Antirrhini linariæ 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, *ſcheiſskraut.* Experience ſcarcely warrants either of theſe appellations; nor does common practice take any notice of the plant.

LINGUÆ CERVINÆ, *ſeu Scolopendrii, folia: Linguæ cervinæ officinarum C. B. Aſplenii ſcolopendrii 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 maidenhairs, but more diſa-

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 maiden-hair, or the other plants called capillary.

LINI CATHARTICI, *Lin. folia: Lini pratenſis floribus exiguis C. B.* Purging flax, or mill-mountain; 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.

LINI VULGARIS *ſemen: Oleum e ſeminibus expreſſum Lini ſativi C. B. Lini uſitatiſſimi Lin.* Common flax; the ſeed, called linſeed [*L. E.*] and the expreſſed oil of the ſeeds [*E.*]

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 maturating 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. Liquidambar; a reſinous juice which flows from a large tree (*Liquidambar ſtyraciflua Lin.*) 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 [*L.E.*] Litharge; 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. See the article PLUMBUM.

LITHOSPERMI, *ſeu Mili ſolis, ſemen: Lithoſpermi majoris erecti C. B. Lithoſpermi officinalis 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.

‘LOBELIÆ RADIX. *Lobeliæ ſiphiliticæ Lin.* [*E.*] Blue cardinal-flower; the root.

‘This plant grows in moiſt places in Virginia, and bears our winters. It is perennial, has an erect ſtalk three

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 is 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.'

LOTI URBANÆ *folia, ſemen: Loti hortenſis odoræ C. B. Trifolii meliloti ceruleæ Lin.* Sweet trefoil; the leaves and ſeeds.

The flowers of this plant are ſtronger in ſmell than the other parts: theſe have been recommended for diaphoretic, alexipharmac, anodyne, and other virtues; but their effects have not been found conſiderable enough to continue them in practice.

LUJULÆ *folia: Oxyos alhæ Gerard. Oxalis acetoſellæ Lin.* Wood-ſorrel; the leaves [*L.*]

This is a ſmall plant, growing wild in woods. In taſte and medical qualities, it is ſimilar to the common ſorrel (ſee the article ACETOSA), 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 is now received in the diſpenſatory.

LUMBRICI *et* LIMACES TERRESTRES. Earth-worms and ſnails.

Both theſe are ſuppoſed to cool and cleanſe the viſcera. The latter, from their abounding with a viſcid glutinous juice, are recommended as a reſtorative in conſumptions: for this purpoſe, they are directed to be boiled in milk; and thus managed, they may poſſibly be of ſome ſervice. They give over nothing in diſtillation either with water or ſpirit; and hence the diſtilled waters of them, though formerly in great eſteem, are not found to have any of the virtues which the animals themſelves are ſuppoſed to poſſeſs.

LUPINI *ſemen: Lupini vulgaris, ſemine et flore albo, ſativi J. B. Lupini albi 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 internal uſe, and tells us (from one of the Arabian writers) that they have ſometimes occaſioned death. Simon Paulli 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 re-

com-

commended by Galen as very wholesome.

LUPULUS: *Convolvulus perennis, heteroclitus, floribus herbaceis, capsulis foliaceis strobili instar, Morif. Humulus lupulus Lin.* Hops; the loose leafy heads which grow on the tops of the stalks.

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 found to induce sleep after opium had failed.'

LYCOPERDON: *Fungus rotundus orbicularis C. B. 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 in the same intentions.

MACIS. *Macis officinarum C. B.* Mace; one of the coverings of the nutmeg (see the article *Nux moschata.*) 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 is an ingredient in the officinal steel-wine [*L.*], and the expressed oil in the stomachic and cephalic plasters [*L.*]

MAGISTRANTIA, vide IMPERATORIA.

MAJORANÆ *folia: Majoranæ vulgaris C. B. Origani majoranæ Lin.* Sweet marjoram; the leaves [*L. E.*]

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 asthmas 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 *folium: Folium cinnamomi sive canellæ Malabaricæ et Javanensis C. B. Lauri cassiæ Lin.* Indian leaf [*L.*]. 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. 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 is of no farther use in medicine, than as an ingredient in the mithridate and theriaca;

riaca; and is, when in its greateſt perfection, much inferior to the mace, which our college directs as a ſuccedaneum to it.

MALVÆ *folia, flores: Malvæ ſylveſtris folio ſinuato C. B. Malvæ ſilveſtris Lin.* Mallow; the leaves and flowers [*L. E.*]

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 is prepared from the flowers [*L.*]

MALA: *Fructus mali ſativæ Raii; Pyri mali Lin.* Apples.

All the ſorts of apples have the common quality of cooling and abating thirſt: the more acid kinds looſen the belly; the auſtere have rather a contrary effect.

MALA SYLVESTRIA: *Fructus mali ſylveſtris acido fructu Tourn.* Crab-apples or wildings.

Theſe are ſo acid as not to be eatable: their juice, called verjuice, has ſometimes ſupplied the place of vinegar, and has been made an ingredient in cooling and reſtringent gargariſms. At preſent, they are ſcarce ever employed for any medicinal uſe.

MANDRAGORÆ *folia: Mandragoræ fructu rotundo C. B. Atropæ mandragoræ Lin.* Mandrake; the leaves.

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. 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 pharmacopœias.

MANNA [*L. E.*]; the juice of certain trees of the aſh kind, particularly the *fraxinus ornus Lin.* growing in Italy and Sicily. 'When naturally concreted 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 ſpontaneous exudation is over, and is in larger maſſes and of a redder colour. The beſt Calabrian manna is in oblong, 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 purgative ingredient, boiled to a proper conſiſtence; this may be diſtinguiſhed by its weight, ſolidity, untranſparent whiteneſs, and by its taſte, which is different from that of manna.

Manna is a mild, agreeable laxative, and may be given with ſafety to children and pregnant women: nevertheleſs, in ſome particular conſtitutions, it acts very unkindly, producing flatulencies and diſtenſion of the viſcera; theſe inconveniences may be prevented by the addition of

of any grateful warm aromatic. Manna operates ſo weakly as not to produce the full effect of a cathartic, unleſs taken in large doſes; and hence it is rarely given in this intention by itſelf. It may be commodiouſly diſſolved in the purging mineral waters, or joined to the cathartic ſalts, ſena, rhubarb, or the like. Geoffroy recommends acuating 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. (See the article CASSIA FISTULARIS.) Manna is an ingredient in the electary of caſſia [*L E.*]

MARGARITÆ [*L. E.*] Pearls; ſmall concretions of a tranſparent whiteneſs, found on the inſide of the ſhell of the *concha margaritifera* or mother of-pearl fiſh, as alſo of certain oyſters, muſſels, and other ſhell-fiſhes. 'Some ſuppoſe pearls the product of age or diſeaſe in thoſe animals; and the Swedes are ſaid to produce the diſeaſe at pleaſure, by a mere perforation of the ſhell.' The pearls moſt eſteemed are brought from the Eaſt and Weſt Indies, and diſtinguiſhed by the names of oriental and occidental: the oriental, which are valued moſt, have a more ſhining ſilver hue than the occidental; theſe laſt are ſomewhat milky: a ſort inferior to both theſe is ſometimes met with in our own ſeas, particularly on the coaſts of Scotland. The coarſe, rough pearls, and the very ſmall ones which are unfit for other uſes, are thoſe generally employed in medicine. They have been greatly celebrated as cordial, alexipharmac, and comforting the nerves; but the only virtue that can be reaſonably expected from them is, that of abſorbing acidities in the primæ viæ, in which intention they enter three of the officinal powders.

MARRUBII *folia: Marrubii albi vulgaris C. B. Marrubii vulgaris Lin.* White horehound; the leaves [*L. E.*]

Theſe have a very ſtrong, not diſagreeable ſmell, and a roughiſh very bitter taſte. Beſides the virtues which they poſſeſs in common with other ſtrong bitters, they are ſuppoſed to be peculiarly ſerviceable in humoural aſthmas and coughs, the yellow jaundice proceeding from a viſcidity of the bile, and other chronical diſorders. They are doubtleſs an uſeful aperient and deobſtruent, they promote the fluid ſecretions in general, and liberally taken looſen the belly. They are an ingredient only in the theriaca [*L.*]

MARI SYRIACI *folia: Mari cortuſi J. B. Chamædryos maritimæ incanæ fruteſcentis foliis lanceolatis Tourn. Origani Syriaci Lin.* Syrian herb maſtich; the leaves [*L.*]

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 bitteriſh taſte; and when rubbed betwixt the fingers, a quick pungent ſmell, 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

ployed than in cephalic ſnuffs. It is an ingredient in the *pulvis ſternutatorius* of the London Pharmacopœia.

MARI VULGARIS *folia*: *Sampſuci ſive mari maſtichen redolentis C. B. Thymbræ Hiſpanicæ majoranæ folio Tourn. Thymi maſtichinæ Lin.* Herb maſtich; the leaves. [*L.*]

This pungent aromatic plant alſo is become almoſt a ſtranger to practice.

'MARS SACCHARATUS [*E.*] 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.

'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: *Reſina piſtaciæ lentiſci Lin.* [*L. E.*] Maſtich; a reſin exuding from the lentiſc tree (ſee LENTISCUS), and 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.

MATRICARIÆ *folia, flores*: *Matricariæ vulgaris ſeu ſativæ C. B. Matricariæ Parthenii Lin.* Common wild featherfew or feverfew; the leaves [*L.*]

This plant is a celebrated antihyſteric. Simon Paulli 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, hyſteric 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, except in being weaker.

MECHOACANNÆ *radix*; the root of an American convolvulus, (*convolvulus Mechoacanna Lin.*) brought from Mechoacan, a province of Mexico, in thin ſlices like jalap, but larger and of a whitiſh colour. It was firſt introduced among us (about the year 1524) as a purgative univerſally ſafe, and capable of evacuating all morbific humours from the moſt remote parts of the body. 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 of-

fend the ſtomach; its operation is ſlow, but effectual and ſafe. Geoffroy affirms that there is ſcarce any purgative accompanied with fewer inconveniencies. 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 [*L.*] 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 which the bees collect it from: 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 diſſolving viſcid juices, and 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.

MELAMPODIUM [*E.*] vide Helleborus Niger.

MELILOTI *folia, flores: Meliloti officinarum Germaniæ C. B. et trifolii meliloti officinalis Lin.* Melilot; th leaves and flowers.

This 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, naſeous. 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 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.

MELISSÆ *folia: Meliſſæ hortenſis C. B. Meliſſæ officinalis Lin.* Balm; the leaves [*L. E.*]

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, 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

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 exceeding 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.

MELONUM *ſemen: Cucumis melo Lin.* Melons: 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 CATARIA, vide NEPETA.

MENTHÆ VULGARIS *folia: Menthæ anguſtifoliæ ſpicatæ C. B. Menthæ viridis Lin.* Garden or ſpearmint; the leaves [*L. E.*]

The leaves of 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, nauſeæ, continual retchings to vomit, and (as Boerhaave expreſſes it) almoſt paralytic weakneſſes of the ſtomach, there are few ſimples perhaps of equal efficacy. In colicky pains, the gripes to which children are ſubject, lienteries, and other kinds of immoderate fluxes, this plant frequently does good ſervice. It likewiſe proves beneficial in ſundry 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 ſpirit. 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 and ſpirituous water, and a conſerve, are kept in the ſhops. This herb is an ingredient alſo in the three alexiterical waters; and its eſſential oil in the ſtomach plaſter [*L.*] and ſtomachic pills [*E.*]

MENTASTRI *folia: Mentaſtri ſpicati folio longiore candicante J. B.* Horſe mint; the leaves. This and ſeveral other ſorts of mint are found wild in moiſt meadows, marſhes, and on the brinks of rivers. They are much leſs agreeable in ſmell than ſpearmint, and have more of a hot unpleaſant bitterneſs.

MENTHÆ PIPERITIDIS *folia: Menthæ ſpicis brevioribus & habitioribus, foliis menthæ fuſcæ, ſapore fervido piperis Raii Synopſ. Menthæ piperitæ Lin.* Peppermint; the leaves [*L. E.*]

This ſpecies 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 like 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 officinal preparations are an eſſential oil, and a ſimple and ſpirituous water [*L. E.*]

MENYANTHES, vide TRIFOLIUM.

MERCURIALIS *maris & feminæ folia: Mercurialis teſticulatæ ſive maris, & ſpicatæ ſive fœminæ Dioſcoridis & Plinii C. B. Mercurialis annuæ Lin.* Male and female French mercury; the leaves.

Theſe ſtand among the five emollient herbs; and in 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 more palatable, has been lately found poſſeſſed of noxious qualities. (See *Raii Synopſ.* edit. 3. page 138. *Phil. Tranſ. abr. Lowthorp*, ii. 640.) This may be diſtinguiſhed from the foregoing, by its being a perennial plant (*Mercurialis perennis Lin.*), larger, having its leaves rough, and the ſtalk not at all branched; the poiſonous *mercurialis*; it is commonly called dog's mercury.

MERCURIUS, vide ARGENTUM VIVUM.

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.

MEI ATHAMANTICI *radix: Mei foliis anethi C. B. Aethuſæ mei Lin.* Spignel; the root [*L.*]

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 little regarded.

MEZEREI CORTICIS *radix: Laureolæ folio deciduo, flore purpureo, officinis laureolæ fœminæ, C. B. Daphnes mezerei Lin.* Mezereon, or ſpurge-olive; the bark of the root [*E.*]

'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. On chewing it a little, it proves very pungent, and its acrimony is accumulated about the fauces, and is very durable. It has 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 bark of the root contains moſt acrimony, though ſome prefer the woody part. Mezereon has alſo been uſed in tu-

mours

mours and cutaneous eruptions not venereal.

MILII *semen : Milii semine luteo C. B. Panici miliacei Lin.* Millet; the seed.

These seeds are frequently employed in food, but hardly ever as medicines: they are sufficiently nutritious, and not difficult of digestion.

MILIUM SOLIS, vide LITHOSPERMUM.

MILLEFOLII *folia, flores : Millefolii vulgaris albi, et Millefolii purpurei C. B. Achillææ millefolii Lin.* Milfoil, or yarrow; the leaves and flowers [*E.*]

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, diarrhœas, debility and laxity of the fibres, and likewise in spasmodic 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, in his language, 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 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 measure supply its place; this, however, is greatly to be doubted, since there is such a remarkable difference betwixt 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 in great measure lost by drying.

MILLEPEDÆ. *Oniscus asellus Lin.* [*L. E.*] Woodlice, hoglice, 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 a 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.

MINIUM [*L.*] Red lead; lead calcined to redness. See the article PLUMBUM.

MORSUS DIABOLI *seu Succisæ radix, folia : Scabiosæ pratensis nostratis præmorsa radice Morison. Scabiosæ arvensis Lin.* Devil's-bit; the leaves and roots.

These stand recommended as alexipharmacs, but they have long given place to medicines of greater efficacy.

MORI *fructus: Mori fructu nigro C. B. Mori nigræ Lin.* The mulberry tree; its fruit [*L.*]

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 promotig the groſſer ſecretions; an agreeable ſyrup made from the juice, is kept in the ſhops. The bark of the roots has been in conſideable eſteem as a vermifuge; its taſte is bitter, and ſomewhat aſtringent.

MOSCHUS, [*L. E.*] 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 (*Moſchus moſchiferus Lin.*) 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 unctuoſity, 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 ſubacrid 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, on a ſuppoſition of its occaſioning vapours, &c. in weak females, and perſons of a ſedentary life. 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° 474), an account of ſome extraordinary effects of muſk in convulſive and other diſeaſes, which have too often baffled the force of medicine. The doctor 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,

xiety, 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 hiccups, 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 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. I have myſelf frequently given it with remarkable ſucceſs; and ſometimes increaſed the doſe as far as twenty grains every four hours, with two or three ſpoonfuls of the muſk julep between. The julep is the only officinal preparation of it.

'Muſk in ſcruple or half-dram doſes, ſtill retains its character in nervous diſeaſes, particularly in thoſe of the convulſive kind; it is combined with opium in tetanus, and with mercury in rabies canina.'

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: (1) The yellow, *myrobalani teretes citrini C. B. Myrobalani citrinæ Lin.* (2) The chebule, *myrobalani maximæ oblongæ angulosæ C. B.* (3.) The Indian or black, *myrobalani nigræ octangulares C. B.* (4) The belliric, *myrobalani rotundæ bellericæ C. B.* (5) The emblic, *myrobalani emblicæ, in ſegmentis nucleum habentes, angulosæ, J. B.* The fruit of *phyllanthus emblica Lin.*

All the myrobalans have a low degree of purgative virtue. They have alſo an attringent 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 in that intention; and the college of Edinburgh, as well as that of London, has now rejected them from the catalogue of officinal ſimples.

MYRRHA: *Gummi reſina*, [*L. E.*] 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, tho' not ſufficient to prevent its proving naſeous to the palate; and a ſtrong not diſagreeable ſmell. The medical effects of this aromatic bitter are, to warm and ſtrengthen the viſcera, and diſſolve thick, tenacious juices: it frequently occaſions a mild dia-

phoreſis, 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 its ſuppoſed effects in phthiſis, hyſteria, and amenorrhœa, are not truſted to.'

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 [*L. E.*] and of the elixir and powder [*L.*] It is an ingredient in the aloetic wine or elixir proprietatis [*L. E.*] the gum pills, Rufus's pills, mithridate and theriaca [*L.*], and ſtomachic pills [*E.*]

MYRRHIDIS *folia, ſemen: Myrrhidis magno ſemine, longo, ſulcato J. B.* Sweet cicely; the leaves and ſeeds.

This plant is cultivated in gardens; it agrees in quality with the *cbærefolium.*

MYRTI *baccæ: Myrti communis Italicæ C. B. Myrti 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 are not at preſent regarded.

NAPI *ſemen: Napi dulcis officinarum: Napi ſativæ C. B. Braſſicæ napi Lin.* Sweet navew or navew gentle; the ſeeds [*L.*]

This is a ſort of turnep, ſown in ſome of our gardens for culinary uſe: the roots are warmer than the common turnep. 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 of no farther uſe in medicine than as an ingredient in the theriaca.

NAPI SYLVESTRIS *ſemen: Napi ſylveſtris C. B. Bropicæ napi var. Lin.* Rape; the ſeeds.

This has little other external difference from the foregoing, than being ſmaller: it grows wild upon dry banks and among corn. The ſeeds of this are warmer and more pungent than thoſe of the garden ſort: the only uſe, however, they are applied to, is the preparation of the oil called rape oil, which is obtained by bruiſing and preſſing the ſeeds: large quantities of the plant are cultivated for this purpoſe in the iſle of Ely.

NARDUS CELTICA: *Radix nardi Celticæ Dioſcoridis C. B. Valerianæ Celticæ Tourn. et Lin.* Celtic nard [*L.*]; the root, brought from the Alps, &c.

This root conſiſts of a number of fibres, with the lower part of the

ſtalks

ſtalks adhering; theſe laſt are covered with thin yellowiſh ſcales, the remains of the withered leaves.

NARDUS INDICA [*L.*] *Nardus Indica, quæ ſpica, ſpica nardi, et ſpica Indica officinarum C. B. Andropegon nardus Lin.* Indian nard, or ſpikenard, brought from the Eaſt-Indies.

This 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 part 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.

Both the nards have a warm, pungent, bitteriſh taſte; and a ſtrong, not very agreeable ſmell. They are ſtomachic and carminative; and ſaid to be alexipharmac, diuretic, and emmenagogue: their only uſe at preſent is as ingredients in the mithridate and theriaca.

NASTURTII AQUATICI *folia, herba: Naſturtii aquatici ſupini C. B. Siſymbrii naſturtii aquatici Lin.* Water-creſſes: the leaves [*L.*], herb [*E.*]

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 mighty 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 *ſucci ſcorbutici* of the ſhops.

NASTURTII HORTENSIS *folia, ſemen: Naſturtii vulgaris ſeu hortenſis tenuiter diviſi Moriſon, Lepidii ſativi Lin.* Garden creſſes; the leaves and ſeeds.

The leaves of garden creſſes make an uſeful ſalad in ſcorbutic habits: in taſte and medical virtues, they are ſimilar to the foregoing, but much weaker. The ſeeds are alſo conſiderably more pungent than the leaves.

NEPETÆ *folia: Menthæ catariæ vulgaris et majoris C. B. Nepetæ catariæ Lin.* Nep, or catmint; the leaves [*L.*]

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: *Lignum peregrinum, aquam cæruleam reddens C. B.* Nephritic wood.

This is an American wood, (of the *guilandina moringa Lin.*) brought to us in large, compact, ponderous pieces, without knots.

of

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 betwixt 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 recommended in difficulty of urine, nephritic complaints, and all diſorders of the kidneys and urinary paſſages; and 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.

NICOTIANÆ *folia: Nicotianæ latifoliæ majoris C. B. Nicotianæ tabaci Lin.* Tobacco; the leaves [*L.*]

This plant was firſt brought into Europe, about the year 1560, from the iſland Tobago in America; and is now cultivated for medicinal uſe, in our gardens: the leaves are about two feet long, of a pale green colour whilſt freſh, and when carefully dried of a lively yellowiſh. 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. Tobacco is ſometimes uſed externally in unguents, for deſtroying cutaneous 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, amenorrhœa, 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 lixivia.'

There is another ſort of tobacco found wild on dunghills, in ſeveral parts of England: this is called by C. Bauhine *Nicotiana minor*, by Gerard *Hyoſcyamus luteus*; *Nicotiana ruſtica 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.

NIGELLÆ *ſemen: Nigellæ flore minore ſimplici candido C. B. Nigellæ ſativæ Lin.* Fennel-flower; 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 ſubacrid, ſomewhat unctuous

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 [*L. E.*] Nitre, or saltpetre; 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 an hexagonal prism, terminated by a pyramid of an equal number of sides. It readily melts in the fire; and in contact with fuel deflagrates, 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 of celebrated use 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 of every kind, are by nitre rendered more dilute, and preserved from coagulation: it nevertheless somewhat thickens the thin, serous, acrimonious humours, and occasions 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 is 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 universal, and likewise in chronic deliriums; that in diarrhœæ happening in petechial fevers, nitre

mixed

mixed with abſorbents and diaphoretics, had the beſt effects, always putting a ſtop to the flux, or rendering the evacuation ſalutary; that in diarrhœæ 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 opium, had been given without ſucceſs. The ſame author recommends this ſalt likewiſe as a medicine of ſingular ſervice in choleras attended with great anxieties and heat of the blood; in the flatulent ſpaſmodic heartburns familiar to hypochondriacal people; and 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 dyſpnœa 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 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 [*L. E.*] A corroſive acid ſpirit is alſo extracted from it; ſee Part II. It is employed likewiſe in operations on metallic bodies, for promoting their calcination.

NUMMULARIÆ *folia: Lyſimachiæ humifuſæ, folio rotundiore, flore luteo Tourn. Lyſimachiæ nummulariæ 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 [*L. E.*] *Nux moſchata fructu rotundo C. B. Myriſtica officinalis Lin.* Nutmegs; 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; through the fiſſures whereof appears a hard woody ſhell that includes the nutmeg.

Theſe

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 in that intention in diarrhœas 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 to 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 (heated) a conſiderable quantity of limpid yellow oil, which in 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 much inferiour 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 ſevum, 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, in 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 ſpirituous water, eſſential oil, and the nutmegs in ſubſtance roaſted [*L.*] The nutmeg itſelf is uſed in the compound horſeradiſh water, compound ſpirit of lavender, cordial confection, cardialgic troches, and ſyrup of buckthorn [*L.*]; its eſſential oil, in the volatile aromatic ſpirit [*L.*]; and the expreſſed oil in mithridate and theriaca, ſtomachic and cephalic plaſters [*L.*]

NUX PISTACHIA: *Nucleus è fructu Piſtaciæ Raii; Piſtachiæ veræ Lin.* Piſtachio.

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 is the ſeed of the *ſtrychnos nux vomica Lin.* 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

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a-day or ſo, in intermittents, particularly obſtinate quartans, and in contagious dyſentery. The *ſtrychnus Ignatii* is a tree of the ſame kind producing gourd-like fruit, the ſeeds of which are improperly called St Ignatius's beans. Theſe, as alſo the woods or roots, of ſome ſuch trees, called lignum colubrinum or ſnakewood, are very narcotic bitters like the nux vomica.'

NYMPHÆÆ ALBÆ *radix, flores: Nymphæa albæ majoris C. B. Nymphæa albæ 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, a diſagreeable ſmell, which is in great meaſure loſt by drying: they are recommended in alvine fluxes, gleets, and the like. The roots are ſuppoſed by ſome to be in an eminent degree narcotic, but on no very good foundation. Lindeſtolpe informs us, that in ſome parts of Sweden they were in times of ſcarcity uſed as food, and did not prove unwholſome.

OCHRA. 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.

OCIMI *folia: Ocimi vulgatioris C. B. Ocimi baſilici Lin.* Baſil; the leaves.

This is a ſmall plant, raiſed annually in our gardens: it flowers in June and July, and produces its ſeeds in Auguſt, but rarely perfects them in this country. The leaves have a ſoft, ſomewhat warm taſte; and when rubbed, a ſtrong unpleaſant ſmell, which by moderate drying becomes more agreeable. They are ſaid to attenuate viſcid phlegm, promote expectoration, and the uterine ſecretions; but have not for a long time been regarded in practice.

OCULI CANCRORUM. See CANCRORUM OCULI.

'ŒNANTHE 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. It proves diuretic, and is apt to occaſion vertigo and ſickneſs.'

OLEUM STILLATITIUM
Caryophyllorum aromaticorum.
Cinnamomi.
Corticis limonum vulgo Eſſentia.
Florum aurantiorum Hiſpalenſium.
Terebinthinæ.

OLEUM EXPRESSUM
Baccarum Lauri.
Seminum lini.
Nucis moſchatæ, oleum macis *vulgo dict.*
Palmæ.
Seminum ricini.

The Edinburgh college orders theſe to be imported. See Part III.

OLIVÆ *earumque oleum expreſſum: Fructus oleæ ſativæ C. B. Oleæ Euro-*

Europæa Lin. The olive tree; the fruit and its expreſſed oil. [*L. E.*]

This tree grows in the ſouthern parts of France, in Spain, Italy, and other warm countries: with us it is uſually preſerved in the greenhouſes 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 oil olive; 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 *amurca*. 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 homogene, 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 the oil is ſometimes met with of a manifeſtly ſaline taſte Oil olive is uſed in the ſimple balſam of ſulphur, Locatelli's balſam, and ſeveral ointments. It is oftener employed in this laſt intention than the other expreſſed oils, but more rarely for internal medicinal purpoſes.

OLIBANUM [*L. E.*] a gummy reſin, the product of the *Juniperus Lycia Lin.* 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 fœmininum*: ſometimes four or five, about the bigneſs of filberds, are found adhering to a piece of the bark of the tree which they exuded from; 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; (ſee the article Thus.)

Olibanum conſiſts of about equal parts of a gummy and reſinous ſubſtance, 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 hæmoptoës, 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 pleuriſies, 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 diarhrœa, enſues, which carries off the diſeaſe. Geoffroy informs us, that he has frequently made uſe of this medicine, after venæſection, with good ſucceſs; but acknowledges that it has ſometimes failed. Olibanum is an ingredient in the *pulvis e ſuccino*, *theriaca* [*L.*]

ONONIDIS: *Anonidis, ſive Areſtæ bovis, radix: Anonidis ſpinoſæ flore purpureo C. B. Ononidis ſpinoſæ Lin.* Reſt-harrow, cammock, or petty-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.

OPHIOGLOSSI *folium: Ophioglоſſi vulgati C. B.* Adder's tongue; the leaf.

This plant has only one leaf, with a ſlender ſtalk ariſing from the bottom of it, dented about the edges, and ſuppoſed to reſemble the tongue of a ſerpent: it grows wild in moiſt meadows. Scarce any other virtues are attributed to it than thoſe of a vulnerary.

OPIUM: *Succus inſpiſſatus papaveris ſomniferi Lin.* Opium; an inſpiſſated juice.

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 uſe. 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 ſoftiſh 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

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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 cow-dung. It is purified by reducing it to a pulp with hot water, and ſtrongly preſſing it while hot through 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; aſtrong peculiar ſmell; a taſte at firſt nauſeous and bitter, and ſoon becoming acrid and warm; 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. In general, when applied to the tongue, the noſe, the eye, or any part deprived of ſkin, it ſtimulates; and according to the quickneſs and degree of this ſtimulus, the ſenſibility of the parts ſeems to be the ſooner and the more diminiſhed. Some allege, that when applied to the ſkin it inflames it, diſcuſſes tumour, 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. Mixed with a cauſtic, it diminiſhes its power, probably by ſomewhat ſaturating the cauſtic, or deadening the part to its action. It ſometimes allays the pain of a carious tooth; and a watery ſolution of it has been uſed in various ulcers, certain ophthalmias, and virulent gonorrhœa. Taken into the ſtomach, or thrown up the inteſtines, its effects appear to be at firſt ſtimulant; and many are of opinion, that opium differs from wine only in its ſtimulus being more ſudden, diffuſive, and complete, and in doing in a ſmall doſe what wine can only do in a large one. The effects of each are to give a temporary vigour both to body and mind, to increaſe the diſpoſition to venery, to produce the various delirium of ebriety, ſometimes attended with heat and watchfulneſs, more commonly with moiſture, itchineſs, drowſineſs, and ſleep or ſtupor, vomiting, convulſions, ſlow intermitting pulſe, death. The operation of opium or wine is often ſucceeded by debility, lowneſs of ſpirits, ſickneſs, thirſt, vertigo, headach, tremors, &c. which ſymptoms are often relieved by a doſe of either; the ultimately debilitating effects of the habitual uſe of either are the ſame; both are contraindicated in a plethoric, active, inflammatory ſtate; both are occaſionally uſed in every other affection; and in all hopeleſs caſes, both are the greateſt means of ſolace.

'Some practitioners uſe opium in active, inflammatory caſes, ſeemingly early, at leaſt before ſuch evacuation as would appear to be adequate. In ſuch caſes, the diſcharge perhaps it uſually occaſions by the ſkin may be ſufficient. It is ſaid ſometimes to produce a general relaxation of the excretories, but more commonly of thoſe chiefly on the ſurface. It is thus, perhaps, it ſo frequently diminiſhes the other excretions; and if this circumſtance be properly attended to, it may be uſed in every diſeaſe, however inflammatory at firſt, as ſoon as exhauſtion and debility appear, attended with watchfulneſs, pain, ſpaſm, cough, any increaſed, or indeed ſuppreſſed diſcharge, or gangrene.

'It is found of great uſe after the inflammatory ſtage, in allay-

ing the ſymptoms, and preventing the ſymptomatic fever occaſioned by wounds.

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 in the hot ſtage, it, as well as wine and volatile alkali, has been obſerved to allay the heat, thirſt, head-ach and delirium, to induce ſweat and ſleep, to cure the diſeaſe with the leſs bark, and without leaving abdominal obſtructions or dropſy.

From theſe effects it promiſes to be uſeful in typhous fevers; and in it ſome place their chief confidence. Wine, bark, and acids, are alſo general remedies; many reſpectable phyſicians have ſtill a high opinion of antimonials; and ſome of great experience truſt almoſt entirely to cleanlineſs, freſh air, a diluent diet, and in open belly.

'In ſmall-pox, when the convulſions before eruption are frequent and conſiderable, portending the confluent or typhous kind, 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 ptyaliſm, 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 relict.

'In diarrhœa, 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 colic, 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 to relieve in jaundice and dyſuria proceeding from ſpaſm.

'It is of acknowleged 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.

'In dropſy, there are ſome caſes mentioned in which ſmall doſes of it are ſaid to have proved a cure.

'Of late, in doſes gradually increaſed to five grains, three, four, or even ſix times a-day, it has been uſed in ſyphilis, and there are ſome unequivocal accounts of its ſucceſs.

'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, 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, as of drink, is wonderfully different in different perſons, and in different ſtates of the ſame perſon. It does not, however, appear certain that thoſe who can bear the moſt drink require the largeſt doſe of opium. A quarter of a grain will in one adult produce effects which ten times the quantity will not

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 watchfulness, disturbed sleep, and other disagreeable consequences; and in some cases it seems impossible to be made agree in any dose or form. 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 by some to last about eight hours from the time of taking it.

'Pure opium is partially soluble in water and in 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 alkalies 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.

'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.

'The officinal preparations of opium are the thebaic extract, or strained opium, and a vinous [*L.*] and a spirituous [*E.*] tincture. It is a chief ingredient in several compositions, as the paregoric elixir [*L. E.*], saponaceous and storax pills [*L.*], thebaic or pacific pills [*E.*], the compound powder of bole, scordium and amber, electuary of scordium, confectio paulina, philonium, mithridate, theriaca [*L.*], anodyne balsam, confectio Japonica, trochisci bechici cum opio [*E.*]

OPOBALSAMUM [*L.*] *Balsamum Judaicum, Syriacum, e Mecha.* Opobalsum, or balm of Gilead; a resinous juice, obtained from an evergreen tree, or shrub, (*amyris Gileadensis Lin.*) growing spontaneously in Arabia. The best sort, which naturally exudes from the plant, is scarce known to Europe; and the inferior kinds, said to be extracted by lightly boiling the leaves and branches in water, are very rarely seen among us. The true opobalsam, 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, light, of a greenish hue; then of a gold yellow; and at length of the colour of honey: after this it grows thick like turpentine, and loses much of its fragrance. This balsam is of great esteem in the eastern countries, both as a medicine, and as an odoriferous unguent and cosmetic. Its great scarcity has prevented its coming into use among us: in the mithridate and theriaca, which it is directed as an ingredient in, the London college allows the expressed oil of nutmegs as a succedaneum to it.

OPOPANAX [*L.*] Opopanax; a concrete gummy resinous juice, obtained from the roots of an umbelli-

belliferous plant, (*Panax paſtinacæ folio C. B. Paſtinaca opopanax Lin.*) 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: in 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, gently purgative.

ORCHIS, vide SATYRION.

ORIGANI *folia: Origani ſylveſtris, cunilæ bubulæ Plinii, C. B. Origani vulgaris Lin.* Wild marjoram; the leaves [*L.*]

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 marjoram, 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.

OROBI *ſemen: Orobi ſiliquis articulatis, ſemine majore C. B.* Bitter vetch; the ſeeds.

This plant is cultivated, though not very often, in our gardens. The ſeeds have a farinaceous bitteriſh diſagreeable taſte: they ſtand recommended in nephritic complaints, but have long been ſtrangers to practice.

ORYZÆ *ſemen.* Rice; the ſeeds, freed from the outward ſkin; theſe are brought chiefly from Carolina, where the plant is cultivated in large quantities. They are ſufficiently nutritious, and afford an uſeful food in diarrhœas, dyſenteries, and other diſorders from a thin acrimonious ſtate of the juices.

OSTEOCOLLA.

This is a foſſil ſubſtance, found in many parts of Germany, as alſo in England, and other countries. It is generally met with in looſe ſandy grounds, ſpreading, from near the ſurface to a conſiderable depth, into a number of branches, like the roots of a tree: it has a whitiſh colour, rough on the ſurface, and for the moſt part either hollow within, or filled with ſolid wood, or a powdery woody matter. Sometimes the roots of living trees are found changed into this kind of ſubſtance. (See *Neumann's* Chemical Works, p. 11. and the *Berlin Memoirs* for the year 1748.)

'This calcareous incruſtation is found to conſiſt of calcareous earth, ſome flinty earth, volatile alkali, and vegetable matter. From this analyſis we may eaſily judge of the

virtue which this foſſil is celebrated for, that of bringing on a callus in fractured bones.

OXALIS, vide ACETOSA.

OXYACANTHA GALENI, vide BERBERIS.

OXYACANTHA VULGARIS, vide SPINA ALBA.

OXYLAPATHUM, vide LAPATHUM.

PÆONIÆ *radix, flores, ſemen: Pæoniæ folio nigricante ſplendido, quæ mas C. B. vel Pæoniæ fœminæ flore pleno rubro majore C. B. Pæoniæ officinalis Lin.* Male and female peony; the roots, flowers, and ſeeds [*L.*]

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 which the ſhops are ſupplied with. In quality they are ſcarce ſenſibly different; and hence the college allows them to 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 ſubacrid 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 medicinal 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 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.

PALMÆ *fructus, oleum expreſſum: Palmæ foliorum pediculis ſpinoſis, fructu pruniformi, luteo, oleoſo Sloan.* The palm-tree, its fruit, and expreſſed oil [*E*].

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; 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 to the cure of chilblains, and, when early made uſe of, not without ſucceſs.

PANICI *ſemen: Panici Germanici, ſive paniculâ minore C. B. Panici miliacei Lin.* Panic; the ſeeds.

This plant is cultivated in ſome parts of Germany: the ſeeds have been made uſe of in food, but are not regarded as medicines.

PAPAVERIS ALBI *capita: Papaveris hortenſis ſemine albo C. B. Papaveris ſomniferi Lin.* The large

garden poppy, with white flowers and ſeeds; or the white poppy; its heads [*L. E.*]

PAPAVER NIGRUM: *Papaver hortenſe nigro ſemine C. B.* The leſſer garden poppy, with purple flowers and black ſeeds; or the black poppy, a variety of the white.

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, agreeing in quality with the opium brought from abroad. (See the article OPIUM.) The juices of both the poppies appear to be ſimilar to one another; 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. (See the *Edinburgh Eſſays abridg.* vol. i. pag. 158. and 132.) 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 officinal 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; as has been obſerved in the *Pharmacopœia reformata.*

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; miſled 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 taken as food: their taſte is ſweetiſh and farinaceous.

PAPAVERIS ERRATICI *ſeu Papaveris rhœados flores: Papaveris erratici majoris C. B. Papaveris rhœados Lin.* Red poppy, or corn-roſe; the greater of the hairy wild poppies, with deep red flowers and dark-coloured ſeeds; its flowers [*L.*]

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; though ſome expect from it a lightly anodyne virtue.

PA-

PARALYSIS *flores: Verbaſculi pratenſis odorati C. B. Primulæ veris majoris Raii. Primulæ veris officinalis Lin.* Cowſlips; the flowers [*L.*]

This plant grows wild in marſhes and moiſt meadows. The flowers appear in April; they have a pleaſant ſweet ſmell, and a ſubacrid, 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 has long maintained a place in the ſhops: by boiling, even for a little time, their fine flavour is deſtroyed.

PAREIRA BRAVA.

This is the root of an American convolvulus (the *ciſſampelos pareira Lin.*) 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 effect of this root in deterging 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 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 humoral 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 two or three drams.

PARIETARIÆ, *ſeu Helxines, folia, herba: Parietariæ officinarum C. B. et Lin.* Pellitory of the wall; the leaves [*L.*], and herb [*E.*]

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 in this intention is occaſionally made uſe of. The expreſſed juice

has been given in the doſe of three ounces as a diuretic.

PARTHENIUM, vide MATRICARIA.

PASTINACA HORTENSIS: *Paſtinaca latifolia Raii & Lin.* Garden-parſnep.

PASTINACA SILVESTRIS: *Paſtinaca ſylveſtris latifolia Raii.* Wild parſnep.

The roots of the garden-parſnep are uſed as food, and prove ſufficiently nutritious. The ſeeds of both ſorts are lightly aromatic; thoſe of the wild are ſtrongeſt.

PENTAPHYLLI *radix*, *Quinquefolii majoris repentis C. B. Potentillæ reptantis Lin.* Cinquefoil; the root [*L.*]

This grows plentifully in hedges, and by road ſides. The root is moderately aſtringent; and as ſuch is ſometimes given internally againſt diarrhœas 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. It is ſcarcely otherwiſe made uſe of than as an ingredient in the theriaca.

PEPONUM *ſemen: Peponis oblongi C. B. Cucurbitæ peponis Lin.* The pumpion; its ſeeds.

Theſe ſeeds are very rarely met with in the ſhops: in quality they are not different from thoſe of cucumbers, melons, and the others called cold ſeeds.

PERICLYMENUM, vide CAPRIFOLIUM.

PERSICARIÆ MITIS *folia: Perſicariæ maculoſæ Raii. Polygon perſicariæ Lin.* Spotted arſmart; the leaves.

This grows wild in moiſt watery places: the leaves ſomewat reſemble thoſe of the *perſica malus*, and have generally a blackiſh ſpot in the middle; their taſte is roughiſh and ſubſaline. This herb is recommended chiefly for external purpoſes; Tournefort aſſures us (in the Memoirs of the French academy, 1703) that it is one of the beſt vulneraries and antiſeptics he knows, and that a decoction of it in wine ſtops gangrenes in a ſurpriſing manner. The preſent practice, however, has no dependence on it.

PERSICARIÆ URENTIS *folia: Perſicariæ vulgaris acris, ſive hydropiperis Raii; Polygoni hydropiperis Lin.* Biting arſmart, lake-weed, or water-pepper; the leaves.

This ſort is readily diſtinguiſhable from the former, by 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.

PERSICÆ MALI *flores: Perſicæ molli carne, &c. C. B. Amygdali perſicæ Lin.* The peach-tree; its flowers.

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 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, in 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*: Peruvian bark. 'The *cinchona officinalis Lin.* which furniſhes this bark, is generally about fifteen feet high and ſix inches thick, 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 bark being coloured, having the cinchona taſte and ſmell, and the trees having very ſmooth leaves and purpliſh flowers. The white includes four varieties, their bark being of a whitiſh colour, with very little taſte or ſmell, the trees having broad hairy leaves, red, very fragrant 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.

'The *Cinchona Caribbæa Lin. Cinchona Jamaicenſis Phil. Tranſ. vol. 77. p.* 11. is called the ſea-ſide beech in Jamaica, and grows from 20 to 40 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 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. 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. The pale is brought to us in pieces of different ſizes, either flat or quilled, and the powder is rather paler than that of cinnamon. The red is generally in much larger, thicker, flattiſh pieces, but ſometimes alſo in 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 theſe reſemble the red bark, the better they are now conſidered. The red bark is heavy, firm, ſound, and dry; friable betwixt 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 middle is thicker, more compact, darker coloured, very reſinous,

fibrous, 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 depoſite 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-two affuſions of cold water; and water extracts aſtringency, but no bitterneſs, from the reſiduum of many affuſions of rectified ſpirit. The reſidua in both are inſipid.

'The menſtrua, as to power, are in the following order.

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 [*E.*]: the watery and ſpirituous extracts conjoined form the propereſt 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 [*L. E.*]: this is beſt made with proof-ſpirit.

'Tincture in volatile ſpirit [*L.*].

'The beſt form is that of powder; in

* See Irving's Prize-Diſſertation on the Bark.

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. 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 viceroy, the Comitiſſa del Cinchon, was cured by the bark, which has therefore been called Cortex or Pulvis Comitiſſæ, Cinchona, 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. From its ſenſible qualities, and its utility in various ſtates of debility, it is no longer conſidered as acting primarily on the fluids, or as a ſpecific, but a tonic; and, chiefly from its tonic power, an antiſeptic. It has not yet been well imitated by art. The only contraindications to its uſe ſeem to be an active inflammatory ſtate of the ſyſtem and rigidity of fibre.

'In intermittents, 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; or, as the chief danger ſeems to be in giving too little, the quantity may be as great as the ſtomach will bear. The requiſite quantity is very different in different caſes; and in many vernal agues it ſeems even hardly neceſſary.

'It often pukes or purges, ſometimes oppreſſes the ſtomach; and frequently, even when retained, it ſeems to require the aſſiſtance of ſomething more ſuddenly and completely invigorating, as wine, opium, aromatics, &c. by which alſo the ſweating is accelerated, and leſs bark is found neceſſary to the cure. 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 continued not only till the paroxyſms ceaſe, but till the natural appetite, ſtrength, and complexion return. Its uſe is then 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.

'Some think its efficacy increaſed by the addition of an aromatic and ſal ammoniac.

'It is a medicine which ſeems not only ſuited to formed and latent intermittents, but to that ſtate of fibre on which all rigidly periodical diſeaſes ſeem to depend; as periodical pain, inflammation, hemorrhagy, 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, in caſes of debility, as little as poſſible.

'In confluent ſmall pox, it promotes languid eruption and ſuppuration, 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 ſome caſes indeed, particularly in thoſe fartheſt removed from the ſource of life, as in the feet, it ſeems to require the aid of ſomething more diffuſive, and ſometimes even opium alone.

'In contagious dyſentery, after due evacuation, it has been uſed by the mouth, and by injection with and without opium.

'In all thoſe hemorrhagies called paſſive, and which it is allowed all are very apt to become, and 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, and, notwithſtanding the latter, a milk diet, in caſes of phthiſis, ſcrophula, ill-conditioned ulcers, rickets, ſcurvy, and in ſtates of convaleſcence.

'In dropſy, not depending on local affection, it is often alternated or conjoined with diuretics; and in venereal caſes, with mercury.

PETASITIDIS *radix: Petaſitidis majoris et vulgaris C. B. Tuſſilaginis pituſitidis 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 in about the middle, ſo as to reſemble a bonnet, or what the Greeks called πιτασος, 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, Rock-oil.

This is a general name for ſundry liquid bitumens, or mineral oils, which ſpontaneouſly exude from the earth, or from clifts 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

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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 ſubtile 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 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, and milder than that of turpentine; the virtues of both which they participate of. 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 [*L. E.*] 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 employs it as a menſtruum for ſulphur in the *balſamum ſulphuris Barbadenſe*, and directs an oil to be diſtilled from it.

PETROSELINI MACEDONICI *ſemen*: *Apii Macedonici C. B. Buboni Macedonici Lin.* Macedonian parſley; the ſeeds [*L.*]

PETROSELINI VULGARIS *ſemen, radix: Apii hortenſis ſeu petroſelini vulgo C. B. Apii petroſelini Lin.* Common parſley; the roots [*E.*], and ſeeds [*L.*]

The firſt of theſe plants is ſometimes met with in our gardens; the ſecond is commonly cultivated for culinary purpoſes. The ſeeds of both have an aromatic flavour, and are occaſionally made uſe of as carminatives, &c. Thoſe of the Macedonian parſley are the ſtrongeſt, though generally ſupplied by the other. The root of parſley is one of the five aperient roots, and in 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. The ſeeds of the Macedonian parſley are an ingredient in mithridate, and

and theriaca; and thoſe of the common in the electuary of bay-berries. [*L.*]

PEUCEDANI *radix: Peucedani Germanici C.B. Peucedani officinalis Lin.* Hog's fennel, or ſulphurwort; the root.

This 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, ſubacrid, 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 in any intention.

PHU, vide VALERIANA SYLVESTRIS.

PILOSELLA, vide AURICULA MURIS.

PIMENTA, vide PIPER JAMAICENSE.

PIMPINELLÆ SANGUISORBÆ *folia: Pimpinellæ ſanguiſorbæ minoris hirſutæ et levis C. B.* Burnet; the leaves.

This grows wild upon dry chalky hills: ſuch as is cultivated in gardens, though preferred by ſome, is inferior in quality to the wild ſort. The leaves are mildly aſtringent, and have been ſometimes employed in this intention in dyſenteries and hemorrhagies.

PIMPINELLÆ SAXIFRAGÆ *radix: Pimpinellæ ſaxifragæ Lin.* Burnet-ſaxifrage; the root [*L. E.*]

Three varieties of this plant are taken notice of by medical writers.

1. *Pimpinella ſaxifraga major, umbella candida C. B.* This is the ſpecies celebrated by the German writers under the name of *pimpinella alba:* it is not very common in this country, and therefore our markets have been generally ſupplied with the following.

2. *Pimpinella ſaxifraga minor foliis ſanguiſorbæ Raii. Tragonoliſenum alterum majus Tourn.* This is not unfrequently met with in dry paſture-grounds.

3. *Pimpinella ſaxifraga minor C. B. foliis diſſectis Hiſt. Oxon.* This ſort is the moſt common in the fields about London: it grows taller than the others, but the leaves are leſs.

All theſe plants ſeem to be poſſeſſed of the ſame qualities, and to differ only in external appearance; and even in this, their difference is ſo inconſiderable, that Linnæus has joined them into one, under the general name of *pimpinella.* The London college, inſtead of the firſt, which has been generally underſtood as the officinal ſort, allow either of the others (which are more common) to be uſed promiſcuouſly.

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: the only officinal compoſition in which it is an ingredient is the *pulvis ari compoſitus* [*L.*] 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 ſuc-

ſucceſs, in ſcorbutic and cutaneous diſorders, foulneſs of the blood and juices, 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.

There is another ſpecies of pimpinella called *nigra*, from its root being externally of a bright black colour, whilſt thoſe of the foregoing ſorts are whitiſh: this is remarkable for its yielding an eſſential oil of a blue colour. It grows wild in ſome parts of Germany, Swiſſerland, &c. and is now and then met with in our gardens.

PINUS *nuclei et reſina: Pinus ſativæ C. B. et Pinus ſylveſtris C. B. et Lin.* Pine-tree; the kernels of its fruit or cones, and its reſin [*E.*]

The pine differs from the firs in having its leaves ſtanding in pairs, thoſe of the firs being ſolitary. The pine abounds with the ſame kind of reſinous juice as the fir-trees (ſee the articles *Terebinthina* and *Thus vulgare.*) The kernels have a very pleaſant ſweet taſte, and appear to be nearly of the ſame quality with ſweet almonds; they are conſidered rather as dietetic than medicinal articles.

PIPERIS NIGRI *Lin. fructus:* [*L. E.*]. Black pepper; the fruit of a plant growing in Java, Malabar, &c. gathered probably before it is 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.

PIPER ALBUM [*L.*] White pepper; the fruit of the black pepper plant gathered when ripe, and decorticated by maceration in water. The grains, as brought to us, have ſometimes pieces of a dark coloured ſkin ſtill upon them.

PIPERIS LONGI *Lin. fructus:* [*L. E.*] Long pepper. This is the fruit of a different plant, growing alſo in the Eaſt-Indies. It is of a cylindrical figure, about an inch and a half in length; the external ſurface appears compoſed of numerous minute grains diſpoſed round the fruit in a kind of ſpiral direction.

All theſe ſpices 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 white, which is the weakeſt of the three, is rarely employed for either. 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.

The white pepper is an ingredient in philonium and mithridate; the black, in the pulvis antilyſſus, electary of bayberries, confectio Paulina, and theriaca; the long, in the bitter wine, aromatic tincture, powder and pills, the compound powders of bole and ſcordium, the confectio Paulina, mithridate, and theriaca [*L.*]

PIPER JAMAICENSE: *Fructus myrti pimentæ Lin.* [*L. E.*] Pimento,

mento, or Jamaica pepper; the *amomum* of many of the German writers.

This is the produce of our own plantations; it 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 ſucceedaneum to the more coſtly ſpices, and from them it has been introduced into our hoſpitals: the London college have given it a place in their late diſpenſatory, and direct a ſimple water to be diſtilled from it, which poſſeſſes the flavour of the pimento in great perfection. It yields a large quantity of a pleaſant eſſential oil, which ſinks in water: this oil, recommended in the Pharmacopœia reformata, is now received into the Edinburgh pharmacopœia. Rectified ſpirit extracts its pungency and flavour, and elevates nothing in diſtillation.

PIPER INDICUM: *Capſicum ſiliquis longis propendentibus Tourn. Capſicum annuum Lin.* Guinea-pepper, or capſicum; the fruit [*E.*]

This is an annual plant cultivated in our gardens; it ripens its red pods in September or October. The taſte of capſicum is extremely pungent and acrimonious, ſetting the mouth as it were on fire. It is rarely made uſe of in medicine, being chiefly employed for culinary purpoſes: 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.*

PISUM: *Piſum arvenſe flore candido, fructu rotundo albo C. B.* Peas; the ſeeds.

Theſe are commonly uſed in food, but very rarely for medicinal purpoſes.

PIX LIQUIDA. *Pinus ſilveſtris et pinus abies Lin.* [*L.E.*] Tar; a thick, black, unctuous 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 (ſee *Terebinthina*) in having received a diſagreeable impreſſion from the fire, and containing a portion 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 turpentines. Water impregnated with the more ſoluble parts of tar, proves, in conſequence of this hot pungent oil, warm and ſtimulating: it ſenſibly raiſes the pulſe and quickens the circulation: by theſe qualities, in cold languid phlegmatic habits, it ſtrengthens the ſolids, attenuates viſcid juices, opens obſtructions of the minuter veſſels, and promotes perſpiration and the fluid ſecretions in general; whilſt in hot bilious temperaments, it diſpoſes to inflammation, and aggravates the complaints which it has been employed to remove.

PIX ARIDA [*L.*] Dry or ſtone pitch.

This is the *pix liquida* exſiccated by heat: in this proceſs, a part of the acid and the more volatile oil are diſſipated along with the aqueous moiſture: and hence the product proves conſiderably leſs active. It is made uſe of only in external applications, as a warm adheſive reſinous ſubſtance.

PIX

PIX NAVALIS. This is generally allowed to be the ſame with the foregoing dry pitch or inſpiſſated tar. According to Geoffroy, it is compounded of a ſtrange mixture of tallow, and tar, and palimpiſſa, and an artificial black pitch; which artificial pitch is itſelf compoſed of tar and palimpiſſa; and this palimpiſſa is no other than an inſpiſſated tar: ſo that notwithſtanding this ſhow of compoſition, the reſult is only a mixture of pitch with a little tallow.

PIX BURGUNDICA. *Pinus abies Lin.* [*L. E.*] Burgundy pitch. This is of a ſolid conſiſtence, yet ſomewhat ſoft, of a reddiſh brown colour, and more agreeable in ſmell than either of the foregoing. Geoffroy relates, that it is compoſed of gallipot (a ſolid whitiſh reſin which ſeparates from ſome of the *terebinthinæ* 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 preparation 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.

All theſe ſubſtances are employed in the ſhops only in external compoſitions. The dry pitch and Burgundy pitch are ingredients in ſeveral plaſters, ointments, and cerates: and tar gives name to one of the ointments.

PLANTAGINIS *foliæ: Plantaginis latifoliæ ſinuatæ C. B. Plantaginis majoris Lin.* Common great water plantane; the leaves [*E.*] It 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 roadſides. 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.

PLUMBUM [*L.*] 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 menſtruum of this metal is aqua-fortis: 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 (*ceruſſe*) 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), and a tincture drawn from theſe and green vitriol, are likewiſe kept in the ſhops.

Preparations of lead, given internally, are ſuppoſed to incraſſate the fluids, abate inflammations, and re-

ſtrain venereal deſires. The ſugar is a ſtrong aſtringent, and has been uſed, it is ſaid, with good ſucceſs in hæmorrhagies, the fluor albus, ſeminal gleets, &c. The tincture is recommended for the like purpoſes; and for checking immoderate ſweats in phthiſical caſes; whence it has been uſually called *tinctura antiphthiſica*. 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 inflammations.'

POLII, *ſeu Polii montani, ſummitates*. Poley mountain; the tops [*L.*]

It has been diſputed among botanic writers, what ſpecies of poley ought to be employed in medicine. The London college allows the promiſcuous uſe of two; the *Polium maritimum erectum Monſpeliacum C. B.* (*Teucrium capitatum Lin.*), and the *Polium anguſtifolium Creticum C. B.* (*Teucrium Creticum Lin.*) The firſt is ſometimes cultivated in our gardens, and is the ſort which the ſhops have been generally ſupplied with. They have both a light aromatic ſmell, and a bitteriſh taſte; that brought from Crete is the moſt agreeable. They ſtand recommended in catarrhs, uterine diſorders, &c. but at preſent are ſcarce otherwiſe made uſe of than as an ingredient in the mithridate and theriaca.

POLYGONATUM, vide SIGILLUM SOLOMONIS.

POLYGONUM, vide CENTINODIUM.

POLYPODII *radix: Filicis polypodii dictæ Herm. Polypodii vulgaris Lin.* Polypody; the root. [*E.*]

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.

POLYTRICHUM, vide TRICHOMANES.

POMPHOLYX: A calx, or flowers, 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,

ter, generally of a pure white colour, tho' ſometimes yellowiſh. See ZINCUM.

POPULI NIGRÆ *gemmæ: Populi nigræ C. B. et 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 rudiments 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.

PORRI *radix: Porri communis capitati C. B. Allii porri Lin.* Leeks; the root.

This participates of the virtues of garlic, from which it differs chiefly in being much weaker. See the article ALLIUM.

PORTULACÆ *ſemen: Portulacæ hortenſis latifoliæ J. B. Portulacæ-oleraceæ Lin.* Purſlane; the ſeeds.

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.

POTENTILLA, vide ARGENTINA.

PRASIUM, vide MARRUBIUM.

PRIMULÆ VERIS *folia, radix: Primulæ veris pallido flore humilis Tourn. Primulæ veris acaulis Lin.* Primroſe; the herb 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 aniſeeds; 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.

PRUNELLÆ, *ſeu Brunellæ, folia: Prunellæ majoris foliis non diſſectis C. B. Prunellæ 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 roughiſh taſte: and hence ſtands recommended in hæmorrhagies and alvine fluxes: it has been principally celebrated as a vulnerary, whence its name; and in gargariſms for aphthæ, and inflammations of the fauces.

PRUNI HORTENSIS *fructus: Pruni domeſticæ Lin.* The plum tree.

Three ſorts of plums are looked upon as articles of the materia medica. They are all met with in our gardens, but the ſhops are ſupplied with the fruit moderately dried from abroad.

PRUNA BRIGNOLENSIA: *Pruna ex flavo ruſeſcentia, mixti ſaporis gratiſſima C. B.* The Brignole plum, brought from Provence under the name of prunelloes.

PRUNA GALLICA: *Fructus Pruni fructu parvo, dulci, atro-cæruleo Tourn.* French or com-

mon prunes [*L.*] This is the plum called by our gardeners the little black damaſk.

PRUNA DAMASCENA: *Fructus Pruni fructu magno, dulci, atro-cæruleo Tourn.* Damaſcene plums or damſons. This is the ſort called the great damaſk violet of Tours. It is ſeldom met with dry in the ſhops, and is generally ſupplied by the common prune.

The medical effects of the damſon and 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. Prunelloes have ſcarce any laxative quality: theſe are mild grateful refrigerants, and by being occaſionally kept in the mouth, uſefully allay the thirſt of hydropic perſons.

PRUNA SILVESTRIA: *Fructus pruni ſilveſtris C. B. Pruni ſpinoſæ Lin.* Sloes; the fruit of the common black thorn, or ſloe buſh [*L.*]

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.

PSYLLII *ſemen: Pſyllii majoris erecti C. B. Plantaginis pſyllii Lin.* Fleawort; the ſeeds.

This is a ſort of plantane, growing wild in the warmer climates, and ſometimes met with in our gardens: it differs from the common plantanes 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.

PTARMICÆ *radix: Dracunculi pratenſis, ſerrato folio C. B. Achilleæ ptarmicæ Lin.* Sneeze-wort, or baſtard pellitory; 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.

PULEGII *folia, herba: Pulegii latifolii C. B. Menthæ aquaticæ ſeu pulegii vulgaris Tourn. Menthæ pulegii Lin.* Pennyroyal; the leaves [*L.*], herb [*E.*]

This plant grows ſpontaneouſly in ſeveral parts of England upon moiſt

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: this is called by Mr Dale *pulegium erectum*.

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, and not undeſervedly, 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, what is of equal efficacy, 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 [*L. E.*] and ſpirituous water, and eſſential oil [*L.*], and its ſimple water for making the lac ammoniaci [*L.*]

PULEGII CERVINI *folia: Pulegii anguſtifolii C. B. Menthæ cervinæ Lin.* Harts pennyroyal; the leaves.

This ſpecies is met with, though not very often, in our gardens. It is ſomewhat ſtronger, yet rather more agreeable, than the foregoing, both in taſte and ſmell.

PULMONARIÆ MACULOSÆ *folia: Pulmonariæ Italorum ad buglossam accidentis J. B. Pulmonariæ officinalis Lin.* Spotted lungwort, or ſage of Jeruſalem; the leaves.

This is met with in 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, phthiſes, and other like diſorders: nevertheleſs experience gives little countenance to theſe virtues, nor does the preſent practice expect them.

'PULSATILLÆ NIGRICANTIS *herba cum floribus. Pulſatillæ flore minore nigricante C. B. Anemones pratenſis Lin.* Meadow anemone; the herb and flowers.

'This is the moſt acrid of the anemonies; and is recommended by Stork, 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 nauſea or vomiting, an augmented diſcharge of urine, diarrhœa, and increaſed pain at firſt in the affected part.'

PYRETHRI *radix: Pyrethri flore bellidis C. B. Anthemitis pyrethri Lin.* Pellitory of Spain; the root [*L. E.*]

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 which the ſhops are uſually ſupplied with from abroad.

Pellitory root has no ſenſible ſmell; its taſte is very hot and acrid, but leſs ſo than that of arum or dracunculus: the juice expreſſed from it has ſcarce 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.

'QUASSIÆ LIGNUM: *Quaſſiæ amaræ Lin.* Quaſſy root; the wood [*E.*]

'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, decoction, 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 *cortex: Quercus cum longis pediculis C. B. Quercus roboris Lin.* Oak tree; the bark [*E.*]

This bark is a ſtrong aſtringent; and hence ſtands recommended in hæmorrhagies, alvine fluxes, and other preternatural or immoderate ſecretions.

'RADIX INDICA LOPEZIANA [*L.*] *Radix Indica a Joanne Lopez denominata, Gaubii Adverſaria, cap.* 6. Indian or Lopez root. The tree is unknown. Neither the woody nor cortical part of the root has any remarkable ſenſible quality. A ſlight bitteriſhneſs is perceptible, and it is recommended, like ſimarouba, in diarrhœas even of the colliquative kind, in half-dram doſes four times a-day.'

RANARUM SPERMA: Frogs ſpawn. This has been celebrated as an excellent cooler for external purpoſes; but practitioners have not experienced from it any peculiar effects that could deſerve its being continued in uſe, and both the London and Edinburgh colleges have now diſcarded it.

RAPHANI RUSTICANI *radix: Raphani ruſticani C. B. Cochleariæ folio cubitali Tourn. Cochleariæ Armoraciæ Lin.* Horſe radiſh; the root [*L. E.*]

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 roots has a quick pungent ſmell, and a penetrating acrid taſte; it nevertheleſs contains in certain veſſels a ſweet juice, which ſometimes exudes upon 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 juices, and promote the fluid ſecretions: it ſeems to extend its action through the whole habit, and affect the minuteſt glands. It has frequently done good ſervice in ſome kinds of ſcurvies and other chronic diſorders, proceeding from a viſcidity 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. The college have given us a very elegant compound water, which takes its name from this root.

RAPI *radix, semen: Rapi sativi rotundi C. B. Brassicæ rapæ Lin.* Turneps; the roots and seeds.

The roots are accounted a wholesome aperient food: the liquor pressed out from them after boiling has been sometimes used medicinally as a deobstruent and diuretic. The seeds are slightly pungent.

REALGAR, a fossil composed of arsenic and sulphur. Vide ARSENICUM.

REGINA PRATI, vide ULMARIA.

RESINA ALBA. See TEREBINTHINA.

RHABARBARUM: *Rhei radix.* Rhubarb; the root [*L. E.*]

The 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. This is the root of the *rheum palmatum foliis palmatis acuminatis Lin.* The other, which is less esteemed, comes immediately from the East-Indies, 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 sorts 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 flinty; that it be easily pulverable, and appear, when powdered, of a fine bright yellow colour: that upon being chewed, it imparts to the spittle a saffron tinge, without proving slimy or mucilaginous in the mouth. Its taste is subacrid, 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,

gent, 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, roaſted rhubarb [*L.*], a watery infuſion [*E.*], vinous tinctures [*L.*], and ſpirituous tinctures [*L. E.*] It is an ingredient in ſundry compoſitions, as the ſyrup of ſena and rhubarb, dyſenteric electary, ſtomachic pills [*E.*], ecphractic pills [*L.*], &c.

RHAMNUS CATHARTICUS, vide SPINA CERVINA.

RHAPONTICI *radix. Rhabarbari Dioſcoridis et antiquorum Tourn. Rhei rhapontici Lin.* Rhapontic; the root of a large roundiſh leaved dock, 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 rhapontic is of a duſky colour on the ſurface, of a looſe ſpongy texture; conſiderably more aſtringent, but leſs purgative than rhubarb; in this laſt intention, two or three drams are required for a doſe.

'RHODODENDRON CHRYSANTHEMUM *Lin.* This plant is a native of Siberia, where it is uſed as tea, but may be cultivated in our gardens. The Siberians uſe a kind of decoction of it in rheumatiſm and gout. They put about two drams of the dried ſhrub in 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, as it 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.'

RHUS OBSONIORUM, vide SUMACH.

RIBESIA: *Fructus ribis vulgaris fructu rubro Raii. Ribis rubri Lin.* Red currant buſh; the berries.

Theſe have a cool, acidulous ſweet taſte, ſufficiently agreeable both to the palate and ſtomach.

'RICINI SEMEN ET EJUS OLEUM. *Ricini vulgaris C. B. Ricini communis foliis, petalis, ſubpalmatis, ſerratis, Lin.* Palma Chriſti; the ſeed with its oil [*E.*]

'The 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 pur-

purgative in worm-cafes. Half an ounce or an ounce commonly anfwers with an adult, and a dram or two with an infant.

'Some prefer taking it fwimming on a glafs of water or peppermint water, or in form of emulfion, with mucilage, or with the addition of a little rum, tincture of jalap, or compound tincture of fenna.'

ROSA DAMASCÆNA: *Rofa purpurea C. B. Rofa pallida Pharm. Edin. Rofa centifolia Lin.* The damafk rofe [*L. E.*]

This elegant flower is common in our gardens. Its fmell is very pleafant and almoft univerfally admired; its tafte bitterifh and fubacrid. In diftillation with water, it yields a fmall portion of a butyraceous oil, whofe flavour exactly refembles that of the rofes. This oil, and the diftilled water, are very ufeful and agreeable cordials. Hoffman ftrongly recommends them as of fingular efficacy for raifing the ftrength, cheering and recruiting the fpirits, and allaying pain; which they perform without raifing any heat in the conftitution, rather abating it when inordinate. Damafk rofes, befides their cordial aromatic virtue, which refides in their volatile parts, have a mildly purgative one, which remains entire in the decoction left after the diftillation: this, with a proper quantity of fugar, forms an agreeable laxative fyrup, which has long kept its place in the fhops. The other officinal preparations of this flower are a folutive honey, and the diftilled water; which laft is an ingredient in the mufk-julep, the confection of kermes, and faponaceous lotion, and is ufed alfo in making the fimple ointment called pomatum [*L.*]

ROSA RUBRA: *Rofa rubra multiplex C. B. Rofa Gallica Lin.* The red rofe [*L. E.*]

This has very little of the fragrance of the foregoing pale fort; and inftead of its purgative quality, a mild gratefully aftringent one, efpecially before the flower has opened: this is confiderably improved by haſty exficcation; but both the aftringency and colour are impaired by flow drying. In the fhops are prepared a conferve, a tincture, honey, troches [*L.*] and fyrup [*E.*] of this flower; it is an ingredient alfo in the compound powder of fcordium, the troches of Japan earth, mithridate, and theriaca [*L.*]

ROR ISMARINI *fummitates florentes: Rorifmarini hortenfis anguftiore folio C. B. Rorifmarini officinalis Lin.* Rofemary; the tops and flowers [*E.*]

This is a native of Spain, Italy, and the fouthern parts of France, where it grows in great abundance upon dry gravelly grounds; in the like foils it thrives beft with us, and likewife proves ftronger in fmell, than when produced in moift rich ones: this obfervation obtains in almoft all the aromatic plants.

Rofemary has a fragrant fmell, and a warm pungent bitterifh tafte, approaching to thofe of lavender: the leaves and tender tops are ftrongeft; next to thefe the cup of the flower; the flowers themfelves are conſiderably the weakeft, but moft pleafant. Aqueous liquors extract great fhare of the virtues of rofemary leaves by infufion, and elevate them in diftillation; along with the water arifes a conſiderable quantity of eſſential oil, of an agreeable ſtrong penetrating ſmell. Pure ſpirit extracts in great perfection the whole aromatic flavour of the rofemary, and elevates very little of it

in

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 roſemarry are, an eſſential oil from the leaves [*L.*], or from the herb in flower [*E.*] a conſerve of the flowers, and a ſpirit called Hungary-water, from the flowery tops [*L.*] The tops are uſed alſo in the compound ſpirit of lavender [*L. E.*] cordial confection [*L.*] and ſapona-ceous balſam [*E.*]

RUBIÆ TINCTORUM *radix: Rubiæ tinctorum ſativæ C. B. Rubiæ tinctorum Lin.* Madder; the root [*L. E.*]

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; 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. This root appears therefore to be poſſeſſed of great ſubtility of parts; whence its medical virtues ſeem to deſerve inquiry.

'Some uſe it in half-dram doſes ſeveral times a day as an emmenagogue.'

RUBI IDÆI *fructus: Rubi idæi ſpinoſi C. B. Rubi idæi Lin.* The raſpberry buſh; the fruit [*L.*]

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.

RUBI VULGARIS *folia, fructus: Rubi vulgaris ſive rubi fructu nigro C. B. Rubi fruticoſi Lin.* The bramble or black-berry buſh; its leaves and fruit.

The 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.

RUSCI, *ſive bruſci, radix: Ruſci myrtifolii aculeati Tourn. Ruſci aculeati Lin.* Butchers broom, or knee-holly; the root.

This is a ſmall prickly plant, ſome-

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 in 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.

RUTÆ *folia, herba: Rutæ hortenſis latifoliæ C. B. Rutæ graveolentis Lin.* Broad-leaved rue; the leaves [*L.*] and herb [*E.*]

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 tenacious 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. (See Part iii.) 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 ariſe; the bitterneſs, and a conſiderable ſhare of the pungency, remaining behind.

An eſſential oil and conſerve [*L.*] of rue are kept in the ſhops. This herb is uſed alſo as an ingredient in the electuary of bayberries, compound powder of myrrh, and the green oil [*L.*]

SABINÆ *folia ſeu ſummitates: Sabinæ folio tamariſci Dioſcoridis C. B. Juniperi ſabinæ Lin.* Savin; the leaves or tops. [*L. E.*]

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 good ſervice in obſtructions of the uterus or other viſcera, proceeding from a laxity

laxity and weakneſs of the veſſels, or a cold ſluggiſh indiſpoſition of the juices.

'The powder is ſometimes uſed for conſuming venereal warts.'

The eſſential oil [*L. E.*], a watery extract [*L.*], and the extract in the compound elixir of myrrh [*L.*], are kept in the ſhops.

SACCHARUM ALBUM. White or refined ſugar.

SACCHARUM PURISSIMUM. Double-refined ſugar [*L.*]

SACCHARUM RUBRUM. Brown or unrefined ſugar [*L.*]

SACCHARUM CANDUM. Sugar-candy.

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 in great quantity in our American plantations. 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 treacly 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 concreted, and the fluid part drained 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, 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: *Gummi Reſina* [*L. E.*] A concrete juice brought from Alexandria, either in diſtinct tears, or run together in large maſſes. It is outwardly of a yelloviſh colour; internally, ſomewhat paler, and clear like horn; grows ſoft upon being handled, 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 frequently 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 deterges the pulmonary veſſels, and proves of conſiderable ſervice in ſome kinds of aſthmas 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

nued 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 is an ingredient in the compound powder of myrrh, gum pills, electary of bay-berries, mithridate and theriaca of the London pharmacopœia. The college of Edinburgh has nowhere employed either this gum or opoponax, giving the preference to ammoniacum and galbanum.

SAGO. This is the produce of an oriental tree, called by C. Bauhine *palmam referens arbor farinifera.* 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 forms an 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:* Vegetable fixed alkaline ſalt, particularly that named in Engliſh, pearl-aſhes. [*E.*] See CINERES RUSSICI, and Part I. and III.

'The Edinburgh college having rejected the oily alkalies of broom, wormwood, &c. orders 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 is thus properly purified, it diſſolves in equal its weight of water; the ſolution is free from colour and ſmell, ſupplies the place of the ol. tartari per 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 calculous 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 gonorrhœa. 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.

'SAL ALKALINUS FIXUS FOSSILIS, *vulgo ſal ſodæ, ex herba kali uſta:* Foſſile fixed alkaline ſalt; commonly ſalt of ſoda, from the burnt herb kali. [*E.*] See FOSSIL FIXT ALKALINE SALT, Part I. and III.

'This does not differ much in its general properties from the above. It is procurable from the aſhes of ſea plants, particularly from kali, and it is called Soda or Bariglia. This purified has been recommended by ſome in ſcrofula.'

SAL AMMONIACUS. Sal ammoniac [*L. E.*]

This

This is an artificial saline concrete, said to be prepared by sublimation from the soot of cow-dung. It is brought to us from Egypt, 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 striæ, 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 experiments to be composed of marine acid, united with a volatile alkali. If mingled with fixt alcalis 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 uritary 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 the bark. This salt is sometimes employed externally as an antiseptic, and in lotions and fomentations, for œdematous and scirrhous tumours: as 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.

'There are several manufactures for it now in Britain.'

SAL CATHARTICUS AMARUS [*L. E.*] The bitter purging salt; 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

than an equal weight of water: in a moderate heat, they melt, bubble up into blifters, and foon change into a white fpungy mafs, with the lofs of above half their weight: this calx taftes bitterer than the falts did at firft, and almoft totally diffolves again in water. The acid of thefe falts is the vitriolic: the bafis of the natural is magnefia; of the artificial, an alkaline falt, the fame with the bafis of fea-falt. Hence upon adding alkaline falts to a folution of the falts of Glauber, no change enfues: whilft the falts obtained from the purging waters, or the bittern of marine waters, grow milky upon this addition, and depofite their earth, the alkaline falt being taken up in its place.

The fal catharticus is a mild and gentle purgative, operating with fufficient efficacy, and in general with eafe and fafety, rarely occafioning any gripes, ficknefs, or the other inconveniences which purgatives of the refinous kind are too often accompanied with. Six or eight drams may be diffolved for a dofe in a proper quantity of common water; or four, five, or more, in a pint, or quart of the purging waters. Thefe liquors may likewife be fo managed as to promote evacuation, by the other emunctories: if the patient is kept warm, they increafe perfpiration; by moderate exercife in a cool air, the urinary difcharge. Some allege this falt has a peculiar effect in allaying pain, as in colic, even independently of evacuation.

SAL COMMUNE. Common or alimentary falt. This is a neutral falt, differing from moft others in occafioning drought when fwallowed. It diffolves in fomewhat lefs than three times its weight of water; the folution flowly evaporated, and fet to fhoot, affords cubical cryftals, which unite together into the form of hollow truncated pyramids. Expofed to the fire, it crackles and flies about, or decrepitates as it is called; foon after, it melts, and appears fluid as water. A fmall quantity of this falt, added to the nitrous acid, enables it to diffolve gold, but renders it unfit for diffolving filver: if a folution of filver be poured into liquors containing even a minute portion of common falt, the whole immediately grows turbid and white; this phenomenon is owing to the precipitation of the filver.

This falt is either found in a folid form in the bowels of the earth, or diffolved in the waters of the fea or faline fprings.

1. *Sal gemmæ* [*L.*] Rock falt. This is met with in feveral parts of the world, but in greateft plenty in certain deep mines, of prodigious extent, near Cracow in Poland; fome is likewife found in England, particularly in Cheſhire. It is for the moft part very hard, fometimes of an opake fnowy whitnefs, fometimes of a red, green, blue, and other colours. When pure, it is perfectly tranfparent and colourlefs; the other forts are purified by folution in water and cryftallizations in order to fit them for the common ufes of falt.

2. *Sal marinus* [*L.*], *Sal marinus Hifpanus* [*E.*] The falt extracted from fea-water and faline fprings. Sea waters yield from one-fiftieth to one-thirtieth their weight of pure falt: feveral fprings afford much larger quantities; the celebrated ones of our own country at Nantwich, Northwich, and Droitwitch, yield (according to Dr Brownrigg) from one-fixth to fomewhat more than one-third. There are two methods of obtaining the common falt from thefe natural folutions of it: The one, a haſty evaporation of the aqueous fluid till the falt begins to con-

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 the preſerving of 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 make them run of by ſtool; and as a ſtimulus in glyſters.

'SAL CORNU CERVI; *i. e. Sal alkalinus volatilis, ſiccus, ex oſſibus vel cornibus animalium igni 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 [*E.*]' See Part III.

'It is a quick and powerful ſtimulant, and as ſuch is employed externally to the noſe in ſyncope; and with oil in inflammation, as cynanche, as a rubefacient. It is uſed internally in various low ſtates of the ſyſtem.'

'SALICIS RAMULORUM CORTEX: *Salicis fragilis Lin.* Common white willow, the bark of its branches [*E.*]'

SALVIÆ *folia: Salviæ majoris C. B. Salviæ officinalis Lin.* Common ſage (the green and red ſorts); the leaves [*L. E.*]

SALVIÆ *hortenſis minoris folia, ſummitates: Salviæ minoris auritæ et non auritæ C. B.* Small ſage or ſage of virtue; the leaves and tops.

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, naturæ conciliatrix—Cur moriatur homo, cui ſalvia creſcit in horto*, &c.) 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 rough-

neſs or bitteriſhneſs. Aqueous infuſions of the leaves, with the addition of a little lemon-juice, prove an uſeful diluting drink in febrile diſorders, of an elegant colour, and ſufficiently acceptable to the palate.

SALVIÆ SYLVESTRIS *folia: Scorodotidis ſive ſcordii foliis ſalviæ J. B.* Wood ſage; the leaves.

This grows wild in woods and hedges. In ſmell, taſte, and medical virtues, it comes nearer to ſcordium than ſage: it is leſs diſagreeable than the former, but more ſo than the latter.

SAMBUCI *cortex, flores, baccæ: Sambuci fructu in umbella nigro C. B. Sambuci nigræ Lin.* Common black berried elder; bark [*E.*], flowers and berries [*L. E.*]

This is a large ſhrub, frequent in hedges; it flowers in May, and ripens its fruits 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 ſpirituous 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.

A rob is prepared from the berries [*L.*] An oil of elder is prepared by boiling the flowers in oil olive [*L.*]; and an ointment, by boiling them in a mixture of oil and ſuet [*L.*]

SAMPSUCHUS, vide MAJORANA.

SANDARACHA, a foſſil compoſed of arſenic and ſulphur. Vide ARSENICUM.

SANGUIS DRACONIS: *Gummi reſina* [*L. E.*] Dragon's-blood, ſo called: A gum-reſin brought from the Eaſt-Indies, either in oval drops, wrapped up in flag leaves; or in large maſſes, compoſed of ſmaller tears. 'It is obtained from the *palmiguncus draco Rumph. amb.* the *calamus rotang Lin.*' The writers on the Materia Medica in general, give the preference to the former, though the latter is 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. It is an ingredient in the ſtyptic powder and ſtrengthening plaſter [*L.*]

SANICULÆ, *ſeu Diapenſiæ, folia: Saniculæ officinarum C. B. Saniculæ Europææ 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, in any intention, are not conſiderable enough to gain them a place in the preſent practice.

SANTALUM ALBUM. White ſaunders; 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 ſaunders 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: *Santalum album Lin.* [*E.*] Yellow ſaunders; a pale yellowiſh wood brought from the Eaſt Indies, 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 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 ſaunders. 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: *Pterocarpus ſantolinus Lin.* [*L. E.*] Red ſaunders; 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 ſaunders is as a colouring drug; in which intention it is employed in the *balſamum Locatelli* [*L.*] and *ſpiritus lavendulæ compoſitus* [*L. E.*] It communicates a deep red to rectified

tified 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, is 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: *Artemiſia ſantonicum* [*E.*] Worm-ſeed; 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 unpleaſant 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 in this intention, either along with melaſſes, or candied with ſugar: their unpleaſant taſte renders the form of a powder or decoction inconvenient. They are not very often met with genuine in the ſhops.

SAPO DURUS [*L.*]: *Sapo albus Hiſpanicus* [*E.*] White Spaniſh ſoap.

SAPO MOLLIS [*L.*]: Common ſoft ſoap.

SAPO NIGER, *ſeu Melanoſmegma*: Black ſoft ſoap.

Soap is compoſed of expreſſed vegetable oils or animal fats, united with alkaline lixivia. 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 forbad 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 deterging 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. See *the Edinburgh Medical Eſſays*.

The ſoft ſoaps are more penetrating and acrimonious than the hard. The only medical uſe of theſe is for ſome external purpoſes.

Hard ſoap gives name to an officinal plaſter [*L. E.*], liniment [*L.*], and balſam [*E.*]: it is joined to opium, to render it more readily

ſoluble in the ſtomach, in the *pilulæ ſaponaceæ* [*L.*]. Soft ſoap is an ingredient in the milder common cauſtic [*L.*]

SAPONARIÆ *folia, radix: Saponariæ majoris lævis C. B. Saponariæ 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 greatly eſteemed by the German phyſicians as an aperient, corroborant, and ſudorific; and preferred by the College of Wirtemberg, Stahl, Neumann, and others, to ſarſaparilla.

SARCOCOLLA [*L.*]; 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. Its taſte is bitter, accompanied with a dull kind of ſweetneſs. This drug 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-glue*), a quality which neither this nor any other drug has a juſt title to. It is an ingredient in the *pulvis e ceruſſa compoſitus* [*L.*]

SARSAPARILLÆ *radix: Smilacis ſarſaparillæ Lin.* [*L. E.*] A root 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. This root 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, 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; inſomuch, that many have denied it to have any virtue at all. It appears, however, from experience, that though greatly 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.

SASSAFRADIS *radix, lignum ejuſque cortex: Lauri ſaſſafradis Lin.* Saſſafras; its wood and bark [*E.*], and root [*L.*]

Saſ-

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 ſubacrid 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 and ſweetening 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; as 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 [*L. E.*]. The ſaſſafras itſelf is an ingredient in the decoction of the woods [*E.*] and the compound lime-waters [*L.*] and the oil in the elixir guaiacinum [*E.*]

SATUREIÆ *folia: Satureiæ hortenſis, ſive cunilæ ſativæ, Plinii C. B. Satureiæ hortenſis Lin.* Summer ſavory; the leaves.

This herb is raiſed annually in gardens for culinary purpoſes. It is a very pungent warm aromatic: and affords in diſtillation with water a ſubtile eſſential oil, of a penetrating ſmell, and very hot acrid taſte. It yields little of its virtues by infuſion to aqueous liquors: rectified ſpirit extracts the whole of its taſte and ſmell, and elevates nothing in diſtillation.

SATYRII MARIS *radix: Orchidis morionis maris foliis maculatis C. B. Orchidis maſculæ Lin.* Orchis; the root [*E.*]

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 unpleaſant ſmell. They abound with a glutinous ſlimy juice. With regard to their virtues, like other mucilaginous vegetables, they thicken the thin ſerous humours, and defend the ſolids from their acrimony: they have alſo been celebrated, though on no very good foundation, for analeptic and aphrodiſiac virtues; and frequently made uſe of in 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. Satyrion 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, 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.

SAXIFRAGÆ ALBÆ *folia, radix: Saxifragæ albæ radice granuloſa J. B. Saxifragæ granulatæ Lin.* White-flowered ſaxifrage; the leaves and roots, which laſt are improperly called (from their conſiſting of little grains) *ſeeds.*

SAXIFRAGÆ VULGARIS *foliq ſemen: Seſelis pratenſis noſtratis Raii. Peucedani ſilai Lin.* Meadow ſaxifrage; the leaves and ſeeds.

Theſe herbs grow wild, the firſt in dry ſandy grounds, the ſecond in fields and meadows. The firſt is not very common, and hence its leaves and roots have been generally ſupplied by the leaves and ſeeds of the ſecond. Neither of them is at preſent in much eſteem, notwithſtanding the aperient, diuretic, and lithontriptic virtues formerly attributed to them.

SCABIOSÆ *folia: Scabioſæ majoris communioris hirſutæ, folio laciniato Raii.* Scabious; the leaves.

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 *gummi reſina* [*L. E.*] Scammony; a concrete juice, extracted from the roots of a large climbing plant (*convolvulus ſcammonia Lin.*) growing in the Aſiatic Turky. 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 unpleaſant 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 hypercatharſes. 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

if triturated with ſugar or with almonds, as we have formerly recommended for other reſinous purgatives, it becomes ſufficiently ſafe and mild in 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 aſſures us, that by this treatment it becomes mildly purgative, without being attended with gripes, or other inconveniencies; and that it likwiſe proves inoffenſive to the palate. The common doſe of ſcammony is from three to twelve grains.

Scammony gives name to an officinal compound powder and electary [*L.*]; and is an ingredient in the compound powder of ſenna, the cathartic extract, the coloquintida pills, mercurial pills [*L.*]

SCHŒNANTHUS, vide JUNCUS ODORATUS.

SCILLÆ *radix: Scillæ radice alba C. B. vel Scillæ vulgaris radice rubra C. B. Scillæ maritimæ Lin.* The ſquill, or ſea-onion; its root [*E.*]

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 betwixt them, is that of the colour; and hence the college allow both to be uſed promiſcuouſly. This root is to the taſte very nauſeous, intenſely bitter, and acrimonious: much handled, it exulcerates 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 is kept warm) ſweat: if the doſe is 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, baked ſquills [*L.*] and the baked ſquills made into troches [*L.*] deſigned as an ingredient in theriaca [*L.*]; dried ſquills [*L.*], a ſyrup and vinegar [*E.*], an oxymel [*L.*], and pills [*E.*]

SCINCORUM *ventres* [*L.*] The belly of the ſkink; a kind of ſmall lizard, brought dry from Egypt. It ſtands recommended as a great reſtorative: whatever virtues it may have as uſed freſh by the Egyptians, it has none as it comes to us, and ſerves to uſeleſsly increaſe the articles of the mithridate.

SCLAREA, vide HORMINUM.

SCOLOPENDRIUM, vide LINGUA CERVINA.

SCORDII *folia: Chamædryos paluſtris caneſcentis Tourn. Teucrii ſcordii Lin.* Water-germander; the leaves [*L. E.*]

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 which it was formerly celebrated for. It enters the mithridate, theriaca, and cataplaſm of cummin ſeed [*L.*]; and gives name to two compound powders, and an electary [*L.*] tho' not the moſt valuable of their ingredients.

SCORZONERÆ *radix: Scorzoneræ latiſoliæ ſinuatæ C. B. Scorzoneræ Hiſpanicæ Lin.* Viper's graſs; the root.

Scorzonera is met with only in gardens. The roots abound with a milky juice, of a bitteriſh ſubacrid taſte; and hence may be of ſome ſervice, for ſtrenthening 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.

SCROPHULARIÆ VULGARIS *folia, radix: Scrophulariæ nodoſæ fœtidæ C. B. Scrophulariæ nodoſæ Lin.* Fig-wort; the leaves 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.

SCROPHULARIÆ AQUATICÆ MAJORIS *folia: Scrophulariæ maximæ radice fibroſa J. B. Scrophulariæ aquaticæ Lin.* Greater water-figwort; the leaves.

This is a large plant, met with chiefly on the ſides of rivers. The leaves have a bitter taſte, and an ungrateful ſmell: they are principally celebrated, though on no very good grounds, as a corrector of ſenna. See the article SENNA.

SEBESTEN: *Mixa ſive Sebeſten J. B.* A ſort of plum, brought half dried from the Eaſt Indies: it is the fruit of the *Cordia myxa Lin.* and 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.

SECALI *ſemina: Secali hyberni vel majoris C. B. Secali cerealis Lin.* Rye; the ſeeds.

Theſe are little regarded as an article of the materia medica: as food, they are accounted more detergent than moſt other kinds of grain.

SEDI MAJORIS, *ſeu Sempervivi majoris, folia: Sedi majoris vulgaris*

C. B. Sempervivi tectorum Lin. Greater houſe-leek; the leaves

This is a low fleſhy leaved plant growing on old walls, and on the tops of houſes. It ſtands recommended as a cooler, though its ſenſible qualities diſcover no great foundation for any virtue of this kind: the taſte is herbaceous, with a ſlight degree of pungency. It is remarkable of this plant, that its juice purified by filtration (when it appears of a dilute yellowiſh colour) upon the admixture of an equal quantity of rectified ſpirit of wine, forms a beautiful white, light coagulum, like the finer kinds of pomatum: this proves extremely volatile; freed from the aqueous phlegm, and expoſed to the air, it in a very little time totally exhales. From hence it is concluded (in the medicor. Silefiac. ſatyræ) that houſe-leek contains a volatile alkaline ſalt: but there are many ſubſtances beſides theſe ſalts which coagulate with ſpirit of wine.

SEMPERVIVUM, vide SEDUM.

SENECIO, vide ERIGERUM.

SENEKA [*E.*] Senecka, rattle-ſnake root; the root of the *polygala ſenega Lin.* which 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.

This root is not at preſent much known in the ſhops. The Senegaro 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; in theſe caſes, Lemery, du Hamel, and Juſſieu, experienced its good ſucceſs (ſee the French memoirs for the years 1738, 1739) 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; Bouvart (in the memoirs above mentioned, 1744,) relates examples of its occaſioning a plentiful evacuation 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 abſtained from, or aſſiſted by proper additions.

SENNÆ, *folia: Sennæ Alexandrinæ foliis acutis C. B. Caſſiæ ſennæ Lin.* Senna; the leaves. [*L. E.*]

This is a ſhrubby plant cultivated in Perſia, Syria, and Arabia; from whence they 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

and a ſubacrid, 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; and the leſs it is divided, the more griping: hence ſenna given by itſelf, or infuſions made in a very ſmall quantity of fluid, gripe ſeverely, 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 fetid and its taſte nauſeous and bitter, can at all improve thoſe of ſenna: others recommend bohea-tea, though 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 very elegant infuſions of this drug (which may be ſeen in Part III.) as alſo ſpirituous tinctures [*L. E.*], compound powders [*L.*] 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.

SERICUM, *et folliculi bombycis*: Silk, and ſilk-worms bags. Theſe are ſcarce ever made uſe of for any medicinal purpoſes. In their crude ſtate they are certainly very inſignificant: though if burnt in a cloſe veſſel, after the ſame manner as ſponge, they would probably prove a medicine of ſimilar, and perhaps of ſuperior virtue. They yield a larger quantity of volatile ſalt than any other animal ſubſtance I know of.

SERPENTARIÆ VIRGINIANÆ *radix*: *Ariſtolochiæ ſerpentariæ Lin.* Virginian ſnake-root [*L. E.*] The root of a ſpecies of ariſtolochia, growing in Virginia and Carolina.

It 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

root is a warm diaphoretic and diuretic: it has been greatly 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 [*L. E.*] is directed as an officinal: it enters alſo the cataplaſm of cummin ſeed [*L.*]

SERPYLLI *ſummitates florentes: Serpilli vulgaris minoris C. B. Thymi ſerpilli Lin.* Mother of thyme; the flowering tops [*E.*]

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.

SESAMI *ſemen: Digitalis orientalis ſeſamum dictæ Tourn. Seſami orientalis Lin.* The ſeeds called Oily Purging Grain.

This plant is cultivated in the eaſtern countries, from whence the ſeeds are brought to us. They very properly deſerve the name of *oily*, as they yield upon expreſſion a larger quantity of oil than almoſt any other known vegetable. The appellation *purging*, they have no title to; among the Indians, they are ſaid to be uſed as food.

SESELIS VULGARIS *ſemen: Liguſtici quod ſeſeli officinarum C. B. Laſerpitii ſileris Lin.* Common hartwort: the ſeeds [*L.*]

SESELIS MASSILIENSIS *ſemen: Seſelis Maſſilienſis ferulæ folio. C. B. Seſelis tortuoſi Lin.* Italian hartwort; the ſeeds [*L.*]

Theſe plants grow ſpontaneouſly in the warmer climates; amongſt us they are met with only in the gardens of the curious. The ſeeds and roots of both ſorts have an agreeable aromatic ſmell and taſte; and in this light might be occaſionally employed, though at preſent they are in diſuſe, being ſcarcely otherwiſe regarded than as the ſeeds of the firſt ſort are an ingredient in mithridate and theriaca.

SESELI PRATENSE, vide SAXIFRAGA VULGARIS.

SILER MONTANUM, vide SESELI VULGARE.

SIMAROUBÆ *cortex: Simaroubæ quaſſiæ Lin.* Simarouba; the bark [*E.*]: A bark, with pieces of the wood adhering to it, brought from Guiana, 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.

SINAPIS *ſemen; Sinapis albi Lin.* White muſtard ſeed [*E.*] *Sinapis nigri Lin.* Muſtardſeed [*L.*] The former of theſe differs from the latter only in being ſomewhat leſs pungent [*L. E.*]

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,

tic. 'Some recommend it in the diſeaſe called *miltreek*, 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 [*L.*] Theſe ſeeds are ſometimes employed externally as a ſtimulant and a ſinapiſm.

SISON, vide AMOMUM VULGARE.

SMYRNIUM, vide HIPPOSELINUM.

SOLANI VULGARIS, *folia*; *Solani hortenſis ſeu vulgaris J. B. Solani nigri Lin.* Common nightſhade; the leaves.

SOLANI LETHALIS, *ſeu Belladonnæ, folia: Solani melanoceraſi C. B. Atropæ Belladonnæ Lin.* Deadly nightſhade; the leaves [*E.*]

Theſe plants grow wild, the firſt in cultivated grounds, the ſecond in ſhady waſte ones. They have both been ſuppoſed cooling and diſcutient in external applications, and poiſonous when taken internally. Late experience has ſhown, that an infuſion of half a grain or a grain of the dried leaves of either may be taken with ſafety, and that in many caſes the doſe may be increaſed by degrees to five or ſix grains; that they generally occaſion ſome conſiderable evacuation, and ſometimes, eſpecially in the larger of the above doſes, alarming nervous ſymptoms, which however ceaſe with the operation of the medicine. It has been expected, that a cautious uſe of theſe very active plants would afford relief in ſome obſtinate diſorders: but though in ſome inſtances they promiſed great benefit, the general event of theſe trials has not been very favourable.

SOLANUM LIGNOSUM, vide DULCAMARA.

SOLDANELLA, vide BRASSICA MARINA.

SOPHIÆ CHIRURGORUM *ſemen: Naſturtii ſylveſtris tenuiſſime diviſi C. B. Siſymbrii ſophiæ Lin.* Fluxweed; the ſeeds.

This plant had formerly a great character as a vulnerary, and for ſtopping fluxes; but its effects have not been conſiderable enough to continue it in practice.

SORBI SYLVESTRIS *cortex*: *Sorbi ſylveſtris foliis domeſticæ ſimilis C. B. Sorbi aucupariæ.* Wild ſervice, or quicken tree; its bark.

The bark of this tree has a faint unpleaſant ſmell, and a bitter taſte; but is not regarded.

SPERMA CETI *dictum* [*L. E.*] improperly ſo called: An unctuous flaky ſubſtance, of a ſnowy whiteneſs, a ſoft butyraceous taſte, without any remarkable ſmell; obtained from the *Phyſeter macrocephalus Lin.* The virtues of this concrete are thoſe of a mild emollient: it is of conſiderable uſe in pains and eroſions 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 yolk of an egg. Sugar does not

render it perfectly miſcible with water; and alkalis, which change other oils and fats into ſoap, have little effect upon ſperma ceti. 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 a 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.

SPICA VULGARIS, vide LAVENDULA ANGUSTIFOLIA.

SPICA NARDI, vide NARDUS INDICA.

'SPIGELIÆ *radix: Spigeliæ Marilandicæ Lin.* Indian pink; the root.

'It grows wild in the ſouthern parts of North America. 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. A puke is generally premiſed; and its purgative effect aſſiſted by ſome ſuitable additions.'

SPINÆ ALBÆ, *ſeu Oxyacanthæ vulgaris, flores, baccæ: Meſpili apii foliis, ſylveſtris, ſpinoſæ ſive oxyacanthæ C. B.* White-thorn, or hawthorn; its flowers and berries.

The reputation which theſe formerly had, in nephritic and calculous complaints, continues them in moſt catalogues of the Materia Medica, though common practice has long rejected them as inſignificant. The flowers have a very pleaſant ſmell; the berries are mucilaginous and ſweetiſh.

SPINÆ CERVINÆ *baccæ, baccharum ſuccus: Rhamni cathartici C. B. et Lin.* Buck-thorn; the berries [*L.*], the juice of the berries [*E.*]

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 *frangula* or black berry-bearing alder, and the *cornus fœmina*, or dog-berry tree, have of late years 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 *frangula* two, and thoſe of the *cornus fœmina* only one. Buckthorn-berries, bruiſed on white paper, give 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 churliſhly, 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

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:* 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 [*E.*]

'The volatile alkali, as got by diſtillation with a ſtrong fire from animal-matter, from ſoot, &c. is, when pure, one and the ſame thing. As firſt diſtilled, however, from the ſubject, it is impregnated with its oil, rendered fetid 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 through 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, ſoot, 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.

'The volatile alkali is got in its pureſt ſtate from ſal ammoniac. It is uſed externally, held to the noſe, on account of its pungent odour, in caſes of faintiſhneſs 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 and diaphoreſis in low fevers.'

SPIRITUS VINOSUS RECTIFICATUS. Rectified ſpirit of wine; "a ſpirit diſtilled from wine "or other fermented liquors, pu- "rified as much as poſſible from "its fetid ſmell, and the phlegm "that ariſes with it in the firſt di- "ſtillation [*L.*]," 'of which one pound by weight ſhall contain thirteen ounces by meaſure [*E.*]' 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 (ſee Part III.). 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, we ſhall ſee hereafter,

and in this place conſider only their own. Pure ſpirit coagulates all the fluids of animal bodies, except urine, and 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 is 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 inconveniencies 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, or if their uſe is long continued, they act as a poiſon of a particular kind.

SPIRITUS VINOSUS TENUIOR [*L. E.*] Proof ſpirit: "The ſame ſpirit, containing an "admixture of an equal quantity "of water: the beſt proof-ſpirit is "that diſtilled from French wine; "but for common uſes may be "employed the ſpirit drawn from "melaſſes, or the ſyrupy matter "that runs from ſugar in the pu- "rification commonly called me- "laſſes ſpirit." [*L.*]. 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 judged 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. The common methods of eſtimating the quantity of phlegm contained in theſe ſpirits, are liable to uncertainty: it ſhould therefore ſeem neceſſary for the nicer purpoſes, and where a perfectly flavourleſs proof-ſpirit is required, to make uſe of the pure rectified ſpirit, mixed with a certain determined proportion of water; equal quantities of theſe liquors, whether taken by weight or meaſure, compoſe a ſpirit ſomewhat weaker than what has been generally looked upon as proof: the exact proportions are, one hundred parts by weight of pure ſpirit, and eighty-ſix of water.

SPONGIA [*L.*] Sponge; 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 Archipa-

lago.

lago. 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: the volatile ſalt is in larger quantity than I have obtained from any animal-matter, except the bags of the ſilk-worm. On this ſalt, ſeem to depend the virtues of the officinal *ſpongia uſta* [*L.*] (See Part III.). Crude ſponge, from its property of imbibing and diſtending by moiſture, is ſometimes made uſe of as a tent for dilating wounds and ulcers.

'It adheres ſtrongly to the mouths of wounded veſſels; and when retained by proper compreſſion, it has prevented conſiderable bleedings preferably to agaric, puff-ball, &c. On account of the ſaline matter contained in burnt ſponge, it has been uſed in ſcrophulous and other cutaneous affections, and in bronchocele.'

STANNUM [*L.*], *ſtanni limatura et pulvis*: the filings and powder of tin [*E.*]

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) into a 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, though it has long been ſuppoſed not to be at all ſo ſoluble in them, unleſs previouſly well calcined

With regard to the virtues of 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 diſpenſatories, under the name of an *antihectic*: but theſe are virtues to which it certainly has little claim. It has of late been celebrated on better foundation as an anthelmintic; and ſaid to deſtroy ſome kinds of worms which elude the force of many other medicines: poſſibly the cauſe of this effect may be very different from what may be ſuſpected, an admixture of a portion of arſenic.

Tin has a ſtrong affinity with arſenic; inſomuch, 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 Henckel has diſcovered a method of ſeparating actual arſenic from tin: this is effected by ſolution in aqua-regia and cryſtalliſation. Mr Margraff has (in the Berlin Memoirs) given a farther account of this proceſs; and relates, that from the tins uſually reputed pure, he has obtained one-eighth their weight of cryſtals of arſenic. For the preparations of tin, ſee the Third Part of this work.

STAPHIDIS AGRIÆ *ſemen C. B. Delphinii platani folio Tourn. Delphinii ſtaphidis agriæ 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

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 naufeous 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; inſomuch, that it has from this virtue received its name, in different languages; *herba pediculariis, herbe aux poux, lauſskraut, louſe-wort.*

STERCUS *anſeris, canis, columbæ, equi, ovis, pavonis, porci.* The dung of the gooſe, dog, pigeon, horſe, ſheep, peacock, hog. Theſe fulſome medicines, which nothing but the moſt fantaſtic viſionaries could have introduced, are now expunged from practice, and from our pharmacopœias.

STIBIUM, vide ANTIMONIUM.

STOECHAS, *Stœchas purpurea C. B. Lavendula ſtœchas Lin.* Arabian ſtechas, or French lavender-flowers [*L.*]

This is a ſhrubby plant, conſiderably ſmaller than the common lavender. The flowery heads are brought from Italy and the ſouthern parts of 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 whilſt freſh or when carefully dried, has a very fragrant ſmell, and a warm, aromatic, bitteriſh, ſubacrid 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 which it is admitted into, are 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 one in the ſhops; this is the *elichryſum ſeu ſtœchas citrina latiore folio C. B. (Gnaphalium arenarium Lin.)* golden ſtechas, 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 for 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.

'STRAMONII *herba. Daturæ ſtramonii Lin.* Thorn apple; the herb [*E.*]

'This narcotic plant is ſometimes found wild among rubbiſh, grows in gardens, and flowers in July. An extract from the acrid expreſſed juice of the leaves, from one to five grain doſes, twice or thrice a-day, is recommended in various nervous diſeaſes; as mania, epilepſy, &c. and an ointment of the leaves is ſpoken of in external inflammation and hemorrhois.'

STYRAX CALAMITA: *Reſina ſtyracis officinalis Lin.* [*L. E.*] Storax; an odoriferous reſinous ſubſtance, exuding, in the warmer climates, from a tree called by C. Bauhine *ſtyrax folio mali cotonei.* It has been cuſtomary to diſtinguiſh three ſorts of ſtorax, tho' 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 ſawduſt. For what purpoſe this addition is made, I ſhall not here inquire; obſerving only, that it can ſcarce be ſuppoſed to be done with any fraudulent view, ſince the ſawduſt 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 fragrancy 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, unleſs as an ingredient in the traumatic balſam, the compound powder and electary of ſcordium, the ſtorax pill, confectio Paulina, mithridate, and theriaca [*L.*]

STYRAX LIQUIDA: Liquid ſtorax. 'It is the reſinous juice of a large tree, the *liquidamber ſtyraciflua Lin.*' What is moſt commonly met with under this name, is a ſoft reſinous ſubſtance, of a grey colour, a weak ſmell, ſimilar to that of the foregoing ſolid ſtorax: it is ſuppoſed to be compounded of ſolid ſtorax, reſin, wine, and oil, beaten up together into a proper conſiſtence. The genuine liquid ſtorax, according to Petiver's account (Phil. Tranſact. N° 313.) 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 through, 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, tenaceous, 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.

Liquid ſtorax is among us ſcarce

ever

ever made uſe of in medicine, and not often found in the ſhops; hence the London College has expunged it from the catalogue of officinals.

SUBER: *cortex Suberis latifolii perpetuo virentis C. B. Querci ſuberis Lin.* Cork, a ſort of evergreen oak, growing in the warmer parts of Europe; its bark. This has been by ſome accounted aſtringent, and recommended as ſuch in dyſenteries and other fluxes; but modern practice applies it to no ſuch uſes, and expects from it no virtues of any kind.

It may here be proper to take notice, that ſundry liquors undergo ſenſible alteration from cork ſtoppers. Neumann obſerves, that acids, alkalis both fixed and volatile, the dulcified alkaline and acid ſpirits, ſome neutral ſaline liquors, lime-water, blue vegetable juices, and ſyrups made from them, are changed more or leſs to a yellow or brown colour.

SUCCINUM [*L. E.*] Amber; 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 opake, and ſometimes very clear and tranſparent. The dark-coloured and opake 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. See Part III.

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 fluor albus, gleets, hyſteric affections, &c.; and in 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 real 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, hyſterical, and cold languid caſes. If part of the ſpirit be abſtracted by a gentle heat, the remainder proves a very elegant aromatic balſam, which is perhaps one of the moſt uſeful preparations obtainable from this concrete. Amber is levigated in the ſhops into an impalpable powder, which gives name to a compound powder [*L.*], and is an ingredient in mithridate and theriaca [*L.*]; and the diſtilled oil and ſalt [*L. E.*] are likewiſe officinals. 'It is alſo an ingredient in the gum pills [*E.*]'

SUCCISA, vide MORSUS DIABOLI.

SULPHUR [*L.*] *Sulphuris flores*; Flowers of ſulphur [*E.*] 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

ſtame which is accompanied with a ſuffocating acid fume. It diſſolves in alkaline liquors and in 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 ſulpur-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 a 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* [*E.*]; 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 one another. Notwithſtanding the preference given by ſome to the more uncommon foſſil ſorts; theſe laſt are of all others 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 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: In theſe caſes, however, it has no very conſiderable effect, unleſs, as Hoffman obſerves, where the diſeaſe proceeds from the blood being tainted by ſcrophulous or ſcorbutic humours; where this happens, the prudent uſe of ſulphur is ſaid to do good ſervice, throwing out a plentiful eruption upon the ſkin, and by degrees carrying off the peccant matter. The common doſe of ſulphur rarely exceeds a ſcruple, though Geoffroy goes as far as two drams. The *trochiſci e ſulphure* of the diſpenſatory are one of the moſt elegant forms for the taking of it. It enters ſix officinal preparations for external uſe, and gives name to one of them. Some have imagined that ſulphur uſed externally is dangerous; that as it throws the morbific matter outwards when given inwardly, it muſt in like manner drive it into the blood when applied externally. This opinion, which is ſupported by ſome late writers, has no juſt foundation. Sulphur has nearly the ſame effects, whether uſed internally or externally: in both caſes, the eruptions become frequently more copious after the firſt uſe of it.

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,

phur, 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; and ſometimes reſtrains their further action. Even the coroſive 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 *folia, ſemen: fruticis quæ Rhus folio ulmi C. B. Rhus coriariæ 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 in this intention, but are now become ſtrangers to the ſhops.

SYMPHYTUM, vide CONSOLIDA.

TACAMAHACA: a reſin obtained from a tall tree (*tacamahaca populo ſimilis, fructu colore pæoniæ ſimili J. B. Populus balſamifera Lin.*) 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 glebes, 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 maturating tumours, and abating pains and aches of the limbs: it is an ingredient in the anodyne, hyſteric, cephalic, and ſtomachic plaſters of the Edinburgh pharmacopœis. The fragrance of the finer ſort ſufficiently points out its being applicable to other purpoſes.

TAMARINDI *fructus: Tamarindi indicæ Lin.* Tamarind; the fruit [*L. E.*] of a tree growing in the Eaſt and Weſt Indies, called by C. Bauhine *ſiliqua Arabica quæ tamarindus.* It is a pod reſembling a bean cod, including ſeveral hard ſeeds, together with a dark 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 in the quantity of two or three drams, or an ounce or more, proves 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, caſia and manna, and weakens that of the reſinous catharties. 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

dient in the electary of caſia [*L.*], the lenitive electary [*E.*], and decoction of tamarinds with ſenna [*E.*]

TAMARISCI *folia, cortex: Tamaricis alterius folio tenuiore, ſive Gallicæ C. B.* The tamariſc tree; its bark and leaves.

Theſe are moderately aſtringent: they are never met with in preſcription, and have long been entire ſtrangers to the ſhops.

TANACETI *folia, flores: Tanaceti vulgaris lutei C. B. Tanaceti vulgaris Lin.* Tanſy; the leaves [*L. E.*], and flowers [*E.*]

Tanſy 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.

TAPSI BARBATI *ſeu Verbaſci folia: Verbaſci maris latifolii lutei C. B. Verbaſci thapſi Lin.* Mullein; the leaves [*E.*]

This is met with by road-ſides, and under hedges: it is cloathed all over with ſoft downy leaves, and produces long ſpikes of yellow flowers in July. The taſte diſcovers in it a glutinous quality; and hence it ſtands recommended as an emollient, and is in ſome places held in great eſteem in conſumptions. The flowers of mullein have an agreeable, honey like ſweetneſs; an extract prepared from them by rectified ſpirit of wine, taſtes extremely pleaſant.

'Some recommend the external uſe of mullein, in form of decoction, in ill-conditioned ulcers.'

TARAXACUM, vide DENS LEONIS.

TARTARUM [*L.*] Tartar is a ſaline ſubſtance, 'conſiſting of the vegetable alkali ſuperſaturated with acid,' 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 filtring the boiling ſolution. On cooling the ſolution, it depoſites irregular cryſtals, containing the oily and colouring matters, which are ſeparated by boiling the maſs with a white clay. The tartar thus purified, may be cryſtalliſed; or if 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 tartar. 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

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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 good effects from it, 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. For the preparations of tartar, ſee Part III. This ſalt is likewiſe an ingredient in the compound infuſion of ſenna, compound powder of ſenna [*L.*], and is uſed for diſſolving or corroding ſome metallic bodies, particularly antimony, from which it receives a ſtrong emetic impregnation, as in the preparation called *emetic tartar*.

TELEPHIUM, vide CRASSULA.

TEREBINTHINÆ. Turpentines; reſinous juices extracted from certain trees. There are four kinds of turpentine diſtinguiſhed in the ſhops.

TEREBINTHINA CHIA, *ſive* CYPRIA [*L.*] Chian or Cyprus turpentine, is the produce of the *Terebinthus vulgaris C. B* the *piſtachia terebinthus Lin.* An evergreen tree or ſhrub, which grows ſpontaneouſly in the warmer climates, and endures the colds of our own.

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 VENETA [*E.*] 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.

The true Venice turpentine is obtained from the *larix folio deciduo conifera J. B.* (*Pinus larix Lin.*) larch, a large tree growing in great abundance upon the Alps and Pyrenean mountains, and not uncommon in the Engliſh gardens. 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 acccount: the finer kinds of it are in appearance and quality not conſiderably different from the true ſort above deſcribed.

TEREBINTHINA ARGENTORATENSIS [*L.*] Straſburgh 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 mentioned in page 65, which are 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. This ſpecies is the *Abies minor, pectinatis foliis, Virginiana, conis parvis, ſubrotundis. Pluk.* (*Pinus balſamea Lin.*) Virginian, or Canada fir; though not a native of this climate, it has been found to endure its ſevereſt colds.

TEREBINTHINA COMMUNIS [*L.*] Common turpentine is the coarſeſt, heavieſt, 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 *pinus ſylveſtris C. B. et Lin.* 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 gleets, the fluor albus, and the like; and by ſome in calculous complaints: where theſe laſt proceed from ſand or gravel, formed into a maſs by viſcid mucous matter, the turpentines, 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 turpentines impart, ſoon after taking them, a violet 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 coroborants: the Straſburgh is an ingredient in the mercurial pills and Locatellus's balſam, and the Chian in mithridate and theriaca [*L.*] 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 ſufficient doſe: this is a moſt potent,

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ſtimulating, detergent diuretic, oftentimes greatly heats the conſtitution, and requires the utmoſt caution in its exhibition.

TERRA JAPONICA, vide JAPONICA.

TERRA LEMNIA *et* SILESIACA, vide BOLUS.

THAPSIÆ *folia: Thapſiæ ſive turbith gargaulci ſemine latiſſimo J. B.* Deadly carrot; the root. 'This plant does not ill deſerve its epithet; a ſmall doſe operating with extreme violence both upwards and downwards. It is an entire ſtranger to the ſhops, and met with only in the gardens of the curious.

THEÆ *folia* [*E.*] Tea; the leaves of a ſhrub (*thea frutex, folio ceraſi, flore roſæ ſylveſtris, &c. Kæmpf.*) *Theæ bohea et viridis Lin.* cultivated in China.

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 tinctured 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 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 which they have been celebrated for, 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 ſtimulate, 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 tremours.'

THLAPSIS *ſemen.* Treacle, or mithridate muſtard; the ſeeds [*L.*]

Two ſorts of thlapſi are uſed promiſcuouſly; *thlapſi arvenſe ſiliquis latis C. B.* and the *thlapſi arvenſe vaccariæ incano folio majus C. B.* they both grow wild, the latter moſt plentifully. Theſe ſeeds have an acrid biting taſte like common muſtard, with which they agree in medical qualities; their principal uſe is as ingredients in the compoſitions whoſe name they bear.

THUS MASCULUM, vide OLIBANUM.

THUS VULGARE [*L. E.*] Common frankincenſe; a ſolid, brittle reſin, brought to us in little glebes 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 to concrete on the ſurface of the terebinthinate juice ſoon after it has iſſued from the plant.

It is an ingredient in mithridate, the

the gum plaſter, ſtrenthening plaſter, and ſtomach plaſter [*L.*]

THYMI *herba : Thymi vulgaris folio tenuiore C. B. Thymi vulgaris Lin.* Common thyme ; the herb [*E.*]

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.

THYMI CITRATI *folia : Serpylli foliis citri odore C. B. Thymi ſerpylli Lin.* Lemon-thyme ; the leaves [*L.*]

This is found wild in dry mountainous places, but the ſhops are ſupplied from gardens. In taſte and ſmell it is leſs acrid and more grateful than the common thyme ; its ſmell, in particular, is remarkably different, approaching to that of lemons. It gives over its flavour in diſtillation both with water and ſpirit : with the former an elegant eſſential oil ariſes : the diſtilled ſpirit is an agreeable aromatic cordial liquor, not inferior to any thing of this kind.

THYMELÆÆ *baccæ : Thymelæa foliis lini C. B. Daphnes Gnidii Lin.* Spurge flax ; its berries, called *grana cnidia.*

TITHYMALI *radix.* Spurge ; the root.

Several ſorts of ſpurge are mentioned in catalogues of the materia medica. Both the Edinburgh and London colleges have now rejected them all.

The ſpurges and grana cnidia are extremely acrid, irritating cathartics, and operate with ſo much violence as to be altogether unfit for internal uſe.

TILIÆ *flores : Tiliæ ſæminæ olio majore C. B. Tiliæ Europææ Lin.* The lime or linden tree ; its flowers [*L.*]

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 uſe of an infuſion of theſe flowers drank as tea.

TINCAR, vide BORAX.

TORMENTILLÆ *radix : Tormentillæ ſilveſtris C. B. Tormentillæ erectæ Lin.* Tormentil, or ſeptfoil ; the root [*L. E.*]

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 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 ſucceſs 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 bole [*L.*], the two powders and elec-

electary of ſcordium [*L.*], the japonic confection [*E*], A tincture made from it with rectified ſpirit poſſeſſes the whole aſtringency and flavour of the root, and loſes nothing of either in inſpiſſiating.

TRAGACANTHA, vide GUMMI TRAGACANTHA.

TRICHOMANIS *folia, herba: Trichomanis ſive polytrichi officinarum C. B. Aſplenii trichomanis Lin.* Engliſh maidenhair; the leaves [*L.*], and herb [*E.*]

This is one of the herds called, from the ſmallneſs of their ſtalks, capillary: it is found wild in different parts of England, upon old walls, and in ſhady places. The leaves have a mucilaginous, ſweetiſh, ſubaſtringent 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 decoction, with the addition of a little liquorice. A ſyrup prepared from them has frequently ſupplied the place of that made from the adianthum verum: ſome have ſubſtituted a ſtill cheaper ingredient, and perhaps not much to the diſadvantage of the medicine; both the maidenhairs yielding little more than a mucilaginous juice, greatly reſembling the ſubſtitute made uſe of. The ſyrup brought from abroad has an admixture of orange-flower water.

TRIFOLII PALUDOSI *folia: Trifolii paluſtris C. B. Menyanthis trifoliatæ Lin.* Marſh-trefoil, or buck-beans; the leaves [*L. E.*]

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 ſome weeks. Boerhaave relates, that he was relieved of the gout by drinking the juice mixed with whey.

TRISSAGO, vide CHAMÆDRYS.

TRITICI *farina, amylum, furfur: Tritici vulgaris glumas triturando deponentis J. B. Tritici æſtivi Lin.* Wheat; the meal or flour, and ſtarch [*L. E.*] (prepared from the meal by maceration in freſh quantities of water.)

Wheat, a common article of our 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 diarrhœas and dyſenteries. Starch is an ingredient in the compound powder of gum tragacanth and the white pectoral troches [*L.*]

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 in this intention externally, and ſometimes likewiſe taken inwardly.

BREAD,

BREAD, carefully toaſted, and infuſed, or lightly boiled in water, imparts a deep colour, and a ſufficiently agreeable reſtringent 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.

'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, that 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 viſcidity of the gluten is diminiſhed, and the whole thus forms a very ſoluble and nutritious bread.'

TUNICA, vide CARYOPHYLLUS HORTENSIS.

TURPETHI *radix: Convolvuli turpethi Lin.* Turbith; the cortical part of the root of an Indian convolvulus, 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, inſomuch 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.

TUSSILAGINIS *ſive ſarfaræ folia, flores: Tuſſilaginis vulgaris C. B. Tuſſilaginis ſarfaræ Lin.* Coltsfoot: the leaves and flowers [*E.*]

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 ſubacrid Tuſſilago ſtands recommended in coughs, phthiſis, and other diſorders of the breaſt and lungs, 'and ſome uſe it in ſcrophula.'

TUTIA [*L. E.*] Tutty; 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 blueiſh 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

mic ointment [*L. E.*] See the article ZINCUM.

VALERIANÆ HORTENSIS MAJORIS *radix: Valerianæ majoris odorata radice J. B.* The greater garden valerian; its roots.

This is an oblong wrinkled root, with ſeveral fibres at the bottom, of a browniſh or aſh colour on the outſide, and whitiſh within; of an aromatic ſmell and taſte, approaching to nard. It is accounted leſs efficacious as a medicine than the following.

VALERIANÆ SILVESTRIS *radix: Valerianæ ſylveſtris majoris montanæ C. B. Valerianæ ſylveſtris majoris foliis anguſtioribus Moriſon. plant. umbellif. Valerianæ officinalis Lin.* Wild valerian (the narrow-leaved ſort growing on open, dry, mountainous places); its roots [*L. E.*]

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 ſubacrid. There is another 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, under the name of *valeriana foliis omnibus pinnatis.* Our college have reſtrained the ſhops to the firſt, which 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. 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. The common doſe is from a ſcruple to a dram; in infuſion, from one to two drams. Its unpleaſant flavour is moſt effectually concealed by a ſuitable addition of mace.

'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.'

A tincture of valerian in proof ſpirit and in volatile ſpirit are kept in the ſhops [*L.*], and is an ingredient in mithridate and theriaca [*L.*]

VERATRUM, vide HELLEBORUS ALBUS.

VERBASCUM, vide TAPSUS BARBATUS.

VERBENÆ *folia, radix: Verbenæ communis flore cerulæo C. B. Verbenæ officinalis Lin.* Common wild vervain; the leaves and root.

This is one of the medicines which we owe to the ſuperſtition of former ages; the virtues it has been celebrated for, both as an internal medicine, and externally as an amulet, are extremely numerous: and poſſibly it has an equal title to them

them all. To the taſte and ſmell it appears almoſt ſimply herbaceous.

VERONICA FOEMINA, vide ELATINE.

VERONICÆ MARIS, *ſeu Betonicæ Pauli folia: Veronicæ maris ſupinæ et vulgartiſſimæ C. B. Veronicæ officinalis Lin.* Male ſpeedwell; the leaves.

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, of which in its place: 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.

VINCETOXICI, *Aſclepiadis, ſeu Hirundinariæ, radix: Aſclepiadis flore albo C. B. Aſclepiadis vintoxici 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 dogſbane; from all the poiſonous ſorts of which it may be diſtiguiſhed, by yielding a limpid juice, whilſt that of the others is 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, ſubacrid, 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 ſucceda-neum 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 indiſputably preferable to it.

VINUM. 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 [*L.*], *vinum album Hiſpanum* [*E.*], Mountain.

Vinum Canarium [*L.*], Canary or ſack.

Vinum Rhenanum [*L. E.*], Rheniſh.

Vinum rubrum [*L.*], Red port.

'Wines conſiſt chiefly of water, alcohol, a peculiar acid, the aërial 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 one another 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. Claret, Madeira, and Port, are thoſe commonly employed in Britain, and even Port to the extent of two quarts a-day.'

VIOLÆ *folia, flores: Violæ martiæ purpureæ flore ſimplici odore C. B. Violæ odoratæ Lin.* The ſingle March violet; its flowers [*L. E.*]

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 a different ſpecies, named by botaniſts *viola Martia major hirſuta, inodora:* 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: *Coluber berus Lin.* [*L. E.*] The viper, or adder, 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, leprous, rheumatic, and other obſtinate chronical 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 us from abroad is entirely inſignificant.

In the ſhops, a broth is directed to be prepared from freſh vipers, and a vinous tincture from dried ones [*L.*]: the dried fleſh is alſo an ingredient in theriaca, and the fat in the ointment of tutty [*L.*]; this fat being ſuppoſed peculiarly uſeful in diſorders of the eyes, for which that ointment is deſigned.

VIRGÆ AUREÆ *folia: Virgæ aureæ auguſtifoliæ minus ſerratæ C. B.* Golden-rod; the leaves.

This

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.

VISCI QUERNI *lignum, folia: Viſci baccis albis C. B. Viſci albi Lin.* Miſſeltoe; the wood and leaves.

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 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.

VITEX, vide AGNUS CASTUS.

VITIS VINIFERA. 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, *omphacium agreſta*, 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 and currants of the ſhops: the juice by fermentation affords wine, vinegar, and tartar; of all which in their places.

VITRIOLUM ALBUM, *ſive zinci* [*L. E.*] White vitriol, or vitriol of zinc; found in the mines of Goſlar, ſometimes in tranſparent pieces, but more commonly in form of white efflorеſcences, 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 by the Edinburgh College 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 depoſites on ſtanding an ochry ſediment, which generally gives a blue tincture to volatile alkalis, 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. A ſolution of it is directed in this intention by the London College.

VITRIOLUM CŒRULEUM *ſive cupri* [*L. E.*] 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 hemorrhagies, which it effects by coagulating the blood, and contracting the mouths of the veſſels. It gives name to an officinal water for this intention.

VITRIOLUM VIRIDE, *ſive ferri* [*L. E.*] Green vitriol, or vitriol of iron, commonly called *copperas*; the Roman vitriol of the Italian and other foreign writers. 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 *ſal martis* or *chalybis*.

The green and blue vitriols (as well as the white) are in many places found native in the earth; though 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 ſapphire 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 irony 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.'

ULMARIÆ, *ſeu Reginæ prati, folia, flores: Ulmariæ barbæ cupri floribus compactis C. B. Spiræa ulmaria Lin.* Meadow-ſweet, or Queen of the meadows; the leaves and flowers.

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.

ULMI *cortex interior: Ulmi campeſtris foliis duplicato-ſerratis, baſi inequalibus Lin.* The inner bark of the elm-tree [*E.*]

'It is an evergreen, trailing, ſhrubby plant with red berries, reſembling the common red wort-buſh, a native of Sweden, and growing in our gardens. The leaves have a bitteriſh aſtringent taſte, and are recommended in powder, to the extent of at leaſt two drams a-day, in ulcerations of the urinary paſſages and catarrhus veſicæ. The powder has been uſed with opium, the latter being gradually increaſed to a conſiderable quantity in diabetes, and it is ſaid with advantage. Some uſe it for alleviating the dyſpeptic ſymptoms in nephritic and calculous ailments.'

URTICA DIOICA *Lin.* Common ſtinging nettle [*E.*]

URTICÆ ROMANÆ *folia, ſemen: Urticæ urentis pilulas ferentis ſemine lini C. B. Urticæ piluliferæ Lin.* Roman nettle; the leaves and ſeeds.

Theſe have had ſundry virtues attributed to them, which the preſent practice pays no regard to. The young leaves of the firſt ſort are by ſome uſed in the ſpring as a wholeſome pot-herb.

UVÆ PASSÆ [*L.*] *majores:* Raiſins of the ſun; the dried grapes of the *vitis Damaſcena.*

UVÆ PASSÆ *minores:* Currants; the dried grapes of the *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: nevertheleſs I have not found that they give any taſte at all. The raiſins of the ſun are an ingredient in the pectoral decoction, tincture of ſenna, and ſtomachic tincture [*L.*]

UVÆ URSI *folia. Vitis ideæ C. B. Arbuti uvæ urſi cautibus procumbentibus, foliis integerrimis Lin.* Bear's whortleberry; the leaves [*E.*]

'A decoction of this, in the proportion of an ounce to a pound of water boiled to a half, has a mild aſtringent taſte, has been recommended in certain obſtinate cutaneous eruptions, and is ſaid to aggravate the diſorder at firſt, but to prove uſeful if continued in the doſe of a pint morning and evening.'

WINTERANUS CORTEX, *Cortex Magellanicus:* Winter's bark; the produce of a tree growing in Jamaica, Barbadoes, &c. called by Sir Hans Sloane *Periclymenum rectum, foliis laurinis, cortice acri aromatico:* the *Winterana aromatica Soland.* 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 to it, and by many reckoned to be the ſame: there is nevertheleſs a conſiderable 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 [*L. E.*] Zedoary; the root of an Indian plant (*Kempferia rotunda Lin.*), 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 itſelf. An extract made from it with proof ſpirit (which is inferior to that prepared with rectified ſpirit) is an ingredient in the confectio cardiaca [*L.*]; the root in ſubſtance enters the confectio Paulina, mithridate, and theriaca [*L.*]

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 [*E.*]

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 going 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 pharmacopœia, directed them to be dug in the ſpring, after the leaves were formed; in the third edition, the autumn is preferred, and this rule is continued in the ſucceeding ones. 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 [*E.*]

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 a 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 curation 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 [*E.*]

'Herbs and flowers are to be dried by a 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 [*E.*]

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 *(celeriter arefactæ)*. One of the moſt valuable aromatics of European

ropean growth, ſaffron, is a part of a flower, dried on paper on a kind of kiln, with a heat ſufficient to make it ſweat, with 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 [*E.*]

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 greatly 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, greatly 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 [*E.*]

The only woods of our own growth, retained in the catalogues of Simples of our pharmacopœias ('viz. laſt edition'), are the juniper and box; the firſt of which is rarely or never kept in the ſhops, or employed in practice; the other is 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 it is applied to, the yielding an empyreumatic oil by diſtillation in a ſtrong fire.

Of the barks of our own growth, the London College has not retained one. In the Edinburgh Pharmacopœia ('viz. in the laſt edition') there are ſeveral, viz. thoſe of the aſh-tree, birch-tree, oak, elm, ſloe, wild ſervice, black alder, and elder, which, however, have been ſo rarely uſed in medicine, that the ſeaſons of their greateſt perfection can-

not be aſcertained from experience. 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 are ordered otherwiſe [*E.*]

The animals of the London Pharmacopœia are only millepedes and the viper, to which the Edinburgh add ſnails, earth-worms, and bees: 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.

PART

PART III.

Pharmaceutical Preparations.

CHAP. I.

THE MORE SIMPLE PREPARATIONS.

TERREORUM, aliorumque quæ aqua non diſſolvuntur corporum præparatio. *The preparation of* EARTHY *and ſuch other pulverable bodies as will not diſſolve in water.*

THESE ſubſtances are firſt to be pulveriſed in a mortar, and then levigated with a little water, upon a hard and ſmooth marble, into an impalpable powder: this is to be dried upon a chalk ſtone, and afterwards ſet by for a few days, in a warm, or, at leaſt, very dry place. *L.*

After this manner are to be prepared,

Ærugo, *verdegris. L.*

Antimonium, *antimony. L. E.* +

Chelæ cancorum, *crabs-claws. L. E.* +

Corallium, *coral. L. E.* +

Creta, *chalk. L. E.* + '*The Edinburgh College direct it to be waſhed with water till the water has neither taſte nor colour: By this method the chalk is freed of all ſaline matter*'.

Lapis bezoar, *bezoar ſtone; which is to be moiſtened, in the levigation, with ſpirit of wine inſtead of water. L.*

Lapis calaminaris, *calamine ſtone, previouſly calcined for the uſe of thoſe who make braſs. L. E.* +

Lapis hæmatites, *blood-ſtone. L. E.* +

Margaritæ, *pearls. L. E.* +

Oculi cancrorum, *crabs-eyes, ſo called. L. E.*

Oſtreorum teſtæ, *oyſter-ſhells, waſhed clean from dirt. L. E. The hollow ſhells are preferred* [*E.*] on account of their containing more of the fine white earth, in proportion to the outward rough coat, than the thinner fat ones: the rough matter appears to be largely impregnated with marine ſalt.

Ovorum teſtæ, *egg-ſhells freed, by boiling, from the ſkin that adheres to them. L.*

Succinum, *amber. L. E.* +

Tutia,

Tutia, *tutty*. *L. E.*

In preparing antimony, calamine and tutty, particular care ought to be taken to reduce them into the moſt ſubtile powder poſſible. *L.*

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 uſe, conſiſting of two ſtones; the uppermoſt of which turns horizontally upon the lower, and has an aperture in the middle for the conveniency of ſupplying freſh matter, or of returning that which has already paſſed, till it is reduced to a proper degree of fineneſs.

For the levigation of hard bodies, particular care ſhould be taken, whatever kind of inſtruments is made uſe, that they be of ſufficient hardneſs, otherwiſe they will be abraded by the powders. The hematites, a hard iron ore, is moſt conveniently levigated betwixt two iron planes; for if the common levigating ſtones are 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 is 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 (ſee page 77.), and continue levigating the remainder till the whole becomes fine enough to remain, for ſome time, ſuſpended in the fluid; a proceſs received in the Edinburgh Pharmacopœia, and there directed as follows.

Edinb.

A quantity of water is to poured upon the levigated powder, in a large veſſel, and the veſſel repeatedly ſhaken, that the finer parts of the powder may be diffuſed through the water: the liquor

quor 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 are not ſoluble in, or ſpecifically lighter than water. The animal and abſorbent 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 juces without much comminution: if no acid is contained in the firſt paſſages, they are apt to concrete, with the mucous matter uſually lodged there, into hard indiſſoluble maſſes; the greater degree of fineneſs they are reduced to, the more are they diſpoſed to form ſuch concretions, and enabled to obſtruct the orifices of the ſmall veſſels.

AXUNGIÆ PORCINÆ, SEVIque OVILLI purificatio.

The purification or trying of hogs-lard and mutton-ſuet.

Lond.

Chop them into ſmall pieces, and melt them by a gentle heat, with the addition of a little water; then ſtrain them from the membranes.

The uſe of the water is to prevent the fat from burning and turning black; which it does very effectually, though it ſometimes prolongs the proceſs, and is likewiſe apt to be in part imbibed by the fat. The Edinburgh Diſpenſatory directed the fat to be firſt freed from the ſkins, blood-veſſels, and fibres; then waſhed in freſh quantities of water till it no longer gives the liquor any bloody tinge; afterwards melted, ſtrained, and kept cloſe from the injuries of the air. The ſhops are uſually ſupplied with theſe fats ready prepared.

AXUNGIÆ VIPERINÆ curatio.

The purification of viper's fat.

Lond.

Let the fat, ſeparated from the inteſtines, be melted by a gentle fire, and then preſſed through a thin linen cloth.

The quantity of this fat uſually purified at a time, is ſo ſmall, that the heat may be eaſily regulated ſo as to prevent burning without the addition of any water.

It is not neceſſary, as Dr Pemberton obſerves, to be very curious in picking out the fat; it is ſufficient if the heart, liver, and other bloody parts, are taken away; for the reſt of the membranes criſp up while the fat melts, ſo as to be eaſily ſeparated by ſtraining.

MELLIS DESPUMATIO.

The deſpumation or clariſying of honey.

Lond.

Let the honey be liquefied in a water-bath (that is, by ſetting the veſſel containing the honey in a veſſel

veſſel of hot water) and the ſcum which ariſes taken off.

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.

SCILLÆ COCTIO.

The baking of ſquills.

Lond.

Let the ſquill (freed from the outer ſkin, and the hard part to which the little fibres adhere) be incloſed in a paſte made of wheat-flour and water, and baked in an oven till the paſte becomes dry, and the ſquill ſoft and tender throughout.

This preparation is as old as the theriaca; and is continued in our diſpenſatory, for no other uſe than making the troches of ſquills, which are one of its principal ingredients. The Edinburgh diſpenſatory having now dropt the theriaca, has dropt alſo the baked ſquills and the troches, and admitted them formerly only in compliance with cuſtom, giving expreſsly the preference to ſquills moderately dried. The intention of baking the root is to abate its acrimony; 'and the effect is often to deſtroy its power entirely.'

SCILLÆ EXSICCATIO.

The drying of ſquills.

Lond.

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. *E.*'

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 Diſpenſatory, 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.

RHABARBARI et NUCIS MOSCHATÆ torrefactio.

The roaſting of rhubarb and nutmeg.

Lond.

Roaſt them with a gentle heat, until they become eaſily friable.

Nutmegs, in their natural ſtate, are ſo ſoft and unctuous, as ſcarce to be reducible into powder, a form in which they are occaſionally wanted; and rhubarb is very difficultly ſo, unleſs it be thoroughly dry. The torrefaction renders them eaſily pulverable; and as ſoon as this this point is obtained, ſhould be immediately diſcontinued, otherwiſe the

to water a ſaline matter ſimilar to the ſublimed flowers. On trial, it could not be obſerved that any ſaline matter was thus ſeparated from ſtorax, though it impregnated the water conſiderably with its fragrance.

Storax may be excellently purified by means of ſpirit of wine, which this reſin totally diſſolves in ſo as to paſs through a filtre, the impurities alone being left. If the ſtorax is afterwards wanted in a ſolid form, it may be recovered from this ſolution by gently diſtilling off the ſpirit, which will elevate very little of its flavour, or by pouring to it a quantity of water. See Chap. VI.

OPIUM COLATUM, vel EXTRACTUM THEBAICUM.

Strained opium, or thethebaic extract. Lond.

Take of opium, cut into ſlices, one pound; diſſolve it into the conſiſtence of a pulp, in a pint of boiling water, with care to prevent its burning; and whilſt it remains qiute hot, ſtrongly preſs it from the feces through a linen cloth: the ſtrained opium is then to be reduced, by a water-bath or other gentle heat, to its original conſiſtence.

Opium thus ſoftened by a ſmall quantity of water paſſes the ſtrainer entire, the feces only being left behind. If it was diſſolved in a large quantity of water, its reſinous and gummy parts would be ſeparated from one another.

Where large quantities of opium are purified at once, the inſpiſſation is moſt commodiouſly performed in a water-bath: but ſmall quantities may be very ſafely inſpiſſated, by placing the veſſel immediately over a gentle fire, the matter being kept ſtirring, and the veſſel occaſionally removed from the fire whenever there is any ſuſpicion of its becoming too hot. The groſſer impurities of the opium are by this proceſs effectually ſeparated; but ſome of its heterogeneous admixtures, conſiſting chiefly of duſt and farinaceous matters, are ſo fine, as partly to paſs along with it through the pores of the ſtrainer when diluted by the preſs: this manifeſtly appears upon boiling the ſtrained opium in water, and afterwards in ſpirit; when a conſiderable quantity of earthy matter will be left, which is not ſoluble in either of thoſe menſtrua.

THE OTHER GUMS,

as ammoniacum, galbanum, aſafœtida, and the like, are purified after the ſame manner; only here a larger quantity of water may be made uſe of without injury. If the reſinous part happens to ſubſide, take it out, and reſerve it to be added again towards the end of the inſpiſſation, that it may unite with the reſt into one uniform maſs.

Any gum that melts eaſily, as galbanum, may likewiſe be purified by inluding it in a bladder, and keeping it in boiling water, until the gum becomes ſoft enough to be preſſed from its impurities through a canvas ſtrainer [*L.*]

In the ſtraining of all the gums, care ſhould be taken, that the heat be neither too great, nor too long continued; otherwiſe a conſiderable portion of their more active volatile matter will be loſt: an inconvenience which cannot, by any care, be wholly avoided. Hence, as the faculty of Paris obſerves, the purer tears, unſtrained, are preferable, for internal uſe, to the ſtrained gums.

The

The laſt of the above methods, that of ſoftening the gum in a bladder by external heat, without the addition of water, appears to be the moſt eligible for all thoſe that will admit of being thus liquefied ſufficiently; both as exhalation is prevented during the liquefaction; and as the ſtrained gum returns in cooling to its original conſiſtence, without the further heat which is requiſite in the other method for evaporating the water. Opium is perhaps leſs injured by heat than the reſt of the gums, the virtues of this drug ſeeming to reſide more in its fixed than in the volatile parts: it is nevertheleſs expedient, that the ſmell of the opium, which affords an uſeful mark of its genuineneſs, be as much as poſſible preſerved; this, if the quantity of water was large, would be deſtroyed by the long evaporation which would then become neceſſary.

'It is by no means certain that the virtues of opium reſide in its fixed parts; and from ſome trials it appears, that its more immediately narcotic powers really reſide in a volatile principle.'

In the Edinburgh Diſpenſatory, opium, and the fouler kinds of aloes, were directed to be purified, by diſſolving them in a ſufficient quantity of water with a gentle heat, ſtraining the ſolutions, and evaporating them to the conſiſtence of honey. The other gums are not required to be purified.

It were to be wiſhed that the conſiſtence, to which the ſtrained ſolutions are to be reduced, was determined with more preciſion, particularly in regard to opium, that there might be as little uncertainty as poſſible in its doſe.

MILLEPEDARUM PRÆPARATIO.

Preparation of millepedes.
Lond. and Edinb.

The millepedes are to be incloſed in a thin canvas cloth, and ſuſpended over hot ſpirit of wine, in a cloſe veſſel, till they are killed by the ſteam, and rendered friable.

These are convenient ways of rendering millepedes pulverable, without endagering any loſs of ſuch virtues as they may be poſſeſſed of.

CHAP.

CHAP. II.

SUBSTANCES *extracted from* VEGETABLES *by Expreſſion.*

SECT. I.

JUICES.

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 cheeks, in the common ſcrew-preſs, ſo 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 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-creſſes, from the acid herbs, as ſorrel and wood-ſorrel, from the aperient 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 been often preſcribed as a ſtomachic, though it wants thoſe qualities by which mint itſelf and its other preparations operate in that intention.

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 preſeving 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 through 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 that 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 ſtopt with ſtraw, as the ſtalks 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 juices may be preſerved for a year or two; and ſome 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 inert. Juices of arum root, iris root, bryony root, and ſundry other vegetables, throw off in like manner their medicinal parts to the bottom.

SUCCI SCORBUTICI.

The ſcorbutic juices.

Lond.

Take the juice of
Garden ſcurvy-graſs, two pints;
Brooklime,
Water-creſſes, each one pint;
Sevile oranges, a pint and quarter.
Mix them together; let them ſtand till the feces have ſubſided; and then either pour the liquor off clear, or paſs it through a ſtrainer.

Edinb.

' Take of
Juice of garden ſcurvy-graſs,

Wa-

Water-creſſes, both expreſſed from the freſh herbs;
Seville oranges, of each two pounds;
Spirituous 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 brook-lime and the ſugar. The ſugar was certainly a very improper addition; for though it may preſerve dry vegetable matters (ſee CONSERVES), 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 ſpirituous 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.'

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 effects 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 above mentioned, 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.'

SECT. II.

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 betwixt 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, liquified 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 is ſufficient to be of any conſiderable 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 emolient 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 inconveniencies 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 Pharmacopœias, are,

OLEUM AMYGDALINUM.
Oil of almonds.
Lond. and Edinb.

OLEUM SEMINUM LINI.
Oil of linſeed.
Lond.

OLEUM SEMINUM SINAPI.
Oil of muſtard-ſeed.
Lond.

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 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 one another; 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.

The oils expreſſed from aromatic ſubſtances, differ from the foregoing, in retaining for the moſt part an admixture of the aromatic nature of the ſubject. Thus nutmegs and mace yield, upon expreſſion, an oil impregnated with the flavour of the ſpices; and an oil expreſſed from aniſeeds, has a great ſhare of the peculiar ſmell of the ſeeds. A purgative oil alſo is extracted in America from the purgative ſeeds of the *ricinus*. It does not appear that other qualities of vegetables are communicated to their expreſſed oils.

The rinds of the ſeveral varieties of oranges, lemons, and citrons, yield by a kind of expreſſion their eſſen-

eſſential oils almoſt pure, and nearly ſimilar to thoſe which are obtained from them by diſtillation. The eſſential oils, in which the fragrance and aromatic warmth of 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 is 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 plate, 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 open 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.

CHAP. III.

INFUSIONS *in different* MENSTRUA.

SECT. I.

INFUSIONS *and* DECOCTIONS *in* WATER.

WATER, 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 great 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 gummy 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: 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 alkalis, 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.

Article I. *Infuſions in Water.*

Infusum cardui.
Infuſion of carduus.

Take an ounce of the dried leaves of carduus benedictus, and a pint of common water. Let them ſteep for ſix hours, without heat; and then filtre the liquor through paper.

By this management only the finer parts of the carduus are extracted, and the infuſion proves an agreeable light bitter; it ſits eaſier on the ſtomach than any other medicine I know of the bitter kind; whereas, by long-continued maceration, or by the application of heat, the groſſer and more ungrateful parts are taken up, and the liquor becomes nauſeous, ſo as to provoke vomiting. I have often given the light infuſion with great benefit, in weakneſſes of the ſtomach, where the common bitters did not agree. It may be flavoured at pleaſure with aromatic materials. Inſtead of pure water, a mixture thereof with ſome grateful diſtilled ſpirituous water, as twelve ounces of common water, and four of the ſpirituous water of orange-peel, may be uſed for the menſtruum. The little quantity of ſpirit contained in this compound will not conſiderably vary the diſſolving power of the water.

Many other vegegetables may be advantageouſly treated in the ſame manner. From thoſe which are weak in virtue, rich infuſions may be obtained, by returning the liquor upon freſh quantities of the ſubject; the water loading itſelf more and more with the active parts. Theſe loaded infuſions are doubtleſs applicable to valuable purpoſes in medicine, as they contain in a ſmall

compaſs the finer, more ſubtile, and active principles of vegeta les, in a form readily miſcible with the fluids of the human body.

TINCTURA MENTHÆ.

Tincture of mint.

Edinb. +

Take half an ounce of the dry leaves of ſpearmint, and a pint of ſimple mint-water Steep them in a cloſe veſſel in a warm place for four hours, and then ſtrain out the tincture.

The diſtilled water of mint is impregnated with as much of the volatile parts of the herb as water can be made to retain by diſtillation. By infuſion, however, it ſtill takes up more, being equally effectual as a menſtruum with freſh water; hence the tincture proves very rich in the virtue of the mint. This is another uſeful method of obtaining ſtrong infuſions from vegetables, and it may be varied at diſcretion: the diſtilled water of one plant may be employed as a menſtruum for another.

INFUSUM CORTICIS PERUVIANI.

Infuſion of Peruvian bark.

Take an ounce of Peruvian bark reduced into fine powder, and twelve ounces of water. Macerate without heat for twenty-four hours, occaſionally ſhaking the veſſel; then pour off the clear liquor, and paſs it through a fine ſtrainer.

The extraction of the virtues of Peruvian bark, with aqueous liquors, has hitherto been attempted by ſtrong coction: But this drug, contrary to moſt other vegetables, has lately been obſerved to give out more to cold than to boiling water. In boiling, a reſinous matter containing the aſtringency of the bark is haſtily melted out by the heat, but not truly diſſolved by the water; and hence, in cooling, it begins to ſeparate, renders the liquor turbid, and at length ſettles to the bottom: whereas by maceration in cold water, the aſtringent and bitter parts are gradually extracted together, and the former as well as the latter are retained by the water in a ſtate of perfect ſolution. The infuſion appears to be one of the beſt preparations of the bark for weak ſtomachs, and may be given in doſes of two or three ounces in intermitting fevers, and in other diſorders where the corroborating virtues of bark are required. 'We ſuppoſe, that in many caſes this preparation may be taken all at once.'

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 two days, 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,

ation, 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 morbific humours.

I ſhall here inſert, from the firſt public recommender of this liquor (Biſhop Berkeley), 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 not "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 be beſt warm. "As to the quantity, in com-"mon chronical indiſpoſitions a "pint a day may ſuffice, taken on "an empty ſtomach, at two or "four times, to wit, night and "morning, and about two hours "after dinner and breakfaſt: more "may be taken by ſtronger ſto-"machs. But thoſe who labour "under great and inveterate mala-"dies, muſt drink a greater quan-"tity, at leaſt a quart every twenty-"four hours. All of this claſs muſt "have much patience and perſeve-"rance in the uſe of this, as well as "of all other medicines, which, "though ſure, muſt yet in the na-"ture of things be ſlow in the cure "of inveterate chronical diſorders. "In acute caſes, fevers of all kinds, "it muſt be drank in bed, warm, "and in great quantity (the fever "ſtill enabling the patient to drink) "perhaps 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 encomiums, tar-water ſeems to be faſt loſing its reputation. It is not probable 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 certain, 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.'

AQUA CALCIS SIMPLEX.

Simple lime-water.

Lond.

Take a pound of quicklime, and a gallon and a half of water. Pour the water gradually upon the lime, and when the ebullition is over, let the whole ſtand to ſettle; then filtre the liquor through paper.

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 ounces 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 through 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

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 quick-lime is far from yielding all its ſoluble parts to either proportion; the remainder giving a ſtrong impregnation to many freſh qnantities 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 broke 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 quick-lime 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 of theſe precipitations is alſo owing to the ſame cauſe. See article FIXED AIR.

'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 aërated 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 redundance 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 complaint; 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 is very doubtful.'

AQUA CALCIS COMPOSITA.

Compound lime-water.
Edinb.†

Take

Take of
Sassafras, root and bark, shaved, two ounces;
Nutmegs, well bruised, three drams;
Liquorice, sliced, one ounce;
Lime-water, fresh prepared, four pints.
Digest them together for two days in a very close vessel; and then strain the liquor.

AQUA CALCIS MINUS CPMPOSITA.

Lime-water less compounded. Lond.

Take of
Liquorice, one ounce;
Sassafras bark, half an ounce;
Simple lime-water, six pints.
Macerate without heat for two days, and then strain off the liquor.

AQUA CALCIS MAGIS COMPOSITA.

Lime-water more compounded. Lond.

Take of
Guaiacum wood, shaved, half a pound;
Liquorice, one ounce;
Sassafras bark, half an ounce;
Coriander seeds, three drams;
Simple lime-water, six pints.
Macerate without heat for two days, and then strain off the liliquor.

This last water has been used for some time in our hospitals, under the title of Aqua liberans. As the guaiacum wood difficultly communicates its virtues to the cold liquor, some have proposed boiling it in the lime-water before the other ingredients are added; but though this treatment more perfectly extracts the virtues of the wood, it very much injures those of the lime-water; greatest part of the matter it had taken up from the lime being separated and thrown off in the boiling. Nor indeed is there any occasion to have recourse to expedients of this kind; the quantity of the wood in the above prescription being so large, that the liquor receives a sufficient impregnation from it by maceration in the cold. If, however, on this or other occasions, it should be thought expedient to increase the dissolving power of lime-water by boiling, we may do it without any injury to the lime-water, by the method directed by the London college for obtaining a solution of sulphur in this menstruum, viz. by adding some quicklime in substance, which will continue to give a fresh impregnation to the water, after the lime at first dissolved in it has been separated by the boiling.

In all these compositions, the additional articles take off the ill flavour of the lime-water, render it more grateful both to the palate and stomach, and at the same time considerably promote its medicinal efficacy, especially when intended against cutaneous disorders. They may be taken in the same quantities as the simple lime-water, and continued for some time; the patient keeping moderately warm during their use: 'it is however found, that the lime is soon precipitated in its mild form, by a beginning fermentation in the infusion.'

'INFUSUM AMARUM.

Bitter infusion. Edinb.

'Take of
Gentian root, half an ounce;
Dried peel of Seville oranges, one dram;

Co-

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.

'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 (See DECOCTIONS). The propriety of ſubſtituting the orange-peel to the leſſer centaury tops, will appear from the remark of the committee of the London college on the infuſum amarum ſimplex of their Pharmacopœia; 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 meaſure 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 AMARUM SIMPLEX.

Simple bitter infuſion.
Lond.

Take of
Gentian root,
Freſh yellow rind of lemon peel carefully freed from the inner white part, each half an ounce.
Dry yellow rind of Seville orange peel, freed in like manner from the white, one dram and a half;
Boiling water, three quarters of a pint.

Macerate for an hour or two, then filtre the liquor through paper, or paſs it through a ſtrainer, without preſſure.

BOTH theſe liquors are very elegant and uſeful bitters, the peels communicating a fine flavour, which is the principal addition that the gentian ſtands in need of. The committee of the London college obſerve, that "moſt of the ingredients "which uſually enter the compoſi- "tion of bitter infuſions, being pre- "pared by them ſeparately, amongſt "all the ſtrong bitters, gentian "gave the moſt unexceptionable "colour, but it wants the aſſiſtance "of ſome ingredient to furniſh an "acceptable flavour; ſcarce any of "the bitters accompanied with fla- "vour, ſuch as zedoary, calamus "aromaticus, and the like, appear- "ed to be truly grateful, except "orange-peel and cardamom ſeeds: "but cardamom ſeeds are mucila- "ginous, and render the liquor "cloudy, and orange-peel is ac- "companied with a hot oil that re- "quires it to be but ſparingly uſed: "lemon-peel, in its outer rind, to "which all its flavour is confined, "is not a bitter, but ſupplies the "gentian moſt ſucceſsfully with

"what

" what is wanted; though the com-
" position, by a moderate addition
" of orange-peel, becomes yet more
" perfect."

'We would propose, that this infusion, like the former, should be prepared with cold water and a proper proportion of proof-spirit.'

INFUSUM AMARUM PURGANS.

Purging bitter infusion.
Lond.

Take of
Senna,
Yellow rind of lemon-peel, fresh, each three drams;
Gentian root,
Yellow rind of Seville orange-peel, dry;
Lesser cardamom seeds, freed from the husks, each half a dram;
Boiling water, five ounces by measure.

Macerate them together, and when cold, strain off the liquor.

INFUSUM AMARUM cum SENNA.

Bitter infusion with senna.
Edinb. +

Take of
Senna, one dram;
Gentian root,
Sweet fennel seeds, each half a dram;
Boiling water, a quarter of a pint.

Infuse them for four hours, and then strain the liquor.

This infusion may likewise be prepared with two, three, or more times the quantity of senna.

'Both these infusions might also be prepared with cold water and a proper proportion of spirit; but when that method is followed, it is proper that they should stand a little longer in infusion.'

Both these are useful purging bitters. The quantities here prescribed are intended for one dose: the first is the largest, and the other the smallest dose, that senna is usually given in.

INFUSUM SENNÆ COMMUNE.

Common infusion of senna.
Lond.

Take of
Senna, an ounce and a half;
Crystals of tartar, three drams;
Lesser cardamom seeds, freed from the husks, two drams;
Water, one pint.

Boil the crystals of tartar in the water until they are dissolved; then pour the water, whilst it continues boiling, upon the other ingredients; and when cold, strain off the liquor for use.

In our former pharmacopœia, 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 have rather a contrary effect. Experience, however, has sufficiently shown (as the committee assure us), " that
" this infusion, and the following
" one with lemon-juice, do not fail
" in their intention; and in a me-
" dicine, very nauseous to many, it
" is of principal consequence to pre-
" pare it so, that the lightest and
" least disgustful parts may be ex-
" tracted." 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

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 TAMARINDOCUM cum SENNA.

Infuſion of tamarinds with ſenna. Edinb.

Take of
Tamarinds, ſix drams;
Cryſtals of tartar,
Senna, of 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 theſe infuſions might be made with cold water, whereby the cardamom ſeeds of the firſt, and the coriander ſeeds of the other, 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, that 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 infuſion.

'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 increaſe than diminiſh 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 be better applied in the way we have propoſed.'

INFUSUM SENNÆ LIMONIATUM.

Infuſion of ſenna with lemon. Lond.

Take of
Senna, an ounce and a half;
Yellow rind of lemon-peel, freſh, one ounce;
Lemon juice, one ounce by meaſure;
Boiling water, one pint;
Macerate them together, and when cold, ſtrain off the infuſion.

THIS is a very pleaſant and ſufficiently efficacious purge: the committee obſerve, that it is the moſt agreeable form they have been able to contrive for the exhibition of ſenna

ſenna to ſuch as are more than ordinarily offended with its flavour. The doſe is from two ounces to four.

INFUSI SENNÆ UNCIÆ QUATUOR.

A four ounce infuſion of ſenna.
Edinb. +

Take of
Senna, three drams;
Ginger, one ſcruple;
Boiling water, four ounces.
Infuſe for four hours, and then ſtrain off the liquor.

This infuſion is tolerably grateful, the ill flavour of the ſenna being in good meaſure covered by the ginger; the quantity of which is here increaſed to double of that in former editions of the pharmacopœia. Formerly two drams of the greater water-figwort were added. The water-figwort has been diſcovered to be the Braſilian herb *iquetaia*, celebrated as a ſpecific corrector of the flavour of ſenna: that plant, however, has not been found from experience to anſwer this purpoſe ſo effectually as it was ſuppoſed to do before it was commonly known.

‘INFUSUM RHEI.

Infuſion of rhubarb.
Edinb.

Take of
Rhubarb, half an ounce;
Boiling water, eight ounces;
Spirituous cinnamon water, one ounce.
‘Macerate the rhubarb in a cloſe veſſel with the boiling water for a night; then having added the cinnamon water, ſtrain the liquor.

‘In this infuſion cold water might alſo perhaps be employed with advantage; we alſo object to the ſpirituous 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.

TINCTURA ROSARUM.

Tincture of roſes.
Lond.

Take of
Red roſe buds, freed from the white heels, half an ounce;
Strong ſpirit (called oil) of vitriol, one ſcruple;
Boiling water, two pints and a half;
Double refined ſugar, one ounce and a half.
Firſt mingle the ſpirit of vitriol with the water, in a glaſs or glazed earthen veſſel, and in this mixture macerate the roſes; when the liquor is grown cold, ſtrain it, and add the ſugar.

‘INFUSUM *vulgo* TINCTURA ROSARUM

‘*Infuſion* commonly called *tincture of roſes.*
Edinb.

‘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 oil of vitriol to be dropped upon the roſes before

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 is added to the water, it would weaken its power as a menſtruum; but, as the committee obſerve, whatever the acid ſpirit will hinder the water from extracting, it muſt precipitate if added afterwards; though, in this preparation, the oil of vitriol bears ſo ſmall a proportion to the water, that its effect, 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 tincture is of an elegant red colour, and makes a very grateful addition to juleps in hæmorrhagies, and in all caſes that require mild coolers and ſubaſtringents: it is ſometimes taken with boluſes or electaries of the bark, and likewiſe makes a good gargle; 'but its virtues are to be aſcribed chiefly, or perhaps ſolely, to the vitriolic acid.'

'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;
Spirituous cinnamon water, two ounces.
'Mix them.

'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 has been moſt uſually employed in fluxes proceeding from that cauſe. At the ſame time that 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. See PUTREFACTION.'

'MUCILAGO GUMMI ARABICI.

'*Mucilage of gum arabic. Edinb.*

'Take of

Gum arabic, beat into powder, and warm water, of each equal weights.

'Digeſt, and frequently ſtir them till the gum is diſſolved, then preſs the ſolution through lint.

'It is very neceſſary to paſs the mucilage through lint, in order to free it from pieces of wood and other impurities which always adhere to the gum; the lint may be placed in a funnel.

'MUCILAGE of gum arabic is very uſeful in many operations in pharmacy (ſee GUMS and ESSENTIAL OILS); it is alſo much uſed for properties peculiar to thoſe ſubſtances of its own claſs. and of all others ſeems to be the pureſt gum. For its medicinal properties, ſee GLUTINOUS, VEGETABLE, and ANIMAL SUBSTANCES.'

'MUCILAGO GUMMI TRAGACANTHÆ.

'*Mucilage of gum tragacanth. Edinb.*

'Take of

Gum tragacanth, beat, 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 lint.

'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.'

INFUSUM LINI.

Infuſion of linſeed.

Take of

Linſeed, whole, two ſpoonfuls;

Liquorice, ſliced, half an ounce;

Boiling water, four pints.

Let them ſtand in infuſion by the fire for ſome hours, and then ſtrain off the liquor.

AN ounce of coltsfoot leaves is ſometimes added to theſe ingredients; which addition procures this medicine the title of INFUSUM PECTORALE, *Pectoral infuſion*. Both infuſions are ſoft, emollient, mucilaginous liquors; and as ſuch they are directed in defluxions of thin acrid rheums, and eroſions of the veſſels. They are given to the quantity of a pint a-day.

INFUSUM ANTISCORBUTICUM.

Antiſcorbutic infuſion.

Take of

Buckbean leaves, two ounces;

Curaſſao oranges, half an ounce;

Compound horſe-radiſh water, four ounces;

Common water, four pints

Let the common water, boiling, be poured on the buckbean and orange, and ſuffered to ſtand in a cloſe veſſel for a night; then ſtrain out the liquor, and add to it the horſe-radiſh water.

'We object to the boiling water and the after addition of the compound horſe-radiſh water, for the reaſons we have already noticed.'

THIS infuſion is a very uſeful, and not inelegant antiſcorbutic: buck-

bean appears from experience to be a very efficacious herb in this intention; the aromatic material, here joined to it, alleviates its ill flavour, and at the ſame time promotes its virtue. A quarter of a pint of the liquor may be taken three or four times a-day.

Infusum cephalicum.
Cephalic infuſion.

Take of
- Wild valerian root, two ounces;
- Roſemary, or ſage, half an ounce;
- Aromatic water, four ounces;
- Common water, four pints.

Let the common water be poured, boiling, on the herb and root, and ſuffered to ſtand for a night in a cloſe veſſel; then ſtrain out the infuſion, and add to it the aromatic water.

'We alſo object to this method on the ſame grounds as we did to that of the preceding article.'

This infuſion is calculated againſt epileptic diſorders, and other like affections of the nervous ſyſtem. The doſe is a quarter of a pint, to be taken twice a day.

Infusum alcalinum.
Alkaline infuſion.

Take of
- Salt of tartar, half an ounce;
- Saffron, half a dram;
- Liquorice root, two ounces;
- Boiling water, three pints.

Let them ſtand together in a warm place for eight or ten hours, and then ſtrain out the liquor for uſe.

This infuſion is of ſervice in a lentor or viſcidity of the blood and juices, the conſequence of an obſtructed perſpiration, and oftentimes the origin of inflammatory diſtempers: it attenuates thick humours, and promotes the natural ſecretions. It is to be taken warm, in little quantities at a time, but frequently repeated.

'This, we preſume, is a very unſcientific and inert preparation; and the diſeaſes it is here alleged to remove, never perhaps exiſted in nature.'

Infusum diureticum.
Diuretic infuſion.

Take of
- Wormwood leaves, dried, half an ounce;
- Salt of tartar, two ſcruples;
- Compound juniper water, two ounces;
- Common water, twelve ounces.

Pour the common water, boiling, on the wormwood and ſalt of tartar; and when grown cold, ſtrain off the liquor, and mix with it the juniper water.

'We object to the boiling water, and the compound ſpirituous water, for the reaſons before advanced.'

This infuſion is much of the ſame nature with the foregoing. It is directed in the obſtructions of the viſcera, which frequently ſucceed a long continuance of bilious fevers, or frequent relapſes into them, and which generally end in a dropſy, jaundice, or irregular intermittent. The quantity here preſcribed, is to be taken every day, at three doſes, and a purgative occaſionally interpoſed. If intermittent fevers return after the cure of the other diſorders, they are then ſucceſsfully treated by the bark. 'Theſe obſervations are to be taken with ſome limitation. See Peruvianus Cortex.'

Preparations of this kind are likewiſe of conſiderable uſe in maniacal diſorders; in which, as Dr Mead obſerves, evacuations by the kidneys are of greater conſequence than is generally ſuppoſed; eſpecially if the mania is of the furious kind,

kind, and accompanied with febrile heat. Alkaline ſalts, given in large doſes, are here very effectual diuretics.

INFUSUM PARALYTICUM.
Paralytic infuſion.

Take of
Horſe-radiſh root, ſhaved,
Muſtard ſeed, bruiſed, each four ounces;
Boiling water, four pints.
Let them ſteep together, in a cloſe veſſel, for twenty-four hours.

THIS infuſion is ſtrongly impregnated with the pungency of the muſtard ſeed and horſe-radiſh, which by this ſimple proceſs give out the whole of their virtues. Though the medicine is deſigned chiefly (as its title expreſſes) for a ſtimulant in paralytic complaints, there are ſeveral other diſorders in which it may be employed to good advantage; in ſcorbutic caſes, in particular, it promiſes to be a remedy of great utility: it generally promotes the urinary diſcharge, and, if the patient is kept warm, perſpiration. It is taken ſometimes to half a pint twice a-day.

THEA ANTIPHTHISICA.
Antiphthiſical tea.

Take of
Avens root, two ounces;
Male ſpeedwell,
Ground-ivy, each one ounce and a half;
Liquorice, one ounce;
Sweet fennel ſeeds, three drams.

THESE ingredients are to be cut, bruiſed, and well mixed together; and half an ounce of the compoſition infuſed for a few minutes, in five or ſix tea-cups full of boiling water. In conſumptive caſes and diſorders of the breaſt, one cup of the infuſion, with a tea-ſpoonfull of honey, may be drank every hour or two. After the ſame manner, medicated teas may be prepared from other vegetable ſubſtances, as camomile flowers, linſeed, orange-peel, fumitory, &c.

INFUSUM CINNAMOMI.
Infuſion of cinnamon.

Take two ounces of powdered cinnamon, and two pints of boiling water. Infuſe them in a cloſe veſſel, in a moderate heat, for half an hour; and then filtre the liquor.

THIS infuſion is agreeably impregnated with the flavour and warmth of the ſpice; and may, on many occaſions, ſupply the place of the ſimple cinnamon water. 'It is probable that the preparation would be more advantageouſly made by cold water.'

ARTICLE II. *Decoctions.*

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 hot infuſions they are preſerved; '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 are 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 entirely 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, though from their not producing ſuch ſenſible operations on the living body, they cannot therefore be ſo clearly diſcovered as in ipecacuanha, tobacco, or aſarum. The experiments we allude to, were made by Mr Irving, a ſtudent in the college of Edinburgh; and they gained him the prize given by the Harveian Society of that place.

'It is for the above-mentioned reaſons that we have propoſed that many of the foregoing infuſions ſhould be made with cold water: it is, however, to be acknowledged, that it is not always abſolutely neceſſary, and in extemporaneous practice may be often very inconvenient; it was, however, our duty to point out the advantages to be expected from this more tedious, but much more complete and elegant method.'

DECOCTUM ALBUM.

The white decoction.

Lond.

Take of
- Calcined hartſhorn, prepared, two ounces;
- Gum arabic, two drams;
- Water, three pints.

Boil them till only two pints remain, and then ſtrain off the liquor.

Edinb. †

Take of
- Calcined hartſhorn, prepared, one ounce;
- Gum arabic, two drams;
- Common water, three pints;
- Cinnamon, bruiſed, one dram;
- White ſugar, two drams.

Boil the calcined hartſhorn and gum in the water till only two pints remain, adding the cinnamon towards the end: in this decoction, unſtrained, diſſolve the ſugar.

These decoctions are 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 calx; which is the in-

ingredient that 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 ſhould 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 calx; and that in the decoction, the earth is only diffuſed in ſubſtance through the water, as it would be by agitation. ‘See CORNU CERVI CALCINATIO.’

DECOCTUM ALBUM COMPOSITUM.

Compound white decoction.

Edinb. +

Take of

Comfrey roots,
Tormentil roots,
Calcined hartſhorn,
Chalk,
White ſugar, of each half an ounce;
Cinnamon bruiſed, one dram;
Common water, three pints.

Boil the roots in the common water, till ſuch time as the liquor, when ſtrained, will amount only to a quart, adding the cinnamon towards the end: ſtrain the decoction; add to it the calcined hartshorn, chalk, and ſugar; and mix them well together.

THIS is a very well contrived compoſition for the purpoſes of a mild, lightly incraſſating reſtringent. A quarter of a pint, more or leſs, may be taken occaſionally, according to the urgency of the ſymptoms. The calcined hartſhorn and chalk appear to be the leaſt uſeful of its ingredients. ‘The uſe of this preparation may, we preſume, be ſafely ſuperſeded by much more proper and effectual remedies.’

DECOCTUM JAPONICUM.

Japonic decoction.

Edinb. +

Take of

The confectio japonica (deſcribed hereafter among the electaries) one ounce;
Common water, a pint and a half;
Spirituous cinnamon water,
Syrup of meconium, each one ounce.

Boil the confection in the common water, till the liquor, after ſtraining, will amount to a pint; to which, while turbid, add the cinnamon water and the ſyrup.

THIS decoction is uſed both in draughts, and in glyſters, as an anodyne and reſtringent in fluxes. The quantity here preſcribed contains two grains and a half of opium, excluſive of the ſyrup: ‘but the ingredients in this decoction muſt infallibly be impaired in their virtues by boiling; and we have no need of ſuch a variety of preſcribed forms to adminiſter aſtringents by.’

DECOCTUM ad ICTERICOS.

Decoction for the jaundice.

Edinb. +

Take of

Celandine, roots and leaves,
Turmeric,
Madder, each one ounce;

Millepedes, two hundred;
Water, three pints.

Boil the celandine, turmeric, and madder, in the water, till only a quart of liquor remains after ſtraining: then, having preſſed out the juice of the millepedes, add this to the decoction when grown cold.

THE ingredients of which this decoction is compoſed, have been long held by many as ſpecifics for the cure of the diſeaſe expreſſed in its title. The medicine, though not a little unpleaſant, is well calculated to anſwer many uſeful purpoſes, if well managed and properly aſſiſted. A quarter of a pint may be taken twice a-day, or oftener: 'but this decoction ought certainly never to take the room of ſeveral much more effectual remedies.'

DECOCTUM LIGNORUM.

Decoction of the woods.
Edinb.

Take of
Guaiacum ſaw-duſt, three ounces;
Raiſins of the ſun, ſtoned, two ounces;
Saſſafras wood, ſhaved,
Liquorice, ſliced, of 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 is duly continued, 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 in 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 expoſes a larger ſurface to the action of the water, than the ſhavings directed in the former edition of the pharmacopœia.'

'DECOCTUM ALTHÆÆ.

Decoction of marſhmallows.
Edinb.

'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 *Decoctum ad Nephriticos* of their former pharmacopœia, 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 ſabulous matter. The 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.

DECOC-

DECOCTUM NITROSUM.

Nitrous decoction.

Edinb. †

Take of
Pure nitre, half an ounce;
White ſugar, two ounces;
Cochineal, one ſcruple;
Water, two pints and a half.

Boil to two pints, then ſuffer the whole to reſt for ſome time, and pour off the clear decoction.

This is an elegant way of diſguiſing nitre, and rendering it agreeable to the patient; both which intentions are fully anſwered by the cochineal and ſugar. There does not ſeem to be any occaſion for ſo long boiling; for the water will diſſolve a much larger quantity of the nitre and ſugar than is directed above, without any heat, and it eaſily extracts a fine colour from cochineal.

The virtues of nitre have been already mentioned in the preceding part. This or other ſimilar forms are the moſt commodious for the exhibition of it; for when given in a ſolid form, it often occaſions great uneaſineſs about the ſtomach. Two or three ounces of this decoction may be taken for a doſe.

DECOCTUM PECTORALE.

Pectoral decoction.

Lond.

Take of
Common barley,
Stoned raiſins,
Figs, each two ounces;
Liquorice, half an ounce;
Water, four pints.

Firſt boil the water with the barley, then add the raiſins, and laſtly (juſt before the end of the proceſs), the figs and liquorice; the boiling is to be continued ſo long, that the liquor, when ſtrained, may be no more than two pints.

Edinb. †

Take of
Stoned raiſins of the ſun,
Barley, each, one ounce;
Fat figs, in number four;
Florentine orris root,
Liquorice,
Coltsfoot flowers, each half an ounce;
Water, ſix pints.

Boil the water with the raiſins, barley, and figs, till only four pints remain; adding, towards the end, the other ingredients; then ſtrain out the liquor for uſe.

Both theſe decoctions are uſeful ſoft pectorals, and very agreeable to the palate, particularly the firſt. They are good auxiliaries in ſharp defluxions on the breaſt and lungs, and have ſometimes done ſervice by themſelves. They may be drank at pleaſure: 'it is, however, to be obſerved, that theſe ſweet and mucilaginous decoctions are often hurtful, by palling the appetite; and they ought never to take the place of more effectual remedies.'

DECOCTUM SERPENTARIÆ COMPOSITUM.

Compound decoction of ſnakeroot.

Edinb. †

Take of
Virginian ſnakeroot, ſix drams;
Edinburgh theriaca (deſcribed hereafter among the electaries) half an ounce;
Cochineal, one ſcruple;
Water, two pints.

Boil the water with the ſnakeroot to one half, adding the theriaca and cochineal towards the end: then ſtrain out the liquor for uſe.

This preparation is an uſeful ſudoriphic and alexipharmac, containing nearly all the virtue of the ſnake-

root, and great part of that of the theriaca. The quantity of theriaca here preſcribed, holds nearly three grains and a half of opium; ſo that about a fifth of a grain of opium, or ſomewhat more, goes to an ounce meaſure of the decoction. 'This is a very unſcientific preparation; and moſt of the ingredients are exceedingly improper ſubjects for decoction.'

AQUA HORDEATA.

Barley water.

Lond.

Take of

Pearl barley, two ounces;
Water, four 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 is waſted. 'The formula in the Edinburgh Pharmacopœia does not materially differ from the above.'

This liquor is to be drank freely, as a diluter, in fevers and other diſorders: hence it is of conſequence that it ſhould be prepared ſo as to be as elegant and agreeable as poſſible; for this reaſon it was inſerted in the pharmacopœia, and the ſeveral circumſtances which contribute to its elegancy ſet down; if any one of them is omitted, the beverage will be leſs grateful. However trivial medicines of this claſs may appear to be, they are of greater importance in the cure of acute diſeaſes than many more laborious preparations.

MUCILAGO SEMINUM CYDONIORUM.

Mucilage of quince ſeeds.

Lond.

Take of

Quince ſeeds, one dram;
Water, ſix ounces by meaſure.

Boil them, over a ſoft fire, till the water grows ſlimy, almoſt like the white of an egg; then paſs it through a linen cloth.

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, which ſome have ſuppoſed it ſimilar to; it has another difference, to its diſadvantage, being apt to grow mouldy in keeping.

GELATINA CORNU CERVI.

Jelly of hartſhorn.

Edinb. +

Take of

Hartſhorn ſhavings, half a pound;
Water, three quarts;
White ſugar, ſix ounces;
Mountain wine, a quarter of a pint;
Orange (or lemon) juice, one ounce.

Boil the hartſhorn with the water by a gentle heat in a glazed earthen veſſel, till two parts are waſted; ſtrain out the remaining liquor, add to it the other ingredients, and boil the whole over a gentle fire to the conſiſtence of a ſoft jelly.

JUS VIPERINUM.

Viper broth.

Lond.

Take a middle ſized viper, freed from the head, ſkin, and inteſtines, and two pints of water. Boil them to a pint and a half; then

then remove the veſſel from the fire; and when the liquor is grown cold, let the fat, which congeals upon the ſurface if the viper was freſh, be taken off. Into this broth, whilſt warm, put a pullet of a moderate ſize, drawn and freed from the ſkin and all the fat, but with the fleſh entire. Set the veſſel on the fire again, that the liquor may boil; then remove it from the fire, take out the chicken, and immediately chop its fleſh into little pieces; put theſe into the liquor again, ſet it over the fire, and as ſoon as it boils up pour out the broth, firſt carefully taking off the ſcum.

Here all the circumſtances ſubſervient to the perfection of the broth are carefully ſet down: and even plain chicken broth for the uſe of the ſick ought to be made in a ſimilar manner.

This ſeems to be one of the beſt preparations of the viper; all the benefit that can be expected from that animal being by this means obtained. It is a very nutritious and reſtorative food: Continued for a length of time, it has ſometimes done good ſervice in leprous and other obſtinate cutaneous diſeaſes. The dried fleſh of the vipers brought from abroad is not at all ſuperior to the freſh vipers of our own country. The wines and tincture of the animal probably have little virtue: the volatile ſalt, however ſtrongly recommended by ſome, does not appear to differ from that producible from every animal ſubſtance.

Decoctum antihecticum.
Antihectic decoction.

Take of
- Comfrey root,
- Eryngo root, each half an ounce;
- Conſerve of roſes, two ounces;
- Dulcified ſpirit of vitriol, forty drops;
- Water, three pints.

Boil the water with the roots and the conſerve, till one pint is waſted; then ſtrain off the remaining liquor, and add to it the dulcified ſpirit.

This decoction is uſually given in hectic caſes, where thin acrimonious humours abound, and in beginning conſumptions. The doſe is a quarter of a pint, to be taken two or three times a-day.

'But we preſume it would be hazardous to truſt to ſuch trifling remedies; and in this, as in almoſt every diſeaſe, it is moſt uſeful to adapt the remedies to the particular circumſtances of each caſe.'

Decoctum vulnerarium.
Vulnerary decoction.

Take of
- The herb ground-ivy,
- Plantane leaves,
- White ſugar, each half an ounce;
- Water, three pints.

Boil the herbs in the water, ſo long that there may be only two pints of ſtrained liquor; in which diſſolve the ſugar.

The herbs which give virtue to this decoction, have long been celebrated as ſpecifics for the cure of internal contuſions and ulcerations, of coughs and pulmonary phthiſes, proceeding either from bruiſes, or an eroſion of the viſcera from a ſpontaneous acrimony of the humours. Though the real virtues of theſe plants fall ſhort of the character which has been uſually given of them, yet experience has ſhown that they are ſuperior to numerous others which have been very ſtrongly recommended.

'We

'We presume, that no such specifics exist in nature.'

Decoctum antifebrile.
Antifebrile decoction.

Take of
Virginian snake-root, bruised,
Peruvian bark, in powder, each three drams;
Water, one pint.

Boil them to half a pint; and having strained off the liquor, mix with it, of
Spirituous cinnamon-water, an ounce and a half;
Syrup of clove julyflowers, two drams.

In the putrid malignant fever, arising from foul air in crowded hospitals and jails, this medicine has been given with remarkable success. In the low state of this dangerous disease, when the pulse, before quick, begins to sink, the stupor to increase, and petechiæ to appear; it promises to be a very useful remedy for supporting the *vis vitæ*, promoting a critical diaphoresis, and correcting the putrid humours. Four spoonfuls of the decoction are to be taken every four or six hours; and moderate quantities of wine or cordial boluses, with volatile salts interposed at proper intervals.

Decoctum febrifugum.
A febrifuge decoction.

Take of
Camomile flowers, dried, two ounces;
Salt of tartar, two drams;
Water, three pints.

Boil the water with the camomile-flowers, till one pint of the liquor is wasted; then strain out the remaining decoction, and dissolve in it the alkaline salt.

In 'what has been called' a thick viscid state of the blood and juices, and obstructions of the abdominal viscera, a quarter of a pint of this decoction, taken three or four times a-day, has sometimes, 'it is said,' removed intermittent fevers, after the Peruvian bark had been tried in vain. It is nearly similar to the alkaline and diuretic infusions described above.

Apozema aperiens.
Aperient apozem.

Take of
Rhubarb,
Madder, each three drams;
Salt of tartar, two drams;
Water, three pints.

Boil them together for an hour; and having strained out the decoction, add to it three ounces of syrup of ginger.

This promises to be a very powerful aperient and attenuating medicine, of great service in icterical and hydropic cases. The dose is three ounces, which may be repeated thrice a-day.

'We think it difficult to conceive how this preparation should be so peculiarly an aperient and attenuating medicine.'

Decoctum astringens.
Astringent decoction.

Take of
Tormentil root, one ounce;
Pomegranate peel,
Plantane leaves, each half an ounce;
Syrup of dry roses, one ounce;
Water, three pints.

Boil the water with the tormentil, granate peel, and plantane, till one pint is wasted, adding the cinnamon towards the end: then strain off the decoction, and mix it with syrup.

The title of this preparation sufficiently expresses its virtues. The dose,

doſe, in fluxes where the morbid matter has been evacuated, and a ſtringency is the only indication, is from one to four ounces, three or four times a-day.

Decoctum bardanæ.
Decoction of burdock.

Take of
- Burdock roots, two ounces;
- Vitriolated tartar, one dram;
- Water, three pints.

Boil the water with the roots, ſo long, that the liquor when ſtrained may amount only to a quart; to which add the vitriolated tartar.

This decoction is drank to the quantity of a pint a-day, as a mild aperient, diuretic, and ſweetener, in ſcorbutic and rheumatic complaints.

'We connot diſcover on what grounds it can be of any material ſervice, nor are its ſuppoſed properties clearly defined.'

Decoctum campechense.
Decoction of logwood.

Take of
- Shavings of logwood, three ounces;
- Cinnamon, two drams;
- Water, four pints.

Boil the water with the logwood till half the liquor is waſted, adding the cinnamon towards the end of the boiling; then ſtrain out the decoction for uſe.

This is an agreeable mild reſtringent in diarrhœas and other fluxes, where ſtronger aſtringents would be improper or unſafe. It is given in the hoſpitals in doſes of a quarter of a pint three or four times a-day. It generally tinges the ſtools red, which has occaſioned ſome to be alarmed, as if the colour proceeded from a diſcharge of blood: the patient therefore is to be cautioned againſt any ſurpriſe on that account.

Decoctum diureticum.
Diuretic decoction.

Take of 1.
- Parſley, or fennel roots, one ounce;
- Wild carrot ſeeds, three drams;
- Pellitory of the wall, half an ounce;
- Raiſins, two ounces;
- Nitre, one dram;
- Water, three pints.

Boil the water with the roots, ſeeds, pellitory, and raiſins, ſo long, that there may be only two pints of liquor after ſtraining; in which diſſolve the nitre.

Take of 2.
- Graſs-roots, two ounces;
- Sorrel, or wood-ſorrel leaves, one handful;
- Tamarinds, an ounce and a half;
- Nitre, two drams;
- Barley-water, three pints.

Boil the roots in the barley-water, till one pint of the liquor is waſted, adding towards the end the ſorrel, tamarinds, and nitre; then ſtrain out the apozem for uſe.

Take of 3.
- Marſhmallow roots, freſh, one pound;
- Fennel roots, half a pound;
- Nitre, half an ounce;
- Water, one gallon.

Boil the water with the roots, till one-fourth of the liquor is waſted; then ſtrain off the remaining decoction, and diſſolve in it the nitre.

These cooling aperient liquors are uſed like the nephritic decoction, already deſcribed, as common drink for promoting urine in nephritic diſeaſes. They may be ta-

taken with ſafety, and often with good effect, in inflammatory caſes, where the hot ſtimulating diuretics would be manifeſtly prejudicial.

Decoctum Peruvianum.
Peruvian decoction.

Take of
Peruvian bark, in powder, two ounces;
Water, three pints.
Boil them together, till one pint of the liquor is waſted, and then ſtrain off the remaining decoction for uſe.

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, though it may be totally melted out by the heat of boiling water, remain only partially ſuſpended in that menſtruum. See Peruvianus Cortex.

Decoctum senekæ.
Decoction of ſeneka.

Take of
Seneka, rattleſnake-root, one ounce;
Water, a pint and a half.
Boil to one pint, and ſtrain.

'This decoction is received into the preſent edition of the Edinburgh Pharmacopœia, and does not materially differ from the formula here given.'

The virtues of this decoction will be eaſily underſtood from thoſe of the root which it is prepared from. See page 233. 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 terræ Japonicæ.
Decoction of Japan earth.

Take of
Japan earth, two drams;
Spirituous cinnamon water,
Syrup of quinces, each two ounces;
Common water, one pint.
Boil the common water with the Japan earth, till about one-fourth of the liquor is waſted; then ſuffer the decoction to ſettle; and having poured off the clear part, add to it the ſpirituous water and the ſyrup.

This decoction is 'ſaid to be' 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.

FOTUS COMMUNIS.
The common fomentation.
Lond.

Take of
Abrotanum leaves, dried,
Sea wormwood tops, dried,
Camomile-flowers, dried, each one ounce;
Bay leaves, dried, half an ounce;
Water, ſix pints.
Lightly boil them, and ſtrain out the decoction for uſe.

It is left to the choice of the apothecary to take either the male or female *abrotanum*; that is, ſouthernwood, or lavender-cotton: which, though differing from one another in ſome reſpects, may be looked upon as ſimilar with regard to the purpoſes for which this compoſition

of

is intended: nor indeed can either of them give much assistance to camomile flowers and wormwood. The use of this decoction is expressed in its title: spirit of wine, which is commonly added in fomentations, is left to be directed by the prescriber, in such quantity as particular cases may require.

DECOCTUM COMMUNE pro CLYSTERE.

The common decoction for glysters.
Lond.

Take of
Mallow leaves, dried, one ounce;
Camomile-flowers, dried,
Sweet-fennel seeds, each half an ounce;
Water, one pint.
Boil them together, and strain out the decoction for use.

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 and fennel-seeds not put in till towards the end, a part of the virtue of these being soon lost by boiling.

DECOCTUM COMMUNE.

Common decoction.
Edinb.

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.

FOTUS ANODYNUS.

Anodyne fomentation.

Take of
Garden-poppy heads, one ounce;
Elder-flowers, half an ounce;
Water, three pints.
Boil them till one pint is wasted, and then strain out the liquor for use.

This fomentation is prescribed for tumefied and inflamed parts, to abate the inflammation and pain. Whether the opiate matter in the poppy-heads contributes much to this intention, may be questioned; as the effects of the composition may be attributed perhaps more to the warm fluid softening and relaxing the skin, than to the particular qualities of the matters which it is impregnated with.

FOTUS AROMATICUS.

Aromatic fomentation.

Take of
Cloves,
Mace, each one dram;
Red wine, one pint.
Boil them a little, and strain off the liquor.

This preparation is intended not only as a mere topical application for external complaints, but likewise for relieving the internal parts. The pains of the bowels which accompany dysenteries, diarrhœas, and flatulent colics, uneasiness at the stomach, and retchings to vomit, are frequently abated by fomenting the abdomen and region of the stomach with the warm liquor.

FOTUS ROBORANS.

Strengthening fomentation.

Take of
Oak bark, one ounce;

Gra-

Granate peel, half an ounce;
Alum, two drams;
Smiths forge-water (that is, water in which red-hot iron has been ſeveral times quenched) three pints.

Boil the water with the oak-bark and granate-peel to the conſumption of one-third; then ſtrain the remaining decoction, and diſſolve it in the alum.

This is a ſtrong aſtringent liquor, in which intention it is directed both as a fomentation for ſtrengthening relaxed parts, and as an injection in the fluor albus.

SECT. II.

WHEYS.

SERUM SOLUTIVUM.
Laxative whey.

Take of
Damaſk roſe-buds, freſh, one ounce;
Whey, two pints.

Steep them together for a night, and then ſtrain out the whey for uſe.

Whey, thus impregnated with the virtues of the damaſk roſe, operates very gently by ſtool; and for this purpoſe is held by ſome in great eſteem. Its action may be quickened, and its taſte rendered more agreeable, by the addition of a ſuitable proportion of cryſtals of tartar.

SERUM SINAPINUM.
Muſtard whey.

Take of
Muſtard-ſeed, bruiſed, three ſpoonfuls;
Cows milk, two pints.

Set the milk over the fire to boil, and add to it the muſtard-ſeed, that a curd may be formed, from which the whey is to be carefully ſeparated.

This is not an inelegant form for the exhibition of muſtard-ſeed; its pungency and medicinal virtues, depending thereon, being in great meaſure communicated to the whey.

SERUM ALUMINOSUM.
Alum whey.
Lond.

Take of
Cows milk, one pint;
Alum, in powder, two drams.

Boil them till the milk is curdled, and then carefully ſeparate the whey.

This medicine is a ſtrong, tho' not very grateful, aſtringent. It is given in immoderate uterine fluxes, and ſometimes in the diabetes; in which laſt intention it is recommended by Dr Mead. The doſe is a quarter of a pint three or four times a-day. It has been recommended alſo in intermittent fevers, the quantity above preſcribed to be taken before the approach of a fit, divided into different doſes: but in this diſorder, great caution is requiſite in the uſe of ſo ſtrong an aſtringent.

'This whey has been ſometimes uſed with ſucceſs in caſes of inflammation of the eye, depending on a laxity of the veſſels.'

SE-

SERUM SCORBUTICUM.
Scorbutic whey.
Lond.

Take of
Cows milk, one pint;
Scorbutic juices, a quarter of a pint.
Boil them till the milk is curdled, and then carefully ſeparate the whey.

THIS whey may be uſed as common drink in ſcorbutic caſes: the quantity above directed, at leaſt, ought to be taken every day, if any conſiderable effect is expected from it.

SECT. III.

VINEGARS.

VINEGAR extracts the virtues of ſeveral medicinal ſubſtances in tolerable perfection: but at the ſame time its acidity makes a notable alteration in them, or ſuperadds a virtue of a different kind; and hence it is more rarely employed in this intention than purely aqueous or ſpirituous menſtrua. Some drugs, however, vinegar, for particular purpoſes, excellently aſſiſts, or coincides with, as ſquills, garlick, 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.

ACETUM ROSACEUM.
Vinegar of roſes.
Edinb. +

Take of
Red roſes dried, one pound;
Strong vinegar, one gallon.
Expoſe them to the ſun in a cloſe veſſel for forty days, and then ſtrain off the liquor.

THIS is ſcarce otherwiſe made uſe of than 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.'

ACETUM SCILLITICUM.
Vinegar of ſquills.
Lond.

Take of
Dried ſquills, one pound;
Vinegar, ſix pints.
Macerate the ſquills in the vinegar with a gentle heat; then preſs out the liquor, and ſet it by till the feces have ſubſided: the vinegar being afterwards poured off, add to it about one-twelfth its quantity of proof-ſpirit, that it may keep the longer from growing mothery.

IT ſhould ſeem moſt convenient to add the ſpirit before the vinegar is decanted; for by this means the purification is accelerated and rendered more perfect, and the liquor prevented from growing foul a ſecond time, which it is apt to do upon the effuſion of the ſpirit, however

ever carefully it may have been depurated before. 'This advantage is procured by the following formula.'

Edinb.

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 good ſucceſs, in diſorders of the breaſt occaſioned by a load of thick viſcid phlegm, for promoting urine in hydropic caſes, &c. See the ſection of ACRIDS. 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 larger doſe, to evacuate them by vomit. 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 PROPHYLACTICUM.
Prophylactic vinegar.
Paris.

Take of
Freſh tops of common wormwood,
Roman wormwood,
Freſh tops of Roſemary,
Sage,
Mint,
Rue, each one ounce and a half:
Lavender flowers, dried, two ounces;
Garlic,
Calamus aromaticus,
Cinnamon,
Nutmegs, each two drams;
Strong vinegar, eight pints.

Digeſt them, by the heat of the ſun or a ſand-bath, in a matraſs cloſely ſtopped, for twelve days; then ſtrongly preſs out and ſtrain the liquor, and having afterwards filtered it, add half an ounce of camphor diſſolved in ſpirit of wine.

THIS compoſition is deſigned, as its title expreſſes, for an antipeſtilential. It is ſaid, that during the plague at Marſeilles, four perſons, by the uſe of this 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 is 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; 'but we can have recourſe to more effectual and elegant formulæ than this confuſed *farrago* of the four thieves.'

ACETUM THERIACALE.
Treacle vinegar.
Edinb. †

Take of
Edinburgh theriaca, deſcribed here-

hereafter among the electaries, one pound;
Strong vinegar, four pints.
Digeſt them together, in a very gentle heat, for three days; and then ſtrain out the vinegar for uſe.

THIS medicine has been greatly celebrated in acute and contagious diſeaſes, as a ſudorific and alexipharmac. Some have choſen to employ the vinegar as a vehicle, rather than as a menſtruum, for the theriaca; in either caſe, it is indiſputably, for ſundry purpoſes, an uſeful addition. To half an ounce by meaſure of the compoſition here preſcribed, there goes ſomewhat more than half a grain of opium; though it does not appear, that the medicine has all the effect which might be expected from that article. 'This is probably owing to the property of acids deſtroying the powers of opium, lately diſcovered to us by the ingenious Dr Percival: we cannot think that this preparation is either a ſafe or elegant remedy.'

ACETUM LITHARGYRITES.

Vinegar of litharge.
Edinb. +

Take of
Litharge, four ounces;
Strong vinegar, one pint.
Digeſt in a ſand-heat for three days, frequently ſhaking them; then filtre the liquor for uſe.

THIS liquor is of the ſame nature with ſolutions of *ſaccharum ſaturni*, of which hereafter. It is only uſed externally, as a coſmetic, againſt cutaneous eruptions, redneſs, inflammations, &c. But even here, it is not void of danger; there are examples of its continued uſe having occaſioned ſundry ill conſequences.

SECT. IV.

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 ſubtile 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.

NOTE.

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 [*L.*]

VINUM ALOETICUM ALKALINUM.

Alkaline aloetic wine.
Lond.

Take of
Any fixt alkaline ſalt, eight ounces;
Socotorine aloes,
Saffron,
Myrrh, each one ounce;
Sal ammoniac purified, ſix drams;
Mountain wine, two pints.
Macerate without heat for a week or longer; then filtre the wine through paper.

THIS is the ELIXIR PROPRIETATIS HELMONTII, with ſome little variations, which affect the compounder rather than the compoſition. It is obſervable, that the ſal ammoniac is decompounded in this proceſs after the ſame manner as in the diſtillation of the *ſpiritus ſalis ammoniaci* (ſee chap. viii. ſect. 2.) its acid being abſorbed by, and neutralizing a part of, the fixed alkali, and its volatile alkaline ſalt being ſet at liberty; ſo that the reſult is the ſame as if as much pure volatile ſalt was added as the ſal ammoniac is capable of affording, viz. near half an ounce, with about ſix drams of marine ſalt.

Helmont's elixir, in our preceding Pharmacopœia, is thus directed:

Take of
Red tartar,
Nitre, each twelve ounces;
White wine, two pints;
Aloes,
Saffron, each an ounce and a half.
Let the nitre and tartar be reduced into powder, and the mixture thrown by degrees into an hot crucible: when ſufficiently calcined, pour the matter into a glaſs mortar, and add the wine, ſo as to make a ley thereof; with which ley, a tincture is to be drawn from the aloe and ſaffron.

Take alſo of
Sal ammoniac, eight ounces;
Spring water, twenty ounces;
White wine, one pint;
Myrrh, an ounce and a half.
Diſſolve the ſal ammoniac in the water, ſtrain the ſolution, and evaporate it to dryneſs. One ounce of this dry ſalt is to be diſſolved in the wine; and with this ſolution draw a tincture from the myrrh.
Mix both tinctures together, in a cloſe veſſel, ſo as to make them into an elixir.

THE preparation made after this troubleſome method is not different from the foregoing. The nitre and tartar, when calcined together, form an alkaline ſalt ſimilar to thoſe which the ſhops are ſupplied with at a cheaper rate.

Helmont and others have entertained a very high opinion of this medicine, and looked upon it as "a "vivifying and preſerving balſam, "capable of continuing health, and "prolonging life to the utmoſt poſ-"ſible limits." The medicine is 'by ſome ſuppoſed to be' a very efficacious and uſeful one for many purpoſes: it 'is thought' to attenuate viſcid juices, and open obſtructions in the remoter parts, and promote evacuation by almoſt all the emunctories. In doſes of one, two, or three drams, it increaſes the urinary ſecretion; and if the patient

is kept moderately warm, generally proves diaphoretic or ſudorific; in larger doſes, it gently looſens the belly. 'It is certainly, however, a very unſcientific and uncertain preparation; and is almoſt wholly laid aſide in modern practice.'

VINUM AMARUM.

Bitter wine.

Lond.

Take of
- Gentian root,
- Yellow rind of lemon-peel, freſh, each one ounce;
- Long pepper, two drams;
- Mountain wine, two pints.

Macerate without heat, and ſtrain out the wine for uſe.

THIS is a very elegant bitter, which the addition of the long pepper renders conſiderably warmer than the watery infuſion. Gentian and lemon-peel, as we have already ſeen, make a bitter of a very grateful flavour: "the ſpice here added was "ſelected after the trial of many o-"ther materials."

'Edin.

'Take of
- Root of gentian, half an ounce;
- Peruvian bark, one ounce;
- Seville orange-peel, dried, two drams;
- Canella alba (Winter's bark), 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 three days, and ſtrain.

'THE virtues of this are the ſame with thoſe of the preceding preparation, with this difference, that both the menſtruum and the ingredients are of a much more powerful nature: this wine is intended to ſupply the place of the *Tinctura ad ſtomachicos.*'

VINUM ANTIMONIALE.

Antimonial wine.

Lond.

Take of
- Crocus of antimony, waſhed, one ounce;
- Mountain wine, a pint and a half.

Digeſt without heat, and filtre the wine through paper.

VINUM EMETICUM.

Emetic wine.

Edinb.

'Take of
- Glaſs of antimony, finely powdered, one ounce;
- Spaniſh white wine, fifteen ounces;

'Macerate three days, ſtirring them now and then, and then 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; yet 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, its 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 in this last intention, in some maniacal and apoplectic cases; and hence 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 e TARTARO ANTIMONIALI.

Wine of antimonial tartar.
Edinb.

'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 is not shaken before using it, the dose of our medicine is considerably 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. Each ounce of the wine contains two grains of the salt; and this dose is generally sufficient to produce full vomiting.'

VINUM CHALYBEATUM.

Steel wine.
Lond.

Take of
Iron filings, four ounces;
Cinnamon,
Mace, each half an ounce;
Rhenish wine, four pints.
Macerate without heat for a month, frequently shaking the vessel, and strain off the wine for use.

Edinb. †

Take of
Iron filings, three ounces;
Cochineal, half a dram;
Rhenish wine, two pints.
Digest them together for twenty days, frequently shaking the vessel, and then pass the wine through a filtre.

BOTH these wines are sufficiently elegant ones: Rhenish is an excellent menstruum for steel, and dissolves a considerable quantity of it; the cochineal, in the second, imparts a fine colour; and the spices, in the first, 'are supposed to' give the liquor an agreeable flavour, to make it sit easier on the stomach, and likewise to promote its medicinal efficacy: 'but the astringent matter of the cinnamon must undoubtedly separate a part of the iron in the form of an inky precipitate, no longer capable of being suspended in the liquor; it is, besides, reasonable to think, that the action of the astringent alters likewise the properties of the separated matter.' In the preceding edition of the Edinburgh Pharmacopœia, the digestion was ordered to be performed in a sand-

ſand-heat, continued for ten days. 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.

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 form, 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 other ſubſtances into that form.

VINUM CROCEUM.

Saffron wine.

Lond.

Take of

Saffron, one ounce;

Canary, one pint.

Macerate without heat, and ſtrain off the wine.

CANARY has been objected to by ſome, as an improper menſtruum for medicinal ſimples, ſince it contains a large quantity of unctuous matter, which impedes its diſſolving power; a pint of this ſort of wine left, upon evaporation, two ounces of a mellaginous ſubſtance, not unlike honey boiled hard. It is nevertheleſs, for ſaffron, a very well adapted menſtruum; as not only ſufficiently loading itſelf with its virtues, but likewiſe coinciding in the general intention of the medicine, that of a cordial. The preparation made with Canary is alſo better fitted for keeping, than when wines that have any tendency to acidity are employed; for tinctures of ſaffron drawn with theſe laſt, ſoon loſe their fine colour; whilſt thoſe made with the firſt, retain it for a much longer time. The doſe of this tincture is from one dram to three or more.

VINUM IPECACUANHÆ.

Wine of ipecacuanha.

Lond.

Take of

Ipecacuanha, two ounces;

Yellow rind of Seville orange-peel, dried, half an ounce;

Canary, two pints.

Macerate without heat, and ſtrain out the wine.

TINCTURA IPECACUANHÆ.

Tincture of ipecacuanha.

Edinb.

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 both to the Spaniſh white wine, and Canary 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 VIPERINUM.

Viper wine.
Lond.

Take of
Dry vipers, two ounces;
Mountain, three pints.

Macerate with a gentle heat for a week, and then ſtrain off the wine.

It has been diſputed, whether live or dry vipers are preferable for making this medicine: ſuch as are moderately and newly dried, are perhaps the moſt eligible, ſince by exſiccation they ſeem to loſe only their phlegmatic or aqueous parts. Whether they communicate to the wine, either when uſed freſh or dry, ſo much virtue as they are ſuppoſed to do, is greatly to be doubted. Some compoſitions under this name have been highly celebrated, as reſtoratives, in debilities and decays of conſtitution; but what virtues of this kind they poſſeſſed, were ſupplied chiefly from other ingredients.

VINUM MILLEPEDARUM.

Wine of millepedes.
Edinb.

Take of
Live millepedes, bruiſed, one ounce;
Rheniſh wine, eight ounces.

Infuſe them together for ſeven days, and afterwards preſs the liquor through a ſtrainer.

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 chronical 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. It is directed to be given from half an ounce to two ounces.

TINCTURA CEPHALICA.

Cephalic tincture.
Edinb. +

Take of
Wild valerian root, four ounces;
Virginian ſnakeroot, one ounce;
Roſemary tops, half an ounce;
French white wine, ſix pints.

Digeſt them together for three days, and then filtre the tincture.

This preparation promiſes to be a medicine of conſiderable utility as a cephalic, that is, in diſorders of the nervous ſyſtem; as in vertiginous, epileptic, and paralytic complaints. The compoſition is improved from former editions, by the rejection of ſome ingredients, of which the beſt were ſuperfluous; viz. caſſumunar,

ſumunar, white dittany roots, peony roots, miſletoe of the oak, and peacocks dung. Caſumunar is doubtleſs an article of importance; but much inferior, in the preſent intention, to the ingredients now retained.

Here it may be proper to obſerve, that though ſome of the diſtilled waters, to be treated of hereafter, receive many ſupernumerary ingredients, without any conſiderable injury to the produce, yet in medicines prepared by infuſion it is far otherwiſe. For there ingredients, which give nothing over, do little harm: but as all thoſe commonly employed in infuſions communicate ſomething to the menſtruum; ſo, if ſuperfluous ones are admitted, they load the liquor with an uſeleſs matter, and occupy in it the place that ought to be poſſeſſed by the more efficacious.

TINCTURA CEPHALICA PURGANS.

Purging cephalic tincture.
Edinb. †

This is made by adding to the foregoing, of
Senna, two ounces;
Black hellebore roots, one ounce;
French white wine, two pints.

PURGATIVES are often very neceſſary additions to medicines of the foregoing claſs. Thoſe here made choice of are well adapted to the purpoſe, and in ſuch quantity as to make the wine gently laxative in doſes of two ounces.

TINCTURA RHABARBARI VINOSA.

Vinous tincture of rhubarb.
Lond.

Take of
Rhubarb, two ounces;
Leſſer cardamom ſeeds, freed from the huſks, half an ounce;
Saffron, two drams;
Mountain wine, two pints.

Macerate without heat, and then ſtrain off the tincture.

‘VINUM RHEI.

Rhubarb wine.
Edinb.

‘Take of
Rhubarb, two ounces;
Canella alba, one dram;
Proof-ſpirit, two ounces;
Spaniſh white wine, fifteen ounces.

‘Macerate ſeven days, and ſtrain.

‘By aſſiſting the ſolvent power of the menſtruum, the proof-ſpirit in the above formula is a very uſeful 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.

TINCTURA SACRA.

Lond.

Take of
Socotorine aloes, eight ounces;
Canella alba, two ounces;
Mountain wine, ten pints.

Reduce the aloes and canella ſeparately into powder; then mix, and pour on them the wine; afterwards macerate without heat, for a week or longer, occaſionally ſhaking the veſſel; laſtly, ſtrain off the wine.

It will be convenient to mix with the powders ſome white ſand, well waſhed from dirt, to prevent the aloes from concreting, which it is apt to do upon being moiſtened.

Edinb.

℞ Take of
Socotorine aloes, one ounce;
Leſſer cardamom ſeeds,
Ginger, of each one dram;
Spaniſh white wine, two pounds.
℞ Digeſt ſeven days, ſtirring now and then, and 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.

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 hæmorroidal 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 continuance than that produced by the other common cathartics.

TINCTURA THEBAICA.

Thebaic tincture.

Lond.

Take of
Strained opium, two ounces;
Cinnamon,
Cloves, each one dram;
Mountain wine, one pint.
Macerate without heat for a week, and then filtre the tincture through paper.

THIS is the LIQUID LAUDANUM of SYDENHAM, with the exchange of Canary wine for mountain, and the omiſſion of an ounce of ſaffron. The aromatics in the form above are in ſo ſmall quantity, that the preſcriber can ſcarce expect any conſiderable effect from them, the proportion of each that goes to a grain of opium, amounting to no more than the ſixteenth part of a grain: even theſe minute proportions, however, are in good meaſure ſufficient to take off the ill odour of the opium, which ſeems to be all that is intended by them.

The principal advantages of exhibiting opium in this form are, that by being already diſſolved, it exerts itſelf the ſooner in the body; and that by ſome perſons, liquids are more commodiouſly taken than a bolus or pill. The common doſes of the tincture are, from ten drops to forty, fifty, or more, according to the exigencies of the caſe. It were to be wiſhed, that the doſe could be more exactly aſcertained, by weight or meaſure; as the drops may, according to different circumſtances, vary in quantity, though in number the ſame; and as an error therein may, in ſome caſes, be of miſchievous conſequence. Twenty drops contain, at a medium, about one grain of opium; or rather, ſo much as that quantity of wine will extract from one grain; for the liquor does not diſſolve the whole ſubſtance of the opium, nor is the ſolution equivalent, in its effect, to the full quantity of opium employed in it.

A liquid opiate, free from the inconveniencies here complained of, will

will be deſcribed under the head of SPIRITUOUS TINCTURES.

VINUM AROMATICUM.
Aromatic wine.

Take of
Cloves,
Ginger, each half an ounce;
Cinnamon,
Nutmegs, each one ounce;
Canary wine, ſix pints.

Beat the ſpices into a coarſe powder, and ſteep them in the wine for ſome days; then paſs the liquor through a ſtrainer.

THIS wine is a very high cordial, and greatly commended for warming the habit and ſtrengthening the nervous ſyſtem. It is ſo hot of the ſpices as to require being diluted for uſe, and to be taken only in ſmall quantities at a time. Mixed with a little lemon juice, and a large proportion of milk, it forms a pleaſant and uſeful whey in low fevers.

VINUM FEBRIFUGUM.
Febrifuge wine.
Paris.

Take of
Peruvian bark, in powder, two ounces;
Rough red wine, two pints.

Digeſt them together in a circulatory veſſel, with a moderate heat, for forty-eight hours, occaſionally ſhaking the veſſel: then ſuffer the whole to cool, and paſs the wine through a ſtrainer.

THIS is the preparation of bark made uſe of by Sir Robert Tabor or Talbot (an Engliſh gentleman reſiding in France) who was one of the firſt that retrieved the character of the medicine itſelf, at the time that ſome ill conſequences following its imprudent uſe had brought it into diſeſteem. He kept this preparation a ſecret, till Lewis XIV. purchaſed it for a conſiderable ſum, and communicated it to the public. It was not however the preparation, but a proper method of managing the medicine, upon which the ſucceſs of his practice depended. See p. 203, 204 It appears from experience, that this wine is leſs certain in the cure of agues than the bark given in ſubſtance; nor is it equal, in this intention, for general uſe, to the watery infuſion deſcribed in page 280; the wine preventing its being taken ſo freely as is in many caſes requiſite. It nevertheleſs has its uſes in thoſe intermittent fevers where a large quantity of the bark is not neceſſary; and is particularly ſerviceable in a laxity and debility of the ſtomach and inteſtines.

VINUM GUAIACINUM.
Guaiacum wine.

Take of
Guaiacum wood,
Yellow ſaunders, each two ounces;
Orange-peel, dried,
Leſſer cardamom ſeeds, each one ounce;
Mountain wine, one gallon.

Let them ſteep together for a week, and then ſtrain out the wine for uſe.

THIS is a moderately warm and corroborating wine. It is uſed in nervous weakneſſes, in decays of conſtitution from cold pituitous humours; and proves an uſeful preſervative againſt rheumatic and arthritic complaints. Two ounces, or an ordinary wine glaſs, may be taken two or three times a day, and continued for a month or two.

VINUM GUAIACINUM CUM HELLEBORO.
Guaiacum wine with hellebore.

Take of
Guaiacum wood,
Black hellebore root, each two ounces;

Leſſer cardamom ſeeds,
Orange-peel, dried, each one ounce;
Mountain wine, four pints.

Let theſe ingredients ſteep together for a week or longer, and then ſtrain out the wine for uſe.

From the warm ſtimulating, deobſtruent qualities of this wine, it may be uſed to good advantage in cold phlegmatic habits, where there is a diſpoſition to gouty, rheumatic, or hydropic diſorders. It is to be taken chiefly over night, in ſuch ſmall doſes as not to run off by ſtool.

SECT. V.

ALES.

Medicated ales are intended as diet drinks in chronical indiſpoſitions. There are two ways of impregnating malt-liquors with the virtues of medicinal ſubſtances; macerating the ſubject in the liquor after the fermentation is completely finiſhed; and fermenting it along with the liquor, or at leaſt adding it towards the end of the fermentation, that, by the reſolutive power of that proceſs, its texture may be opened, and its medicinal parts more fully extracted. Neumann obſerves, that the active powers of many vegetables are not only effectually extracted, but extended, as it were, by fermentation: that ſo much pounded nutmeg, as will lie on the point of a knife, gives a flavour to a large vat of fermenting ale; whereas, when the fermentation is finiſhed, the quantity of liquor to which it gives a like impregnation is comparatively inconſiderable.

Cerevisia amara.
Bitter ale.

Take of
Gentian root,
Lemon-peel, freſh, each four ounces;
Long pepper, ounce;
Ale, one gallon.

Let them ſteep together without heat.

This is an agreeable bitter ſtomachic ale, much ſuperior to the common purls, or any of the compoſitions of this kind to be met with in the extemporaneous recipe writers.

Cerevisia aperiens.
Aperient ale.

Take of
Muſtard-ſeed, unbruiſed, ten ounces;
Long birthwort root, ſix ounces;
Leſſer centaury tops, two ounces;
Savin tops, one ounce;
New ſmall-ale, ten gallons.

This is an uſeful aperient diet-drink in cachectic and chlorotic indiſpoſitions, and in all caſes where obſtructions begin to form in the viſcera. It is to be taken, to the quantity of half a pint at a time, twice a-day.

Cerevisia Butleri.
Dr Butler's ale.

Take of
Betony,
Sage,
Agrimony,
Garden ſcurvy-graſs,
Roman wormwood, each three handfuls;
Elecampane roots,
Horſe-radiſh roots, each four ounces;

New

New ale, four gallons.
The herbs and roots are to be put in a bag, and hung in the ale while it works.

THIS liquor has ſo far obtained among the common people, as to have been frequently made and ſold in public houſes. It is uſed in the ſpring for purifying the blood, and preventing ſcorbutic diſorders.

CEREVISIA CEPHALICA.
Cephalic ale.

Take of
Wild valerian-root, ten ounces;
Muſtard-ſeed, whole, ſix ounces;
Virginian ſnake-root, two ounces;
Roſemary, or ſage, three ounces;
New ſmall-ale, ten gallons.

THE ingredients of this compoſition are all of the warm and ſtimulating kind; and conſequently tend to invigorate the nervous ſyſtem, and promote the circulation of the fluids. In palſies, epilepſies, and vertigoes, ſome benefit may be expected from this liquor uſed as common drink.

CEREVISIA DIURETICA.
Diuretic ale.

Take of 1.
Muſtard-ſeed, whole,
Juniper-berries, each eight ounces;
Wild-carrot ſeeds, three ounces;
Common wormwood, two ounces;
New ſmall-ale, ten gallons.

Take of 2.
Broom-tops,
Muſtard-ſeed, each ſixteen ounces;
Flower-de-luce roots,
Sharp-pointed dock roots, each twelve ounces;
Winter's bark,
Elder bark,
Wild-carrot ſeeds,
Juniper-berries, each two pounds;
New ale, twelve gallons.

IN hydropic caſes, and corpulent ſcorbutic habits, theſe aperient and and diuretic liquors are very uſeful diet-drinks. Half a pint of either may be taken two or three times a-day.

CEREVISIA AD SCORBUTICOS.
Scorbutic ale.

Take of
Horſe-radiſh root, freſh, one pound;
Sharp-pointed dock roots, half a pound;
Canella alba, two ounces;
Buck-bean leaves, freſh, eight ounces; or dried, three ounces;
New ſmall-ale, ten gallons.

IN ſcorbutic diſorders, and impurities of the blood and juices, this liquor, uſed as common drink, generally does good ſervice. All the ingredients are very effectual for the intention, and well-ſuited to the form. If the ſharp-pointed dock roots were exchanged for thoſe of the great water dock, the compoſition would be ſtill more powerful.

'We are, however, diſpoſed to conſider the whole of the above preparations as remedies of very uncertain effect; and in diſeaſes of conſequence, they ought certainly never to take the room of more active medicines. When taken in their fermenting ſtate, the fixed air may probably have ſome effects as a tonic and antiſeptic; and this is the more probable, ſince wort is found to be ſuch an effectual remedy in ſcurvy.'

SECT.

SECT. VI.

Spirituous Tinctures.

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 univerſal; for the active parts of ſome vegetables, when extracted by rectified ſpirit, are not precipitated by water, being almoſt equally diſſoluble in both menſtrua.

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 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*.

General Rules for extracting Tinctures; from the Edinburgh Pharmacopœia. +

I.

The vegetable ſubſtances ought to be moderately and newly dried, unleſs they are expreſsly ordered otherwiſe. They ſhould likewiſe be cut and bruiſed, before the

the menſtrum is poured on them.

II.

If the digeſtion is performed in balneo, the whole ſucceſs depends upon a proper management of the fire: it ought to be all along gentle, unleſs the hard texture of the ſubject ſhould require it to be augmented; in which caſe the heat may be increaſed ſo as to make the menſtruum boil a little towards the end of the proceſs.

III.

Very large circulatory veſſels ought to be employed for this purpoſe, which ſhould be heated before they are luted together.

Circulatory veſſels are thoſe which are ſo contrived, and of ſuch a height, that the vapour, which ariſes during the digeſtion, may be cooled and condenſed in the upper part, and fall down again into the liquor below: by this means the diſſipation, both of the ſpirit and of the volatile parts of the ingredients, is prevented. They are generally compoſed of two long-necked matraſſes or boltheads; the mouth of one of which is to be inſerted into that of the other, and the juncture ſecured by a piece of wet bladder. The uſe of heating the veſſels is, to expel a part of the air; which otherwiſe rarifying in the proceſs, would endanger burſting them, or blowing off the uppermoſt matraſs. A ſingle matraſs with a long neck, or with a glaſs-pipe inſerted into its mouth, is more commodious than the double veſſel. See PHARMACEUTICAL APPARATUS.

IV.

The veſſel is to be frequently ſhaken during the digeſtion.

V.

All tinctures ſhould be ſuffered to ſettle before they are committed either to the filtre or ſtrainer.

VI.

In the tinctures (and diſtilled ſpirits likewiſe) deſigned for internal uſe, no other ſpirit (drawn from malt, melaſſes, or other fermented matter) is to be uſed, than that expreſsly preſcribed.

VII.

Reſins and reſinous gums yield tinctures more ſucceſsfully, if, after being ground into powder, they be mixed with ſome white ſand, well waſhed and dried, which will prevent their running into lumps by the heat. If the powders preſcribed are ſufficient for this purpoſe, ſuch an addition is unneceſſary.

TINCTURA AMARA
Bitter tincture.
Lond.

Take of
- Gentian-root, two ounces;
- Yellow rind of Seville orange-peel, dried, one ounce;
- Leſſer Cardamom-ſeeds, freed from the huſks, half an ounce;
- Proof-ſpirit, two pints.

Digeſt without heat, and ſtrain off the tincture.

‘TINCTURA AMARA, five ELIXIR STOMACHICUM.
Bitter tincture, or ſtomachic elixir.
Edinb.

‘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 four days, and ſtrain thro’ paper.’

THESE are very elegant ſpirituous bitters. As the preparations are deſigned for keeping, lemon-peel,

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 commodous ingredient, as in this ſpirituous menſtruum they are free from the inconvenience which they are attended with in other liquors, of rendering them untranſparent.

TINCTURA AROMATICA.

Aromatic tincture.

Lond.

Take of
- Cinnamon, ſix drams;
- Leſſer cardamom-ſeeds, freed from the huſks, three drams;
- Long-pepper,
- Ginger, each two drams;
- Proof-ſpirit, two pints.

Digeſt without heat, and then ſtrain off the tincture.

This is a very warm aromatic, too much ſo 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 like complaints. The ſtomachic tincture deſcribed 'formerly,' is ſimilar in intention to this, but contrived leſs hot of the ſpices, that it may be taken by itſelf.

Edinb.

'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 ſuſuperfluous or foreign to the intention; galangal, gentian, zedoary, bay-berries, and 'calamus aromaticus.' As now reformed, it is a ſufficiently elegant warm aromatic.

TINCTURA BALSAMICA.

Balſamic tincture.

Edinb. +

Take of
- Balſam of Copaiba, one ounce and a half;
- Balſam of Peru, half an ounce;
- Engliſh ſaffron, one dram;
- Rectified ſpirit of wine, one pint.

Digeſt theſe ingredients together, in a ſand-heat, for three days; and then paſs the tincture through a ſtrainer.

This tincture is uſually given in doſes of ten, twenty, or thirty drops, in the fluor albus, gleets, cachexies, ſome kinds of aſthmas, and nephritic complaints, for ſtrengthening the tone of the viſcera, and corroborating the nervous ſyſtem in general. Some caution is requiſite in the uſe of theſe reſinous warm medicines: in cold, languid, phlegmatic habits, they have, for the moſt part, good effects; but in bilious and plethoric conſtitutions, where there is any tendency to inflammation, or immoderate heat, they are manifeſtly prejudicial, and raiſe or continue febrile ſymptoms.

TINCTURA CANTHARIDUM.

Tincture of cantharides.

Lond.

Take of
- Cantharides, bruiſed, two drams;
- Cochineal, half a dram;
- Proof-ſpirit, a pint and a half.

Digeſt them together, and afterwards filtre the tincture through paper.

Edinb.

Edinb.

'Take of
Cantharides, one dram;
Proof-ſpirit, one pound;
'Digeſt four days, and ſtrain thro' 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 one another. 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, can 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 diuretic, as a detergent in ulcerations of the urinary paſſages, or as a ſpecific reſtringent of ſeminal gleets 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 any other more agreeable liquor, twice a-day; and increaſed by two or three drops at a time, according to the effect.

TINCTURA CARDAMOMI.

Tincture of cardamoms.

Lond.

Take of
Leſſer cardamom-ſeeds, huſked, half a pound;
Proof-ſpirit, two pints.
Digeſt without heat, and ſtrain the tincture.

Edinb.

'Take of
Leſſer cardamom ſeeds, ſix ounces;
Proof-ſpirit, two pounds and a half.
'Macerate 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.

TINCTURA CASTOREI.

Tincture of caſtor.

Lond.

Take of
Ruſſia caſtor, powdered, two ounces;
Proof ſpirit, two pints.
Digeſt for ten days without heat, and ſtrain off the tincture.

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 cold or warm digeſtion, are preferable for making this tincture. To determine this point, the following experiment has been brought. "Some fine Siberia caſtor having "been infuſed in good French "brandy, without heat, for twenty "days, the tincture proved very "weak:

" weak: On the ſame individual " 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 the trials which I have made 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.

TINTURA CASTOREI COMPOSITA.

Compound tincture of caſtor.

Edinb.

Take of
Ruſſia caſtor, one ounce;
Aſafetida, half an ounce;
Vinous ſpirit of ſal ammoniac, one pound.'
Digeſt for ſix days in a cloſe-ſtopped phial, frequently ſhaking the veſſel; and then ſtrain the tincture.

This compoſition is a medicine of real efficacy, particularly in hyſterical diſorders, and the ſeveral ſymptoms which accompany them. The ſpirit here uſed, is the ſecond of thoſe hereafter deſcribed under that title: it is an excellent menſtruum both for the caſtor and the aſafetida, and greatly adds to their virtues.

TINCTURA CINNAMOMI.

Tincture of cinnamon.

Lond.

Take of
Cinnamon, an ounce and a half;
Proof-ſpirit, a pint.
Digeſt without heat, and ſtrain off the tincture.

Edinb.

'Take of
Cinnamon, three ounces;
Proof ſpirit, two pounds and a half.
'Macerate 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 the ſpice.

TINCTURA CORTICIS PERUVIANI SIMPLEX.

Simple tincture of Peruvian bark.

Lond.

Take of
Peruvian bark, four ounces;
Proof-ſpirit, two pints.
Digeſt and ſtrain.

Edinb.

'Take of
Peruvian bark, four ounces;
Proof-ſpirit, two pounds and a half.
'Digeſt 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 diſpenſatory. Some have employed highly-rectified ſpirit of wine

wine as a menſtruum; which they have taken care fully to ſaturate, by digeſtion on a large quantity of the bark. Others have thought to aſſiſt the action of the ſpirit by the addition of a little fixed alkaline ſalt, 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 tea-ſpoonful to half an ounce or an ounce, according to the different purpoſes it is intended to anſwer. See PERUVIANUS CORTEX.

TINCTURA CORTICIS PERUVIANI VOLATILIS.

Volatile tincture of Peruvian bark. Lond.

Take of
- Peruvian bark, four ounces;
- Spirit of ſal ammoniac, two pints.

Digeſt without heat, in a veſſel cloſe ſtopped, and afterwards ſtrain the tincture.

THIS tincture is but lightly impregnated with the virtues of the bark; and is ſo acrimonious, that the largeſt doſe, which can with ſafety be given of it, can contain only a very ſmall quantity of the ſubject. The medicine nevertheleſs has its uſes, and may be ſerviceable in ſome caſes where the ſtronger are improper, as in difficulty of breathing, obſtructions and oppreſſions of the breaſt. Stronger tinctures of this kind may be obtained by means of dulcified ſpirit of ſal ammoniac, or the ſpirit prepared with quicklime. All the three may be employed where a large quantity of bark is not required, as at the cloſe of the cure of intermittents, in weakneſs of digeſtion, attended with a cold ſenſation at the ſtomach, and ſome fluxes, particularly thoſe from the uterus, where the circulation is languid, the fibres relaxed, and where there is a periodical return of ſlight feveriſh complaints. In theſe caſes I have often experienced ſalutary effects from a tincture in dulcified ſpirit of ſal ammoniac, given to the quantity of a tea-ſpoonful five or ſix times a-day, in any appropriated vehicles.

TINCTURA CORTICIS PERUVIANI COMP.

Compound tincture of Peruvian bark. Edinb. †

Take of
- Peruvian bark, in powder, three ounces;
- Virginian ſnakeroot,
- Gentian, each two drams;
- French brandy, two pints.

Let them ſteep together for three days, and afterwards filtre the tincture.

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 conjunction with 'ſtimulating' ſtomachics and deobſtruents, it more rarely fails of the due effect. Gentian and Virginian ſnakeroot are among the beſt additions for this purpoſe; to which it is 'thought by

ſome' neceſſary to join chalybeate medicines alſo.

TINCTURA CROCI.

Tincture of ſaffron.

Edinb.

'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 depoſite 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 in the intention of an alexipharmac; but the acid in that compound water ſoon deſtroys the colour of the tincture.

TINCTURA FŒTIDA.

Fetid tincture.

Lond.

Take of
Aſafetida, four ounces;
Rectified ſpirit of wine, two pints.
Digeſt, and ſtrain.

Edinb.

'Take of
Aſafetida, two ounces;
Vinous ſpirit of ſal ammoniac, one pound.
'Macerate ſix days in a cloſe-ſhut veſſel, and ſtrain.

'In the above formula, 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 aſafetida 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 aſafetida than a rectified one, but the tincture proves turbid; and therefore rectified ſpirit, which extracts a tranſparent one, is very juſtly preferred.

TINCTURA FULIGINIS.

Tincture of ſoot.

Lond.

Take of
Wood-ſoot, two ounces;
Aſafetida, one ounce;
Proof-ſpirit, two pints.
Digeſt, and ſtrain.

Edinb.

'Take of
Shining wood-ſoot, one ounce;
Aſafetida, 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 the ſame objection here as in the foregoing tincture; for when ſoot 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 theſe, only with a little myrrh, which is no very material addition to afafetida and ſoot. Theſe medicines are found ſerviceable, not only in hyſteric caſes, but likewiſe in other nervous diſorders. They may be given from a teaſpoonful to a common ſpoonful twice a-day.

'This medicine has by ſome been thought ſerviceable in obſtructions of the menſes.'

TINC-

TINCTURA GUAIACINA VOLATILIS.

Volatile tincture of guaiacum.
Lond.

Take of
Gum guaiacum, four ounces;
Volatile aromatic ſpirit, a pint and a half.
Digeſt without heat in a veſſel cloſe ſtopped; and afterwards let the tincture be paſſed through a ſtrainer.

ELIXIR GUAIACINUM VOLATILE.

Volatile elixir of guaiac.
Edinb.

'Take of
Gum guaiacum, four ounces;
Balſam of Peru, two drams;
Diſtilled oil of ſaſſafras, half a dram;
Vinous ſpirit of ſal ammoniac, a pound and a half.
Macerate ſix days in a cloſe veſſel, and ſtrain.'

'In the above formula, 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 ſaſſafras, are uſeful additions by increaſing the permanence of its operation as a general ſtimulant, or more particularly as a diuretic.'

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 even table' ſpoonful, taken every morning and evening in any convenient vehicle, has proved of ſingular ſervice.

TINCTURA JALAPII.

Tincture of jalap.
Lond.

Take of
Jalap-root, eight ounces;
Proof-ſpirit, two pints.
After proper digeſtion, ſtrain off the tincture.

This tincture is an uſeful and mild purgative, the menſtruum, here employed, taking up ſo much of the gummy parts, as corrects the griping quality which the reſin is attended with. It may be taken by itſelf from a dram to half an ounce; or mixed in ſmaller quantity with cathartic infuſions, or the like.

TINCTURA JALAPPÆ.

Tincture of jalap.
Edinb.

'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 further 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 tinc-

ture 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 JALAPPÆ COMPOSITA.

Compound tincture of jalap.
Edinb. +

Take of
- Jalap, ſix drams;
- Black-hellebore roots, three drams;
- Juniper-berries,
- Guaiacum ſhavings, each half an ounce;
- French brandy, a pint and a half.

Digeſt for three days, and afterwards ſtrain the tincture.

This tincture requires to be taken in larger quantity than either of the foregoing, if intended to act fully as a cathartic. It may, in ſome caſes, be employed to advantage in ſmall doſes, as an alterant. The quantity of the purgative materials, that goes to an ounce of the tincture, is fifteen grains of jalap, and ſeven and a half of the black hellebore root.

TINCTURA JAPONICA.

Japonic tincture.
Lond. Edinb.

Take of
- Japan earth, three ounces;
- Cinnamon, two ounces;
- Proof-ſpirit, two pints, ('two pounds and a half *Ed.*')

After a proper digeſtion, ('eight days *Ed.*') 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 Japan earth, not only as it warms the ſtomach, &c. but likewiſe as it improves the roughneſs and aſtringency of the other.

This tincture is of good ſervice in all kinds of defluxions, catarrhs, looſeneſſes, uterine fluors, and other like 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 LACCÆ.

Tincture of gum-lac.
Edinb. +

Take of
- Gum-lac, powdered, an ounce;
- Myrrh, powdered, half an ounce;
- Spirit of ſcurvy-graſs, a pint and a half.

Di-

Digeſt in a ſand-heat for ſix days; after which, ſtrain off the tincture for uſe.

This tincture is principally employed for ſtrengthening the gums, and in bleedings and ſcorbutic exulcerations of them: it may be fitted for uſe in theſe intentions, by mixing it with honey of roſes, or the like. Some recommend it internally againſt ſcorbutic complaints, and as a corroborant in gleets, female weakneſſes, &c Its warmth, pungency, and manifeſtly aſtringent bitteriſh taſte, point out its virtues in theſe caſes to be conſiderable, though common practice among us has not yet received it.

TINCTURA FLORUM MARTIALIUM.

Tincture of the martial flowers.
Lond.

Take of
Martial flowers, four ounces;
Proof-ſpirit, one pint.
Digeſt and ſtrain.

TINCTURA MARTIS.

Tincture of iron.
Edinb. +

Take of
Iron-filings, three ounces;
Dulcified ſpirit of ſalt, two pounds.
Digeſt them together in a gentle heat of ſand, and then filtre the tincture.

TINCTURA MARTIS in SPIRITU SALIS.

Tincture of iron in ſpirit of ſalt.
Lond.

Take of
Iron-filings, half a pound;
Glauber's ſpirit of ſalt, three pounds;
Rectified ſpirit of wine, three pints.
Digeſt the iron-filings in the ſpirit of ſalt, without heat, as long as the ſpirit acts upon the iron: after the feces have ſubſided, evaporate the liquour to one pound, and add thereto the vinous ſpirit.

TINCTURA MARTIS.

Tincture of iron.
Edinb.

'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.'

'For the preference given to the ſcales of Iron, ſee that preparation. The ſtrength of the muriatic acid is ſo variable, that the quantity is left to the judgment of the operator. If the acid is ſuperabundant, the ſolution is of a green colour; if it is 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 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 ſometimes 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 is 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 three tinctures, here directed, differ from one another only in ſtrength, the acid being the ſame in all: the firſt is the weakeſt, 'from the acid being ſtill, perhaps, combined in the flowers, with a ſmall quantity of the volatile alkali; the other two are ſtronger.' In our former Pharmacopœia, 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 uſe.

All 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 adviſeable to extend the doſe ſo far as the laſt of theſe quantities, eſpecially in regard to the tincture in ſpirit of ſalt, which is exceeding ſtrong of the iron.

TINCTURA MELAMPODII.

Tincture of melampodium, or black hellebore.

Lond. and Edinb.

Take of

Black-hellebore roots, four ounces;

Cochineal, two ſcruples ('half a dram *Ed.*');

Proof-ſpirit, two pints ('two pounds and a half *Ed.*').

Digeſt them together ('eight days *Ed.*'), 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 ſeldom fails of exciting the menſtrual evacuations, and removing the ill conſequences of their ſuppreſſion. So great 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.

TINTURA MYRRHÆ.

Tincture of Myrrh.

Lond. and Edinb.

Take of

Myrrh, three ounces;

Proof-ſpirit, two pints ('two pounds and a half *Ed.*').

After due digeſtion ('ten days *Ed.*'), 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

out

out 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.

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 indiſpoſition 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 MYRRHÆ et ALOES.

Tincture of myrrh and aloes.
Edinb. +

Take of
Myrrh, in powder, one ounce and a half;
Hepatic aloes, in powder, one ounce;
Rectified ſpirit of wine, two pints.
Digeſt in a ſand-heat for ſix days, and then let the tincture be ſtrained off.

This tincture is employed only in chirurgical dreſſings, for cleanſing foul ulcers, reſtraining the progreſs of gangrenes, &c. in which intention the aloes is an uſeful addition to the myrrh. The hepatic aloes is reckoned more effectual for theſe purpoſes than the finer Socotorine.

TINCTURA THEBAICA, Vulgo LAUDANUM LIQUIDUM.

Tincture of opium, commonly called liquid laudanum.
Edinb.

'Take of
Opium, two ounces;
Spirituous cinnamon-water, one pound and a half.
Digeſt four days, and ſtrain off the tincture.'

This is a very elegant liquid opiate, the menſtruum diſſolving nearly the whole ſubſtance of the opium, and effectually covering its ill flavour. The proportion of menſtruum is ſomewhat larger than in the vinous tincture formerly deſcribed: one grain of opium goes to about twenty drops of that tincture, and twenty-five of this; nevertheleſs, as there appears to be more of the opium diſſolved here than in the other, this tincture may poſſibly be the ſtrongeſt of the two. 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 is diſſolved, and then filtre the ſolution through paper.

This preparation I apprehend to be free from all the inconveniencies 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 nor 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, as I have been informed, to near one-fourth of the quantity of opium at firſt diſſolved; it floats on the ſurface of the vinous tincture, and in the ſpirituous 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 in 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 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 in 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.

'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.'

TINCTURA RHABARBARI SPIRITUOSA.

Spirituous tincture of rhubarb.
Lond.

Take of
Rhubarb, two ounces;
Leſſer cardamom ſeeds, huſked, half an ounce;
Saffron, two drams;
Proof-ſpirit, two pints.

Digeſt without heat, and ſtrain off the tincture for uſe.

TINCTURA RHEI.

Tincture of rhubarb.
Edinb.

'Take of
Rhubarb, three ounces;
Leſſer cardamom ſeeds, half an ounce;
Proof-ſpirit, two pounds and a half.

Digeſt ſeven days, and ſtrain.'

TINCTURA RHEI AMARA.

Bitter tincture of rhubarb.
Edinb.

'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.'

TINC-

TINCTURA RHEI DULCIS.

Sweet tincture of rhubarb.
Edinb.

'It is made by adding to the ſtrained tincture of rhubarb (viz. two pounds and a half of it) four ounces of ſugar-candy.'

The laſt of theſe preparations is improved from the former editions. Two ounces of liquorice and one of raiſins are ſupplied by an increaſe of the ſugar.

All the foregoing tinctures of rhubarb are deſigned as ſtomachics and corroborants, as well as purgatives: ſpirituous liquors excellently extract thoſe parts of the rhubarb in which the two firſt qualities reſide, and the additional ingredients conſiderably promote their efficacy. In weakneſs of the ſtomach, indigeſtion, laxity of the inteſtines, diarrhœas, colicky and other like complaints, theſe medicines are frequently of good ſervice: the ſecond is alſo, in many caſes, an uſeful addition to the Peruvian bark, in the cure of intermittents, particularly in cachectic habits, where the viſcera are obſtructed; in theſe intentions, a ſpoonful or two may be taken for a doſe, and occaſionally repeated.

TINCTURA SATURNINA.

Saturnine tincture.
Lond.

Take of
Sugar of lead,
Green vitriol, each two ounces;
Rectified ſpirit of wine, two pints.
Reduce the ſalts ſeparately into a powder; then add the ſpirit, and digeſt them together without heat; afterwards filtre the tincture thro' paper.

TINCTURA ANTIPHTHISICA.

Antiphthiſical tincture.
Edinb.

Take of
Sugar of lead, an ounce and a half;
Vitriol of iron, an 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 are attempted to be pulverized together, they will grow ſoft and almoſt liquid; and if heat is made uſe of, ſcarce any tincture will be obtained.

Theſe tinctures are ſometimes given from twenty to thirty drops, for reſtraining immoderate ſecretions, particularly the colliquative ſweats attending hectic fevers and phthiſical diſorders, whence the name *antiphthiſical* tincture. They are undoubtedly medicines of great efficacy in theſe caſes, but too dangerous ones to be raſhly ventured on. Some have ſuppoſed, that they do not contain any of the ſugar of lead: but experiments, made for that purpoſe, have ſhown that they do; and therefore the London College has very judiciouſly changed the title of their tincture into one expreſſing its being a preparation of lead.

'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 is capable of diſcharging the acetous acid, yet the vitriolic makes not only in its entire ſtate a leſs perfect union with lead than the acetous acid, but the vitri-

olic

olic acid is now alſo combined with iron, for which it has a greater attraction, 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 vitriolic 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.'

TINCTURA SENNÆ.

Tincture of ſenna.

Lond.

Take of
- Raiſins, ſtoned, ſixteen ounces;
- Senna, one pound;
- Caraway ſeeds, one ounce and a half;
- Leſſer cardamoms, huſked, half an ounce;
- Proof-ſpirit, one gallon.

Digeſt without heat, and then ſtrain the tincture.

TINCTURA SENNÆ COMPOSITA, vulgo ELIXIR SALUTIS.

Compound tincture of ſenna, commonly called *Elixir of health.*

Edinb.

'Take of
- Senna leaves, two ounces;
- Jalap root, one ounce;
- Coriander ſeeds, half an ounce;
- Proof-ſpirit, two pounds and a half.

Digeſt 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 its 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.

Tincture of ſnakeroot.

Lond.

Take of
- Virginian ſnakeroot, three ounces;
- Proof-ſpirit, two pints.

Digeſt without heat, and ſtrain off the tincture.

The tincture of ſnakeroot was in a former pharmacopœia directed 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.

Edinb.

'Take of
- Virginian ſnakeroot, two ounces;
- Cochineal, one dram;
- Proof-ſpirit, two pounds and a half.

Digeſt

Digeſt in a gentle heat for four days, and then ſtrain the tincture.'

TINCTURA STOMACHICA.

Stomachic tincture.

Lond.

Take of
Raiſins, ſtoned, four ounces;
Cinnamon, half an ounce;
Caraway ſeeds,
Leſſer cardamoms huſked,
Cochineal, each two drams;
Proof-ſpirit, two pints.
Digeſt without heat, and ſtrain off the tincture.

THIS is a moderately warm ſtomachic tincture, much more pleaſant than the USQUEBAUGH of our former pharmacopœias. It may be taken, without any vehicle, to half an ounce or an ounce, though oftener uſed in mixtures. 'It might very well be ſpared.'

TINCTURA STYPTICA.

Styptic tincture.

Lond.

Take of
Green vitriol calcined, one dram;
French brandy (ſuch as has acquired a yellowiſh tinge from the caſk) two pints.
Mix them together, that the ſpirit may grow black; then paſs it through a ſtrainer.

SOME have ſuppoſed, that no other ſpirit than French brandy would ſucceed in ſtriking the black colour, for which this tincture is valued. But any ſpirit that has gained an impregnation from the oak caſks, which theſe kinds of liquors are generally kept in, or from other vegetable aſtringents, will equally exhibit this phenomenon; and French brandy will not do it without ſuch aſſiſtance. The title of this tincture expreſſes its medicinal intention. The celebrated STYPTIC OF HELVETIUS (which is ſaid to be the ſame with that of EATON) differs from it no otherwiſe, than in being more operoſe in compoſition. They are recommended both for internal uſe, and for reſtraining external hæmorrhages: their virtues do not ſeem to depend ſo much on the iron, as on the menſtruum, the quantity of metal diſſolved being extremely ſmall. In keeping, the iron is apt to ſeparate, and the liquor to loſe its black colour.

TINTURA SUCCINI.

Tincture of amber.

Take of
Yellow amber, two ounces;
Rectified ſpirit of wine, twenty ounces.
Digeſt in a ſand-heat for eight days, and afterwards filtre the tincture.

THIS is a very elegant preparation of amber, of a grateful balſamic taſte, and fragrant ſmell. Boerhaave, Hoffman, and others, ſtrongly recommend it in diſorders proceeding from a lax ſtate of the ſolids and debility of the nervous ſyſtem; in ſuppreſſions of the menſtrual diſcharges, the fluor albus, ſeminal gleets, rheumatic complaints, and ſome kinds of epilepſies: it is directed to be taken from ten to an hundred drops, in Canary or other rich wine.

The medicine is doubtleſs an efficacious one; though it would be much more ſo, if a part of the ſpirit was drawn off, ſo as to leave what it had extracted from the amber concentrated into the conſiſtence of a balſam: a tea ſpoonful of this may be taken three or four times a-day, with ſugar, or in any convenient vehicle. The ſpirit diſtilled off, which is richly impregnated with the amber ſmell, may be reſerved for extracting a freſh tincture from another parcel of amber. A tincture of amber,

amber, made in this ſpirit, poſſeſſes the whole virtue of the concrete, and appears to be one of the moſt valuable preparations of it.

Fixt alkaline ſalts have been commonly employed in the preparation of this tincture, but with no good effect; for they not only do not promote the diſſolution of the amber, but likewiſe injure the medical virtue of the preparation. Scarcely any of the ſubſtances that have been made trial of, give any conſiderable aſſiſtance to ſpirit of wine in diſſolving this concrete, except the vitriolic acid; which, when intimately combined with it into a dulcified ſpirit, forms a menſtruum ſaid to be much more efficacious for amber than the ſimple vinous ſpirit. The College of Edinburgh have accordingly, in the late reformation of their Pharmacopœia †, made choice of this menſtruum, and directed the tincture as follows.

Take of
Yellow amber, two ounces;
Dulcified ſpirit of vitriol, one pint.
Digeſt them in a ſand-bath, with a gentle heat, for four days, and then filtre the tincture.

TINCTURA SUDORIFICA.
Sudorific tincture.
Edinb. †

Take of
Virginian ſnakeroot, ſix drams;
Cochineal,
Engliſh ſaffron, each two drams;
Opium, one ſcruple;
Spirit of Mindererus, one pint.
Digeſt them together in a gentle heat for three days, and then paſs the tincture through a ſtrainer.

This compoſition is an efficacious ſudorific; the ingredients being of the moſt powerful kind, and the menſtruum not only extracting thoſe parts of them in which their virtues conſiſt, but co-operating ſtrongly in the ſame intention. Ruſſia caſtor, a ſupernumerary ingredient in former editions, is now omitted: and cochineal, which from the quantity of it formerly employed ſeemed to have been deſigned with a medicinal view, is now reduced to one half; and nothing more is expected from it, than to furniſh an agreeable colour to the tincture. Half an ounce of the tincture, by meaſure, contains five-eighths of a grain of opium.

TINCTURA SULPHURIS.
Tincture of ſulphur.

Take of
Rectified ſpirit of wine, one pint.
Hepar ſulphuris (that is, a mixture of ſulphur and fixt alkaline ſalt melted together) four ounces.
Grind the hepar into powder whilſt hot from the fire, add to it the ſpirit, and digeſt in a moderate heat for twenty-four hours; then pour off the tincture from the feces.

The digeſtion may be commodiouſly performed in a glaſs receiver; put the ſpirit firſt into the veſſel, and pour the hot powder upon it: then ſhake them together; and, to prevent the exhalation of any part of the ſpirit during the digeſtion, inſert a glaſs tube into the mouth of the receiver.

This tincture is of a rich gold colour, a hot aromatic taſte, and a particular, not ungrateful ſmell. Its virtues are thoſe of a warm attenuating, aperient, and anti-acid medicine. Some have recommended it as a laſt reſource in phthiſes and ulcerations of the lungs; but in theſe caſes it promiſes little ſervice, and has been ſometimes found prejudicial. The doſe is from ten to ſixty drops: it is moſt commodiouſly taken in Canary or other rich wines.

TINC-

TINCTURA ANTIMONII.

Tincture of antimony.

Lond.

Take of
Any fixt alkaline ſalt, one pound;
Antimony, half a pound;
Rectified ſpirit of wine, two pints.

Reduce the antimony into powder, mix it with the ſalt, and melt them together, with a ſtrong fire, for an hour. Then pour out the matter, pulverize it, add the ſpirit, and digeſt them for three or four days: after which, ſtrain off the tincture for uſe.

Edinb. †

Take of
Antimony, in powder, four ounces;
Salt of tartar, ſix ounces;
Rectified ſpirit of wine, two pints.

Mix the antimony with the ſalt of tartar, and inject them by little and little into a crucible placed in a ſtrong fire. The mixture melts thin, and is to be continued 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 matraſs, and pour thereon the ſpirit. Digeſt them together for three days in a gentle heat of ſand; and then decant the tincture.

In theſe proceſſes, the alkaline ſalt unites with the ſulphur of the antimony into a hepar; which communicates to the ſpirit a tincture ſimilar to the foregoing. 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 of from ten to ſixty drops or more, as a deobſtruent, promoter of urine, and purifier of the blood. See Kermes Mineralis.

Tinctura antimonii diaphoretici.

Tincture of diaphoretic antimony.

Take of
Diaphoretic antimony, ſixteen ounces;
Nitre, four pounds;
Tartarized ſpirit of wine, three pints.

Let the antimony and nitre be finely powdered, mixed, injected by a ſpoonful at a time into a red-hot crucible, and kept in a ſtrong melting heat for half an hour. Then pour the matter into a warm iron mortar, powder it whilſt hot, and immediately add the vinous ſpirit. Digeſt for three days, and filtre the tincture for uſe.

This tincture is recommended for the ſame purpoſes as the foregoing, and in the ſame doſe. It is very fragant in ſmell, and agreeable to the taſte. 'As the diaphoretic antimony is a perfect calx of the metal, the nitre and the alkali of the rectified ſpirit form an imperfect and uſeleſs compound with the inert calx of antimony.'

TINCTURA TOLUTANA.

Tincture of balſam of Tolu.

Edinb.

Take of
Balſam of Tolu, an ounce and a half;
Rectified ſpirit of wine, one pound.

Digeſt until the balſam is 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, in the ſeveral intentions for which this 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 VALERIANÆ SIMPLEX.

Simple tincture of valerian.
Lond.

Take of
Wild valerian root, four ounces;
Proof-ſpirit, two pints.
After due digeſtion, ſtrain off the tincture.

The valerian root ought to be reduced into fine powder, otherwiſe the ſpirit will not ſufficiently extract its virtues. The tincture proves of a deep colour, and conſiderably ſtrong of the valerian; though 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.

Volatile tincture of valerian.
Lond.

Take of
Wild valerian root, four ounces;
Volatile aromatic ſpirit, two pints.
Digeſt without heat, in a veſſel cloſely ſtopt, and afterwards ſtrain off the tincture.

Edinb.

'Take of
Wild valerian root, two ounces;
Vinous ſpirit of ſal ammoniac, one pound.
Macerate ſix days in a cloſe veſſel, and ſtrain.'

'Both the volatile 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.

Tincture of veratrum, or white hellebore.
Lond. and *Edinb.*

Take of
White hellebore root, eight ounces;
Proof-ſpirit, two pints. ('Two pounds and a half, *Edinb.*)'
Digeſt them together, ('ten days, *Edinb.*') 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.

BALSAMUM GUAIACINUM.

Balſam of guaiacum.
Lond.
Elixir guaiacinum.
Edinb.

Take of
Gum guaiacum, one pound;
Balſam of Peru, three drams;
Rectified ſpirit of wine, two pints and a half. ('Two pounds and a half, *Edin.*')
Digeſt till the gum is diſſolved, ('ten days, *Edin.*') and then ſtrain off the balſam.

'ELIXIR

ELIXIR GUAIACINUM VOLATILE.

Volatile elixir of guaiac.
Edinb.

'Take of
Gum guaiacum, four ounces;
Balſam of Peru, two drams;
Diſtilled oil of ſaſſafras, one half dram;
Vinous ſpirit of ſal ammoniac, one pound and a half.
Macerate ſix days, in a cloſe veſſel, and ſtrain.'

These compoſitions, 'and eſpecially the laſt,' are medicines of great efficacy, and capable of anſwering many uſeful purpoſes. They warm and ſtrengthen the habit, and promote inſenſible perſpiration. Twenty or thirty drops, 'or a table-ſpoonful,' may be taken two or three times a-day, or oftener, in any proper vehicle, in rheumatic complaints, cutaneous defedations, &c. particularly where the patient is of a cold phlegmatic temperament, and the ſolids weak and relaxed. In hot bilious conſtitutions, and tenſity or rigidity of the veſſels, like other ſtimulating medicines, they are evidently improper.

Balsamum commendatoris.

Baume de commandeur.

Take of
Dry Peruvian balſam, one ounce;
Storax in the tear, two ounces;
Benjamin, three ounces;
Socotorine aloes,
Myrrh,
Olibanum,
Angelica roots,
St John's wort flowers, each half an ounce;
Spirit of wine, two pounds eight ounces by weight.
Let them ſtand together in the ſun during the dog-days, in a glaſs veſſel, cloſely ſtopped; and afterwards ſtrain out the balſam thro' a linen cloth.

This balſam has been inſerted, with little variation, in ſome foreign pharmacopœias, and likewiſe kept a ſecret in private hands, under the titles of *Balſamum Perſicum*, *Balſam of Berne*, *Wade's balſam*, *Friar's balſam*, *Jeſuit's drops*, &c. The form above is taken from the original receipt publiſhed by Pomet (*Hiſtoire de Drogues*, edit. 2. tom. ii. p. 56.) It ſtands greatly 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 feather; inwardly, a few drops are taken at a time, in wine or any other convenient vehicle. 'It ſeems to have got far too much to do; and is undoubtedly a very confuſed farrago of diſcordant ſubſtances.'

BALSAMUM TRAUMATICUM.

Traumatic or vulnerary balſam.
Lond.

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, that the gums may as much as poſſible be diſſolved; and then ſtrain off the balſam for uſe.

This is an elegant reformation of the preceding compoſition, conſiderably more ſimple, yet not inferior in efficacy. The balſam of Tolu ſupplies, with advantage, the dry Peru-

Peruvian balſam, a drug very rare to be met with in this country: the olibanum, myrrh, and angelica roots here omitted, were certainly ſuperfluous in a medicine containing ſo much more powerful materials; and the St John's wort flowers are as deſervedly thrown out, as having little elſe to recommend them than prejudice or ſuperſtition.

Edinb.

'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.'

This is a further contraction of the *baume de commandeur*, without any injury to it as a medicine, at leaſt with regard to the purpoſes for which the title ſhows it deſigned. Socotorine aloes is here judiciouſly exchanged for the hepatic, which appears from experience to be the moſt ſerviceable in external applications.

ELIXIR ALOES.

Elixir of aloes.
Lond.

Take of
Tincture of myrrh, two pints;
Socotorine aloes,
Saffron, each three ounces.
Digeſt them together, and ſtrain off the elixir.

ELIXIR ALOES, vulgo PROPRIETATIS.

Edinb.

'Take of
Myrrh, in powder, two ounces;
Socotorine aloes, an ounce and a half;
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.'

This is 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 greatly 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 good ſervice in cachectic and icteric caſes, uterine obſtructions, and other like diſorders; particularly in cold, pale, phlegmatic habits: where the patient is of a hot, bilious conſtitution, and florid complection, 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 ſive PROPRIETATIS VITRIOLICUM.

Vitriolic elixir of aloes or *of property.*
Edinb.

'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 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 alſo 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 of the menſtruum, preferred to it in hot conſtitutions, and weakneſſes of the ſtomach. See ELIXIR VITRIOLI in the following page.

ELIXIR PAREGORICUM.

Paregoric elixir.
Lond.

Take of
Flowers of benzoine,
Opium ſtrained, each one dram;
Camphor, two ſcruples;
Eſſential oil of aniſeeds, half a dram;
Rectified ſpirit of wine, two pints.

Digeſt, and ſtrain.

Edinb.

'Take of
Flowers of benzoine,
Engliſh ſaffron, of each three drams;
Opium, two drams;
Eſſential oil of aniſeeds, half a dram;
Vinous ſpirit of ſal ammoniac, ſixteen ounces.

Digeſt four days in a cloſe veſſel, and ſtrain.

'The moſt material differences in the above formula from the preceding, are the ſubſtitution of the vinous ſpirit of ſal ammoniac to the rectified 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 dependance, 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. Half an ounce by meaſure contains about a grain of opium; 'but in the Edinburgh formula the proportion of opium is larger.'

ELIXIR PECTORALE.

Pectoral elixir.
Edinb. +

Take of
- Balſam of Tolu, two ounces;
- Balſam of Peru, one ounce;
- Flowers of benzoine,
- Engliſh ſaffron, each half an ounce;
- Rectified ſpirit of wine, two pints.

Digeſt them in a ſand-heat for three days, and then ſtrain off the elixir.

This balſamic elixir is given to the quantity of a tea-ſpoonful, two or three times a-day, as an expectorant and detergent, in coughs and ulcerations of the breaſt. The balſam of Peru is a new ingredient, introduced in the preſent edition; and the flowers of benzoine are ſubſtituted to benzoine in ſubſtance: 'very much caution is, however, neceſſary in the uſe of theſe ſtimulating ſubſtances.'

ELIXIR VITRIOLI ACIDUM.

Acid elixir of vitriol.
Lond.

Take of the
- Aromatic tincture, one pint;
- Strong ſpirit (called oil) of vitriol, four ounces;

Mix them together; and after the feces have ſubſided, filtre the elixir through paper.

This preparation was originally taken from Mynſicht, and has been uſually diſtinguiſhed by his name. It is here prepared in a ſomewhat different manner from that directed by the author and in other books of pharmacy; the oil of vitriol and ſpirit of wine being there firſt mixed together, and then digeſted upon aromatics.

Mynſicht's elixir of vitriol is directed in our preceding pharmacopœia as follows:

Take of
- Cinnamon,
- Ginger,
- Cloves; each three drams;
- Calamus aromaticus, one ounce;
- Galangal, an ounce and a half;
- Sage,
- Mint, each half an ounce;
- Cubebs,
- Nutmegs, each two drams;
- Aloes wood,
- Citron-peel, each one dram.

Reduce theſe ingredients into a powder; to which add of
- Sugar-candy, three ounces;
- Spirit of wine, a pint and a half;
- Oil of vitriol, one pint.

Digeſt them together for twenty days, and then filtre the tincture for uſe.

Edinb.

'Take of
- Rectified ſpirit of wine, two pounds;
- Drop into it by little and little of vitriolic acid, ſix ounces.

Digeſt the mixture with a very gentle heat, in a cloſe veſſel, three days; then add,
- Of cinnamon, an ounce and a half;
- Ginger, one ounce;

Digeſt again in a cloſe veſſel ſix days, and then filtre the tincture through

through paper placed in a glaſs funnel.'

THE intention in theſe proceſſes 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, as in the firſt of the above preſcriptions, 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, as in the ſecond proceſs, 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, as in the laſt proceſs, the inconvenience is ſomewhat leſſened.

All theſe compoſitions are valuable medicines 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. They have frequently taken place after bitters and aromatics by themſelves had availed nothing; and, indeed, great part of their virtue depends 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. They may all 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. 'They are very uſefully conjoned with the bark, both as covering its diſagreeable taſte and coinciding with its virtues.'

ELIXIR VITRIOLI DULCE.

Sweet elixir of vitriol.

Lond.

Take of

Aromatic tincture, one pint;

Dulcified ſpirit of vitriol, eight ounces by weight.

Mix them together.

'*Edinb.*

'It 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.'

THESE are deſigned for perſons whoſe ſtomach is too weak to bear the foregoing acid elixir: to the taſte, they are 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 fixt alkaline ſalt, as hereafter directed in chap. viii. ſect. 5. The mint is moſt commodiouſly ſuſpended in the ſpirit in a fine linen cloth: this prevents the neceſſity of filtration, during which the more volatile parts would exhale.

ELIXIR MYRRHÆ COMPOSITUM.

Compound elixir of myrrh.
Lond.

Take of
Extract of ſavin, one ounce;
Tincture of caſtor, one pint;
Tincture of myrrh, half a pint.
Digeſt them together, and then ſtrain the elixir.

THIS preparation is improved from one deſcribed in ſome former diſpenſatories 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 penny-royal water, or any other ſuitable vehicle.

ELIXIR ex ALOE et RHEO, vulgo SACRUM.

Elixir of aloes and rhubarb, commonly called *ſacred elixir*.
Edinb.

'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.'

SPIRITUS VINOSUS CAMPHORATUS.

Camphorated ſpirit of wine.
Lond.

'Take of
Camphor, two ounces;
Rectified ſpirit of wine, two pints.
Mix them together, that the camphor may be diſſolved.

Edinb.

'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 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 dilution 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 fixt alkaline ſalt, then adding a proper quantity of proof-ſpirit, and drawing off one half of it by diſtillation. This ſpirit was propoſed to the College to be received into the Pharmacopœia, at the late reviſal, under the title of SPIRITUS CAMPHORÆ TARTARIZATUS. But upon trial, it did not anſwer expectation: ſome of the camphor, as the committee obſerve, 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,

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.

TINCTURA ABSINTHII.

Tincture of wormwood.
Edinb.

'Take of
The flowering tops of wormwood, properly dried, four ounces;
Rectified ſpirit of wine, two pounds.
Macerate two days; then preſs out the ſpirit; and pour it upon,
Of wormwood, two ounces.
Macerate again 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; ſo in this very elegant formula, the flowerings 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; for a deſcription of which, ſee ABSINTHIUM.'

TINCTURA e KINO.

Tincture of gum kino.
Edinb.

'Take of
Gum kino, two ounces;
Proof-ſpirit, a pound and a 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; for a deſcription of which, ſee KINO.'

TINCTURA MOSCHI.

Tincture of muſk.
Edinb.

'Take of
Muſk, two drams;
Rectified ſpirit of wine, one pound.
Digeſt 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 often neceſſary for our purpoſe.'

TINCTURA BENZOINI.

Tincture of benzoine.

Take of
Benzoine, four ounces;
Rectified ſpirit of wine, one pint.
Digeſt them together in a ſand-heat for three or four days, and then decant off the tincture.

THIS tincture ſtands recommended in aſthmas, and other diſorders of the lungs, in doſes of from twenty to ſixty or ſeventy drops. It has, however, been principally made uſe of externally, as a coſmetic, for clearing and ſmoothing the ſkin: for theſe purpoſes it is mixed with a large proportion of water, when it forms into a white liquor called LAC

VIRGINIS. If this be ſuffered to reſt for ſome time, the benzoine precipitates in form of a white magiſtery, (of a very pleaſant ſmell, and not diſagreeable taſte), which in the Brandenburgh pharmacopœia is preferred to the flowers of benzoine, as being free from the empyreumatic flavour which theſe are generally attended with: it is, however, of a different nature from the flowers, being no other than the benzoine in its whole ſubſtance; whereas the flowers are a diſtinct part of it, not reſinous, like the reſt of the maſs, but rather, as we ſhall ſee hereafter, of the ſaline kind. The precipitation is directed to be made with roſe-water.

GUTTÆ VITÆ.
Drops of life.

Take of
- Opium, four ounces;
- Saffron, one ounce;
- Virginian ſnakeroot,
- Cochineal, each half an ounce;
- Nutmegs,
- Zedoary, each two ounces;
- Camphor, one ounce;
- Tincture of diaphoretic antimony, one pint;
- Water, two pints.

Digeſt the opium with the water in a ſcalding heat, till as much as poſſible of it is diſſolved, and paſs the ſolution through a ſtrainer. Digeſt the other ingredients in the antimonial tincture for three or four days. Mix both liquors together; let them ſtand in digeſtion for two days longer; and after the feces have ſubſided, pour off the clear for uſe.

THIS medicine has been recommended as preferable to the common opiates, and leſs apt to leave a nauſea on the ſtomach: the doſe is from ten drops to forty or fifty. 'Its uſe may be very well ſuperſeded.'

TINCTURA ſeu ESSENTIA AMBRÆ.
Tincture or eſſence of ambergris.
Pariſ.

Take of
- Ambergris, one dram;
- Tartarized ſpirit of wine,
- Spirit of roſes, that is, highly rectified ſpirit of wine drawn off from dried damaſk roſes, each one ounce and a half.

Digeſt in the heat of a water-bath.

THE ambergris, if pure, is here totally diſſolved into a reddiſh liquor, provided the heat be ſufficient to make the ſpirit boil or ſimmer: with a weaker heat, or if the ſpirit is not highly rectified, this ſolution does not ſucceed. This tincture is a high cordial: eight or ten drops may be taken on ſugar.

TINCTURA ſeu ESSENTIA REGIA.
The royal tincture or eſſence.
Pariſ.

Take of
- Ambergris, two ſcruples;
- Muſk, one ſcruple;
- Civet, ten grains;
- Oil of cinnamon, ſix drops;
- Oil of rhodium, four drops;
- Salt of tartar, half a dram;
- Rectified ſpirit of wine,
- Spirit of roſes,
- Spirit of orange-flowers, each one ounce and a half.

Grind the ſalt of tartar with the ambergris, muſk, civet, and eſſential oils, till they are thoroughly mixed; then add the ſpirits, and digeſt in a warm place for ſome days, frequently ſhaking the veſſel; afterwards let the liquor ſettle, and pour off the clear from the dregs.

THIS tincture is a very high perfume; and by thoſe who can bear ſubſtances of that claſs, may be taken, like the preceding, as a cordial. A few drops give a fine flavour to

a large quantity of other liquors. The ambergris diſſolves here with leſs heat than in the foregoing preparation, the eſſential oils promoting its ſolution.

Tinctura odontalgia Mynsichti.

Mynſicht's tincture for the toothach.
Argentoratenſ.

Take of
Guaiacum wood, two ounces;
Saſſafras,
Sarſaparilla, each one ounce;
Pellitory of Spain,
Alum,
Sal prunellæ, each half an ounce;
Staveſacre ſeeds,
Henbane ſeeds, each two drams;
Opium,
Cloves, each one dram and a half;
Serpyllum,
Origanum,
Saffron, each one dram;
Rectified ſpirit of wine,
Vinegar, each one pint and a half.
Reduce the dry ingredients into powder, and extract a tincture from them with the ſpirit and vinegar mixed.

"A little of this tincture is to "be taken warm into the mouth, "and repeated if there ſhould be "occaſion. It effectually relieves "the moſt violent toothachs; pre- "venting the afflux of humours, "and ſurpriſingly extracting thoſe "already ſettled upon the parts; "the pain ſeems often on the firſt "application of it to increaſe, but "ſoon after abates and goes off." The above compoſition, and this account of its virtues, is from the pharmacopœia of the college of Straſburgh. 'The opium, the henbane, and the hot ſpices in the above formula, may, no doubt, ſometimes produce a temporary relief of the pain; but we alledge, that the college of Straſburgh have given it too much to do, and that their opinion has been drawn more from faith than good works.'

Essentia lignorum.

Eſſence of the woods.
Argentoratenſ.

Take of
Saſſafras, two ounces;
Guaiacum, three ounces;
China root,
Sarſaparilla,
Red ſaunders,
Yellow ſaunders, each one ounce;
Spirit of wine, as much as will cover the above ingredients to the height of four inches.
Digeſt for eight days, and then filtre the eſſence.

This eſſence, or tincture, is given in venereal and catarrhous diſorders, and impurities of the humours in general, from a ſcruple to a dram or more. By gently drawing off half of the ſpirit, the remainder becomes proportionably ſtronger, and is then called *eſſentia lignorum concentrata*.

Balsamum vitæ.

Balſam of life.
Brandenburgh.

Take of
Eſſential oils of Lavender,
Nutmegs,
Cloves,
Rhodium,
Serpyllum, each half a dram;
Cinnamon,
Lemon-peel,
Bergamotte, each two ſcruples;
Balſam of Peru, one dram;
Highly rectified ſpirit of lavender, fifteen ounces.
Firſt diſſolve the balſam in the ſpirit, then add the oils, and digeſt till the whole is diſſolved.

This fragrant balſam is an improvement on one deſcribed by Hoffman in his notes on Poterius; and is probably the ſame, or nearly the ſame, with the balſam ſo much celebrated afterwards in that author's practice, internally in languors, faintings, debilities of the nervous ſyſtem, colics, &c. from ten to twenty or thirty drops; and externally, applied to the noſtrils, temples, &c. in vertiginous, lethargic, and other like complaints. Thus much is certain, from Hoffman's own writings, that his balſam was compoſed of fragrant oils diſſolved in rectified ſpirit of wine.

SECT. VII.

Oils *by* Infusion *and* Decoction.

Expressed oils extract the reſinous and oily parts of vegetables, but do not act upon the gummy and mucilaginous: hence the *oleum e mucilaginibus* of the ſhops contains nothing of the mucilage which its ingredients abound with. Theſe oils may be tinged, by vegetable matters, of almoſt all colours; the leaves of moſt plants communicate a green; yellow flowers, a dilute gold colour; ſome red flowers, a light red; alkanet root, a beautiful and deep red.

In making the officinal oils from the leaves of plants, a good deal of care is neceſſary, to give them the fine green colour expected in them. If the boiling of the herb in the oil is not continued till all the aqueous moiſture has exhaled (the mark of which is, the herb's being criſp) the oil will have a dingy yellowiſh hue; if continued longer, it turns black, and contracts an empyreumatic ſmell. The moſt convenient method of managing the proceſs ſeems to be, to ſtrain off the oil when ſufficiently impregnated with the virtue of the plant, and afterwards to let it ſtand in a clean veſſel over a gentle fire, until, by frequent trials on a white tile, it appears to have gained the deep green colour required.

OLEUM CHAMÆMELI.
Oil of camomile.
Edinb. +

Take of
Camomile, with the flowers, freſh gathered and bruiſed, one pound;
Oil olive, three pints.

Boil them gently till the herb is almoſt criſp; then ſtrain and preſs out the oil.

The oils of the other herbs are prepared in the ſame manner.

OLEUM HYPERICI.
Oil of St John's wort.
Lond.

Take of
The flowers of St John's wort, full blown, freſh gathered, and carefully freed from the cups, four ounces;
Oil olive, two pints.

Pour the oil upon the flowers, and let them ſtand together till the oil is ſufficiently coloured.

OLEUM e MUCILAGINIBUS.
Oil of mucilages.
Lond.

Take of
Marſhmallow root, freſh, half a pound;
Linſeed,

Fenugreek

Fenugreek ſeed, each three ounces;
Water, two pints;
Oil olive, four pints.

Bruiſe the roots and ſeeds, and gently boil them in the water for half an hour: then add the oil, and continue the boiling till all the water is waſted: afterwards let the oil be carefully poured off for uſe.

OLEUM SAMBUCINUM.

Oil of elder.
Lond.

Take of
Elder flowers, one pound;
Oil olive, two pints.

Boil the flowers in the oil till they are almoſt criſp; then preſs out the oil, and ſet it by till the feces have ſubſided.

OLEUM VIRIDE.

Green oil.
Lond.

Take of
Bay leaves,
Rue leaves,
Marjoram leaves,
Sea-wormwood leaves,
Camomile leaves, each, freſh gathered, three ounces;
Oil olive, two pints.

Bruiſe the herbs and gently boil them in the oil till they are almoſt criſp; then preſs out the oil, let it ſtand to ſettle, and afterwards pour it off from the ſediment.

All the foregoing oils are deſigned for external applications only. They are ſuppoſed, beſides the general emollient quality of the oil itſelf, to receive particular virtues from the ingredients: that of camomile flowers, to be a warm diſcutient and reſolvent; that of St John's wort flowers, to be peculiarly grateful to the nerves, to give great relief in all kinds of pains and wearineſs, to reſolve tumours, and heal wounds and ulcers; and the oil of mucilages to be ſofter and more emollient than common oil. An oil prepared in the ſame manner from wormwood, rubbed on the ſtomach and umbilical region, is ſaid to excite appetite, ſtrengthen the viſcera, and kill worms; and one from rue, to be of ſingular efficacy againſt worms and colicky pains and ſwellings.

It is preſumed, however, that at preſent there are few who expect much more from theſe preparations than from common oil itſelf, which has the advantage of being leſs offenſive. The mucilaginous ingredients, marſhmallow-root and linſeed, in the *oleum e mucilaginibus*, make no addition to the virtue of the oil; for mucilages, as already obſerved, are not ſoluble in oils. Experience has not diſcovered any ſuch ſingular qualities in the flowers of St John's wort, that four ounces of them ſhould communicate any remarkable virtue to a quart of oil. Of the other herbs, the more valuable parts are diſſipated by the boiling heat: and although the remaining matter, if it was taken internally either by itſelf, or diſſolved in watery or ſpirituous liquors, might not be deſtitute of activity, yet it can ſcarcely be ſuppoſed, when combined with a large quantity of oil, to have any material effect in external applications. The number of theſe oils has, therefore, been judiciouſly retrenched at the late reformation: the five above retained, are not one-tenth part of thoſe which were formerly ordered to be kept in the ſhops. The moſt certain way of anſwering the purpoſes intended by theſe preparations appears to be, by mixing with the expreſſed oil a ſuitable quantity, either of the native reſins of vegetables, or of the eſſential oils and reſinous extracts artificially prepared from them.

OLEUM

OLEUM CAMPHORATUM.

Camphorated oil.
Edinb.

'Take of
Freſh olive oil, two ounces;
Camphor, half an ounce.
Diſſolve the camphor in the oil.'

THIS oil is deſigned, like the foregoing ones, for external purpoſes. It has been in uſe for ſome time, in the infirmary of Edinburgh, againſt burns, rheumatic pains, &c. and is thence received into the Pharmacopœia of the Edinburgh college.

OLEUM ODORIFERUM.

Odoriferous oil.

Let ſome fine carded cotton be dipt in oil olive, or oil of ben nuts, that it may be thoroughly imbibed with the oil, without retaining ſo much as to drip ſpontaneouſly. Lay a bed of this cotton in the bottom of a tin or porcelaine veſſel, and lightly ſpread upon it a pretty thick layer of any odoriferous flowers freſh gathered, as jaſmine flowers, violets, lilies of the valley, &c. Above theſe ſpread more of the cotton, and then more flowers alternately, till the veſſel is full; then cover it cloſe, and let it ſtand for twenty-four hours in a gentle warmth. Great part of the fragrance of the flowers will be communicated to the oil in the cotton, which is to be ſtratified in the ſame manner with two or three freſh quantities of the flowers, till it is ſufficiently impregnated therewith, after which the oil is to be ſqueezed out from the cotton in a preſs.

THIS appears to be the moſt effectual method of transferring into expreſſed oils the odoriferous matter of thoſe tender flowers which yield little or no eſſential oil; the perfumed oils and eſſences of thoſe flowers brought from Italy are prepared in this manner. The odorous parts may be again ſeparated from the oil, and transferred into water or ſpirit, by diſtillation with thoſe liquors.

CHAP.

CHAP. IV.

CONSERVATION *of* RECENT VEGETABLES *and their* INFUSIONS, &c. *by* SUGAR *and* HONEY.

SECT. I.

CONSERVES.

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 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 greater efficacy, or as intermediums for joining them together. They are very convenient 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 ſyrups, 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.

General

General Method of Preſerving CONSERVES.

Leaves are picked from the ſtalks, and flowers from their cups. They are then beaten in a marble mortar, with a wooden peſtle, into a ſmooth maſs; after which, thrice their weight of double-refined ſugar is added by degrees, and the beating continued till they are uniformly mixed.

The ſugar ſhould be pulveriſed by itſelf, and paſſed through a ſieve, before it is mixed with the vegetable maſs; otherwiſe it cannot eaſily be reduced to ſufficient fineneſs, ſo as to be duly incorporated. Some vegetables are ſcarce reducible to the requiſite fineneſs by beating in a mortar; ſuch as orange-peel. This is moſt conveniently raſped or grated off from the fruit, then well-mixed with the ſugar, and the compound ſet by in a cloſe veſſel for ſome weeks; after which it may be beaten ſmooth with conſiderable leſs labour than at firſt. This peel, and red-roſe buds, are commonly ground in a wooden mill made for that purpoſe.

CONSERVA foliarum COCHLEARIÆ hortenſis.

Conſerve of the leaves of garden ſcurvy-graſs.
L. E. +

THIS is the only form that ſcurvy-graſs in ſubſtance can be kept in, without the total loſs of its virtues. The conſerve retains the full taſte and virtue of the herb for a very conſiderable length of time; as a year or two, provided the veſſel be made perfectly cloſe, and ſet in a cool place. It may be given in ſcorbutic habits, three or four times a-day, or oftener; tho' it is more frequently uſed as an aſſiſtant to other medicines of ſimilar intention, than depended on by itſelf. It is an excellent addition to arum-root in rheumatic caſes; and in this form even the freſh root arum may be taken freely, without any complaint of the exceſſive pungency which of itſelf it impreſſes on the tongue. An ounce of freſh arum root, beaten into a pulp, and four ounces or leſs of conſerve of ſcurvy-graſs, well mixed together, form a compound, in which the pungency of the arum is hardly perceived; and which I have given, with good effect, to the quantity of a nutmeg twice or thrice a-day. To further ſheath the acrimony of the arum, it may be beaten with equal its weight of powdered gum arabic, before the admixture of the conſerve.

CONSERVA foliorum LUJULÆ.

Conſerve of the leaves of wood-ſorrel.
L. E. +

THIS is a very elegant and grateful conſerve; in taſte it is lightly acidulous, with a peculiar flavour, which ſome reſemble to that of green-tea. It is taken occaſionally for quenching thirſt, and cooling the mouth and fauces, in hot diſtempers. It may be uſefully joined to the foregoing preparation, whoſe virtue it ſomewhat promotes, at the ſame time that it improves the taſte.

CONSERVA foliorum MENTHÆ vulgaris.

Conſerve of the leaves of ſpearmint.
L. E.

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 foliorum RUTÆ.
Conſerve of the leaves of rue.
Lond.

This conſerve is given from a dram to half an ounce, in crudities of the primæ viæ, for promoting digeſtion, and in hyſteric diſorders: it gently ſtimulates the ſolids, and excites the natural ſecretions. Some have had a great opinion of it, taken in a morning, as a preſervative againſt the effects of contagious air or exhalation.

CONSERVA ſummitatum ABSINTHII maritimi.
Conſerve of the tops of ſea wormwood.
Lond.

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 LAVENDULÆ.
Conſerve of lavender flowers.
Lond.

This conſerve is not near ſo fragrant as the flowers themſelves. It is nevertheleſs a ſufficiently agreeable one; and is ſometimes uſed as a mild cordial, and in debilities of the nervous ſyſtem.

CONSERVA florum MALVÆ.
Conſerve of the flowers of mallows.
Lond.

This is looked upon as an emollient, and ſometimes made uſe of as ſuch in diſorders of the breaſt and urinary paſſages. It is the moſt unimportant of conſerves: nor do the flowers themſelves appear to have much virtue.

CONSERVA florum ROSARUM rubrarum immaturarum.
Conſerve of the buds of red roſes.
L. E.

This is a very agreeable and uſeful conſerve. A dram or two diſſolved in warm milk, are frequently given as a light reſtringent, in weakneſs of the ſtomach, and likewiſe in coughs and phthiſical complaints. In the German Ephemerides, examples are related of very dangerous phthiſes 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 have a conſiderable ſhare in the effect.'

CONSERVA florum RORISMARINI.
Conſerve of roſemary-flowers.
L. E. +

Rosemary flowers in great meaſure loſe their peculiar fragrance by beating; and hence the conſerve has very little of their flavour. Some

are

are therefore accuſtomed to make this preparation from the leaves of the plant (which retain their virtues under the peſtle), or at leaſt to add a portion of theſe to the flowers. The conſerve of roſemary is directed in weakneſs of the nerves, and as a light cordial.

CONSERVA flavedinis CORTICUM AURANTIORUM Hiſpalenſium.

Conſerve of the yellow rind of Seville orange-peel.

L. E.

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 in this intention is frequently made uſe of.

CONSERVA FRUCTUS CYNOSBATI.

Conſerve of hips.

L. E. +

Hips require leſs ſugar for reducing them into a conſerve than the ſubſtances above enumerated. Twelve ounces of the pulp of the ripe fruit are to be mixed with only twenty ounces of ſugar. 'In the Edinburgh Pharmacopœia, the ſugar is directed in the ſame proportion as in the other conſerves.'

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, which the inſide of the fruit is lined with; if theſe are retained in the conſerve, they will irritate the ſtomach, ſo as to occaſion vomiting.

CONSERVA PRUNORUM SILVESTRIUM.

Conſerve of ſloes.

L. E.

Let the ſloes be put into water, and ſet over the fire till they grow ſoft, with care that they do not burſt. Then take the ſloes out of the water, preſs out their pulp, and mix with it thrice its weight of double-refined ſugar.

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 that the conſerve has been kept.

SECT. II.

PRESERVES.

Preſerves are made, by ſteeping or boiling recent ſimples, firſt in water, and then in ſyrup or ſolution of ſugar. The ſubject is afterwards either kept moiſt in the ſyrup; or taken out and dried, that the ſugar may candy upon it: this laſt is the moſt uſual method.

In this proceſs, ſome of the valuable parts of the ſubject are extracted by the liquor, and conſequently loſt to the preparation; greater regard being here had to palatableneſs than medicinal efficacy. And indeed moſt of the preparations of this kind are conſidered rather as ſweetmeats than as medicines;

dicines; as the buſineſs of the confectioner rather than of the apothecary. It would be needleſs therefore to mention the doſes of the ſeveral articles, or give particular remarks on the manner of preparing them.

RADIX ERYNGII CONDITA.
Candied eringo roots.
Lond.

Boil them in water till the rind will eaſily peel off; when peeled, ſlit them through the middle, take out the pith, and waſh them three or four times in cold water. For every pound of the roots, ſo prepared, take two pounds of double-refined ſugar, which is to be diſſolved in a proper quantity of water, and ſet over the fire. As ſoon as the liquor begins to boil put in the roots, and continue the boiling till they are ſoft.

After this manner are candied

ANGELICÆ CAULES.
Angelica ſtalks.

CORTEX AURANTIORUM CONDITUS.
Candied orange-peel.
Lond.

Steep the freſh peels of Seville oranges in water, which is to be frequently renewed, until they loſe their bitterneſs. Then having diſſolved in water a ſuitable quantity of double-refined ſugar, boil the peels in this liquor till they become ſoft and tranſparent

After the ſame manner are candied

LIMONUM CORTICES.
Lemon-peels. L.

In the ſame, or a ſimilar manner, may likewiſe be candied

RADICES ANGELICÆ.
Angelica roots. E. +

RADICES HELENII.
Elecampane roots. E. +

All ſorts of fruits, flowers, and ſeeds, may alſo be preſerved, either by keeping them in ſyrup, or cruſting them over with ſugar; but theſe kinds of preparations ſcarce belong to the art of Pharmacy.

Nutmegs and ginger are brought to us ready candied from the Eaſt Indies. *E.* +

MARS SACCHARATUS.
Candied ſteel.
Edinb. +

Put any quantity of clean filings of iron into a braſs-kettle, ſuſpended over a very gentle fire. Add to them, by little and little, twice their weight of white ſugar, boiled to the conſiſtence of candy, with which powdered ſtarch has been previouſly mixed in the proportion of a dram to every pound; agitating the kettle continually, that the filings may be cruſted over with the ſugar, and taking great care to prevent their running into lumps.

This is a very agreeable preparation of ſteel; but has hitherto been made only by the confectioners. The College of Edinburgh received it in the former editions; but, as there deſcribed, it was almoſt impoſſible to hinder the matter from concreting into lumps. They have now diſcovered the intermedium which prevents that inconvenience, and which the confectioners have kept a ſecret; the addition of a little ſtarch to the ſugar. The preparation may be given to the quantity of half a dram, in thoſe caſes wherein chalybeate medicines are proper. See page 142.

SECT. III.

JELLIES.

VEGETABLE jellies are compoſed of the juices of fruits and ſugar, boiled to a thick conſiſtence. Independently of the admixture of ſugar, the boiling appears to occaſion ſome alteration in the quality of the juices themſelves. The recent juices of the ſummer-fruits are prone to fermentation: after they have been boiled, they are leſs diſpoſed to ferment, and at the ſame time they are much leſs liable to produce, in the human body, flatulencies, gripes, or fluxes; though they ſtill retain, in no ſmall degree, their original antiſeptic, anti-inflammatory, and aperient or reſtringent virtues.

GELATINA, ſeu miva CYDONIORUM.

Jelly, or marmalade of quinces.
Edinb. +

Take three pints of depurated quince juice, and a pound of white ſugar. Simmer them together to a proper thickneſs.

THIS is an uſeful, cooling, reſtringent medicine: it is given in weakneſs of the ſtomach, retchings to vomit, diarrhœas, and dyſenteries, proceeding from a hot indiſpoſition, or ſharp bilious humours. It is beſt taken in little quantities, as a tea ſpoonful or two now and then, either by itſelf or diluted with any ſuitable liquors.

GELATINA BERBERORUM.

Jelly of barberries.
Edinb. +

Take a pound of barberries, picked clean from the ſtalks, and the ſame quantity of white ſugar. Boil them with a gentle heat to a due conſiſtence; then paſs the jelly through a flannel cloth.

GELATINA RIBESIORUM.

Jelly of currants.
Edinb. +

Is prepared after the ſame manner.

HERE the trouble of expreſſion is ſaved, theſe ſoft fruits freely giving out their juice, which incorporates with the ſugar in the proceſs. Both theſe preparations are gratefully ſub-acid and cooling; and in this intention are occaſionally made uſe of for moiſtening the mouth and fauces in febrile or inflammatory diſtempers. Diſſolved in water they afford an uſeful diluent drink. By the ſame qualities, they prove ſerviceable likewiſe in chronical diſorders proceeding from obſtructions of the viſcera, or accompanied with immoderate heat: in bilious fluxes and putrid ſcurvies, their liberal and continued uſe has ſometimes had good effects. Boerhaave greatly commends theſe kinds of preparations in the ſcorbutic diſorders to which ſeafaring people are particularly ſubject.

SECT. IV.

SYRUPS.

SYRUPS are ſaturated ſolutions of ſugar, made in water, or watery or 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 regularly prepared for expulſion. Hence aroſe the exuberant collection of both, which we meet with in pharmacopœias, 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 electaries, and other like purpoſes. Some likewiſe may not improperly be conſidered as medicines themſelves; as thoſe of ſaffron, buckthorn berries, 'and ſome others.'

General Rules for preparing 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. *E.* +

II.

In both the London 'and Edinburgh' Pharmacopœia, 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 into 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 clariſication and deſpumation of the ſugar, by itſelf, very adviſeable; 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 See page 220. 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 thereof are to be taken to 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. *L.*

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 in powder, till a little remains undiſſolved at the bottom, which is to be afterwards incorporated by ſetting the ſyrup in a water-bath. *E.* +

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 candied, 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 are well tinned, ſhould not be employed in the making of acid ſyrups, or ſuch as are compoſed of the juices of fruits. *E.* +

The confectioners, who are the moſt dexterous people at theſe kinds of preparations, to avoid the expence 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, take it off. *L.*

SYRUPUS ex ALLIO.

Syrup of garlic.
Lond.

Take of
Garlic, ſliced, one pound;
Boiling water, two pints.

Macerate them in a cloſe veſſel for twelve hours; then ſtrain off the liquor, and diſſolve in it a proper quantity of ſugar, ſo as to make a ſyrup.

This ſyrup is occaſionally made uſe of for promoting expectoration in humoral aſthmas and oppreſſions of the breaſt; in theſe caſes, it proves a medicine of conſiderable efficacy, though a very unpleaſant one: it taſtes and ſmells ſtrongly of the garlick. The College have received it as an alternative to the *oxymel ex allio*, for the uſe of thoſe with whom honey diſagrees.

SYRUPUS ex ALTHÆA.

Syrup of marſhmallows.
Lond.

Take of
Marſhmallow roots, freſh, one pound;

Double-

Double - refined ſugar, four pounds;
Water, one gallon.

Boil the water with the roots, to one half: when grown thoroughly cold, pour off and preſs out the decoction, and ſet it by for a night to ſettle: next morning pour off the clear liquor, and adding to it the ſugar, boil the whole 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 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 may ſupply the place of the pectoral ſyrup.'

SYRUPUS e CORTICIBUS AURANTIORUM.

Syrup of orange-peel.

Lond.

Take of the
Yellow rind of Seville orange-peel, freſh, eight ounces;
Boiling water, five pints.

Macerate them for a night in a cloſe veſſel; next morning ſtrain out the liquor, and diſſolve in it the proper quantity of ſugar for making it into a ſyrup.

Edinb.

'Take of the
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 therein 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 BALSAMICUS.

Balſamic ſyrup.

Lond.

Take of
Balſam of Tolu, eight ounces;
Water, three pints.

Boil them for two or three hours in a circulatory veſſel, or at leaſt in

a long-necked matrafs, having its mouth lightly covered. When grown cold, ſtrain out the liquor, and mix therewith a proper quantity of ſugar to make it into a ſyrup.

THE coction may be conveniently performed in a retort, with a receiver adapted to it, the liquor which comes over being occaſionally poured back; or the water may be entirely drawn off, and the ſugar diſſolved in the diſtilled liquor.

Edinb.

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 method of making the balſamic ſyrup was dropt in one of the preceding editions of the Edinburgh Pharmacopœia, 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 Pharmacopœia.' 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 pharmacopœias, an elegant ſyrup of this kind is prepared from a tincture of balſam of Peru, with roſe-water and a proper quantity of ſugar.

SYRUPUS CARYOPHYLLORUM RUBRORUM.

Syrup of clove-gillyflowers.

Lond.

Take of

Clove-gillyflowers, freſh gathered and freed from the heels, three pounds;

Boiling-water, five pints.

Macerate them for a night in a glaſs or glazed-earthen veſſel; then ſtrain off the liquor, and diſſolve therein its due proportion of ſugar to make it into a ſyrup.

SYRUPUS CARYOPHYLLORUM.

Edinb.

'Take of

Clove gillyflowers, 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 parable at ſeaſons when the flowers are not to be procured: an ounce

of

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-gillyflower; 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.

SYRUPUS CROCI.

Syrup of ſaffron.
Lond.

Take of
Saffron wine, one pint;
Double-refined ſugar, twenty-five ounces.
Diſſolve the ſugar in the wine, ſo as to make a ſyrup thereof.

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 more frequently preſcribed than the wine from which it is made: it is a pleaſant cordial, and gives a fine colour to juleps.

SYRUPUS CYDONIORUM.

Syrup of quinces.
Lond.

Take of
Quince juice, depurated, three pints;
Cinnamon, one dram;
Cloves,
Ginger, each half a dram;
Red Port wine, one pint;
Double-refined ſugar, nine pounds.
Digeſt the juice with the ſpices, in the heat of aſhes, for ſix hours; then adding the wine, paſs the liquor through a ſtrainer; and afterwards diſſolve in it the ſugar, ſo as to make a ſyrup.

If the quinces are kept for ſome time, in an airy place, before the juice is preſſed out, the ſyrup proves rather more elegant, and richer of the fruit, than when they are taken freſh from the tree. In either caſe, the preparation is a very agreeable, mild, cordial reſtringent; and in ſome kinds of looſeneſſes and diſorders of the ſtomach, may be either taken by itſelf, in the quantity of a ſpoonful or two at a time, or employed for reconciling to the palate and ſtomach medicines of the more ungrateful kind.

SYRUPUS KERMESINUS.

Syrup of kermes.
Edinb. +

This ſyrup is brought to us ready made, from the ſouthern parts of France.

The ſyrup of kermes is of an agreeable taſte, and a fine red colour. It is accounted cordial and corroborant, and ſuppoſed to be particularly ſerviceable in weakneſſes and other diſorders of pregnant women.

SYRUPUS e SUCCO LIMONUM.

Syrup of lemon-juice.
Lond. Edinb.

Take of
Juice of lemons, ſuffered to ſtand till the feces have ſubſided, and afterwards ſtrained, two pints; (‘two pounds and a half, *Edin.*’)
Double-refined ſugar, fifty ounces.
Diſſolve the ſugar in the juice, ſo as to make a ſyrup thereof.

After the ſame manner are prepared

SYRUPUS e SUCCO MORORUM.

Syrup of mulberries [*L.*]

SYRUPUS e SUCCO FRUCTUS RUBI IDÆI.

Syrup of raſpberries [*L.*]

All theſe are very pleaſant, cooling ſyrups; and in 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 e MECONIO, ſive DIACODION.

Syrup of meconium, or *diacodium. Lond.*

Take of

White poppy heads, dried and cleared from the ſeeds, three pounds and a half;

Water, ſix gallons.

Cut the heads and boil them in the water, ſtirring them now and then to prevent their burning, till only about one-third of the liquor remains, which will be almoſt entirely ſoaked up by the poppies. Then remove the veſſel from the fire, ſtrongly preſs out the decoction, and boil it down to about four pints: ſtrain it whilſt hot, firſt through a ſieve, and afterwards through a fine woollen cloth; and ſet it by for a night, that the feces may ſubſide. Next morning, pour the liquor off clear, and boil it with ſix pounds of double-refined ſugar, until the weight of the whole is nine pounds, or a little more, that it may become a ſyrup of a proper conſiſtence.

SYRUPUS PAPAVERIS ALBI, ſeu de MECONIO, vulgo DIACODION.

Syrup of white poppies, or *of meconium*, commonly called *diacodium. Edinb.*

'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 remains; 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.

Syrup of wild poppies. Lond.

Take of

Wild poppy flowers, freſh, four pounds;

Boiling water, four pints and a half.

Pour the water on the poppies, ſet them

them over the fire, and frequently ſtir them, until the flowers are thoroughly moiſtened: as ſoon as they have ſunk under the water, let the whole be ſet by to ſteep for a night; next day pour off, and preſs out the liquor, and ſet it by for a night longer to ſettle: afterwards add the proper quantity of double-refined ſugar to make it into a ſyrup.

The deſign of ſetting the flowers over the fire is (as Dr Pemberton obſerves), that they may be a little ſcalded, ſo as to ſhrink enough to be all immerged 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.'

SYRUPUS PECTORALIS.

Pectoral ſyrup.
Lond.

Take of
English maidenhair, dried, five ounces;
Liquorice, four ounces;
Boiling water, five pints.
Macerate them for ſome hours; then ſtrain out the liquor, and, with a proper quantity of double-refined ſugar, make it into a ſyrup.

The title of this compoſition expreſſes its medical intention: it is ſuppoſed to ſoften acrimonious humours, allay tickling coughs, and promote the expectoration of tough phlegm. The true maidenhair is the only ſort that has been uſually directed in theſe kind of compoſitions: the uſe of the Engliſh is here very judiciouſly allowed; not only as being more eaſily procurable, and having been ſubſtituted to the other in the ſhops, but likewiſe as there does not ſeem to be any medicinal difference betwixt them. Fuller finds great fault with both theſe ingredients, on a ſuppoſition that all their virtues fly away in drying; but in this he was certainly miſtaken: for the virtues of both theſe maidenhairs conſiſt in a mucilaginous ſubſtance, which ſuffers no injury by being dried. There is one ſpecies indeed, the Canada maidenhair, which has a conſiderable ſhare of a pleaſant ſmell and flavour joined to its mucilage; but this is as yet little known in the ſhops, though not uncommon in ſome of our gardens. 'This preparation may be ſuperſeded by the *Syrupus ex Althæa*.'

SYRUPUS e FLORIBUS PARALYSIS.

Syrup of cowſlips.
Lond.

This is made from cowſlip flowers after the ſame manner as the ſyrup of clove-gillyflowers.

It has been ſuppoſed ſerviceable in nervous diſorders: its agreeable flavour recommends it to the patient, though at preſent there are few who ſuppoſe it to poſſeſs any ſingular virtues.

SYRUPUS ROSARUM SOLUTIVUS.

Solutive ſyrup of roſes.
Lond.

Take the liquor that remains after the diſtillation of ſix pounds of damaſk roſes;

Of double-refined ſugar, five pounds.

Having preſſed out the liquor from the roſes, boil it down to three pints, and ſet it by for a night to ſettle: next morning, pour it off clear from the ſediment; and adding the ſugar, boil the mixture to the weight of ſeven pounds and a half.

SYRUPUS ROSARUM PALLIDARUM.

Syrup of pale roſes.

Edinb.

'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 in this intention may be of ſervice in coſtive habits. Its principal uſe is in ſolutive glyſters.

SYRUPIS de ROSIS SICCIS.

Syrup of dry roſes.

Edinl.

'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.

Syrup of ſquills.

Lond.

Take of

Vinegar of ſquills, a pint and a half;

Cinnamon,

Ginger, each one ounce;

Double-refined ſugar, three pounds and a half.

Steep the ſpices in the vinegar for three days; then ſtrain out the liquor, and add the ſugar, ſo as to make a ſyrup thereof.

Edinb.

'Take of

Vinegar of ſquills, two pounds;

White ſugar, three pounds and a half.

Make them into a ſyrup with a gentle heat.'

The ſpices, in the firſt of theſe compoſitions, ſomewhat alleviate the offenſiveneſs of the ſquills, though not ſo much as to prevent the medicine from being diſagreeable. It is uſed chiefly, in doſes of a ſpoonful or two, for promoting expectoration, which it does very powerfully.

SYRU-

SYRUPUS de SENNA et RHEO.

Syrup of ſenna and rhubarb.
Edinb. +

Take of
Senna, two ounces;
Rhubarb, ſliced, one ounce;
Ginger, bruiſed, two drams;
White ſugar, three pounds and a half;
Currant-raiſins, two ounces;
Water, four pints.

Boil the water with the currants to the conſumption of one-fourth; and in the hot decoction infuſe for a night the ſenna, rhubarb, and ginger. The liquor being then ſtrained out, ſuffered to ſettle, and poured off clear from the ſediment, boil it with the ſugar, over a gentle fire, to the conſiſtence of a ſyrup.

THIS ſyrup is deſigned chiefly as a purgative for children; but is not a very agreeable one, nor among us often made uſe of. The former London Pharmacopœia had a medicine of this kind, with ſome ſuperfluous articles, which the committee, in their reviſal of it, retrenched: they likewiſe omitted the ſenna, as being at beſt unneceſſary, and retained only rhubarb for the purgative ingredient: the compoſition was, nevertheleſs, at length entirely expunged, and very juſtly; for, as they obſerve, rhubarb is eaſily given to young children in powder or infuſion, and the taſte of it cannot be rendered agreeable to them by any ſweetening.

SYRUPUS SIMPLEX.

The ſimple ſyrup.
Lond.

Diſſolve in water ſo much double-refined ſugar as will make it into a ſyrup.

SYRUPUS SIMPLEX, ſive COMMUNIS.

Simple or common ſyrup.
Edinb.

'Take of
Pureſt ſugar, fifteen parts;
Water, eight parts.

Let the ſugar be diſſolved by a gentle heat.'

THESE preparations are plain liquid ſweets, void of flavour or colour. They are convenient for ſundry purpoſes where theſe qualities are not wanted, or would be exceptionable.

SYRUPUS e SPINA CERVINA.

Syrup of buckthorn.
Lond.

Take of the
Juice of ripe and freſh buckthorn berries, one gallon;
Cinnamon,
Ginger,
Nutmegs, each one ounce;
Double-refined ſugar, ſeven pounds.

Set the juice by for ſome days, to ſettle; then paſs it through a ſtrainer, and in ſome part thereof macerate the ſpices. Boil the reſt of the juice, adding towards the end that part in which the ſpices were macerated, firſt paſſed through a ſtrainer: this part of the proceſs muſt be ſo managed, that the whole liquor may be reduced to four pints. Laſtly, put in the ſugar, and make the mixture into a ſyrup.

Edinb.

'Take of the
Juice of ripe buckthorn berries, depurated, ſeven pounds and a half;
White ſugar, three pounds and a half.

Boil

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: both these 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 VIOLARUM.

Syrup of violets.

Lond.

Take of

Violets, fresh and well coloured, two pounds;

Boiling water, five pints.

Macerate them for a whole day in a glass, or at least a glazed earthen vessel; then pour out the liquor, and pass it through a thin linen cloth, carefully avoiding even the lightest pressure; afterwards adding the due proportion of sugar, make it into a syrup.

Edinb.

'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 is 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 alkalized juleps or mixtures, by the addition of the blue syrup.

SYRUPUS ZINGIBERIS.

Syrup of ginger.

Lond.

Take of

Ginger, cut into thin slices, four ounces;

Boiling water, three pints.

Macerate them for some hours; then strain out the liquor, and make it into a syrup with a proper quantity of double-refined sugar.

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

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.

CONFECTIO ALKERMES.

Confection of kermes.
Lond.

Take of
Juice of kermes grains, warmed and ſtrained, three pounds;
Damaſk roſe water, ſix ounces by meaſure;
Oil of cinnamon, half a ſcruple;
Double-refined ſugar, one pound.
Diſſolve the ſugar in the roſe water, by the heat of a water-bath, into a ſyrup; then mix in the juice of kermes, and after it has grown cold, the oil of cinnamon.

Edinb. †

Take of
Syrup of kermes, three pounds;
Yellow ſaunders,
Cinnamon, each ſix drams;
Cochineal, three drams;
Saffron, one dram and a half.
Evaporate the ſyrup, with a gentle heat, to the conſiſtence of honey; then mix with it the other ingredients reduced to a very fine powder.

BOTH theſe compoſitions are agreeable cordials; the doſe, when taken by themſelves, is from a ſcruple to a dram or more. The firſt has an advantage of mixing uniformly in juleps without ſpoiling their tranſparency, which the powders in the ſecond always do. Particular care ought to be had in the choice of the eſſential oil, which for the moſt part is grievouſly adulterated; it would be convenient to grind the oil with a little of the ſugar before it is added to the other ingredients; for by this means, it will mix more perfectly, and not be apt to ſeparate in keeping. 'The kermes are ſeldom uſed in modern practice.'

SYRUPUS ACETI.

Syrup of vinegar.
Edinb.

'Take of
Vinegar, two pounds and a half;
Pureſt ſugar, three pounds and a half.
Boil ſo as to make a ſyrup.

THIS is a very pleaſant ſyrup; and may be uſed to acidulate the common drink in fevers, both as a cooler and antiſeptic medicine: for theſe intentions it may be uſed as a convenient ſuccedanum to the ſyrup of lemon-juice, and other more coſtly preparations.'

SYRUPUS COLCHICI.

Syrup of colchicum.
Edinb.

'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. For its nature and medicinal qualities, ſee COLCHICUM.'

SECT.

SECT. V.

HONEYS *and* OXYMELS.

THE more fixt 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 any advantage whatever 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 in their laſt edition of the Pharmacopœia.'

MEL ELATINES.
Honey of fluellin.
Lond.

Take of
Depurated juice of fluellin, four pints;
Clarified honey, four pounds.
Boil them to a due conſiſtence.

THIS preparation made its firſt appearance in the preceding edition of our Pharmacopœia. It is very rarely made uſe of, and not often kept in the ſhops.

MEL HELLEBORATUM.
Honey of Hellebore.
Lond.

Take of
White hellebore roots, dried, and cut in ſlices, one pound;
Clarified honey, three pounds;
Water, four pints.
Let the roots be macerated in the water for three days, and then boiled a little; preſs out the liquor; and having paſſed it again through a ſtrainer, boil it with the honey to a proper thickneſs.

PARTICULAR care ought to be had to reduce this preparation as nearly as poſſible to the honey conſiſtence, that its ſtrength may not be too uncertain. It acts, as a draſtic purgative or emetic, too violent and precarious for common uſe. It has been ſometimes given in maniacal caſes, in doſes of one or two drams and upwards; though more frequently employed in glyſters. The preſent practice very rarely makes uſe of it at all.

MEL ROSACEUM.
Honey of roſes.
Lond.

Take of
Red roſe buds, freed from the heels, and haſtily dried, four ounces;
Boiling water, three pints;
Clarified honey, five pounds.
Steep the roſes in the water for ſome hours; then ſtrain off the liquor, mix it with the honey, and boil them to a due conſiſtence.

Edinb. †

Take of
Red roſes, dried, half a pound;
Boiling water, four pints;
Clarified honey, ſix pounds.
Steep the roſes in the water for a night; then ſtrain out the liquor, add it to the honey, and boil the mixture to the conſiſtence of honey.

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 design of hastily drying the roses, as directed in the first of the above prescriptions, is, that they may the better preserve their astringency.

MEL SOLUTIVUM.

Solutive honey.
Lond.

Take of
- The liquor remaining after the distillation of six pounds of damask roses;
- Cummin seeds, bruised a little, one ounce;
- Brown sugar, four pounds;
- Honey, two pounds.

Having pressed out the liquor, boil it to three pints; adding, toward the end, the seeds tied up in a linen cloth. Then put in the sugar and honey, and boil down the mixture to the consistence of thin honey.

This composition is contrived for the purpose expressed in its title. It is principally employed in laxative glysters; and hence brown sugar is here allowed, whilst for all other uses the double-refined is directed.

OXYMEL ex ALLIO.

Oxymel of garlick.
Lond.

Take of
- Garlick, cut in slices, an ounce and a half;
- Caraway seeds,
- Sweet fennel seeds, each two drams;
- Clarified honey, ten ounces by weight;
- Vinegar, half a pint.

Boil the vinegar, for a little time with the seeds bruised, in a glazed earthen vessel; then add the garlick, 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 garlick prevailing, notwithstanding the addition of the aromatic seeds.

OXYMEL PECTORALE.

Pectoral oxymel.
Edinb. †

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.

OXYMEL

OXYMEL SCILLITICUM.

Oxymel of ſquills.

Lond.

Take of

Clarified honey, three pounds;
Vinegar of ſquills, two pints;

Boil them in a glazed earthen veſſel, over a gentle fire, to the conſiſtence of a ſyrup.

Edinb. +

Take of

Clarified honey, four pounds;
Vinegar of ſquills, two pints.

Boil them to the conſiſtence of a ſyrup.

The honey was formerly employed for this preparation unclarified; and the ſcum, which in ſuch caſes ariſes in the boiling, taken off: by this means the impurities of the honey were diſcharged; but ſome of the medicinal parts of the ſquills, which the vinegar was impregnated with, were alſo ſeparated. For this reaſon the Colleges both of London and Edinburgh have now judiciouſly ordered the honey for all theſe kinds of preparations to be previouſly clarified by itſelf.

Oxymel of ſquills is an uſeful aperient, detergent, and expectorant, and of great ſervice in humoral aſthmas, 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.

Simple oxymel.

[*L. E.*] +

Take of

Clarified honey, two pounds;
Vinegar, one pint.

Boil them to a due conſiſtence.

This ſimple preparation 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.

The boiling of oxymels in glazed earthen veſſels is not free from danger. Their glazing is procured by a vitrification of lead; and vinegar, by a boiling heat, may corrode ſo much of vitrified lead, as to receive from it noxious qualities.

CHAP. V.

SEPARATION *and* COLLECTION *of thoſe Parts of* VEGETABLE *and* ANIMAL SUBSTANCES, *which are volatile in the* HEAT *of* BOILING WATER.

THERE are many vegetable, and ſome animal ſubſtances, whoſe virtues reſide, wholly or in part, in a matter which is capable of totally exhaling in the heat of boiling water. In moſt of the proceſſes hitherto deſcribed, it is endeavoured, as much as poſſible, to preſerve this volatile matter along with the more fixt parts; whether thoſe fixt parts were themſelves medicinal, or only ſubſervient to the union of the volatile matter with the fluids employed. The aim, in the preſent chapter, is, to completely ſeparate this volatile ſubtile principle, and collect it pure from the groſſer fixt parts, either in a concentrated ſtate, or diluted with water or ſpirit of wine. In its concentrated ſtate, it appears commonly an oil; which, from its containing always the ſpecific odour, and frequently the other medicinal powers of the ſubject, is called *Eſſential Oil.*

SECT. I.

ESSENTIAL OILS.

ESSENTIAL oils are drawn by diſtillation in an alembic, with a large refrigeratory. A quantity of water is added to the ſubject, ſufficient to prevent its burning; and in this water, it is likewiſe macerated a little time before the diſtillation. The oil comes over along with the water; and either ſwims on its ſurface, or ſinks to the bottom, according as it is lighter or heavier than that fluid [*L.*]

OLEA ESSENTIALIA.

Eſſential oils.

Edinb.

'Of the herbs of garden mint,
Peppermint,
Savin;

Of

Of the tops of roſemary,
Flowering ſpikes of lavender,
Aniſeeds,
Juniper berries,
Saſſafras root,
Jamaica pepper,

Are prepared almoſt in the ſame manner as the ſimple diſtilled waters, ſave 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 ſcarce be laid down; wherefore we have only explained the general method, leaving many things to be varied by the judgment of the operator. [*E.*]

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 ſeemvery well fitted for this proceſs, yielding 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 ſavin, whoſe diſagreeable ſcent extends to no great diſtance, gives out the moſt 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; lavender and rue, for inſtance. 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 larger 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 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 riſe in that form, but reſolved into vapour, and blended and

coagi-

coagitated 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, I can ſee no 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, I think, 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 wa-"tery humidity exhales; and as "from two pounds of a freſh plant "we do not obtain above one pound "of dry, and little of the ſubtile "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 I apprehend 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. I do not recollect any inſtance, in which freſh and dry plants have been brought to a fair compariſon, by dividing 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, 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, as 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 reduduced 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 is of any real ſervice, is greatly to be doubted. The uſes generally aſſigned to it are, to penetrate and unlock the texture of the ſubject more effectually 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 that 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 Pharmacopœia, to be fermented for ſome days with a little yeſt; half their quantity of water is ſufficient for performing the fermentation; ſo 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 to 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 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

ring 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 conſiderably leſs heat; ſuch as thoſe of lemon-peel, 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 greatly 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 ſubjects themſelves. For the diſtillation of ſubſtances of this claſs, I have contrived another method: 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 being 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*. I 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. Oil olive 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; as 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 to duly cleanſe the worm before it is em-

ployed 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 ſtopt, 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 turpentines, 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 no more than to divide, between the old oil and the new, the active matter which belongs to the new alone.

Eſſential oils, medicinally conſidered, agree in the 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 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 nervine of roſemary, the ſtomachic of mint, the antiſcorbutic of ſcurvy-graſs, the cordial of aromatics, &c. are 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; which 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 fixt 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 diſguſtful. 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 eaſier 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. See the article CATHARTICS.

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 ABSINTHII ESSENTIALE.

Eſſential oil of the leaves of wormwood.

L. E. †

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 entire 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 in tertian fevers, a medicated liquor compoſed of about ſeven grains of the 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 is no ſcirrhoſity or ſuppuration. With us, the oil of wormwood is employed chiefly as a vermifuge; and for this purpoſe is both applied externally to the belly, and taken internally: it is moſt conveniently exhibited in the form of pills, which it

be reduced into by mixing it with crumb of bread.

OLEUM SEMINUM ANETHI ESSENTIALE.

Essential oil of dill seeds.

Lond.

This is a very warm oil; of a flavour not very agreeable, less so than that of the seeds. It is sometimes given as a carminative, in flatulences, colicky pains, hiccups, and the like, from one to three or four drops.

OLEUM SEMINUM ANISI ESSENTIALE.

Essential oil of aniseeds.

L. E.

This oil possesses the taste and smell of the aniseeds in perfection. It is one of the mildest of the distilled oils: fifteen or twenty drops may be taken at a time without danger, though 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 pectoral virtues usually ascribed to it: in flatulences 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, at least a considerable quantity of oil will remain in it.

OLEUM SEMINUM CARUI ESSENTIALE.

Essential oil of caraway seeds.

L. E. +

The flavour of this exactly resembles that of the caraway. 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 CARYOPHYLLORUM AROMATICORUM ESSENTIALE.

Essential oil of cloves.

L. E. +

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 co-"lour." (*Boerh. proces.* 27.) 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,

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 FLORUM CHAMÆMELI ESSENTIALE.

Eſſential oil of camomile flowers. Lond.

This 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.

The oil above deſcribed is that obtained from the common garden camomile, which is the only ſort directed in our diſpenſatories, (ſee the foregoing Part, page 123.) There is another ſpecies, more frequent in corn fields than in our gardens, (*chamæmelum vulgare Ger. Raii ſynopſ. ed.* 3. 288.) which yields a beautiful blue oil: this colour, if the oil is carefully kept, remains for many years; but, if the air is not perfectly excluded, ſoon degenerates into a yellow like that of the foregoing.

OLEUM CINNAMOMI.

Oil of cinnamon. L. E. +

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, above 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 CYMINI ESSENTIALE.

Eſſential oil of cummin ſeeds. Lond.

This is one of the warmer and leſs pleaſant oils. It is employed chiefly in cold, flatulent, hyſteric complaints, in doſes of two or three drops. It gives its ſmell ſtrong to the urine, and is ſuppoſed peculiarly ſerviceable for promoting its diſcharge.

OLEUM SEMINUM FŒNICULI ESSENTIALE.

Eſſential oil of fennel ſeeds. Edinb. +

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 aniſeeds; 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 baccarum JUNIPERI ESSENTIALE.

Essential oil of juniper berries.
L. E.

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, a stimulating, detergent, diuretic and emmenagogue: it seems to have somewhat of the nature of the turpentines, or their distilled oil; like which, it communicates a violet 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 florum LAVENDULÆ ESSENTIALE.

Essential oil of lavender flowers.
L. E.

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.

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.

ESSENTIA LIMONUM [*L.*]
OLEUM corticum LIMONUM [*E.*] +

Essence of lemons, or the essential oil of lemon-peel.

This 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. though more frequently used as a perfume. It gives a fine flavour to the officinal spiritus volatilus aromaticus, and occasions the soap pills to sit easy on the stomach.

OLEUM MAJORANÆ ESSENTIALE.

Essential oil of marjoram leaves.
Lond.

This oil is very hot and penetrating, in flavour not near so agreeable 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

pecu-

peculiarly serviceable in relaxations, obstructions, and mucous discharges of the uterus: the dose is one or two drops.

OLEUM MENTHÆ ESSENTIALE.

Essential oil of the leaves of common mint.

L. E.

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, retchings 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 purposes; and is an excellent ingredient in the stomachic plaster of the shops.

OLEUM MENTHÆ PIPERITIDIS ESSENTIALE.

Essential oil of the leaves of peppermint.

L. E.

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 diffuses, 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 NUCIS MOSCHATÆ ESSENTIALE.

Essential oil of nutmegs.

L. E. +

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 ORIGANI ESSENTIALE.

Essential oil of the leaves of origanum.

L. E. +

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 ESSENTIALE PIPERIS JAMAICENSIS.

Essential oil of Jamaica pepper.

Edinb.

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 PULEGII ESSENTIALE.

Essential oil of the leaves of pennyroyal.

L. E. +

This oil, in smell and taste, resembles the original plant; the virtues of which it likewise possesses. It is given in hysteric cases, from one to four or five drops.

OLEUM RORISMARINI ESSENTIALE.

Essential oil of rosemary.

L. E.

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 fragrancy, though not quite so agreeable as the rosemary itself. It is recommended, in the dose of a few

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 LIGNI RHODII ESSENTIALE.

Eſſential oil of rhodium.

L. E. +

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.

OLEUM RUTÆ ESSENTIALE.

Eſſential oil of rue leaves.

L. E. +

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; as 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 SABINÆ ESSENTIALE.

Eſſential oil of ſavin leaves.

L. E.

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 much 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 good ſervice, though not capable of performing what it has been uſually repreſented to do. The doſe is, two or three drops, or more.

OLEUM SASSAFRAS ESSENTIALE.

Eſſential oil of ſaſſafras.

L. E.

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 (ſee chap. vi.) 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 fevers, and for abating hypochondriacal ſpaſms.

OLEUM TEREBINTHINÆ.

Oil of turpentine.

L. E. +

This is diſtilled in the ſame manner as the foregoing oils; and is ſtrictly an eſſential one, though not uſually ranked in this claſs: it is commonly, but improperly as the College obſerve, called ſpirit of turpentine. It is employed in large quantities for ſome mechanic purpoſes;

poſes; and hence the diſtillation of it is become a particular buſineſs.

This oil is a very hot ſtimulating medicine. It is ſometimes given as a ſudorific and diuretic, in the doſe of two or three drops: in larger doſes, it is apt to greatly heat the body, occaſion pain of the head and effuſion of the ſemen and liquor of the proſtate glands. It has nevertheleſs been of late taken in conſiderable doſes (along with honey or other convenient vehicles) againſt the ſciatica; and, as is ſaid, with good ſucceſs. Some have recommended it againſt venereal runnings: but here it has produced miſchievous conſequences, inflaming the parts, and aggravating the diſorder. Externally, it is not unfrequently employed againſt rheumatic pains, aches, ſprains, for diſcuſſing cold tumours, and reſtraining hæmorrhagies.

After the diſtillation of the turpentine, there remains in the ſtill a brittle reſinous ſubſtance, of a yellow colour, called *reſina flava*, yellow reſin [*L.*]

The only uſe of this is in external applications, for giving conſiſtence to plaſters, and the like purpoſes.

Most of the foregoing oils are drawn by our chemiſts, and eaſily procurable in a tolerable degree of perfection; thoſe of cinnamon, cloves, nutmegs, and mace, excepted. Theſe are uſually imported from abroad; and are for the moſt part ſo much adulterated, that it is difficult to meet with ſuch as are at all fit for uſe.

Nor are the adulterations of theſe kinds of preparations eaſily diſcoverable. The groſſer abuſes indeed may be readily detected: thus if the oil is 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 ſubtile 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, oftentimes 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 one another, 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 I have often ſeen genuine oils, from incurious diſtillation, and long and careleſs

leſs keeping, weaker both in ſmell and taſte than the common ſophiſticated ones.

The ſmell and taſte ſeem to be the only certain teſts that the nature of the thing will admit of. 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 wants 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 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.

I ſhall here ſubjoin ſome experiments *of 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: thoſe to which no name is added, are experiments of my own. 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 ariſe from the operation itſelf having been more or leſs carefully performed.

TABLE *of the Quantity of* ESSENTIAL OIL *obtained from different* VEGETABLES.

		yielded of essential oil		so that one part of oil was obtained from	
Agallochum wood -	10 lb.	4 dra.		320	*Hoff.*
Angelica root - -	1 lb.	1 dra.		128	*Carth.*
Aniseed - -	1 lb.	4 dra.		32	*Neum.*
Aniseed -	3 lb.	1 oz.		48	
Aniseed - -	4 lb.	1 oz.		64	
Asafetida -	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	
Caraway seeds - -	2 lb.	9 dra.		28½	
Caraway seeds -	1 cwt.	83 oz.		21½	
Caroline thistle root	1 lb.	2½ scr.		153	*Neum.*
Cardamom seeds -	1 oz.	1 scr.		24	*Neum.*
Carrot seeds - -	2 lb.	1½ dra.		171	
Cascarilla -	1 lb.	1 dra.		128	*Carth.*
Camomile flowers -	1 lb.	30 gra.		256	*Carth.*
Common camomile flowers	6 lb.	5 dra.		153	
Wild camomile flowers	1 lb.	20 gra.		384	*Carth.*
Wild camomile flowers	6 lb.	2½ dra.		307	
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.	2½ scr.		153	*Neum.*
Cinnamon -	4 lb.	6 dra.		85⅓	*Lemery*
Cinnamon - -	1 lb.	2 dra.		64	*Carth.*
Cinnamon -	1 lb.	8 scr.		45½	*Carth.*
Clary seeds - -	4 lb.	2 dra.		256	
Clary in flower, fresh	130 lb.	3½ oz.		594	
Cloves - -	1 lb.	1½ oz.		10⅔	*Teichm.*
Cloves - - -	1 lb.	2½ oz.		7⅔	*Carth.*
Cloves - -	2 lb.	5 oz.		6⅖	*Hoff.*
Copaiba balsam -	1 lb.	6 oz.		2⅔	*Hoff.*
Copaiba balsam -	1 lb.	8 oz.		2	
Cummin-seed - -	1 bush	21 oz.			
Dictamnus Creticus -	1 lb.	30 gra.		256	
Dill-seed - -	4 lb.	2 oz.		32	
Elecampane root -	2 lb.	3½ scr.		245	*Neum.*
Elemi - -	1 lb.	1 oz.		16	*Neum.*
Fennel-seed, common	2 oz.	1 scr.		48	*Neum.*
Fennel-seed, sweet -	1 bush	18 oz.			
Galangal root -	1 lb.	1 dra.		128	*Carth.*
Garlick 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.	1½ dra.		237	*Neum.*

Hyssop

Hyſſop leaves	1 lb.	yielded of eſſential oil	1½ 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
Hyſſop leaves, freſh	10 lb.		3 dra.		427
Hyſſop leaves, freſh	30 lb.		9 dra.		427
Juniper-berries	8 lb.		3 oz.		42⅔ *Hoff.*
Juniper-berries	1 lb.		3 dra.		42⅔ *Carth.*
Lavender in flower, freſh	48 lb.		12 oz.		64
Lavender in flower, freſh	30 lb.		6¾ oz.		72
Lavender in flower, freſh	13½ lb.		60 oz.		403
Lavender flowers, freſh	2 lb.		4 dra.		64 *Hoff.*
Lavender flowers, dried	4 lb.		2 oz.		32
Lavender flowers, dried	2 lb.		1 oz.		32 *Hoff.*
Lavender flowers, dried	4 lb.		3 oz.		21⅓ *Hoff.*
Broad leaved lavender flowers, dry	4 lb.		1 oz.		64 *Hoff.*
	1 lb.		2 dra.		64 *Carth.*
Lovage-root	1 lb.		1 dra.		128 *Carth.*
Mace	1 lb.		5 dra.		25⅗ *Neum.*
Mace	1 lb.		6 dra.		21⅓ *Carth.*
Marjoram in flower, freſh	81 lb.		3¾ oz.		347
Marjoram in flower, freſh	13½ lb.		3½ dra.		493
Marjoram in flower, freſh	34 lb.		1½ oz.		362
Marjoram leaves, freſh	18½ lb.		4 dra.		592
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
Mint in flower, freſh	6 lb.		4¼ dra.		177
Mint leaves, dried	4 lb.		1½ oz.		42⅔ *Hoff.*
Peppermint, freſh	4 lb.		3 dra.		170⅔
Myrrh	1 lb.		2 dra.		64 *Hoff.*
Myrrh	1 lb.		3 dra.		42⅔ *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.		21⅓ *Sala.*
Nutmegs	1 lb.		5 dra.		25⅗ *Carth.*
Parſley ſeeds	2 lb.		1 dra.		256
Parſley leaves, freſh	238 lb.		2 oz.		1904
Parſnep ſeeds	8 lb.		2 dra.		512
Pennyroyal in flower, freſh	13 lb.		6 dra.		277
Black pepper	2 lb.		6 dra.		42⅔
Black pepper	1 lb.		2½ 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.		42⅔ *Neum.*
Rhodium wood	1 lb.		2 dra.		64 *Sala.*
Rhodium wood	1 lb.		3 dra.		42⅔ *Sala.*
Rhodium wood	1 lb.		3 dra.		42⅔ *Carth.*

Rho-

Rhodium wood -	1 lb.	4 dra.	32	*Carth.*
Rosemary in flower -	1 cwt.	8 oz.	224	
Rosemary leaves -	1 lb.	2 dra.	64	*Sala.*
Rosemary leaves -	1 lb.	3 dra.	42⅔	*Sala.*
Rosemary leaves -	3 lb.	3⅛ dra.	121	*Neum.*
Rosemary leaves -	1 lb.	1 dra.	128	*Carth.*
Rosemary leaves -	1 lb.	1½ dra.	82	*Carth.*
Rosemary leaves, fresh	70 lb.	5 oz.	224	
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	
Rue in flower -	60 lb.	2½ oz.	507	
Rue with the seeds -	72 lb.	3 oz.	384	
Saffron - -	1 lb.	1½ dra.	85⅓	*Vogel*
Sage leaves -	1 lb.	5 scr.	77	*Carth.*
Sage in flower, fresh -	34 lb.	1½ oz.	544	
Sage of virtue in flower	27 lb.	6 dra.	576	
Sage of virtue in flower	8 lb.	1½ dra.	681	
Saffafras - -	6 lb.	1¾ oz.	55	*Hoff.*
Saffafras - -	6 lb.	2 oz.	48	*Neum.*
Savin - -	2 lb.	5 oz.	6⅖	*Hoff.*
Saunders, yellow -	1 lb.	2 dra.	64	*Carth.*
Smallage seeds - -	1 lb.	2½ scr.	154	*Neum.*
Stechas in flower, fresh	5½ lb.	2 dra.	368	
Thyme in flower, fresh	2 cwt.	5½ oz.	652	
Thyme in flower, dry -	3¾ lb.	1½ dra.	298	
Lemon-thyme in flower, fresh	51 lb	1¼ oz.	653	
Lemon-thyme in flower, fresh	98 lb.	2½ oz.	627	
Lemon-thyme, dried a little	104 lb.	3 oz.	555	
Wormwood leaves, dry	4 lb.	1 oz.	64	
Wormwood leaves, dry	18 lb.	1½ oz.	192	
Wormwood leaves, dry	25 lb.	3½ oz.	114	
Zedoary - -	1 lb.	1 dra.	128	*Neum.*

yielded of essential oil

so that one part of oil was obtained from

SECT. II.

Simple distilled Waters.

THE effluvia which exhale in 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

odour of the Indian hyacinth excites ſtrange ſpaſms, which the ſtrong ſcent of rue relieves: that the effluvia of the walnut-tree occaſion headachs, 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 analagous 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 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 the very ſubſtance that the plant would have ſpontaneouſly emitted in the open air.

But on ſubmitting to this proceſs many kinds of odoriferous vegetables, I have always found the liquors obtained by it to be very different from the natural effluvia of the reſpective ſubjects: they had very little ſmell, and no remarkable taſte. It appeared 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 meaſure 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 ex-

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 inſufficient 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 is 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 ſkilfully managed, 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 burning; 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 one another, 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 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 managing this operation, which I have already 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 obſerved in the foregoing ſection, imbibes always a 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 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 is more oil than is ſufficient for this ſatiation, 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 little 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 *cohobation*, 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* OFFICINAL 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 at all times of the year, though rather more elegant waters might be obtained from them whilſt green. *L.*

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 refrigeratory, the junctures being luted. *E.* +

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 of unfavourable ſeaſons, and weaker than ordinary, the quantities are to be varied according to the diſcretion of the artiſt. *L.*

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 yeſt, 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. *E.* +

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. *L.*

A great number of diſtilled waters was 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, in any intention of conſequence, by themſelves.

AQUA DESTILLATA.

Diſtilled water.

Edinb.

'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 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.'

AQUA ALEXETERIA SIMPLEX.

Simple alexeterial water.

Lond.

Take of

Spearmint leaves, freſh, a pound and a half;

Sea-wormwood tops, freſh;

Angelica leaves, freſh, each one pound;

Water, as much as is ſufficient to prevent an empyreuma.

Draw off by diſtillation three gallons.

Edinb. †

Take of

Elder flowers, moderately dried, two pounds;

Angelica leaves, freſh gathered, one pound;

Water, a ſufficient quantity.

Diſtil off three gallons.

This water is ſufficiently elegant with regard to taſte and ſmell; though 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 it, as coinciding with the intention; but in general, is not ſuppoſed to be itſelf of any conſiderable efficacy.

AQUA SEMINUM ANETHI.

Dill-ſeed water.

Lond.

Take of

Dill ſeeds, a pound and a half;

Water, as much as is ſufficient to prevent an empyreuma.

Draw off by diſtillation a gallon.

This water, which turns out pretty ſtrong of the dill ſeeds, is ſometimes employed as the baſis of carminative juleps. It is ſimilar in flavour to a water drawn from caraway ſeeds, but leſs agreeable.

AQUA SEMINUM ANETHI SIMPLEX.

Simple dill-ſeed water.

Edinb.

'Take of

Dill ſeeds, one pound;

Pour on as much water as when ten pounds have been drawn off by diſtillation, there may re-

remain as much as is ſufficient to prevent an empyreuma.

After proper maceration, let ten pounds be drawn off.

'In the ſame manner may be prepared ten pounds of ſimple diſtilled water, from

Cinnamon, one pound.
Caſſia lignea, a pound and a half.
Peppermint leaves, three pounds.
Common-mint leaves, three pounds.
Pennyroyal leaves, three pounds.
Jamaica pepper, half a pound.
Freſh pale roſes, ſix pounds.
Freſh lemon-peel, two pounds.
Freſh Seville orange peel, two pounds.

'These are all the diſtilled waters, and the directions for preparing them, given in the laſt edition of the Edinburgh Pharmacopœia. It will, however, be uſeful for the leſs experienced artiſts to conſult Dr Lewis's directions, delivered at full length in this book. The particular virtues of each will be noticed at the end of the ſeveral formulæ directed in the laſt edition of the London Pharmacopœia.'

AQUA CORTICUM AURANTIORUM SIMPLEX.

Simple orange-peel water.
Lond.

Take of
Yellow peel of Seville oranges, dried, four ounces;
Water, as much as is ſufficient to prevent burning.
Diſtil off one gallon.

This water proves very weak of the orange-peel. It is deſigned for a diluter in fevers and other diſorders where the ſtomach and palate are ſubject to receive quick diſguſt; in which caſes (as the committee obſerve) cordial waters, eſpecially if their uſe is to be long continued, ought to be but lightly impregnated with any flavour, however agreeable.

AQUA CASTOREI.

Caſtor water.
Lond.

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 eſſential 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.

AQUA CERASORUM NIGRORUM.

Black-cherry water.

Let any quantity of black cherries be bruiſed, ſo as that the ſtones may be broken, and then diſtilled according to art, with only a ſmall proportion of water.

This is a very grateful water, and has long maintained a place in

the ſhops. It has frequently been employed by phyſicians as a vehicle, in preference to the other diſtilled waters; and among nurſes, and others who have the care of young children, has been the firſt remedy againſt the convulſive diſorders to which children 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 ſome time paſt been diſcovered to yield, by infuſion or diſtillation, the moſt ſudden poiſon known: ſome phyſicians of Worceſter have lately 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 committee of the London College repeated the ſame experiment, and found the effects agreeable to thoſe gentlemens 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, as the committee obſerve, 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 drank 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; the 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 of 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.

AQUA CINNAMOMI SIMPLEX.

Simple cinnamon water.
Lond.

Take of
Cinnamon, one pound;
Water, as much as will prevent burning.
Digeſt off one gallon.

This is a very grateful and uſeful water, poſſeſſing in an eminent degree the fragrance and aromatic cordial virtues of the ſpice. Great care ſhould be had in the choice of the cinnamon, to avoid the too common impoſition of caſia being ſubſtituted in its room: this latter yields a water much leſs agreeable than that of cinnamon, and whoſe flavour is manifeſtly empyreumatic. The two drugs may be eaſily diſtinguiſhed from one another by the marks laid down under the reſpective articles in the Second Part of this work.

The

The virtues of all theſe waters depend upon their containing a portion of the oil of the ſubject. 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 CHAMÆMELI.

Camomile water.

Edinb. +

Take any quantity of camomile flowers, and ſo much water as will prevent burning. Diſtil off the water ſo long as it proves ſufficiently ſtrong of the flavour of the flowers.

Camomile flowers were ordered in the former editions 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 depurated 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 FŒNICULI.

Fennel water.

Lond.

Take of

Sweet-fennel ſeeds, one pound;
Water, as much as is ſufficient to prevent an empyreuma.

Diſtil off one gallon.

Edinb. +

Take of

Fennel leaves, freſh, any quantity;
Water, three times as much.

Diſtil as long as the water runs well flavoured.

The firſt of theſe waters is a ſufficiently grateful one, and the other is not unpleaſant: the leaves 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 HYSSOPI.

Hyſſop water.

Edinb. +

This is diſtilled from the freſh leaves of hyſſop, after the ſame manner as the water of fennel leaves.

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 Pharmacopœia 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 made uſe of, or met with in the ſhops.

AQUA MELISSÆ.
Balm water.
Edinb. +

This is prepared by diſtilling the green leaves of balm, as in the foreging proceſs.

In the former editions of the Edinburgh Pharmacopœia, this water was ordered to be cohobated, or rediſtilled 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 morbific matter.

For my own part, I have already given my opinion with regard to the cohobation of theſe liquors; and ſhall here only obſerve, that whatever virtues are lodged in balm, they may be much more perfectly and advantageouſly extracted by cold infuſion in aqueous or ſpirituous menſtrua: in this proceſs, the liquor ſuffers no injury from being returned on freſh parcels of the herb; 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.

AQUA MENTHÆ VULGARIS SIMPLEX.
Simple ſpearmint water.
Lond.

Take of
Spearmint leaves, dried, a pound and a half;
Water, as much as is ſufficient to prevent burning.
Draw off by diſtillation one gallon.

This water ſmells and taſtes very ſtrong of the mint; and proves in many caſes an uſeful ſtomachic. Boerhaave commends it (cohobated) as a preſent and incomparable remedy for ſtrengthening a weak ſtomach, and curing vomiting proceeding from cold viſcous phlegm; as alſo in lienteries.

AQUA MENTHÆ PIPERITIDIS SIMPLEX.
Simple peppermint water.
Lond.

Take of
Peppermint leaves, dry, a pound and a half;
Water, as much as will prevent and empyreuma.
Draw off by diſtillation one gallon.

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.

AQUA PIPERIS JAMAICENSIS.
Water of Jamaica pepper.
Lond.

Take of
Jamaica pepper, half a pound;
Water, as much as will prevent burning.
Diſtil off one gallon.

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

the more coſtly ſpice waters. It is, however, inferior in gratefulneſs to the ſpirituous water of the ſame ſpice hereafter directed.

AQUA PULEGII SIMPLEX.

Simple pennyroyal water.
Lond.

Take of
Pennyroyal leaves, dry, a pound and a half;
Water, as much as will prevent burning.
Draw off by diſtillation one gallon.

This water poſſeſſes in a conſiderable degree the ſmell, taſte, and virtues of the pennyroyal. It is frequently taken in hyſteric caſes, and not without good effects.

AQUA ROSARUM DAMASCENARUM.

Damaſk roſe water.
Lond.

Take of
Damaſk roſes, freſh gathered, ſix pounds;
Water, as much as will keep them from burning.
Diſtil off a gallon of the water.

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 RUTÆ.

Rue water.

This is to be diſtilled from the freſh leaves of rue, and cohobated on freſh parcels of them, after the ſame manner as the aqua meliſſæ.

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.

AQUA SABINÆ.

Savin water.

This is diſtilled from the freſh leaves of ſavin, after the ſame manner as *aqua angelica.*

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 hemorrhoidal flux.

AQUA SAMBUCI.

Elder flower water.

This is diſtilled from freſh elder flowers, after the ſame manner as the *aqua angelicæ.*

This water ſmells conſiderably of the flowers; but is rarely made uſe of.

SECT.

SECT. III.

Spirituous DISTILLED WATERS *and* SPIRITS.

THE flavour and virtues of diſtilled waters are owing, as obſerved in the preceding ſection, 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 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, ſapid, and of a milky hue.

The proof-ſpirits uſually met with in the ſhops are accompanied with a degree of ill flavour; which though 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 diſtill; 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.

SPIRITUS VINI RECTIFICATUS.

Rectified ſpirit of wine.
Edinb. +

Take any quantity of French brandy, and with a very gentle heat diſtil it to one half.

This rectified ſpirit, being digeſted for two days with one-fourth its quantity of dry ſalt of tartar in powder, and then diſtilled in a glaſs cucurbit, with a very gentle heat, becomes ALCOHOL.

Spirits diſtilled from malt liquors, or other fermented ſubſtances, after being rectified in the above method, require further purification;

tion; namely, repeated diſtillation from an equal quantity of ſpring water.

FRENCH brandy 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 is 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 was 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 ſuch 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 thro' 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 is made to boil, a conſiderable quantity of mere phlegm will come over along with the ſpirit; and if the heat is not raiſed to this pitch, neither phlegm nor ſpirit will diſtil. The moſt convenient inſtrument is the common ſtill, betwixt the body of which and its head an adopter 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 flavour; 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, perfect-

ly

ly flavourleſs, and fit for the fineſt purpoſes. It may be reduced to the ſtrength commonly underſtood by proof, by mixing twenty ounces of it (by weight) 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 alkalized ſpirit is called TARTARIZED SPIRIT OF WINE.

The general virtues of vinous ſpirits have been already mentioned in the preceding part: the ſpirits impregnated with the volatile oils of vegetables, to be treated of in this chapter, have joined to thoſe, the aromatic, cordial, or other virtues which reſide in the oils.

ARTICLE I. *Diſtilled Spirits.*

AQUA MELISSÆ COMPOSITA.

Compound balm water, commonly called *Eau de carmes.*

Take of

Balm in flower, freſh gathered and cleared from the ſtalks, two pounds;

Lemon-peel, freſh, as ſoon as pared from the fruit, four ounces;

Coriander ſeeds, eight ounces;

Nutmegs,

Cloves,

Cinnamon, each, bruiſed, two ounces;

Angelica roots, dried and bruiſed, one ounce;

Spirit of wine, highly rectified, ten pints.

Steep the ſeveral ingredients in the ſpirit four or five days; and then draw off, in the heat of a water-bath, ten pints. Rectify the diſtilled liquor by a ſecond diſtillation in a water-bath, drawing off only about eight pints and three quarters.

THIS proceſs is taken from the *Elemens de Pharmacie* of M. Beaumé, who obſerves, that all the aromatic ſpirits ought to 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 deſireable qualities, the ſpirit muſt not only be perfectly pure at firſt, but that the liquor ought alſo to be rectified after it has been diſtilled from the ſubjects. In this rectification, only the more volatile, ſubtile, 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 for the remedy; as 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 odori-

ferous ſpirits whoſe excellence is cried 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. Baumé 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 ter having ſuffered, for ſix or eight hours, the cold hence 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, *Hiſt. Acad.* 1713.

SPIRITUS RORISMARINI.

Spirit of roſemary.

Lond.

Take of
- Roſemary tops, freſh gathered, a pound and a half;
- Proof-ſpirit, one gallon.

Diſtil in the heat of a water-bath till five pints are come over.

Edinb.

Take of
- Flowering tops of roſemary, freſh gathered, two pounds;
- Rectified ſpirit of wine, eight pounds.

Diſtil in the heat of boiling water till ſeven pounds are come over.

A SPIRIT ſimilar to this is generally brought to us from abroad, under the name of Hungary water.'

This ſpirit is very fragrant, inſomuch 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 that recommended for the foregoing preparation, and employing a perfectly pure ſpirit.

In the Wirtemberg pharmacopœia, 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.

SPI-

SPIRITUS LAVENDULÆ SIMPLEX.

Simple ſpirit of lavender.

Lond.

Take of
Lavender flowers, freſh gathered, a pound and a half;
Proof-ſpirit, one gallon.
Draw off, by the heat of a water-bath, five pints.

Edinb.

'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.'

THE ſame cautions are to be obſerved here as in the diſtillation of the foregoing ſpirit. Both of them, when made in perfection, are very grateful and fragrant: they are frequently rubbed on the temples, &c. under the notion of refreſhing and comforting the nerves; and likewiſe taken internally, to the quantity of a tea-ſpoonful, as warm cordials.

SPIRITUS LAVENDULÆ COMPOSITUS.

Compound ſpirit of lavender.

Lond.

Take of
Simple ſpirit of lavender, three pints;
Spirit of roſmary, one pint;
Cinnamon,
Nutmegs, each half an ounce;
Red ſaunders, three drams.
Digeſt them together, and then ſtrain out the ſpirit for uſe.

Edinb.

'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.'

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.

All 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, 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.

AQUA ODORIFERA.

An odoriferous ſpirit, called ſweet honey water.

Take of
Coriander ſeeds,
Honey, each one pound;
Cloves, an ounce and a half;

Nut-

Nutmegs,
Banzoine,
Storax, each an ounce;
Vanelloes, in number four;
Yellow rind of three lemons:
French brandy, one gallon.

Digeſt theſe ingredients together for forty-eight hours; and then diſtil off the ſpirit in balneo mariæ. To one gallon of this ſpirit add,

Orange-flower water,
Roſe water, of each one pound and a half;
Ambergris,
Muſk, of each five grains.

Firſt grind the muſk and ambergris with ſome of the water, and afterwards put all together in a large matraſs; ſhake them well, and let them circulate for three days and nights in a gentle heat; then ſuffer them to cool, filtre the liquor, and keep it cloſe ſtopt up for uſe.

This compoſition is deſigned rather as a perfume than as a medicine; though for ſuch as can bear its fragrance, it might be uſed to advantage in this laſt intention. The muſk and ambergris do not communicate ſo much of their ſmell as might be expected; and ſerve chiefly to heighten the flavour of the other ingredients; which theſe perfumes excellently do, when employed in very ſmall proportion, to all the odoriferous ſimples, without imparting any thing perceptible of their own. A few drops of this ſpirit give a fine flavour to a large quantity of other liquor. Mr Wilſon, from whom it is taken (*Pract. Chem.* pag. 354.) tells us, that he often made it for king James II. and that it gives one of the moſt pleaſant ſcents that can be ſmelt to.

SPIRITUS COCHLEARIÆ.

Spirit of ſcurvygraſs.
Edinb. +

Take of

Freſh ſcurvygraſs, bruiſed, ten pounds;
Rectified ſpirit of wine, five pints.

Steep the herb in the ſpirit for twelve hours; then with the heat of a water-bath, diſtil off five pints.

This ſpirit is very ſtrong of the ſcurvygraſs; and may be given, in thoſe caſes where the uſe of this herb is proper, from twenty to one hundred drops. The virtues of ſcurvygraſs reſide in a very ſubtile, 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, 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 ſcurvygraſs 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 one another. Here it may be obſerved, that tho' *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, and yet their

virtues

virtues are deſtroyed in the operation.

Aqua Anhaltina.
Anhalt water.

Take of
Turpentine, ſix ounces;
Olibanum, one ounce;
Aloes wood, three ounces;
Cloves,
Cinnamon,
Cubebs,
Roſemary flowers,
Galangal,
Maſtich,
Nutmegs, each, ſix drams;
Saffron, two drams and a half;
Bay berries,
Fennel ſeeds, each half an ounce;
Spirit of wine, five pints.

Pulveriſe thoſe ingredients which require ſuch treatment, and digeſt the whole with the ſpirit for ſix days; then diſtil with an exceeding gentle heat in balneo mariæ: the liquor which runs clear is to be ſeparated from the turbid, and kept by itſelf.

Where the addition of muſk is required, fifteen grains thereof are to be tied in a bag, and ſuſpended in the head of the ſtill.

We have inſerted this compoſition from the Brandenburgh pharmacopœia, on account of its being held, in ſome places, in great eſteem. It is rubbed on weak or paralytic limbs, againſt catarrhs, old pains, and aches, &c. and likewiſe given internally, in doſes of half an ounce, for ſtrengthening the ſtomach, diſcuſſing flatulences, relieving colicky pains, and promoting the uterine purgations. It is very unpleaſant to the palate; the aromatics, though ſufficiently numerous, and in conſiderable quantity, not giving over near enough to cover the ſtrong flavour of the turpentine; there are not many of them, indeed, that give over any thing conſiderable at all. A more elegant ſpirit of this kind might be prepared from turpentine, roſemary, lavender, and ſage flowers; or by diſtilling the ſpirit firſt from the turpentine alone, and then diſſolving in it a proper quantity of any ſuitable eſſential oils.

Article II. *Diſtilled Spirituous Waters.*

By *diſtilled ſpirits* are underſtood ſuch as are drawn with a ſpirit that has been previouſly rectified, or which is reduced nearly to that ſtrength in the operation; by *ſpirituous waters*, thoſe in which the ſpirit is only of the proof ſtrength, or contains an admixture of about an equal meaſure of water. Theſe laſt have been uſually called compound waters, even when diſtilled from one ingredient only; as thoſe, on the other hand, which are drawn by common water, though from a number of ingredients, are named ſimple; the title *ſimplex*, here, relalating not to ſimplicity in reſpect of compoſition, but to the vehicle being *plain* water. The Edinburgh Pharmacopœia denominates thoſe waters ſimple which are drawn from a ſingle ingredient, whether the vehicle be common water or ſpirituous water, and all thoſe compounds which are diſtilled from more than one.

General rules for the Distillation *of* spirituous Waters; *from the* Edinburgh Pharmacopœia †.

I.

The plants and their parts ought to be moderately and newly dried, except ſuch as are ordered freſh gathered.

II.

II.

After the ingredients have been ſteeped in the ſpirit for the time preſcribed, add as much water as will be ſufficient to prevent an empyreuma, or rather more.

The liquor which comes over firſt in the diſtillation, is by ſome kept by itſelf, under the title of ſpirit; and the other runnings, which prove milky, fined down by art. But it is better to mix all the runnings together, without fining them, that the waters may poſſeſs the virtues of the plant entire; which is a circumſtance to be more regarded than their fineneſs or ſightlineſs.

If the diſtillation is ſkilfully managed, the heat equable, and all along gentle, and no more drawn off than the quantity directed, moſt of the waters will appear ſufficiently bright and fine; ſome of them, which look turbid juſt after they are drawn, will, on ſtanding for a few days, become clear and tranſparent. The practice here forbid, of ſaving ſome of the firſt runnings apart, is certainly very injurious to the compoſition; the water being not only robbed by it of ſome of the more volatile parts of the ingredients, but likewiſe rendered permanently milky, as wanting the ſpirit which, by diſſolving the oil of the ingredients that gives this appearance, would make the liquor tranſparent. Nor is the method of fining the turbid waters by alum, &c. leſs culpable; for theſe additions produce their effects only by ſeparating from the liquor what it had before gained from the ingredients.

III.

In the diſtillation of theſe waters, the genuine brandy obtained from wine is directed. Where this is not to be had, take inſtead of that proof-ſpirit, half its quantity of a well rectified ſpirit prepared from any other fermented liquors: in this ſteep the ingredients, and then add ſpring-water, enough, both to make up the quantity ordered to be drawn off, and to prevent burning.

By this method more elegant waters may be obtained, than when any of the common proof-ſpirits, even that of wine itſelf, are made uſe of. All vinous ſpirits receive ſome flavour from the matter from which they are extracted; and this flavour, which adheres chiefly to the phlegm or watery part, they cannot be diveſted of, without ſeparating the phlegm, and reducing them to a rectified ſtate.

Aqua absinthii composita.

Compound wormwood water.

Take of

Calamus aromaticus,
Orange-peel, freſh,
Cinnamon, each four ounces;
Roman wormwood, half a pound;
Mint, three ounces;
Leſſer cardamoms,
Mace, each one ounce;
French brandy, two gallons.

Having bruiſed the ſeeds and ſpices, and cut the other ingredients, pour on them the brandy, and after ſteeping them together for the ſpace of four days, diſtil off two gallons.

This water was formerly preſcribed as a ſtomachic, along with bitter infuſions; and for this purpoſe it is the leaſt unfit (as being the moſt elegant and leaſt unpleaſant) of all the wormwood waters that the ſhops were furniſhed with. It is nevertheleſs too ungrateful an addition to the fine bitters of our new pharmacopœias; and cannot be ſuppoſed to contribute any thing to their virtue, which more agreeable ſpirituous waters would not equally do. Some have expected wormwood wa-

ter to be itſelf a bitter; but only the ſmell and flavour of the wormwood ariſes in this proceſs, thoſe parts in which its bitterneſs reſides remaining behind in the ſtill.

In former editions of the London Pharmacopœia there were two wormwood waters, which by ſome are ſtill held in eſteem, and were propoſed by the committee of the College to be continued at the late reviſal, with ſome amendments.

AQUA CARVI SPIRITUOSA.

Spirituous caraway water.
Edinb.

'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.
In the ſame manner may be prepared nine pounds of ſpirituous diſtilled waters, from
Cinnamon, one pound;
Peppermint leaves, a pound and a half;
Nutmeg, well beat, two ounces;
Jamaica pepper, half a pound.

AQUA ALEXETERIA SPIRITUOSA.

Spirituous alexeterial water.
Lond.

Take of
Spearmint leaves, freſh, half a pound;
Angelica leaves, freſh,
Sea wormwood tops, freſh, each four ounces;
Proof-ſpirit, one gallon;
Water, as much as will prevent burning.
Diſtil off one gallon.

This is a tolerably pleaſant water; it is looked upon as an alexipharmac and ſtomachic; and in theſe intentions is not unfrequently made uſe of in juleps, &c.

AQUA ALEXETERIA SPIRITUOSA cum ACETO.

Spirituous alexeterial water with vinegar.
Lond.

Take of
Spearmint leaves,
Angelica leaves, each half a pound;
Sea-wormwood tops, four ounces;
Proof-ſpirit, one gallon;
Water, as much as is ſufficient to prevent burning;
Vinegar, one pint.
Diſtil the freſh herbs with the ſpirit and water, drawing off one gallon; to which add the vinegar.

Angelica, after trial of ſundry other materials, has been found the moſt effectually to remove the diſagreeable flavour which the vinegar would otherwiſe communicate, and therefore this plant is ordered in a larger proportion here than in the other alexeterial waters. Perhaps it would be more eligible to add the vinegar occaſionally; for when mixed with the liquor at firſt, it is apt to throw down, upon keeping, ſome of the more valuable parts which the water received from the herbs.

'Theſe waters, and likewiſe the aqua theriacalis in former editions of the Edinburgh Pharmacopœia, are ſcarcely ever employed in modern practice; and thoſe who have employed them for the purpoſes ſignified by their title, have often been diſappointed, and as frequently been led to doubtful or baneful practice.'

AQUA EPIDEMICA.

Plague water.
Edinb. †

Take of
Maſterwort roots, a pound and a half;

Angelica

Angelica ſeed,
Elder flowers, each half a pound;
French brandy, three gallons.

Digeſt for two days, then diſtil off two gallons and a half; to which add half a gallon of diſtilled vinegar.

THE foregoing compoſitions are the only diſtilled waters in which the heat of the ſpirit is tempered by the addition of vinegar, an ingredient which renders them ſerviceable in many caſes where ſpirituous liquors alone would be improper. 'They were formerly' held in great eſteem as ſudorifics and alexipharmacs.

AQUA SEMINUM ANISI COMPOSITA.

Compound aniſeed water.
Lond.

Take of
Aniſeeds,
Angelica ſeeds, each half a pound;
Proof-ſpirit, one gallon;
Water, as much as is ſufficient to prevent burning.

Draw off by diſtillation one gallon.

THIS is a very elegant aniſeed water, the angelica ſeeds greatly improving the flavour of the aniſe: it is apt to turn out milky, if drawn ſo low as here ordered.

AQUA CORTICUM AURANTIORUM SPIRITUOSA.

Spirituous orange-peel water.
Lond.

Take of
Outer rind of Seville orange-peel, dried, half a pound;
Proof-ſpirit, one gallon;
Water, as much as is ſufficient to prevent an empyreuma.

Diſtil off one gallon.

THIS is conſiderably ſtronger of the orange-peel than the ſimple water. It is uſed as a cordial, ſtomachic, and carminative.

AQUA BRYONIÆ COMPOSITA.

Compound bryony water.

Take of
Bryony roots, one pound;
Wild valerian root, four ounces;
Pennyroyal,
Rue, each half a pound;
Mugwort leaves,
Feverfew flowers,
Savin tops, each one ounce;
Orange-peel, freſh,
Lovage ſeed, each two ounces;
French brandy, two gallons and a half.

Having cut or bruiſed thoſe ingredients which require ſuch treatment, ſteep them in the brandy four days; then draw off by diſtillation two gallons and a half of liquor.

THIS compoſition, deſigned as an antihyſteric, is liable to conſiderable objections, not only in regard to its particular ingredients, but to the medicinal intention of the whole. Many, by the uſe of this and other like waters, under the notion of medicines, have been betrayed into the pernicious habit of drinking drams: whereas, however ſpirituous liquors may give a temporary relief to the languors of hyſterical and hypochondriacal perſons, none ſuffer ſo ſoon the ill effects attending the conſtant uſe of them. The unpleaſant flavour of this water renders it exceptionable alſo as a vehicle of other antihyſteric medicines, which, in general, are of themſelves ſufficiently ungrateful: a ſmall augmentation in the doſe of the medicines themſelves (as the London committee obſerve) would abundantly compenſate any aſſiſtance to be expected from this water, and leave room for the uſe of a more agreeable vehicle.

The colleges have therefore wholly omitted this water, without giving any thing of ſimilar intention in its place. 'The following is leſs exceptionable, but might alſo perhaps be very well ſpared out of the ſhops:'

AQUA VALERIANÆ COMPOSITA.

Compound valerian water.
Edinb. †

Take of
Wild valerian root, a pound and a half;
Lovage ſeed, half a pound;
Pennyroyal leaves, four ounces;
Savin tops, two ounces;
French brandy, two gallons.
Digeſt for two days, and then draw off by diſtillation two gallons.

AQUA SEMINUM CARDAMOMI.

Cardamom-ſeed water.
Lond.

Take of
Leſſer cardamom ſeeds, freed from the huſks, four ounces;
Proof-ſpirit, one gallon;
Water, as much as is ſufficient to prevent burning.
Diſtil off one gallon.

This water is a grateful cordial and carminative, the cardamom ſeeds giving over in this proceſs the whole of their flavour. It is not, perhaps, very neceſſary to be at the trouble of ſeparating the huſks, for theſe communicate nothing diſagreeable: the only difference is, that if employed unhuſked, a proportionably larger quantity of them muſt be taken.

AQUA SEMINUM CARUI.

Caraway water
Lond.

Take of
Caraway ſeeds, half a pound;
Proof-ſpirit, one gallon;
Water, as much as will prevent burning.
Diſtil off one gallon.

This is a cordial in common uſe: it contains the flavour of the caraway ſeeds in perfection.

AQUA CINNAMOMI SPIRITUOSA.

Spirituous cinnamon water.
Lond.

Take of
Cinnamon, a pound;
Proof-ſpirit, a gallon;
Water, ſo much as will prevent burning.
Draw off by diſtillation one gallon.

This is a very agreeable and uſeful cordial water, 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 feints 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 water 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

nauſeous taint which the common proof-ſpirits are impregnated with.

AQUA JUNIPERI COMPOSITA.

Compound juniper water.
Lond.

Take of
Juniper berries, one pound;
Sweet fennel ſeeds,
Caraway ſeeds, each an ounce and a half;
Proof-ſpirit, one gallon:
Water, as much as is ſufficient to prevent burning.
Diſtil off one gallon.

Edinb.

'Take of
Juniper berries, well bruiſed, one pound;
Seeds of caraway,
ſweet fennel, of 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 difficulty of urine. The water by itſelf is a good cordial and carminative: the ſervice which this and other ſpirituous waters do in theſe intentions, is too commonly known; though the ill conſequences that follow their conſtant uſe, are too little regarded.

AQUA MENTHÆ PIPERITIDIS SPIRITUOSA.

Spirituous peppermint water.
Lond.

Take of
Peppermint leaves, dry, a pound and a half;
Proof-ſpirit, a gallon;
Water, as much as is ſufficient to prevent an empyreuma.
Draw off by diſtillation one gallon.

THIS water is made uſe of in flatulent colics and other like diſorders; in which it oftentimes gives immediate relief. It ſmells and taſtes ſtrongly of the peppermint.

AQUA MENTHÆ VULGARIS SPIRITUOSA.

Spirituous ſpearmint water.
Lond.

Take of
Spearmint leaves, dry, a pound and a half;
Proof-ſpirit, a gallon;
Water, as much as will prevent burning.
Diſtil off one gallon.

THIS water, if the ſpirit be good, 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.

AQUA MIRABILIS.

Take of
Cinnamon, two ounces;
Lemon-peel, one ounce;
Angelica ſeeds,
Leſſer cardamom ſeeds,
Mace, each half an ounce;
Cubebs, two drams:
Balm leaves, ſix ounces;
French brandy, one gallon.
Pour the brandy on the other ingredients bruiſed; and after digeſting them for four days, draw off by diſtillation one gallon.

THE above compoſition of this celebrated water is that which was formerly followed. At the late re-

formation it has received a conſiderable improvement; the cardamoms, cubebs, and balm, are omitted, and an addition of peppermint introduced. The formula at preſent is as follows:

AQUA AROMATICA, vulgo MIRABILIS.

Aromatic water, commonly called *Aqua mirabilis.*
Edinb. +

Take of
Cinnamon, two ounces;
Freſh yellow rind of lemons,
Angelica ſeeds, each one ounce;
Mace, half an ounce;
Peppermint, three ounces;
French brandy, one gallon.
Digeſt for two days, and then diſtil off one gallon.

This water is very rich of the ſpices; and proves a pleaſant, warm cordial and carminative. In thoſe who have not, by frequent uſe, deprived themſelves of the benefit of theſe kinds of liquors, it often gives preſent relief in languors, flatulences, colicky pains, and other like complaints.

The ſpices in theſe two compoſitions being rather too dear for the purpoſes of a common cordial water, the wholeſale dealers, as I have been informed, generally ſubſtitute to them a cheaper ſpice from our own plantations, Jamaica pepper. A very elegant water is prepared alſo from that ſpice by itſelf in the following proportions:

AQUA PIPERIS JAMAICENSIS SPIRITUOSA.

Spirituous Jamaica pepper water.
Take of
Jamaica pepper, half a pound;
Proof-ſpirit, three gallons;
Water, a ſufficient quantity to prevent an empyreuma.
Draw off by diſtillation three gallons.

This water is far more agreeable than a ſimple water drawn from the ſame ſpice; and has long had a place among the cordials both of the diſtiller and apothecary; though it has not yet been received into any public pharmacopœia.

AQUA NUCIS MOSCHATÆ.

Nutmeg water.
Lond.

Take of
Nutmegs, two ounces;
Proof-ſpirit, a gallon;
Water, as much as will prevent burning.
Draw off by diſtillation one gallon.

This water (with the addition only of ſome hawthorn flowers, an article of very little ſignificance) was formerly celebrated in nephritic diſorders, under the name of AQUA NEPHRITICA. At preſent, it is regarded only as an agreeable ſpirituous liquor, lightly impregnated with the nutmeg flavour.

AQUA PŒONIÆ COMPOSITA.

Compound peony water.
Take of
Peony roots, two ounces;
Wild valerian roots, an ounce and a half;
White dittany root, one ounce;
Peony ſeeds, ſix drams;
Lilies of the valley, freſh, four ounces;
Lavender flowers,
Roſemary flowers, each two ounces;
Betony,
Marjoram,
Rue,
Sage, tops of each, one ounce;
French brandy, a gallon and a half.

Cut

Cut or bruiſe thoſe materials that require ſuch treatment, ſteep them four days in the brandy, and then diſtil over a gallon and a half of liquor.

THIS water was formerly diſtinguiſhed by the title of AQUA ANTIEPILEPTICA, and recommended in all kinds of epilepſies and nervous complaints. For ſome time paſt it has had little regard paid to it, having rarely been preſcribed any otherwiſe than as a vehicle, and as ſuch not often. The ingredients from which it receives its name, the peony roots and ſeeds, communicate little or nothing to the water; whatever virtues theſe are poſſeſſed of, remain behind in the decoction; nor are theſe the only exceptionable articles; the dittany, betony, and ſome others, though of the aromatic kind, afford ſo little, as not to deſerve a place among more powerful materials.

The above formula is taken from 'a former edition of the Edinburgh Pharmacopœia.' It is here inſerted, for the ſake of thoſe who may ſtill have ſome regard for forms ſo long received.

AQUA PULEGII SPIRITUOSA.

Spirituous penny-royal water.
Lond.

Take of
- Penny-royal leaves, dry, a pound and a half;
- Proof-ſpirit, a gallon;
- Water, as much as will prevent burning.

Diſtil off one gallon.

THIS water has a good ſhare of the flavour of the penny-royal, and is pretty much in uſe as a carminative and antihyſteric.

AQUA RAPHANI COMPOSITA.

Compound horſeradiſh water.
Lond.

Take of
- Garden ſcurvygraſs leaves, freſh, four pounds;
- Horſeradiſh root, freſh,
- Orange-peel, freſh, each two pounds;
- Nutmegs, nine ounces;
- Proof-ſpirit, two gallons;
- Water, ſufficient quantity to prevent burning.

Draw off by diſtillation two gallons.

Edinb. †

Take of
- Horſeradiſh root,
- Garden ſcurvygraſs, freſh, each three pounds;
- Orange-peel, freſh,
- Juniper berries,
- Canella alba, each four ounces;
- French brandy, three gallons.

Steep the juniper berries and canella alba in the ſpirit for two days; then add the other ingredients, and draw off three gallons.

BOTH theſe waters are very elegant ones, and as well adapted for the purpoſes of an antiſcorbutic as any thing that can well be contrived in this form. The committee of the London college obſerve, with regard to the firſt, that the horſeradiſh and ſcurvygraſs 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 to this, orange-peel (no incongruous ingredient to the intention of the medicine) adds a flavour very agreeable. Arum root has generally had 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 diſpenſatory-writers, to the contrary. Muſtard ſeed, though not hitherto, that I know of, employed in theſe kinds of compoſitions, ſhould 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, unleſs ſome aromatic material to furniſh an agreeable flavour.

AQUA VULNERARIA, ſeu AQUA CATAPULTARUM.

Arquebuſade water.
Pharm. Argent.

Take of
Comfrey, leaves and root,
Sage,
Mugwort,
Bugloſs, each four handfuls;
Betony,
Sanicle,
Ox-eye daiſy,
Common daiſy,
Greater figwort,
Plantane,
Agrimony,
Vervain,
Wormwood,
Fennel, each two handfuls;
St John's wort,
Long birthwort,
Orpine,
Veronica,
Leſſer centaury,
Milfoil,
Tobacco,
Mouſe-ear,
Mint,
Hyſſop, each one handful;
Wine, twenty-four pounds.

Having cut and bruiſed the herbs, pour on them the wine, and let them ſtand together in digeſtion, in horſedung, or any other equivalent heat, for three days; afterwards diſtil in an alembic with a moderate fire.

THIS celebrated water has been for ſome time held in great eſteem, in contuſions, for reſolving coagulated blood, diſcuſſing the tumours that ariſe on fractures and diſlocations, for preventing the progreſs of gangrenes, and cleanſing and healing ulcers and wounds, particularly gun-ſhot wounds. Mr Lemery has been at the pains of writing a whole treatiſe on it; in which he conſiders each of the ingredients ſingly, and ſuppoſes the water to poſſeſs their united virtues. In this, however, he is miſtaken; for the virtues of moſt of the herbs, admitting them to be as great as he would have them, reſide in ſuch parts as are not capable of being elevated in this proceſs.

CHAP.

CHAP. VI.

CONCENTRATION *of the Medicinal Parts of* JUICES *and* INFUSIONS *by* EVAPORATION.

WHEN vegetable juices, or watery or ſpirituous 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. As the object of the preceding chapter was the collection of the volatile principle which exhales along with the fluid, that of the preſent is this reunion and concentration of the fixed matter. 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 ſpirituous 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 ſpirituous tinctures, reduced to a like conſiſtence, are called *balſam*.

SECT. I.

INSPISSATED JUICES.

WHAT relates to the expreſſion of juices, has already been delivered in Chap. ii. 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 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 parts of ſome

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.

SUCCI SPISSATI, vulgo EXTRACTA.

Inſpiſſated juices, commonly called *Extracts.*

SUCCUS SPISSATUS ACONITI.

Inſpiſſated juice of wolfsbane.
Edinb.

'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
Deadly nightſhade.
Henbane.'

ROB BACCARUM SAMBUCI.

Rob of elder berries.
Lond.

Let the depurated juice of elder-berries be inſpiſſated with a gentle heat.

SUCCUS SPISSATUS BACCARUM SAMBUCI, vulgo ROB SAMBUCI.

Inſpiſſated juice, commonly called *Rob of elder berries.*
Edinb.

'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, generally 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 uſefully taken in common colds at bed-time.

SUCCUS PRUNORUM SILVESTRIUM, five ACACIA GERMANICA.

Inſpiſſated juice of ſloes, or *German acacia.*
Edinb. +

Let any quantity of the juice of unripe ſloes be inſpiſſated over a gentle fire.

This juice is inſpiſſated nearly to dryneſs, care being taken to prevent its burning, as directed in the following ſection for making extracts with water. It is a moderately ſtrong aſtringent, ſimilar to the Egyptian acacia, for which it has been commonly ſubſtituted in in the ſhops. It is given in fluxes, and other diſorders where ſtyptic medicines are indicated, from a ſcruple to a dram.

EX-

EXTRACTUM PLANTAGINIS.

Extract of plantane.
Edinb. +

Let any quantity of the juice of plantane leaves be depurated; either by ſuffering it to ſettle, and then decanting off the clear liquor; or by ſtraining; or by clarification with whites of eggs. Afterwards evaporate the juice in a ſand-heat, to the conſiſtence of honey.

After the ſame manner, extracts may be made from all acid, cooling, ſtyptic, juicy plants.

THIS is a method of treating plants very little practiſed, but which promiſes, if duly proſecuted, to afford medicines of conſiderable power. There are many common and neglected herbs, as plantane, chickweed, chervil, &c. whoſe juices in their dilute ſtate, as well as the herbs in ſubſtance, ſeem to be altogether inſignificant, but which, when the juice is well depurated from the feculent matter, and concentrated by the evaporation of the fluid, yield extracts, which diſcover to the taſte no ſmall activity. Theſe extracts, like thoſe prepared from the juices of moſt of the ſummer fruits, if inſpiſſated to dryneſs, grow moiſt again in the air.

ELATERIUM.

Lond.

Slit ripe wild cucumbers, and having very lightly preſſed out the juices, paſs it through a fine hair ſive into a glazed earthen veſſel. After ſtanding for ſome hours, the thicker part will fall to the bottom; from which the thinner is to be poured off, and what liquid matter is ſtill left, is to be ſeparated by filtration. The remaining thick part is to be covered with a linen cloth, and expoſed to the ſun, or other gentle heat, till grown thoroughly dry.

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 *fæculæ*. The filtration above directed, for draining off ſuch part of the watery fluid as cannot be ſeparated by decantation, is not the common filtration through 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 through. 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.

The Edinburgh Pharmacopœia + directs the wild cucumbers to be gathered before they have grown fully ripe; and no more of the juice to be taken, than that which iſſues ſpontaneouſly upon ſlitting them. After ſettling, the fluid part is ordered to be poured away; and the thick reſiduum, without any further draining or filtration, to be exſiccated in the ſun.

THE juice of the unripe fruit is ſaid to operate with greater violence than of that which is ripe. The foregoing preſcriptions do not per-

perhaps differ ſo much in regard to the degree of maturity, as in the manner of expreſſing it; both ſeeming to intend the fruit to be taken juſt before it has grown ſo thoroughly ripe, as to burſt and ſhed its juice on being touched. If any preſſure is uſed, it ſhould be exceedingly gentle; otherwiſe ſome of the inactive pulpy matter of the fruit will be forced out with the juice, and render the ſtrength of the elaterium precarious; a point of primary conſequence to be avoided, in a medicine of ſuch powerful operation, and limited to ſo ſmall a doſe.

Elaterium is a ſtrong irritating cathartic, and oftentimes operates alſo as an emetic. It is never to be ventured on but in indolent phlegmatic habits, as in dropſies, in which it is by ſome particularly recommended. Two or three grains are in general a ſufficient doſe.

Succus spissatus cicutæ.
Inſpiſſated juice of hemlock.
Edinb.

'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 to that length, ſo 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 Stork,' who recommends it as a high 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 neither 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, though of long continuance; diſcuſſes ſcirrhous tumours, both internal and external; and cures dropſies and conſumptions proceeding from ſchirroſities: 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 is effected, or much benefit perceived from it; that in ſome caſes it failed of giving any relief; and 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 medicines in their reſpective intentions, yet the great number of deplorable

caſes

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; tho' 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 plant's being gathered, and the manner of the preparation of the extract. Dr Storck 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 mucilagilaginous: 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 is 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 few inſtances of its diſcovering any valuable medicinal powers, 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 Storck, 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 inſpiſſated juices of the belladonna and hyoſcyamus, like that of cicuta, poſſeſs the virtues of the herbs; and this form is obviouſly the beſt for concentrating and preſerving their properties. See BELLADONNA and HYOSCYAMUS.'

SECT. IV.

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

are either not extracted at all, or exhale alone 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, in regard to the medicine, whether the ſubject is uſed freſh or dry; ſince nothing that can be preſerved in this proceſs will be loſt by drying. In 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 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 naufeous; and the draſtic purgatives loſe their virulence, though without any remarkable ſeparation of their parts.

4. The decoctions are to be depurated 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 is 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 here exceeding ſlow and tedious.

7. Extracts are to be ſprinkled with a little ſpirit of wine, to prevent their growing mouldy [*L.*] They ſhould be kept in bladders moiſtened with ſweet oil [*E.*] +

EXTRACTUM GENTIANÆ.

Extract of gentian.
Edinb.

'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 herbs in a ſtate of tolerable perfection. 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 ABSINTHII.

Extract of wormwood.
Edinb. +

Boil dried wormwood leaves in water, ſupplying freſh water occaſionally, till the herb has given out all its virtues to the liquor. Strain the decoction through a woollen cloth, and evaporate it, in a ſand-heat, to the conſiſtence of honey.

This extract is almoſt ſimply bitter; the peculiar flavour of the wormwood being diſſipated in the evaporation. The chemiſts uſually prepare the extract of wormwood from the decoction which remains in the ſtill after the diſtillation of the eſſential oil: And, provided the ſtill has been perfectly clean, and the liquor not ſtood too long in it after the diſtillation, this piece of frugality is not to be diſapproved of; ſince, whether we catch the exhaling vapour, or ſuffer it to be diſſipated in the air, the remaining extract will be the ſame.

EXTRACTUM CENTAURII MINORIS.

Extract of leſſer centaury.
Edinb. +

This is directed to be prepared in the ſame manner as the preceding. It is the oldeſt extract we have any account of: its preparation is very accurately and circumſtan-

ſtantially ſet down in a book uſually aſcribed to Galen, *de Virtute Centureæ.* The author of that treatiſe recommends the extract as a medicine of excellent ſervice in many caſes; and looks upon centaury as a ſpecific againſt the bite of a mad dog and other venomous animals. It is doubtleſs an uſeful bitter, poſſeſſing the general virtues of the ſubſtances of that claſs; but cannot well be ſuppoſed to have any others.

EXTRACTUM CHAMÆMELI.

Extract of camomile.
Edinb. +

This extract is prepared from the flowers of camomile, in the ſame manner as thoſe of the leaves of the two preceding plants. Nor is it greatly different from thoſe extracts in quality; the ſpecific flavour of the camomile exhaling in the evaporation. The chemiſts commonly prepare it, like that of wormwood, from the decoction remaining after the diſtillation of the eſſential oil.

EXTRACTUM ENULÆ CAMPANÆ.

Extract of elecampane.
Lond.

Boil the roots of elecampane in water; preſs out and ſtrain the decoction, and ſet it by to ſettle. Then pour off the clear liquor, and boil it down to a pilular conſiſtence; taking care towards the end to prevent its burning to the veſſel.

This extract retains a conſiderable ſhare of the virtues of the root: its taſte is ſomewhat warm, and not ungratefully bitteriſh. It is given from a ſcruple to a dram, in a lax ſtate of the fibres of the ſtomach, and in ſome diſorders of the breaſt.

EXTRACTUM GENTIANÆ.

Extract of gentian.
Lond.

This extract is prepared from the roots of gentian, in the ſame manner as the foregoing extracts. It is of a reddiſh-brown colour, and an intenſely bitter taſte, being one of the ſtrongeſt of the vegetable bitters.

EXTRACTUM GLYCYRRHIZÆ.

Extract of liquorice.
Lond.

Lightly boil freſh liquorice roots in water, preſs the decoction thro' a ſtrainer, and after the feces have ſubſided, evaporate it until it no longer ſticks to the fingers, taking care towards the end of the operation to prevent an empyreuma.

It is convenient, before boiling the root, to cut it tranſverſely into ſmall pieces, that it may more readily give out its virtues by light coction. If the boiling is long continued, the rich ſweet taſte, for which this preparation is valued, will be greatly injured. For the ſame reaſon, the quantity of water ought to be no larger than is abſolutely neceſſary to extract the virtues of the root: a quart, or at moſt three pints, will be fully ſufficient for a pound of liquorice. It would be of conſiderable advantage to the preparation, and probably (when made in quantity) leſs expenſive to the preparer, to uſe inſtead of the decoction juice of liquorice, preſſed out betwixt iron rollers, after the manner practiſed abroad for obtaining the juice of the ſugar-cane.

Large quantities of extract of liquorice have been uſually brought to us from Spain, and other foreign

tries: but it is very rarely met with in the ſhops in perfection; the makers of this commodity, both at home and abroad, being either very ſlovenly in its preparation, or deſignedly mixing it with ſand, and other impurities. When made with due care, it is exceedingly ſweet, not at all bitteriſh or nauſeous, more agreeable in taſte than the root itſelf, of a pleaſant ſmell, a reddiſh-brown colour, and when drawn out into ſtrings, of a bright golden colour, totally ſoluble in water, without depoſiting any feces.

This preparation would be very convenient for many purpoſes in the ſhops, if kept in a ſomewhat ſofter conſiſtence than that of an extract. The only inconvenience attending this ſoft form is, its being apt in a ſhort time to grow mouldy: this may be effectually prevented by the addition of a ſmall portion of ſpirit of wine.

'This extract is a very convenient vehicle to convey ſeveral medicines: it has been more eſpecially employed to ſuſpend the powder of the bark, and to reconcile that drug to the palate of children.'

EXTRACTUM HELLEBORI NIGRI.

Extract of black hellebore.
Lond.

This extract is prepared from the roots of black hellebore, in the ſame manner as that of elecampane roots, above deſcribed. It purges with conſiderably leſs violence than the hellebore in ſubſtance, and appears to be one of the beſt preparations of that root, when intended to act only as a cathartic. The doſe is from eight or ten grains to fifteen or more.

EXTRACTUM LIGNI CAMPECHENSIS.

Extract of logwood.
Lond.

Take of logwood, reduced to powder, one pound. Boil it in a gallon of water till half the liquor is conſumed, repeating the coction with freſh water four times, or oftener. The ſeveral decoctions are to be mixed together, paſſed through a ſtrainer, and evaporated to a due conſiſtence.

This wood very difficultly yields its virtue to watery menſtrua, and hence the reducing it into fine powder is extremely neceſſary. The Edinburgh Diſpenſatory directs ſpirit of wine to be called in aid. See the following ſection.

The extract of logwood has been uſed for a conſiderable time in ſome of our hoſpitals, but is now firſt received into the Pharmacopœia. It has an agreeable ſweet taſte, with ſome degree of aſtringency; and hence becomes ſerviceable in diarrhœas, for blunting the acrimony of the juices, and 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 to 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 preſcriber therefore ought to caution the patient againſt any ſurpriſe of this kind.

EXTRACTUM CORTICIS PERUVIANI,

MOLLE ET DURUM.

Extract of Peruvian bark, ſoft and hard.
Lond.

Boil a pound of powdered bark in five or ſix quarts of water, for an hour or two, and pour off the liquor; which, whilſt hot, will be red and tranſparent, but on growing cold becomes yellow and turbid. The remaining bark is to

be boiled again in the ſame quantity of water as before, and this proceſs repeated till the liquor remains tranſparent when cold. All the decoctions, ſtrained and mixed together, are to be evaporated over a gentle fire to a due conſiſtence, care being taken to prevent the matter from burning.

This extract is directed to be kept in the ſhops, both in a ſoft and hard form; the firſt of a proper conſiſtence for making into pills; the other fit for being reduced into powder.

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 (See the account of this article). 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, as the Committee obſerve, 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 of the ſpirit, which evaporating laſt, muſt communicate this ill flavour to the extract; a circumſtacce of very great conſequence, as this medicine is deſiggned for ſuch 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.

EXTRACTUM LIGNI GUAIACI, molle et durum.

Extract of guaiacum wood, ſoft and hard.

Lond.

Boil a pound of ſhavings of guaiacum in a gallon of water till half the liquor is waſted, repeating the operation four times, or oftener, with the ſame quantities of freſh water. The ſeveral decoctions, paſſed through a ſtrainer, are to be mixed and inſpiſſated together; when the aqueous parts are almoſt entirely exhaled, a little rectified ſpirit of wine is to be added, that the whole may be reduced into an uniform and tenacious maſs. This extract is to be prepared as the foregoing, in a ſoft and hard form.

Here the reſinous parts of the wood which were boiled out with the water, are apt to ſeparate towards the end of the inſpiſſation: hence an addition of ſpirit becomes neceſſary, to keep them united with the reſt of the matter. The extract agrees in virtue with the wood.

EXTRACTUM RUTÆ.

Extract of rue.

Lond.

This is prepared from the leaves of rue, in the ſame manner as that of elecampane roots already deſcribed. It retains a conſiderable ſhare of the warmth and pungency of the rue; for though the principal virtues of the rue reſide in an eſſential oil, yet the oil of this plant, as formerly obſerved under the head of thoſe preparations (ſee page 378) is not of a very volatile kind.

EXTRACTUM SABINÆ.

Extract of ſavin.

Lond.

This extract is prepared from the leaves of ſavin, in the ſame manner as the preceding. It does not retain ſo much, as that extract does, of the virtues of its ſubject, the oil of ſavin being more volatile than that of rue.

GUMMI

GUMMI et RESINA ALOES.

Gum and resin of aloes.
Lond.

Boil four ounces of socotorine aloes in two pints of water till as much as possible of the aloes is dissolved. The solution suffered to rest for a night, will deposite the resin to the bottom of the vessel: after which, the remaining liquor, strained, if needful, is to be evaporated, that the gum may be left.

The gum of aloes is somewhat less purgative, and considerably less disagreeable, than the crude juice. This alteration is not owing, as might be supposed, to the separation of the resin; for the pure resin of aloes is still less disagreeable, and less purgative even than the gum: some have denied that it has any purgative virtue at all; and others ascribe to it an astringent quality. I have exhibited this resin, divided by trituration with the testaceous powders, in the dose of a scruple, without observing any effect from it (See page 75.) The gum seems to be the only part here intended for medicinal use: if the resin is required, it ought to be further purified by solution in spirit of wine; for as it is obtained by precipitation from an aqueous solution of impure aloes, all the impurities of the drug that are not soluble in water will precipitate along with it.

PILULÆ, seu EXTRACTUM, RUDII.

The pills or extract of Rudius.
Edinb. †

Take of
Black hellebore roots,
Colocynth,
Socotorine aloes, each two ounces;
Scammony, one ounce;
Virtiolated tartar, two drams;
Distilled oil of cloves, one dram.

Bruise the colocynth and hellebore; pour on them two quarts of water, and boil to the consumption of half the liquor: pass the decoction through a strainer, and evaporate it to the consistence of honey, adding the aloes and scammony, reduced into a fine powder: when the mass is taken from the fire, mix into it the vitriolated tartar and distilled oil.

This preparation is a medicine of 'considerable violence' as a cathartic, similar to one described hereafter, under the title of *Extractum Catharticum*. Water appears to be a better menstruum than spirituous liquors, both for the colocynth and the hellebore; the watery extracts being much less irritating than the spirituous, though not perhaps less effectual purgatives.

ROB BACCARUM JUNIPERI.

Rob of juniper berries.

Let juniper berries, thoroughly bruised, be boiled in a sufficient quantity of water, the liquor strained, and inspissated to the consistence of honey.

This preparation may be made also from the decoction that remains after the distillation of the essential oil of the berries. It has a sweet balsamic taste, accompanied with a greater or less bitterness, according as the seeds of the berry were more or less thoroughly bruised. This elegant preparation, though not received in our Pharmacopœias, seems not unworthy of a place in the shops. Hoffman has a great opinion of it in debilities of the stomach and intestines, and in the difficulties of urine familiar to persons of an advanced age.

SECT. III.

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 conſiderably evaporates, 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 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 water 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 (See Chap. v.). If the diſtilled ſpirit is found to have brought over any flavour from the ſubject, it may be advantageouſly reſerved for the ſame purpoſes again.

It is obſervable, that though rectified ſpirit is 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 only 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, being 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.

RE-

RESINA JALAPPÆ.

Resin of jalap.

Edinb. +

Take any quantity of jalap root very well bruised. Pour upon it so much rectified spirit of wine as will cover it to the height of four fingers; and digest them together in a sand-heat, that the spirit may extract the virtue of the root. Filtre the tincture thro' paper, put it into a glass cucurbit, and distil off one half of the spirit. Add to the remainder a proper quantity of water, and the resin will precipitate to the bottom; divide it into little cakes, and dry it with a very gentle heat.

This preparation is a pure resin; such gummy parts as the spirit might have taken up remaining suspended in the liquor. Its indissolubility in any aqueous fluid, and its tenacious quality, by which it adheres to the coats of the intestines, and occasions great irritation and gripes, forbid its being ever given by itself. It is fitted for use, by thoroughly triturating it with testaceous powders; by grinding it with almonds or powdered gum, and making the compound into an emulsion with water; or by dissolving it in spirit of wine, and mixing the solution with a proper quantity of syrup or of mucilage. Six or eight grains, managed in either of these ways, prove powerfully cathartic, and generally without griping or greatly disordering the body.

It has been said, that resin of jalap is frequently adulterated with common resin; and that this abuse may be discovered by spirit of wine, which dissolves the former, without touching the latter. This criterion, however, is not to be relied on; for there are many cheap resins which are soluble in spirit of wine as well as that of jalap; and there is not any one which may not be artfully rendered so.

RESINA SCAMMONII.

Resin of scammony.

Edinb. +

This resin is prepared in the same manner as the preceding; with which it agrees also in its general qualities; occasioning vehement gripes if taken by itself, and operating generally with sufficient safety when properly divided. Scammony is doubtless a valuable purgative; but what advantage there is in thus separating the purgative resin from its natural corrector, the gummy part, is not so clear.

RESINA GUAIACI.

Resin of guaiacum.

Edinb. +

This resin is prepared in the same manner as the two preceding, either from the wood of guaiacum, or from what is called gum guaiacum: it is obtained most commodiously from the latter.

The virtue of guaiacum consists wholly in its resin; and the resin of the wood, and of the gum so called, is perfectly one and the same, the gum being the natural exudation from the tree. If this exudation could be had pure, there would be no occasion for any artificial preparation of this kind: but it always contains a large proportion of earthy matter, so as to stand greatly in need of this method of purification. Sixteen ounces of the best gum guaiacum do not yield above twelve ounces of pure resin. The same quantity of the wood yields about three ounces, more or less, according to its goodness. The bark is somewhat less resinous than the wood.

RESINA CORTICIS PERUVIANI.

Reſin of Peruvian bark. Edinb. +

This reſin is made in the ſame manner as the foregoing, and proves an elegant preparation of the bark, much ſtronger in taſte than the watery extract deſcribed in the preceding ſection: it is nearly equivalent to about ten times its quantity of the bark in ſubſtance. There does not, however, appear to be any advantage in ſeparating the pure reſin by the addition of water, either in this or in the other articles. In regard to the bark particularly, it is more adviſable to endeavour to unite into one compound all that can be extracted from it by watery and ſpirituous menſtrua: and accordingly the Edinburgh College has received a preparation of this kind, which is deſcribed in the following ſection.

EXTRACTUM CROCI.

Extract of ſaffron. Pharm. Brandenburg.

Digeſt ſaffron in freſh quantities of pure ſpirit of wine, ſo long as the ſpirit extracts any colour from it. Mix the ſeveral tinctures together, and diſtil off the ſpirit, in a tall glaſs veſſel, by the heat of a water-bath, till the reſiduum appears of the conſiſtence of oil or balſam.

THIS is a general proceſs, for the preparation of extracts from aromatic and other odorous ſubſtances; which extracts have been commonly diſtinguiſhed by the name of *eſſential*, for the ſame reaſon that the volatile oils are ſo called, their retaining the ſpecific odour and flavour of the ſubjects. In making the extracts of this claſs, the inſpiſſation ſhould never be carried much lower than the conſiſtence above directed; for when the matter has become thick, the ſpirit exhales more difficultly than before, and is more apt to carry off with it ſome of the volatile parts. If the preparation is wanted in a ſolid or conſiſtent form, it is more adviſable to mix with it a ſuitable quantity of any appropriated powdery matters, than to hazard the loſs of its virtue by a further evaporation. If any addition is wanted for giving conſiſtence to the extract of ſaffron, ſaffron in ſubſtance appears to be the beſt.

The eſſential extract of ſaffron is an elegant and high cordial. Boerhaave ſays, it poſſeſſes ſuch exhilarating virtues, that, if uſed a little too freely, it occaſions an almoſt perpetual and indecent laughing: he obſerves, that it tinges the urine of a red colour; and that it mingles with water, ſpirit, and oils, but is moſt conveniently taken in a glaſs of Canary or other rich wine. A few drops are a ſufficient doſe. The diſtilled ſpirit contains alſo ſome ſhare of the virtue of the ſaffron, though far leſs than the extract: it is ſaid to have an advantage above moſt other cordial ſpirits, of diſpoſing the patient to ſweat: it may be taken, properly diluted, from a dram to half an ounce.

SECT.

SECT. IV.

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 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 in 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 compound or gummy-reſinous extracts: one, by uſing proof-ſpirit, that is, a mixture of about equal part of ſpirits 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 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 ſolution 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.

EXTRACTUM JALAPII.

Extract of jalap.

Lond.

Upon powdered jalap pour ſome rectified ſpirit of wine, and with a gentle heat extract a tincture: boil the remaining jalap in freſh parcels of water. Strain the firſt tincture, and draw off the ſpirit, till what remains begins to grow thick: boil the ſtrained decoction alſo to a like thickneſs: then mix both the inſpiſſated matters together, and with a gentle fire reduce the whole to a pilular conſiſtence.

Edinb.

'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 liquors thus inſpiſſated; and keeping them conſtantly ſtirring, evaporate to a proper conſiſtence.'

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 was inſpiſſated by itſelf, it would afford a reſinous maſs, which, unleſs thoroughly divided by proper admixtures, occaſions violent griping, and yet does not prove ſufficiently cathartic; the watery decoctions yield an extract which operates exceeding weakly: both joined together, as in this preparation, compoſe an effectual and ſafe purge. This method of making extracts might be advantageouſly applied to ſundry 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, extracts all the other ſoluble parts.

In a former edition of the Edinburgh Pharmacopœia, a little fixt 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 CORTICIS PERUVIANI.

Extract of Peruvian bark.
Edinb.

The College of Edinburgh has directed the extract of bark to be made with water and ſpirit, in the ſame manner as the preceding. In the bark we may diſtinguiſh two kinds of taſtes, an aſtringent and a bitter one; the former of which ſeems to reſide in the reſinous matter, and the latter chiefly in the gummy. The watery extract (deſcribed in page 417.) is moderately ſtrong in point of bitterneſs, but of the aſtringency it has only a ſmall degree. The pure reſin, on the other hand (page 422.), is ſtrong in aſtringency, and weak in bitterneſs. Both qualities are united in the preſent extract; which appears to be the beſt preparation of this kind that can be obtained from this valuable drug.

EXTRACTUM LIGNI CAMPECHENSIS.

Extract of logwood.
Edinb.

This extract is directed in the Edinburgh Pharmacopœia to be prepared as the foregoing; and the ſame treatment is judiciouſly ordered for all the reſinous drugs in general.

EXTRACTUM CATHARTICUM.

Cathartic extract.
Lond.

Take of
- Socotorine aloes, an ounce and a half;
- Colocynth, ſix drams;
- Scammony,
- Leſſer cardamoms, huſked, each half an ounce;
- Proof-ſpirit, one pint.

Having cut the colocynth ſmall, and bruiſed the ſeeds, pour on them the vinous ſpirit, and digeſt with a gentle heat for four days. Preſs out the tincture, and diſſolve therein the aloes and ſcammony, firſt ſeparately reduced to powder: then draw off the ſpirit, and inſpiſſate the remaining maſs to a a pilular conſiſtence.

THIS compoſition anſwers very effectually the intention expreſſed in its title, ſo as to be relied on in caſes where the patient's life depends on its 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. The purgative virtue of this laſt article appears indeed to be ſufficiently got out by water; and the watery extract to operate with greater mildneſs than that with proof-ſpirit, though in general effectually: the Edinburgh College have accordingly preferred water, in making a preparation of the ſame intention with this, deſcribed in page 419. 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 aromatic 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.

CONFECTIO CARDIACA.

Cordial confection.
Lond.

Take of
Roſemary tops, freſh,
Juniper berries, each one pound;
Leſſer cardamom ſeeds, huſked,
Zedoary,
Saffron, each half a pound.

Extract a tincture from theſe ingredients, with about a gallon and a half of proof-ſpirit: let the tincture be ſtrained off, and reduced by a gentle heat to the weight of about two pounds and a half; then add the following ingredients very finely pulveriſed, and make the whole into an electary.

Compound powder of crabs-claws, ſixteen ounces;
Cinnamon,
Nutmegs, each two ounces;
Cloves, one ounce;
Double-refined ſugar, two pounds.

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 committee, appointed for reforming the London Pharmacopœia, obſerve, that the original confection is compoſed of no leſs than five and twenty particulars; each of which they 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 due 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, and from thence the proportions collected as now ſet down: after which the compound extract was made, and found to anſwer expectation.

The confection, as now reformed, is a ſufficiently grateful, and moderately warm cordial; and frequently

quently given in that intention, from eight or ten grains to a ſcruple or upwards, in boluſes and draughts. The extract retains a conſiderable ſhare of the flavour and virtue of the ingredients, though not near ſo much as if a rectified ſpirit had been employed. The operator ſhould be particularly careful to extract as much from the ingredients as the ſpirit will take up; otherwiſe the inſpiſſated matter turns out ſo thin, and of ſo little tenacity, that the powders are apt to ſeparate and ſubſide from it in keeping. 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.

'In the preſent edition of the Edinburgh Pharmacopœia, this preparation ſtands among the electaries, and is directed thus.

ELECTUARIUM CARDIACUM vulgo CONFECTIO CARDIACA.

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 electary.

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.'

SECT. V.

Extracts by LONG DIGESTION.

IN the foregoing part of this chapter 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 depoſite 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, though 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; the ſubſtance of which is as follows.

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 analogous 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 several years *(plusieurs annees)* cannot

not perhaps be aſcribed fairly to the medicine.

If the theory of the proceſs, and of the alteration produced by it in the opium, is 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 peculiar 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, has little, or rather nothing, of its ſoporific power.

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.

CHAP.

CHAP. VII.

EMPYREUMATIC OILS.

VEGETABLE and animal ſubſtances, and mineral bitumens, on being urged with a red heat, have their original properties deſtroyed, and are reſolved or changed into products of a different nature from what pre-exiſted in the ſubject. By burning them in the open air, a part is changed into aſhes, a part into ſoot, and a part is diſſolved by the air. Expoſed to the fire in cloſe veſſels (as in thoſe called retorts), having receivers adapted to them for detaining the volatile parts, they are reſolved into fetid oils, and different kinds of ſaline ſubſtances, which riſe into the receiver; and a black coal which remains behind, and which, though no farther alterable in cloſe veſſels, on admitting air burns into white aſhes. The oils, called from their fetid burnt ſmell, *empyreumatic*, are the objects of the preſent chapter. Some of theſe, however, being obtained in the ſame proceſs with certain ſaline bodies of more importance than themſelves, are referred to the head of SALINE PREPARATIONS.

OLEUM BUXI.

Oil of box.

Lond.

Diſtil pieces of boxwood in a retort, with a ſand-heat gradually increaſed: the oil will come over along with an acid ſpirit, which is to be ſeparated by a funnel.

OLEUM GUAIACI.

Oil of guaiacum.

Edinb. +

Put any quantity of chips of guaiacum into an earthen long neck, or a glaſs retort, and diſtil either in a ſand-bath or an open fire, increaſing the heat by degrees. At firſt an acid liquor will come over; afterwards a light red oil; and at length, in the utmoſt degree of fire, a thick black oil, which ſinks through the other liquors to the bottom of the receiver.

Oils may be obtained after the ſame manner from every kind of wood.

THE retort may be filled almoſt up to the neck with chips or ſmall pieces

pieces of box or guaiacum, the refuſe of the turner. Lute on a glaſs receiver with a paſte made of linſeed meal and water: ſet the retort on the bottom of a deep iron pot, with a little ſand under it; and fill up the ſpace, betwixt it and the ſides of the pot, with more ſand. Apply at firſt a gentle fire, and gradually increaſe it to the utmoſt that the furnace is capable of giving. Particular care muſt be had not to raiſe the heat too faſt when the firſt reddiſh oil begins to come over; for at this time a large quantity of elaſtic vapour is extricated from the wood, which, if the fire is urged, or if it is not allowed an exit, will burſt the veſſels; when the diſtillation is finiſhed, and the veſſels grown cool, unlute the receiver, and ſeparate the oil from the acid liquor. The method of performing this by the funnel, as directed in the firſt of the above proceſſes, is as follows: Pour the ſeveral liquors into a glaſs funnel, whoſe ſtem is ſtopt by the finger, the ponderous black oil ſinks lowermoſt: ſuffer this to run out; then cloſe the ſtem again, and afterwards ſeparate the acid liquor from the lighter oil in the ſame manner. They are more perfectly ſeparated, by pouring them into a hollow cone of filtering paper, moiſtened with water, and placed in a funnel: the acid liquor paſſes through, and the oil remains on the paper.

The oils obtained by this treatment from different woods and plants, are nearly of the ſame qualities: they have all a very diſagreeable acrid taſte, and a burnt ſtinking ſmell; without any thing of the peculiar flavour, taſte, or virtues of the ſubject which afforded them. The preſent practice rarely employs thoſe oils any otherwiſe than for external purpoſes, as the cleanſing of foul bones, for the tooth-ach, againſt ſome kinds of cutaneous eruptions, old pains and aches, and the like; and for theſe not very often.

OLEUM LATERITIUM.

Oil of bricks.

Lond.

Heat bricks red hot, and quench them in oil olive, till they have ſoaked up all the oil: then break them into pieces ſmall enough to be conveniently put into a retort; and diſtil with a ſand heat gradually increaſed: an oil will ariſe, together with a ſpirit, which is to be ſeparated from it as in the foregoing proceſs.

This preparation has had a place in moſt diſpenſatories, under the pompous names of Oleum Philoſophorum, Sanctum, Divinum, Benedictum, and others as improper as that under which it ſtands above. It is really oil olive, rendered ſtrongly empyreumatic by heat: the ſpirit, ſo called, is no more than phlegm, or water, tainted with the burnt flavour of the oil. It has been celebrated for ſundry external purpoſes, particularly againſt gouty and rheumatic pains, deafneſs, and tingling of the ears, &c. and ſometimes likewiſe given inwardly. But common practice ſeems to have now entirely rejected this loathſome remedy; and the College of Edinburgh have expunged it from their book.

OLEUM PETROLEI BARBADENSIS.

Oil of Barbadoes tar.

Lond.

Diſtil Barbadoes tar with a ſand-heat; an oil will ariſe, together with a ſpirit, which is to be ſeparated frrom it.

Dr Pemberton obſerves, that this oil will be more or leſs thin, according to the continuance of the diſtillation; that the tar will at laſt be reduced

reduced to a black coal; and then the oil will be pretty deep in colour, though perfectly fluid: that 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, I have observed it to lose this property. It is somewhat less disagreeable than the foregoing oils, though very acrid and stimulating.

Oleum Terebinthinæ Æthereum, et Empyreumaticum sive Balsamum.

The ethereal oil of turpentine, and the empyreumatic oil or balsam. Lond.

Distil the essential oil of turpentine in a retort, with a very gentle fire, until what remains has acquired the consistence of a balsam.

Balsam of turpentine may likewise be obtained from the yellow resin left after the distillation of the essential oil: upon distilling this in a retort, at first a portion of thin oil arises, which is to be kept by itself, and afterwards a thick balsam: there remains in the retort a blackish resin, called colophony.

Edinb. †

Melt any quantity of turpentine over a gentle fire, and pour it into a glass retort, of which it may fill one half: then lute on a receiver, and distil in a sand-bath. Apply at first a gentle heat, upon which an acid spirit will come over; and, on gradually increasing the fire, a limpid oil, commonly called ethereal spirit of turpentine; at length a yellow oil will arise. In the bottom of the retort, there remains a resinous mass, called colophony: which if still farther urged with successive degrees of heat to the highest, gives first a red oil, and afterwards a darker coloured one, which sinks through the other liquors to the bottom of the receiver.

These processes are tedious, and accompanied with a good deal of danger; for unless the luting is very close, some of the vapour will be apt to get through, which if it catches fire, will infallibly burst the vessels. The oil here called ethereal, does not considerably differ in specific gravity, smell, taste, or medical qualities, from the cheaper one obtained by the addition of water in the common still: nor are the empyreumatic thin oil and balsam of any great esteem in practice.

Oleum Copaivæ Compositum.

Compound oil or balsam of Copaiva. Lond.

Take two pounds of balsam of Copaiva, and four ounces of gum guaiacum. Distil them in a retort, continuing the operation till a pint of oil is come over.

This mixture, undistilled, proves a medicine of considerable efficacy in rheumatic cases, &c. In distillation, the guaiacum gives over little, serving chiefly for the same purpose that bricks do in the oleum lateritium. The balsam distilled in a retort, with or without the gum, yields first a light coloured oil, smelling considerably of the subject; this is immediately followed by a darker coloured oil, and afterwards by a blue one; both which have little other smell than the empyreumatic one that distinguishes the oils of this class: their taste is very pungent

and

and acrimonious. This balſam, diſtilled with water, yields as much eſſential oil as above of empyreumatic.

OLEUM CERÆ.

Oil of wax.

Edinb. +

Melt yellow bees wax with twice its quantity of ſand, and diſtil in a retort placed in a ſand furnace. 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 a 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 above-mentioned greatly 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, and ſay it is a powerful diuretic *(ingens diureticum)* in doſes of from two to four or more drops; but its diſagreeable ſmell has prevented its coming into uſe among us.

BALSAMUM ANODYNUM, vulgo GUIDONIS.

The anodyne, commonly called *Guido's, balſam.*

Edinb.

Take of

Tacamahaca, in powder,

Venice turpentine, each equal parts.

Put them into a retort, whereof they may fill two thirds, and diſtil with a fire gradually increaſed. Separate, according to art, the red oil, or balſam, from the liquor that ſwims above it.

THIS oil is ſuppoſed to be anodyne and diſcutient. In foreign pharmacopœias, and in the former editions of the London and Edinburgh, oils are directed to be diſtilled in the ſame manner from different reſinous and gummy reſinous bodies ſeparately, as tacamahaca, ſtorax, ammoniacum, galbanum, ſagapenum, &c. but it does not appear that they are materially different from one another in regard to their external uſe, which is the only intention in which they have been employed. The above compoſition has loſt one of its former ingredients, galbanum, without the leaſt injury to its virtue.

'In the preſent edition of the Edinburgh Pharmacopœia, the Balſamum Anodynum is placed among the tinctures, and is directed as follows:

LINIMENTUM ANODYNUM, vulgo BALSAMUM ANODYNUM.

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 more ſimple formula, are exceeding-

ly

dy 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.'

Oleum animale Dippelii.
Dippel's animal oil.

Take any quantity of the empyreumatic oil diſtilled from animal ſubſtances, as that of hartſhorn (the preparation of which is deſcribed along with that of the volatile ſalt and ſpirit in the following chapter.) Put it into a glaſs retort; and having fitted on a receiver, diſtil in a ſand-heat: the oil will ariſe paler coloured and leſs fetid; and a black coaly matter will remain behind. Repeat the diſtillation in freſh retorts till the oil ceaſes to leave any feces, and till it loſes its ill ſmell, and acquires an agreeable one.

OLEUM e CORNUBUS RECTIFICATUM, ſive OLEUM ANIMALE.
Rectified oil of horns, or *animal oil.*
Edinb.

'Take of
Empyreumatic oil newly diſtilled from the horns of animals, as much as you will.

Diſtil with a gentle heat, in a matraſs 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 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.'

Animal oils thus rectified, are thin and limpid, of a ſubtile, penetrating, not diſagreeable ſmell and taſte. They are ſtrongly recommended as anodynes and antiſpaſmodics, in doſes of from fifteen to thirty drops. Hoffman reports, that they procure a calm and ſweet ſleep, which continues often for twenty 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 twenty drops or more, on an empty ſtomach, ſix hours before the acceſſion of an intermittent 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 oils, to be anodyne, antiſpaſmodic, and diaphoretic, or ſudorific. It is obſervable, that all the empyreumatic oils diſſolve in ſpirit of wine, and that the oftener they are rectified or rediſtilled, 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 tedioufneſs and trouble of the rectification having prevented their coming into general uſe, or being often made. They are liable alſo to a more material inconveniency in regard to their medicinal uſe, precarioufneſs 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.

CHAP.

CHAP. VIII.

SALTS *and* SALINE PREPARATIONS.

SECT. I.

FIXT ALKALINE SALTS.

THE aſhes of moſt vegetables, ſteeped or boiled in water, give out to it a ſaline ſubſtance, ſeparable in a ſolid form by evaporating the water. 'It has been ſuppoſed, that theſe ſaline ſubſtances never pre-exiſted in the vegetable, but were always generated during the burning. This, however, is found to be a miſtake; as Margraaf and other chemiſts have procured them from the vegetables in their entire ſtate. Tartar, too, which has been generally conſidered as a product of the vinous fermentation, has been diſcovered in muſt and verjuice. The ſaline ſubſtances in the aſhes of vegetables are of various kinds; but in the preſent ſection we are to conſider the methods of obtaining one particular ſalt, which of all others more eſpecially predominates, and which is called *fixt alkaline ſalt*. See ANALYSIS of VEGETABLES by FIRE in Part I.'

SAL TARTARI.

Salt of tartar.

Lond.

Let any kind of tartar be wrapt up in ſtrong brown paper, firſt made wet, or included in a proper veſſel, and expoſed to the fire, that its oil may be burnt out: then boil it in water, filtre the ſolution, and evaporate it, till there remains a dry ſalt, which is to be kept in a veſſel cloſely ſtopt.

Edinb.

'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 does 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 of 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, wherewith 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 becomes almoſt red, any oily matter that may ſtill be preſent ſeems to be decompoſed by the united action of the 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 fixed alkali alſo ſuffers a conſiderable loſs of its fixed air, or aërial acid; with which, when fully ſaturated, it forms the imperfect neutral ſalt, denominated by Dr Black *mild fixed alkali:* on this account it 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 alkalis. See ANALYSIS of VEGETABLES by FIRE, and the article FIXED AIR. 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 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 is perfectly clean, cloſe covered, and has ſtood the fire without cracking, the ſalt will

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.

SAL ALCALINUS fixus VEGETABILIS PURIFICATUS.

Fixed vegetable alkaline ſalt purified.
Edinb.

'Let the fixed alkaline ſalt, called in England *pearl aſhes*, be put into a crucible, and brought to a ſomewhat red heat, that the oily impurities, if there are 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, though it is 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 matter in an oven; but beſides that this proceſs is inſufficient to 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 proceſs here directed, the alkali is effectually freed from all theſe heterogeneous matters, except 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, however, 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.'

SAL ABSINTHII.

Salt of wormwood.
Edinb. +

Let any quantity of wormwood, either freſh gathered or moderately dried, be put into an iron pan, and with a gentle fire, reduced into white aſhes. Boil theſe with a ſufficient quantity of ſpring water, filtre the liquor, and evaporate it till a dry ſalt is left behind: this proves of a brown colour; by repeated ſolution, filtration, and inſpiſſation, it becomes at length pure and white.

It is generally expected of a brown colour in the ſhops, and diſtinguiſhed by this mark from the purer alkali of tartar. If required to be white, the means above recommended will ſcarcely render it ſo; the remains of the oil of the plant, on which the brown colour depends, not being effectually ſeparable without ſtrong calcination. If the aſhes

have been fully calcined before the affuſion of water, the ſalt will turn out white at once.

Lond.

Let the aſhes of wormwood [which the ſhops are uſually ſupplied with from the country] be put into an iron pot, or any other convenient veſſel, and kept redhot over the fire for ſome hours, often ſtirring them, that what oily matter remains may be burnt out; then boil the aſhes in water, filtre the ley through paper, and evaporate it till a dry ſalt remains; which is to be kept in a veſſel cloſe ſtopt.

After the ſame manner a fixt alkaline ſalt may be prepared from all thoſe vegetables which yield this kind of ſalt [*L.*], as beanſtalks, broom, &c. [*E.*] +

These ſalts are obtained to greater advantage from dry plants than from green ones; they muſt not however be too dry, or too old; for in ſuch caſe they afford but a ſmall quantity of ſalt. The fire ſhould be ſo managed, as that the ſubject may burn freely, yet not burſt into violent flame; this laſt circumſtance would greatly leſſen the yield of the ſalt; and a very cloſe ſmothering heat would have this effect in a greater degree: hence the aſhes of charcoal ſcarce yield any ſalt, whilſt the wood it was made from, if burnt at firſt in the open air, affords a large quantity.

If the aſhes are not calcined after the burning, a conſiderable portion of the oil of the ſubject remains in them unconſumed; and hence the ſalt turns out impure, of a brown colour, and ſomewhat ſaponaceous. Tachenius, Boerhaave, and others, have entertained a very high opinion of theſe oily ſalts, and endeavour as much as poſſible to retain the oil in them. They are nevertheleſs liable to a great inconvenience, uncertainty in point of ſtrength, without promiſing any advantage to counterbalance it: if the common alkalis are required to be made milder and leſs acrimonious (which is the only point aimed at in the making of theſe medicated ſalts, as they are called) they may be occaſionally rendered ſo by ſuitable additions. Pure alkalis, united with a certain quantity of expreſſed oil, compoſe (as we ſhall ſee hereafter) a perfect ſoap, in which the pungent taſte of the alkaline ſalt is totally ſuppreſſed: it is obvious, therefore, that on the ſame principle the pungency may be covered in part, and this proportionably to the quantity of oily matter combined. But we may obtain more elegantly, by a proceſs deſcribed in page 440, (under the title of *Sal alkalinus ſalis marini*), a perfectly pure white alkaline ſalt, of all the mildneſs that can be wiſhed for.

The ſhops were formerly burdened with a great number of theſe ſalts, which are now very judiciouſly rejected; thoſe here retained being abundantly ſufficient to anſwer all the uſeful purpoſes that can be expected from theſe kinds of preparations. All fixt alkaline ſalts, from whatever vegetable they may be obtained (thoſe of certain marine plants excepted, which partake of ſea-ſalt or its alkali), are nearly one and the ſame thing, and not diſtinguiſhable from each other, at leaſt in their effect as medicines; and hence the college of London, in moſt of the compoſitions wherein theſe ſorts of ſalts are ingredients, allow any fixt alkaline ſalt to be made uſe of.

Some differences indeed are obſerved in them as uſually prepared; but theſe depend upon the manner in which the proceſs for obtaining them is conducted, or on ſome ſa-

line

line matters of a different kind, which either pre-exiſted in the vegetable, or were produced in the burning, remaining mixed with the alkali. A variation in the heat by which the plant is burnt or calcined, occaſions a difference in the acrimony of the produce: the more vehement and laſting the fire (to a certain degree) the more acrid is the ſalt. The circumſtances of uſing the aſhes freſh burnt, or after they have been long expoſed to the air, and of applying the water hot or cold to the aſhes, likewiſe make a conſiderable variation. By long expoſure to the air, even the alkalis that have been made cauſtic by quicklime, loſe all the acrimony which they had received from that treatment, 'on account of their abſorbing fixed air from the atmoſphere.' The chemiſts affirm, that they imbibe alſo from the air, in a length of time, a portion of vitriolic acid, by which a part of them is converted into a neutral ſalt, the ſame with the *tartarus vitriolatus* of the ſhops; and it is certain, that ſuch a ſalt is often found among the aſhes of vegetables; though it does not, perhaps, ariſe from that origin. Boiling water takes up this neutral ſalt from the aſhes; whilſt cold water extracts from them only the pure alkaline ſalts, unleſs it be uſed in too large a quantity, or ſuffered to ſtand too long upon them. Boiling water diſſolves alſo more than cold, of the oily parts of the ſubject, if any remained unconſumed.

NITRUM FIXUM.

Fixt nitre, or rather fixed alkali of nitre.

Take of
Powdered nitre, four ounces;
Charcoal in powder, five drams.
Mix them thoroughly together, by rubbing them in a mortar; and inject the mixture, by a little at a time, into a red-hot crucible. A deflagration, or a bright flame with a hiſſing noiſe, happens on each injection: the whole quantity being thus deflagrated, continue the fire ſtrong for half an hour.

NITRE is compoſed of the common vegetable fixt alkaline ſalt and a peculiar acid. In this proceſs the acid is deſtroyed, and the remaining ſalt proves merely alkaline, not different in quality from the *ſal tartari*, except that a very minute portion of the nitre generally remains unchanged; the ſalt is purified by ſolution in water, filtration, and evaporation. It may be obſerved, that the ſalt receives no ſenſible addition from the vegetable coal employed for the deflagration; for the aſhes of charcoal have exceeding little ſaline matter; and the quantity of charcoal above directed, yields only a grain or two of aſhes. 'Theſe are the ſeveral methods of obtaining the vegetable fixed alkali in its pure ſtate, ſo far as it is freed of every thing but fixed air. The ſalt may be obtained by a variety of other proceſſes; but is always the ſame thing, ſave differences in regard to its purity.'

This ſalt, then, has a pungent fiery taſte, and occaſions in the mouth a kind of urinous flavour, probably from a reſolution which it produces in the ſaliva. It readily diſſolves in water, and deliquates in the air, but is not acted upon by pure vinous ſpirits. Inſtead of being diſſolved by vinous ſpirits, if a ſaturated ſolution of it in water be dropt into the pure ſpirit, it will not mix therewith, but fall diſtinct to the bottom: if water be mixed with the ſpirit, the addition of fixt alkaline ſalt will imbibe the water, and form with it, as in the other caſe, a diſtinct fluid at the bottom:

this property affords a commodious method of dephlegmating vinous ſpirits, or ſeparating their watery part: as we have already ſeen in page 395.

Mild ſalt of tartar, or ſolutions of it in water, raiſe an effervescence on the admixture of acid liquors, and deſtroy their acidity, the alkali and acid uniting together into a compound of new qualities, called neutral: earthy ſubſtances, and moſt metallic bodies, previouſly diſſolved in the acid, are precipitated from it by the alkali. The alkaline ſalt changes the colours of the blue flowers of plants, or their infuſions, to a green: it has the ſame effect on the bright red flowers and on the colourleſs infuſions of white ones; but in many of the dark red, as thoſe of the wild poppy, and of the yellow ones, it produces no ſuch change.

Solutions of this ſalt liquefy all the animal juices except milk; corrode the fleſhy parts into a kind of mucous matter; concrete with animal fats and vegetable oils into ſoap; and diſſolve ſulphur into a red liquor; eſpecially if aſſiſted by a boiling heat, and mingled with quicklime, which greatly promotes their activity, 'by abſtracting their fixed air.' On pure earths and ſtones, theſe liquors have no ſenſible action; but if the earth or ſtones be mixed with four or five times the weight of the dry ſalt, and urged with a ſtrong fire, they melt along with it, and become afterwards perfectly ſoluble both in water and by the moiſture of the air: with a ſmaller proportion of the ſalt, as an equal weight, they run into an indiſſoluble glaſſy matter.

The medical virtues of this ſalt are, to attenuate the juices, reſolve obſtructions, and promote the natural ſecretions. A dilute ſolution of it drank warm in bed, generally excites ſweat; if that evacuation is not favoured, its ſenſible operation is by urine. It is an excellent remedy in coſtive habits, eſpecially if a few grains of aloes be occaſionally interpoſed; with this advantage above other purgatives and laxatives, that when the complaint is once removed, it is not apt to return. Where acidities abound in the firſt paſſages, this ſalt abſorbs the acid, and unites with it into a mild aperient neutral ſalt. As one of its principal operations is to render the animal fluids more thin, it is obvious, that where they are already colliquated, as in ſcurvies, and in all putrid diſorders in general, this medicine is improper. 'By Dr. Pringle's experiments, however, fixed alkali was found to be very conſiderably antiſeptic.' The common doſe of the ſalt is from two or three grains to a ſcruple; in ſome circumſtances it has been extended to a dram; in which caſe it muſt always be largely diluted with watery liquors.

Sal alcalinus salis marini.

The alkaline ſalt of ſea-ſalt.

Take of

Cubical nitre (prepared as hereafter deſcribed in ſect. vi. of this chapter) four ounces;

Charcoal, five drams.

Mix and deflagrate as in the preceding proceſs.

Cubical nitre is compoſed of the nitrous acid united with the alkaline baſis of ſea-ſalt: the acid being here ſeparated in the deflagration, that alkali remains nearly pure. It poſſeſſes the general properties of the foregoing preparation; changing blue flowers, green; diſſolving oils, ſalts, and ſulphur; bringing earths and ſtones into fuſion, and forming with them, according to its quantity, either a vitreous or a

ſoluble

ſoluble compound; effervesing with acids, precipitating earths, and metals diſſolved in them, and uniting with the acid into a neutral ſalt. It differs from the foregoing alkalis, in being much milder in taſte; not ſo readily diſſolving in water; not at all deliquating in the air; eaſily aſſuming, like neutral ſalts, a cryſtalline form; and yielding, with each of the common acids, compounds very ſenſibly different, both in their form and qualities, from thoſe which reſult from the coalition of the vegetable alkalis with the reſpective acids. The cryſtals of this ſalt itſelf are priſmatic, greatly reſembling thoſe of the ſalt called *ſal mirabile*. (See the ſection of NEUTRAL SALTS.) Expoſed to a warm air, they fall into a porous, friable maſs, and loſe above two-thirds of their weight.

How far this ſalt differs in medical virtue from the other alkalis, is not well known. It apparently poſſeſſes the ſame general virtues; and, as it is far milder, may be given in more conſiderable doſes.

A ſalt of the ſame nature with this, but leſs pure, as containing an admixture of the common vegetable alkali, is prepared at Alicant, and ſome other places, from the aſhes of certain marine plants, called *kali*; which plants are ſuppoſed to have given riſe to the name *alkali*. The ſalt of the kali plants is called *ſoda* or *bariglia*: it has been long uſed medicinally in France, and begins now to be introduced into practice in this country.

SAL ALCALINUS fixus FOSSILIS PURIFICTUS.

Fixed foſſil alkaline ſalt purified.

Edinb.

'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 is diſſolved in the water. Strain this through paper, and evaporate in an iron veſſel, ſo as after the liquor has cooled the ſalt may concrete into cryſtals.

'By the above proceſs, 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.

The natrum, 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 natrum may ſuperſede artificial means to procure it from mixed bodies, we have not been able to learn with certainty.'

LIXIVIUM TARTARI [*L.*]

Liquamen ſalis tartari, vulgo Oleum tartari per deliquium [*E.*]

Ley of tartar,

Or oil of tartar per deliquium.

Lond.

Let tartar, calcined to whiteneſs, be ſet by in a moiſt place, that it may liquefy.

Edinb.

Put any quantity of ſalt of tartar in a flat glaſs diſh, and expoſe it to the air, for ſome days, in a moiſt place; it will run into a liquor, which is either to be filtered thro' paper, or ſeparated from the feces by decantation.—The higher the ſalt has been calcined, the more readily will it relent in the air.

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

though the ſalt be repeatedly diſſolved in water, filtered, and exſiccated; yet on being liqueſied by the humidity of the air, it will ſtill depoſite 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 one circumſtance than in the other, I have not examined. The deliquated lixivium is ſaid to contain nearly one part of 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.

LIXIVIUM SAPONARIUM.

Soap ley.

Lond.

Take of

Ruſſia pot-aſh,

Quicklime, each, equal weights.

Gradually ſprinkle on them as much water as will ſlake the lime; then pour on more water, ſtirring the whole together, that the ſalt may be diſſolved: let the ley ſettle, pour it off into another veſſel, and, if there is occaſion, filtre it. A wine pint of this ley, meaſured with the greateſt exactneſs, ought to weigh juſt ſixteen ounces Troy. If it proves heavier, for every dram that it exceeds this weight, add to each pint of the liquor an ounce and a half of water by meaſure: if lighter, boil it till the like quantity is waſted, or pour it upon freſh lime and aſhes.

QUICKLIME greatly increaſes the ſtrength of alkaline ſalts; and hence this ley is much more acrimonious, and acts more powerfully as a menſtruum on oils, fats, &c. than a ſolution of the pot-aſh 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 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 where it reaches to being marked with a diamond. A pint of the common leys of our ſoft ſoapmakers weighs more than ſixteen ounces: it has been found that their ſoapley will be reduced to the ſtandard here propoſed, by mixing it with ſomething leſs than an equal meaſure of water.

LIXIVIUM CAUSTICUM.

Cauſtic ley.

Edinb.

'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

roughly mixed them, ſhut the veſſel till the whole 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 the other is inſerted into a glaſs veſſel, ſo that the ley may gradually drop through the rag into the veſſel placed underneath. 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 is rightly prepared, it will be void of colour or ſmell; nor will it raiſe an effervеſcence except, perhaps, a very ſlight one with acids. Colour and odour denote the ſalt not ſufficiently calcined; and effervеſcence, 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, is very evidently fixed air or the aërial acid: But as quicklime has a greater attraction for fixed air than any of theſe ſalts, ſo if this ſubſtance is 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 proceſſes (See ANALYSIS of VEGETABLES by FIRE, and the article FIXED AIR). 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 much more tedious, on account that 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 others 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 firm 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 imbeds 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,

uſual, copied nature in the means ſhe employs to depurate watery matters in the bowels of the earth; and it might be uſefully applied for the filtration of ſundry other fluids.

'It is a very neceſſary caution to pour the water gently into the funnel; for if it is thrown in a forcible ſtream, a quantity of the powdery matter will be waſhed down, and render all our previous labour uſeleſs. That 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 to 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 aërated alkalis.

'The cauſtic ley is therefore to be conſidered as a ſolution of pure alkali in water. See article FIXED AIR.

'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 the alkali.

'The cauſtic ley, under various pompous names, has been much uſed as a lithontriptic; but its fame is now beginning to paſs away. In acidities in the ſtomach, attended with much flatulence and laxity, the cauſtic ley is better adapted than mild alkalis; 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 its ſtimulus coincides with the other intentions of cure.'

LAPIS SEPTICUS, ſeu CAUTERIUM POTENTIALE.

The ſeptic ſtone, or potential cautery. Edinb.

Take of
Potaſh,
Quicklime, each equal parts;
Water, three times the weight of both.

Macerate for two days, occaſionally ſtirring them; then filtre the ley, and evaporate it to dryneſs. Put the dry maſs into a crucible, and urge it with a ſtrong fire, till it flows like oil: then pour it out upon a flat plate made hot; and while the matter continues ſoft, cut it into pieces of a proper ſize and figure, which are to be kept in a glaſs veſſel cloſely ſtopt.

CAUSTICUM COMMUNE ACERRIMUM.

The ſtrongeſt common cauſtic. Edinb.

'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.

'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

parations 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.

CAUSTICUM COMMUNE FORTIUS.

The ſtronger common cauſtic.
Lond.

Boil any quantity of the ſoap leys above deſcribed to one-fourth part; then, whilſt it continues boiling, ſome lime that has been kept for ſeveral months in a glaſs veſſel ſtopt with a cork is to be ſprinkled in by little and little, till it has abſorbed all the liquor, ſo as to form a kind of paſte; which keep for uſe in a veſſel very cloſely ſtopt.

CAUSTICUM COMMUNE MITIUS.

The milder common cauſtic.
Edinb.

' 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 pulſe, which is to be kept in a veſſel cloſely ſtopt.

' Here the addition of lime in ſubſtance renders the preparation leſs apt to liquefy than the foregoing, and conſequently more eaſily confineable 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 effervеſcence, and loſe proportionably of the additional activity which the quicklime had produced in them.

Lond.

Take of
Freſh quicklime,
Soft ſoap, of each equal parts.
Mix them well together at the time of uſing.

This cauſtic, notwithſtanding the lime is uſed freſh, proves much milder than the former; the acrimony of the ſalt being here covered by the oil and tallow by which it is reduced into ſoap.

SECT. II.

Volatile alkaline Salts.

As fixed alkalis are procured from the burning of vegetables, and remain behind in the aſhes; volatile ones are produced by a like degree of heat from animal ſubſtances, and riſe in diſtillation along with the other volatile principles; the admiſſion of air neceſſary for the production of the former is not needful for the latter. Theſe ſalts are obtainable alſo from ſome vegetable matters, and from vegetable and animal ſoot. Though a ſtrong fire is requiſite for their production, yet when once completely formed, they are diſſipated by the gentleſt warmth: in diſtillation they riſe ſooner than the moſt highly rectified ſpirit of wine. They are produced in urine by putrefaction without fire; and without fire alſo they exhale from it.

SPIRITUS, SAL, et OLEUM CORNU CERVI.

Spirit, ſalt, and oil of hartſhorn.

Lond.

Diſtil pieces of hartſhorn by a fire gradually raiſed almoſt to the higheſt; a ſpirit, ſalt, and oil will aſcend.

If the oil be ſeparated, and the ſpirit and ſalt diſtilled again together with a very gentle heat, they will both ariſe more pure. If this be carefully repeated ſeveral times, the ſalt will become exceedingly white, the ſpirit limpid as water, and of a grateful odour.

The ſalt, ſeparated from the ſpirit, and ſublimed firſt from an equal weight of pure chalk, and afterwards from a little rectified ſpirit of wine, becomes the ſooner pure.

Calcined hartſhorn is generally made by burning the horns left after this diſtillation.

After the ſame manner a ſpirit, ſalt, and oil, may be obtained from every kind of animal ſubſtance.

Edinb. †

Put pieces of hartſhorn into a large iron pot furniſhed with an earthen head; and having fitted on a capacious receiver, and luted the junctures, diſtil in an open fire gradually increaſed. At firſt a phlegm ariſes, then a ſpirit, and afterwards a volatile ſalt, accompanied with an oil: the oil that comes over firſt is of a yellowiſh colour; but on protracting the diſtillation, there ſucceeds a reddiſh one verging to black. In the bottom of the iron pot there remains a black coal; which being burnt to whiteneſs in the open air, is called *calcined hartſhorn.*

Having poured out of the recipient all the different matters which have come over into it, they may be ſeparated from one another in the following manner: the oil ſeparates from the phlegm and ſpirit in filtration; the two latter will paſs through, and the oil remain on the filtre. The phlegm may be ſeparated from the ſpirit by diſtillation in a tall veſſel with a gentle heat: the ſpirit will come over into the recipient, and the phlegm remain at the bottom of the diſtilling veſſel.

The ſpirit may be divided into a volatile ſalt and phlegm, by diſtilling it in a very tall and narrow cucurbit: the ſalt will ariſe, and adhere to the head in a dry form; the phlegm remaining behind.

The ſalt may be freed from the oil by ſubliming it from twice its quantity of potaſh; for the oil is kept down by the potaſh whilſt the ſalt ariſes.

The ſpirit alſo is rendered purer, by adding to every pint two ounces of potaſh, and diſtilling in a glaſs retort.

The remaining potaſh may be again purified for uſe, by calcining it in an open fire, ſo as to burn out the oil it had abſorbed from the ſalt or ſpirit.

A ſpirit, ſalt, and oil, may be obtained in the ſame manner from all the ſolid parts of animals.

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

ration 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 betwixt 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 aphlegmatic liquor ariſes; the quantity of which will be leſſer 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 is 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 is 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 ſtopt 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 after it, as is juſt ſufficient to diſſolve it, the ſpirit will be fully ſaturated, and as ſtrong as it can be made. If the proceſs is not at this inſtant ſtopt, 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 above-mentioned inconvenience of theſe kinds of ſpirits; and the remedy is firſt hinted at in the Pharmacopœia Reformata. The purity of the ſpirit is eaſily judged from its clearneſs and grateful odour.

Volatile alkaline ſalts, and their ſolutions called *ſpirits*, agree, in many reſpects, with fixt alkalis, and their ſolutions or leys; as in changing the colour of blue flowers to a green; effervеſcing with and and neutraliſing acids when in their mild

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 alkalis, 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 alkalis 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, being found 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, headachs, 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 redundance of phlegm, they are of great utility; liquefying the viſcid juices, raiſing the vis vitæ, and exciting a ſalutary diaphoreſis: but in putrid fevers, ſcurvies, 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 the moſt efficacious remedy. Mr 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 a pretty many that were only ſuppreſſed from time to time by the bark, but were completely cured by alkaline ſpirits: That theſe ſpirits will often carry off vernal intermittents, without any previous evacuation: but that they are generally more effectual, if a purge is premiſed; and in plethoric or inflammatory caſes, or where the fever perſonates a remittent, veneſection.

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-cup full 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;

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 undergone repeated diſtillations, and ſuch other operations 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 one another, as they do from themſelves in different ſtates of purity. To which may 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 (See page 432). 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 this is by no means the caſe. 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. I have repeated the rectification of ſpirit of hartſhorn twenty times ſucceſſively, and found it 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 fetid. The ſalts and ſpirits alſo, however carefully rectified, ſuffer in length of time the ſame change; reſuming their original brown colour and ill ſmell; a proof that the rectification is far from having diveſted them of oil.

SPIRITUS, SAL, et OLEUM FULIGINIS

Spirit, ſalt, and oil of ſoot.
Lond.

Diſtil ſoot after the ſame manner as directed above for hartſhorn: but here more labour is required to render the ſpirit and ſalt pure.

The volatile ſalt and ſpirit of ſoot are, when ſufficiently purified, not different in quality from thoſe of animal ſubſtances; though ſome

have preferred them in nervous complaints, particularly in epileptic cases.

SPIRITUS et SAL VOLATILIS SALIS AMMONIACI.

The volatile salt and spirit of sal ammoniac.

Lond.

Take a pound and a half of any fixt alkaline salt, a pound of sal ammoniac, and four pints of water.

Distil off, with a gentle heat, two pints of spirit.

The volatile salt is made from a pound of sal ammoniac mixed with two pounds of pure chalk, and set to sublime in a retort with a strong fire.

ALCALI VOLATILE ex SALE AMMONIACO, vulgo SAL AMMONIACUS VOLATILIS.

Volatile alkali from sal ammoniac, commonly called *Volatile sal ammoniac.*

Edinb.

'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.

Spirit of sal ammoniac.

Edinb.

'Take of

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.'

Sal ammoniac is a neutral salt, composed of volatile alkali and marine acid. In these processes the acid is absorbed by the fixt alkali or chalk; and the volatile alkali is of course set at liberty.

'The volatile alkali is, however, in its mild state; having catched the fixed air discharged from the fixed alkali or chalk on their uniting with the muriatic acid.'

The fixt 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 fixt salt is fully, perhaps more than sufficient, to extricate all the volatile.

Chalk does not begin to act upon the sal ammoniac till a considerable heat is 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. Though the fire must here be much greater than when fixt alkaline salt is used, it must not be too strong, nor too suddenly raised; for if it is, 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 fixt 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 proceſſes 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 ſalt 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* hereafter deſcribed: and hence we may judge of the extraordinary virtues formerly attributed to this ſalt, under the names of *ſal antihyſtericum*, *antihypochondriacum*, *febrifugum*, *digeſticum 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 obtained, which likewiſe runs in the air, and forms a liquor of the ſame kind.

ALCALI VOLATILE CAUSTICUM, vulgo SPIRITUS SALIS AMMONIACI CUM CALCE VIVA.

Cauſtic volatile alkali, commonly called *ſpirit of ſal ammoniac with quicklime.*

Edinb.

'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, inſomuch 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 in 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 alkalis 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.'

This ſpirit is held 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, which the other ſpirits extract little from. '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 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) was complied with. 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 is 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 depoſites 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.

SECT.

SECT. III.

Combination of ALKALIS *with* OILS *and* INFLAMMABLE SPIRITS.

SAPO AMYGDALINUS.
Almond ſoap.
Lond.

TAKE any quantity of freſh-drawn oil of almonds, and thrice its quantity by meaſure of the foregoing ſoap leys. Digeſt them together in ſuch a heat that they may but juſt boil or ſimmer, and in a few hours they will unite: after which, the liquor in boiling, will ſoon become ropy, and in good meaſure tranſparent; a little of it ſuffered to cool, will appear like jelly. When this happens, throw in by little and little ſome common ſalt, till the boiling liquor loſes its ropineſs; and continue the coction, till, on receiving ſome drops on a tile, the ſoap is found to coagulate, and the water freely ſeparates from it. The fire being then removed, the ſoap will gradually ariſe to the ſurface of the liquor; take it off before it grows cold, and put it into a wooden mould or frame, which has a cloth for its bottom; afterwards take out the ſoap, and ſet it by till ſufficiently dried.

After the ſame manner a ſoap may likewiſe be made with oil olive; but the pureſt oil muſt be uſed, that the ſoap may be as little ungrateful as poſſible either to the palate or ſtomach.

THIS proceſs is ſo fully deſcribed, as to render any farther directions unneceſſary. The general virtues of ſoaps have been already delivered in page 227: that prepared after this manner is not different in quality from the hard ſort there mentioned. The ſtrength of ſoaps varies conſiderably with their age, and the manner in which they have been kept; freſh ſoap, though apparently of a good conſiſtence, loſes, upon being thoroughly dried, near one-third of its weight; the whole of which loſs is mere water; a circumſtance to be particularly attended to in the exhibition of this medicine.

Soap is decompounded (or the alkaline ſalt and oil, of which it is compoſed, ſeparated from one another) by all acids; and hence it does not lather with waters that contain any acid unneutralized. In pure water, it diſſolves into a milky liquor; which, on dropping in ſome oil of vitriol, forms a kind of coagulum: on adding more of the acid, the liquor becomes clear, the oil of the ſoap ariſes to the ſurface; its alkali uniting with the acid, and forming ſaline concretions at the bottom. The oil, carefully collected, proves remarkably purer than when it firſt entered the compoſition of the ſoap; and, like the eſſential oils of vegetables, diſſolves in ſpirit of wine: it may poſſibly be applicable to ſome uſeful purpoſes, as it ſeems to be freed from its groſſer matter, extremely pure, and is void of the pungency of eſſential oils.

It follows from the above experiments, that no kind of acid ought to be uſed along with ſoap; all acids abſorbing the alkaline ſalt of the ſoap from the oil. Neutral ſalts have not this effect, their acid being already ſatiated with an alkali: but ſalts compoſed of an acid and an earthy or metallic body, as the purging bitter ſalt, vitriol, &c. de-

compound the ſoap equally with pure acids; acids quitting an earth or metal to unite with an alkali brought in contact with them.

Soap diſſolves likewiſe, but in ſmall quantity, in pure ſpirit of wine: it is obſervable of this ſolution, that if expoſed to a degree of cold, a very little greater than that in which water begins to freeze, it congeals into a ſolid pellucid maſs.

The menſtruum which diſſolves ſoap moſt perfectly, and in greateſt quantity, is a pure proof-ſpirit. The common proof-ſpirits have a ſlight acidity, not indeed diſtinguiſhable by the taſte or by the uſual ways of trial, but ſufficient to give ſomewhat of a milky hue to ſolutions of ſoap made in them. This may be corrected by the addition of a little alkaline ſalt. Mr Geoffroy obſerves, in the Memoirs of the French Academy, that twenty-eight parts of good proof-ſpirit, with the addition of one part of ſalt of kali (ſee page 440.) will diſſolve ten parts of good hard ſoap into a perfectly limpid liquor. The common alkaline ſalts, that of tartar, anſwer equally in this reſpect with that of kali; but the latter, being much leſs acrimonious, ſeems preferable where the ſolution is intended for medicinal uſe.

This facility of the decompoſition of ſoap by acids, renders it an uſeful criterion of low degrees of unneutralized acidity in waters, &c. The limpid ſolution of ſoap in proof-ſpirit, dropt into any liquor, that contains either a pure acid, or a ſalt compoſed of an acid with an earth or metal, renders the liquor immediately milky, more or leſs in proportion to the quantities it is impregnated with.

Sapo purificatus.
Purified ſoap.

Slice one pound of dry, hard, Genoa, Alicant, or any other oil-ſoap, into a clean pewter veſſel, and pour upon it two gallons of rectified ſpirit of wine. Place the veſſel in a water-bath, and apply ſuch a degree of heat as may make the ſpirit boil, when it will ſoon diſſolve the ſoap. Let the veſſel ſtand cloſe covered, in a warm place, till the liquor has grown perfectly clear; if any oily matter ſwim upon the ſurface, carefully ſcum it off. Then decant the limpid liquor from the feces, and diſtil off from it all the ſpirit that will ariſe in the heat of a water-bath. Expoſe the remainder to a dry air for a few days, and it will become a white, opake, and ſomewhat friable maſs. *Pract. Chem.*

Soap thus purified has little or no ſmell, and proves, upon examination, not in any degree acrimonious, but quite mild and ſoft, and conſequently well fitted for medicinal purpoſes.

Sapo tartareus.
Soap of tartar.

Take any quantity of ſalt of tartar, very well calcined and reduced into powder whilſt hot: immediately pour upon it, in a broad glaſs veſſel, twice its quantity of oil of turpentine; and let them ſtand together in a cellar for ſome weeks, till the oil has penetrated the ſalt: then add more oil by degrees, till the ſalt has abſorbed thrice its own quantity, and both appear united into a ſoap; which, if the matter is every day ſtirred, will happen in a month or two. The effect ſucceeds ſooner, if the containing veſſel be fixed to the ſail of a windmill, or any other machine that turns round with great velocity.

This tedious proceſs, which is taken from a former edition of the Edinburgh Pharmacopœia, might be finiſhed in a very little time, by duly attending to a circumſtance which our chemiſts, and the pharmaceutical writers, have in general overlooked; and which many have ſuppoſed to be a means even of preventing ſucceſs. If the oil be poured upon the pulverized ſalt whilſt very hot, they will immediately unite, with a hiſſing noiſe; and, by rubbing for a few minutes in a hot mortar, form a truly ſaponaceous maſs, the medicine here intended. If the ſalt is ſuffered to grow cold before the addition of the oil, it is ſcarce poſſible to unite them, as the committee of the London College obſerves, without the addition of a little water, which in this caſe promotes the effect. The regular, uniform motion above recommended, does not anſwer ſo well as agitation or rubbing in a mortar; the different degrees of centrifugal force which the oil and ſalt acquire when moved circularly, tending to keep them apart. The ſalt does not retain ſo much of the oil as might be expected; far the greateſt part of this volatile fluid being diſſipated in the proceſs. Mr Baumé relates, in his *Manuel de Chemie* lately publiſhed, that experiments have convinced him, that the ſoap conſiſts of only the reſinous part of the oil united with the alkali; that the more fluid and well rectified the oil is, the leſs ſoap is obtained; and that by adding a little turpentine in ſubſtance to the mixture, the preparation is conſiderably accelerated.

This medicine has been greatly celebrated as a diuretic, in nephritic complaints; and as a corrector of certain vegetable ſubſtances, particularly opium: it was for ſome time a great ſecret in the hands of its firſt preparer, Starkey, under the names of Philoſophic ſoap, The vegetable corrector, &c. Its virtues, however, have not been ſufficiently warranted by experience; nor does the preſent practice pay any regard to it. Accordingly both the London and Edinburgh Colleges have rejected it at the late reformation of their Pharmacopœias.

LOTIO SAPONACEA.

Saponaceous lotion.
Lond.

Take of
Damaſk-roſe water, three quarters of a pint;
Oil olive, one quarter of a pint;
Ley of tartar, half an ounce by meaſure.
Grind the ley of tartar and the oil together until they unite; then gradually add the roſe water.

This is deſigned for external uſe, as a detergent waſh; and, like other ſoapy liquors, anſwers this purpoſe very effectually. Where it is required to be more deterſive, it may be occaſionally rendered ſo, by the addition of a ſmall quantity of a ſolution of any fixt alkaline ſalt.

LINIMENTUM SAPONACEUM.

Saponaceous liniment.
Lond.

Take of
Spirit of roſemary, one pint;
Hard Spaniſh ſoap, three ounces;
Camphor, one ounce.
Digeſt the ſoap in the ſpirit of roſemary until it is diſſolved; then add the camphor.

BALSAMUM SAPONACEUM vulgo OPODELDOCH.

Saponaceous balſam, commonly called *opodeldoc.*
Edinb. †

Take of
Spaniſh ſoap, ten ounces;

Camphor, two ounces;
Eſſential oil of roſemary,
Eſſential oil of origanum, each half an ounce;
Rectified ſpirit of wine, four pints.

Digeſt the ſoap in the ſpirit of wine, with a gentle heat, till it is diſſolved; then add the camphor and the oils, and ſhake the whole well together, that they may be perfectly mixed.

THESE compoſitions alſo are employed chiefly for external purpoſes, againſt rheumatic pains, ſprains, bruiſes, and other like complaints. Soap acts to much better advantage, when thus applied in a liquid form, than in the ſolid one of a plaſter.

LINIMENTUM VOLATILE.

Volatile liniment.
Lond.

Take of
Oil of almonds, one ounce by meaſure;
Spirit of ſal ammoniac, two drams by weight.

Stir them together in a wide-mouthed phial, until they perfectly unite.

EPITHEMA VOLATILE.

Volatile epithem.
Lond.

Take of
Common turpentine,
Spirit of ſal ammoniac, each equal weights.

Stir the turpentine in a mortar, gradually dropping in the ſpirit, until they unite into a white maſs.

EMPLASTRUM VOLATILE.

Volatile plaſter.
Edinb. †

Take of
Venice turpentine,
Spirit of ſal ammoniac, each one ounce.

Pour the ſpirit gradually into the turpentine, ſtirring them diligently together in a mortar.

THE three foregoing are very acrid, ſtimulating compoſitions, and are principally applied againſt rheumatic and iſchiadic pains. The epithem or plaſter was formerly made of a ſtiffer conſiſtence, and more adheſive, by an addition of tacamahaca; which is here judiciouſly omitted, as it prevented the application from being ſo expeditiouſly got off from the part as its great irritating power made ſometimes neceſſary.

SPIRITUS SALIS AMMONIACI DULCIS.

Dulcified ſpirit of ſal ammoniac.
Lond.

Take half a pound of any fixt alkaline ſalt, four ounces of ſal ammoniac, and three pints of proof-ſprit of wine. Diſtil off, with a gentle heat, a pint and a half.

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 is 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 adviſeable to uſe in this intention the volatile ſpirit made with quicklime, 'as in the ſubſequent formula:' for this may be mixed at once with rectified ſpirit of wine, in

any

any proportions, without the leaſt danger of any ſeparation of the volatile alkali.

SPIRITUS SALIS AMMONIACI VINOSUS.

Vinous ſpirit of ſal ammoniac.
Edinb.

'Take of
Quicklime, ſixteen ounces;
Sal ammoniac, eight ounces;
Rectified ſpirit of wine, thirty-two ounces.
Having ſlightly bruiſed and mixed 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.'

SPIRITUS VOLATILIS FŒTIDUS.

The volatile fetid ſpirit.
Lond.

Take of
Any fixt alkaline ſalt, a pound and a half;
Sal ammoniac, one pound;
Aſafœtida, four ounces;
Proof-ſpirit of wine, ſix pints.
Draw off with a gentle heat, five pints.

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 the beſt)' is deſigned as an antihyſteric, 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 VOLATILIS AROMATICUS.

Volatile aromatic ſpirit.
Lond.

Take of
Eſſential oil of nutmegs,
Eſſence of lemons, each two drams;
Eſſential oil of cloves, half a dram;
Dulciſied ſpirit of ſal ammoniac, one quart;
Diſtil them with a very gentle fire.

SPIRITUS VOLATILIS AROMATICUS, vulgo SPIRITUS VOLATILIS OLEOSUS, et SPIRITUS SALINUS AROMATICUS.

Volatile aromatic ſpirit, commonly called *volatile oily ſpirit*, and *ſaline aromatic ſpirit.*
Edinb.

'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

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, as in the following compoſitions; in which Jamaica pepper is choſen for the aromatic material, as being a cheap and ſufficiently elegant one, and very well adapted to general uſe.

SPIRITUS VOLATILIS OLEOSUS EXTEMPORANEUS.

Extemporaneous volatile oily ſpirit.

Take of
- Dulcified ſpirit of ſal ammoniac, one pint;
- Eſſential oil of Jamaica pepper, two drams.

Mix them together, that the oil may be diſſolved.

Or,

Take of
- Spirit of wine, highly rectified,
- Spirit of ſal ammoniac, each half a pint;
- Eſſential oil of Jamaica pepper, two drams.

Diſſolve the oil in the ſpirit of wine, and mix this ſolution with the ſpirit of ſal ammoniac: a white coagulum will be immediately formed, which, in a warm place ſoon reſolves into a tranſparent liquor, depoſiting a quantity of a volatile oily ſalt.

By either of the above methods, a volatile oily ſpirit may be made occaſionally, and adapted, at pleaſure, to particular purpoſes, by chooſing an eſſential oil proper for the intention. Thus, in hyſterical diſorders, where the uterine purgations are deficient, a preparation of this kind made with the oils of rue, ſavin, pennyroyal, or other like plants, proves an uſeful remedy; for weakneſs of the ſtomach, oil of mint may be taken; where a cephalic is required, oil of marjoram, lavender, or roſemary; in coldneſs and faintings, oil of cinnamon; in caſes of flatulence, the oils of aniſeeds and ſweet fennel ſeeds. Theſe laſt greatly cover the pungency of the volatile ſpirit, and render it ſupportable to the palate. The ſpirits thus made by ſimple mixture, are nowiſe inferior, in medicinal efficacy, to thoſe prepared by diſtillation, tho' the tinge which they receive from the oil may render them to ſome perſons leſs ſightly.

SPIRITUS VOLATILIS SUCCINATUS.

Succinated volatile ſpirit.

Take of
- Rectified oil of amber, from twelve to ſixty drops;
- Rectified ſpirit of wine, one ounce;
- Volatile ſpirit of ſal ammoniac prepared with quicklime, twelve ounces.

Mix them together, and diſtil in a retort with a moderate fire.

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 is not exceedingly ſtrong, ſcarcely any of the oil will be imbibed.

SECT.

SECT. IV.

ACID SPIRITS.

SPIRITUS VITRIOLI tenuis, et fortis (oleum dictus *E.*) + atque COLCOTHAR.

Weak ſpirit, and the ſtrong ſpirit or oil of vitriol, and colcothar.

Lond.

LET calcined vitriol be diſtilled in earthen veſſels, with a reverberatory fire, for three days without intermiſſion. What remains in the veſſels is called *colcothar of vitriol.*

Put the diſtilled liquor into a glaſs retort, and place in it a ſand furnace: the weak ſpirit will come over, the ſtrong (improperly called *oil of vitriol*) remaining behind.

Edinb. +

Take any quantity of green vitriol, calcined to a ſlight yellow colour, and reduced into powder. Fill therewith one half of an earthen retort, place it in a reverberatory furnace, fit on a very large receiver, and lute well the junctures: then proceed to diſtillation, gradually increaſing the fire to the utmoſt degree, which is to be kept up as long as any vapours ariſe.

The phlegm, ſpirit, and oil improperly ſo called, may be ſeparated from each other, by committing the whole to diſtillation in a retort placed in a ſand furnace. The phlegm (which will be in little quantity if the vitriol has been duly calcined) will ariſe with a ſmall degree of heat, and the ſpirit with a ſtronger, leaving the oil behind.

THE vitriol ſhould be calcined till it acquires a yellowiſh colour inclining to red: if calcined only to whiteneſs, as has been commonly directed, it will change in the diſtilling veſſels into a hard compact maſs, from which the due quantity of acid can never be obtained, though urged with the moſt vehement fire for a great length of time. A retort is an inconvenient inſtrument for performing the diſtillation in: it requires an extraordinary expence of fuel and time to elevate the ponderous acid of vitriol ſo high as the figure of this veſſel demands: the veſſels uſually employed are ſo contrived, that the vapour paſſes out laterally, without any aſcent; theſe are called long-necks: the junctures of them with the receivers may be luted with Windſor loam, moiſtened with a ſolution of any fixt alkaline ſalt, and then beaten up with a ſmall quantity of horſe-dung. If the fire is ſufficiently ſtrong, the diſtillation will be finiſhed in much leſs than three days, though vapours will not ceaſe to appear long after this period: when the proceſs has been continued for a certain time, which Boerhaave limits to eighteen hours, the ſpirit that ariſes will not pay the expence; regard, however, muſt be had herein to the ſize of the furnace, the quantity of vitriol in each diſtilling veſſel, and the degree of heat employed; thoſe who make this commodity in quantity, continue the operation no longer than till the fumes which iſſue from the long-necks, at the greateſt diſtance from the fire, begin to leſſen, and the recipients grow ſomewhat clear.

This proceſs is not practicable to advantage without a very large apparatus. Hence it is become a diſtinct

ſtinct branch of the chemical buſineſs, and conſiderable works have been erected for it, in ſuch parts of the kingdom as fuel can be moſt eaſily procured in, ſome of the furnaces are ſo large as to contain a hundred earthen long-necks, or diſtilling veſſels, at once. The metallic part of the vitriol, or colcothar, which remains after the diſtillation, is ground down in mills, edulcorated with water, and employed as a pigment: in medical virtue, it is not different from ſome of the calces of iron, to be ſpoken of hereafter.

The acid ſpirit, as it ariſes in the firſt diſtillation, appears of a dark or blackiſh colour, and contains a conſiderable portion of phlegm. In the ſecond diſtillation, the phlegmatic parts ariſe firſt, together with the lighter acid, which are kept apart under the name of weak ſpirit: at the ſame time, the remaining ſtrong ſpirit, or oil as it is called, loſes its black colour, and becomes clear; and this is the uſual mark for diſcontinuing the diſtillation. Methods of farther purifying this acid for the nicer uſes are deſcribed in Practical Chemiſtry, page 144.

ACIDUM VITRIOLICUM TENUE, vulgo SPIRITUS VITRIOLI TENUIS.

Weak vitriolic acid, commonly called *weak ſpirit of vitriol.*

Edinb.

'Take of
Vitriolic acid, one part;
Water, ſeven parts.
Mix them.'

The ſpirit 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 or earth, upon the addition of the vitriolic, ſuch acid will be diſlodged, 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 conceives great heat, inſomuch that glaſs veſſels are apt to crack from the mixture, unleſs it is very ſlowly performed: expoſed to the air, it imbibes moiſture, and ſoon acquires a notable 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 in the intentions of a cooling antiſeptic, reſtringent, and ſtomachic. See page 338.

SPIRITUS SULPHURIS per campanam.

Spirit (commonly called *oil*) *of ſulphur by the bell.*

Lond.

Let the ſulphur be ſet on fire, under a glaſs veſſel fitted for this uſe, called a bell; and let the acid ſpirit, which trickles down from the ſides of the bell, be received in a glaſs diſh placed underneath.

Edinb.

Take any quantity of ſulphur; melt it in an earthen diſh, and dip into it twiſted ſtrips of linen, ſo as to form a ſulphurated match. Faſten this in the mouth of a phial, which is to be ſet in the bottom of a glaſs or earthen diſh, in a moiſt place ſcreened from the wind: then kindle the ſulphur with a red-hot iron; and hang over it a glaſs bell, at ſuch a diſtance that the flame may not touch it. The vapour of the ſulphur will condenſe in the bell by the

the cold, and drop down from its ſides like water into the veſſel placed underneath.

The glaſs uſually employed for this purpoſe by the chemiſts, differs conſiderably from the bell ſhape; its belly is ſpherical, and has a rim at the bottom, turned inwards a little; the upper part ends in a long open ſtem: a large receiver, with a hole cut in its bottom, and a long tube inſerted into its mouth, would anſwer as well. If the ſulphur happens to burn dull, the glaſs is taken off, and the matter ſtirred with an iron wire, or clean tobacco pipe: as it conſumes, freſh quantities are to be ſupplied, till all the ſulphur deſigned for this uſe is burnt. The condenſation of the fumes depends in great meaſure upon their imbibing aqueous moiſture: hence in wet weather, or a damp place, the operation ſucceeds beſt. In dry weather it is cuſtomary to moiſten the bell, by ſuſpending it for a little time over the ſteam of boiling water.

This proceſs is ſufficiently troubleſome, and the yield of acid ſpirit obtained by it extremely ſmall; greateſt part of the fumes eſcaping into the air, partly at the bottom, and partly through the upper aperture of the bell.

Several contrivances have been made for preventing theſe inconveniences. One of the beſt commonly known, is that deſcribed in Vol. V. art. 14. of the Edinburgh Eſſays; inſtead of the bell, a large retort is employed, having a tubulated receiver (with the pipe turned uppermoſt) adapted to its neck; inſtead of the large aperture in the bottom of the bell, a ſmall one is made in the bottom of the retort: and thus by diminiſhing the aperture, enlarging the capacity of the veſſels, and lengthening the paſſage of the fume, a conſiderably larger quantity of the fumes are detained than in the common inſtruments.

This apparatus may be greatly improved, by cutting the hole in the ſide of the retort, and pouring into the bottom an ounce or two of warm water, in the middle of which is placed a ſhallow ſtone-cup containing the ſulphur. The heat of the burning ſulphur is ſoon communicated to the water, ſo as to keep it continually riſing in ſteam; with this aqueous vapour, the fumes of the brimſtone are effectually blended as they aſcend; and detained in conſiderable quantity, in a much leſs proportion of phlegm than when the common methods are purſued; for here the buſineſs of rectification or dephlegmation is carrying on, at the ſame time that the acid is collecting.

This affair is capable of being much farther improved. In the common method by the bell, in the moſt favourable circumſtances, ſcarce above two drams of acid ſpirit are obtained from ſixteen ounces of ſulphur. By the ſecond apparatus, an ounce may be obtained from the ſame quantity; and by the other, about two ounces. It appears, however, from experiments related by Stahl and others, that out of ſixteen ounces of ſulphur, at leaſt fifteen ounces are pure acid, of ſuch ſtrength as to require being diluted with above an equal weight of water, to reduce it to the pitch of common ſpirit of ſulphur. It follows therefore, that if we could contrive a method of burning ſulphur, ſo as to preſerve all the fumes, we might obtain from it much more than its own weight, of an acid of the ordinary ſtrength.

The acid obtained from ſulphur is in all reſpects ſimilar to that of vitriol; only that what comes firſt over is ſomewhat more volatile, poſ-

ſeſſing

ſeſſing the characters of what is called the *volatile ſulphureous acid.*' The acid of ſulphur, united with iron or copper, forms a true vitriol; and the acid of vitriol, combined with inflammable matters, produces ſulphur, not diſtinguiſhable from pure common brimſtone. The identity of theſe acids is well known to ſome particular perſons, who ſupply us with almoſt all that is now ſold under the name of *oil of vitriol, prepared from the fumes of burning ſulphur.* The method by which they obtain the acids ſo plentifully, and at ſo cheap a rate, from this concrete which has hitherto yielded it ſo ſparingly, differs from the proceſſes above deſcribed. Inſtead of an open bell, or a retort with the mouth open, they uſe for burning the ſulphur in, very large ſpherical glaſs veſſels blown on purpoſe, of the ſize of a hogſhead or more, with only one aperture, through which the ſulphur is introduced, and which is afterwards immediately cloſed, till the fumes have ſubſided and incorporated with the vapour of the warm water placed in the lower part of the veſſel.

AQUA SULPHURATA.

Sulphurated water, uſually called *gas ſulphuris.*

Lond.

Take a quart of water, and half a pound of ſulphur. Let part of the ſulphur be ſet on fire in an iron ladle, and ſuſpended over the water in a cloſe veſſel: as ſoon as the fumes ſubſide, ſome more of the ſulphur is to be fired in the ſame manner; and this repeated till the whole quantity is burnt.

A convenient way of managing this proceſs is, to put the water into a glaſs receiver, placed on its ſide, and to have the ladle containing the burning ſulphur fixed to a plug, made to go freely into the neck of the veſſel; the uſe of the plug is to keep the ladle from dipping into the water; the fumes which iſſue betwixt it and the glaſs may be confined by a cloth thrown round the neck.

The water is impregnated, in this proceſs, with a ſubtile volatile acid, different in many reſpects from the foregoing ſpirits of ſulphur and of vitriol. The acid may likewiſe be obtained in the ſame volatile ſtate, both from vitriol and ſulphur without water. If the retort or long-neck, during the diſtillation of oil of vitriol, happens to crack in the fire, all the acid that riſes afterwards, is found to be thus volatiliſed. If cloths, moiſtened with a ſolution of fixt alkaline ſalt, be ſuſpended over burning brimſtone, the acid fumes will be imbibed by the alkali, and form with it a neutral ſalt: if this neutral ſalt be rubbed off from the cloths, and ſome common oil of vitriol poured upon it, the volatile acid it had imbibed from the ſulphur will be immediately extricated again, and may be collected by diſtillation. The acid proves in all theſe caſes ſo volatile, as to diſtil in a heat ſcarcely greater than that which the hand can ſupport: it has a pungent ſuffocating ſmell, like that of the fumes of burning brimſtone, but diſcovers to the taſte very little acidity or corroſiveneſs. Expoſed for ſome time to the air, it loſes theſe properties, and becomes a fixt acid, and corroſive like common oil of vitriol.

The *aqua ſulphurata* is liable to great uncertainty in point of ſtrength; partly on account of the water being impregnated with a greater or leſs quantity of the fumes, according as the proceſs is more or leſs ſkilfully managed; and partly on account of the above change of the acid

cid from a volatile to a fixt ſtate. When newly prepared, it is highly volatile and pungent, ſmelling like burning brimſtone, but in taſte rather bitteriſh and auſtere than acid. In keeping, the volatility and ſmell are loſt, and the liquor (ſooner or later, according as the air is more or leſs admitted to it) becomes in all reſpects the ſame as water acidulated with a little common oil of vitriol.

This preparation is ſaid to give relief in fits of the convulſive aſthma. It is taken to the quantity of a ſpoonful or half an ounce, two or three times a day, in any ſuitable vehicle.

SPIRITUS NITRI GLAUBERI.

Glauber's ſpirit of nitre.
Lond.

Take three pounds of nitre, and one pound of the ſtrong ſpirit or oil of vitriol. Mix them cautiouſly and gradually together under a chimney; and then diſtil, at firſt with a gentle, and afterwards with a ſtronger heat.

ACIDUM NITROSUM, vulgo SPIRITUS NITRI GLAUBERI.

Nitrous acid, commonly called *Glauber's ſpirit of nitre.*
Edinb.

'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 oil 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. When two parts of nitre are taken to one of oil 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 is 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 be not a neutral ſalt, but a very acid one. In this laſt caſe there is one conveniency; 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 TENUE.

Weak nitrous acid.
Edinb.

'Take of
Nitrous acid,
Water, equal weights.
Mix them, taking care to avoid the noxious vapours.

'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 but that 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

tonation enſues. The chief uſe of this acid is as a menſtruum for certain minerals, and as the baſis of ſome particular preparations, of which hereafter. It has been given likewiſe, diluted with any convenient vehicle, as a diuretic, from ten to fifty drops.

SPIRITUS SALIS MARINI GLAUBERI.

Glauber's ſpirit of ſea-ſalt.
Lond.

Take two pounds of ſea-ſalt, and the ſame quantity of ſtrong ſpirit or oil of vitriol. Dilute the acid ſpirit with a pint of water, and pour this mixture by little and little on the ſalt under a chimney; then diſtil, at firſt with a gentle, and afterwards with a ſtronger fire.

ACIDUM MURIATICUM, vulgo SPIRITUS SALIS MARINI.

Muriatic acid, commonly called *Spirit of ſea-ſalt.*
Edinb.

'Take of
Sea-ſalt, two pounds;
Vitriolic acid,
Water, of each one pound.

Let the ſalt be firſt 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.

In a former edition of the Edinburgh Pharmacopœia, this ſpirit was directed to be rectified by a ſecond diſtillation; but the previous burning of the ſalt in the above proceſs is ſufficient to diſcharge every inflammable matter that ſhould render the acid impure; and the neceſſity of the ſecond diſtillation is by this means ſuperſeded.'

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 ſcarce to condenſe without ſome adventitious humidity. The oil of vitriol is moſt conveniently mixed with the water in an earthen or ſtone-ware veſſel: for unleſs the mixture is 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 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 dieuretic, from ten to ſixty or ſeventy drops.

SPIRITUS SALIS.

Spirit of ſalt.

Take a pound of ſea-ſalt, thoroughly dried, and three pounds of powdered bricks. Mix, and put them into an earthen retort, of ſuch a ſize that theſe may fill only one half of it. Place the retort in a reverberatory furnace, adapt to it a large receiver, and lute well the junctures. Let the fire be applied, at firſt very ſparingly, and afterwards increaſed by degrees, until all the ſpirits are driven over in the form of clouds. When the veſſels are grown cold, pour out the diſtilled liquor into a glaſs cucurbit, and gently abſtract from it the phlegm, which will leave the ſpirit pure.

Instead of brickduſt, ſome have uſed bolar earths and clays. It has been ſuppoſed, that theſe ſubſtances act by diſcontinuing and dividing the particles of the ſalt, ſo as to enable the fire to expel the ſpirit. If this was true, glaſs or ſand would prove equally ſerviceable, and the ſame intermedium would anſwer as well for a number of times as at firſt; the reverſe of which, experiments ſhow to be true. Brick-earth, and other ſubſtances of this kind, contain a ſmall quantity of vitriolic acid, whoſe known property it is to diſengage the acid of ſea-ſalt, and which is the only part of them of uſe in this proceſs. The quantity of ſpirit therefore obtained by theſe intermedia, is only in proportion to that of the acid contained in them, which is extremely ſmall. This has occaſioned ſome to make uſe of vitriol, as containing a larger quantity of the vitriolic acid: But though vitriol is in this reſpect greatly preferable to brickduſt or the argillaceous earths, yet in another it is found leſs eligible; its metallic part ſo ſtrongly adheres to the marine acid, as to keep it down after it has ſeparated from its baſis, or elſe ariſes along with it, and defiles the product. Theſe methods therefore of extracting the ſpirit of ſalt have been for ſome time laid aſide; the foregoing, in which the pure vitriolic acid itſelf is uſed, being in all reſpects more convenient and advantageous.

AQUA FORTIS.

Lond.

Take of
Nitre,
Green vitriol, uncalcined, each three pounds;
The ſame vitriol, calcined, one pound and a half.
Mix them well together, and diſtil with a very ſtrong fire, as long as any red vapour ariſes.

AQUA FORTIS SIMPLEX.

Single aquafortis.
Edinb. +

Take two parts of vitriol calcined to whiteneſs, and one part of powdered nitre; mix them very well together, and fill therewith an earthen retort to two thirds; then fit on a large receiver, and proceed to diſtillation: which is to be performed in the ſame manner as directed for ſpirit of ſalt.

The vitriol here, is not liable to the inconvenience mentioned in the foregoing remark; it only occaſions a greater heat to be neceſſary than when the pure vitriolic acid is uſed, for the acid of the vitriol muſt be extricated before it can act on the nitre: the fire, however, muſt not be extremely ſtrong, otherwiſe ſome of the metallic parts of the vitriol will be forced over along with the nitrous acid. The direction of thoroughly mixing the ingredients ought to be well attended to; for if this is neglected, or but ſlightly performed, the due quantity of acid will not be obtained. The produce of theſe proceſſes is a ſpirit of nitre, containing ſo much more phlegm or watery moiſture than Glauber's ſpirit, as the vitriol employed in its preparation does more than an equivalent quantity of oil of vitriol.

AQUA FORTIS DUPLEX.

Double aquafortis.
Edinb. +

Take of
Green vitriol, calcined to whiteneſs,
Clay, dried and powdered,

Powdered nitre, of each equal parts.
Mix them well together, and diſtil in an earthen retort as above.

This proceſs is an unartful one. The clay appears to be of very little uſe, though the contrivers of the proceſs ſeem, from the reduction of the vitriol, to have laid conſiderable ſtreſs on it: all it can do is to hinder the melting of the ſalts. It would doubtleſs be better to omit the clay, and increaſe the quantity of the vitriol; which, in order to make the aquafortis of the ſtrength here intended, ſhould undergo a farther degree of calcination.

'The above proceſſes are no more than different forms of preparing an impure nitrous acid, unfit for pharmaceutical purpoſes. All of them may therefore be ſuperſeded by the more ſimple and proper formulæ directed for the *Acidum nitroſum* and *Acidum nitroſum tenue*.'

The great demand which there is in ſundry buſineſſes for aquafortis, has occaſioned the preparation of it to become a trade by itſelf. Hence larger and leſs expenſive inſtruments than thoſe mentioned above, have been contrived. The common diſtilling veſſel is a large iron pot, with an earthen or ſtone-ware ſtill-head, to which is adapted a large glaſs globe, or elſe a jar made of the ſame kind of clay as the head. The workmen are not at the trouble either of drying the vitriol, or pounding the nitre, but throw them both promiſcuouſly into the pot, where the fire ſoon liqueſies and mixes them together. The aquafortis, prepared after this manner, is extremely impure, and utterly unfit for many purpoſes; ſuch in particular are the ſolution of mercury and ſilver. The violence of the fire employed in the operation, never fails to elevate ſome of the metallic parts of the vitriol; the nitre is uſed rough or unrefined, which containing a portion of ſea-ſalt, ſends over ſome of the marine along with the nitrous acid; nor are the ingredients free from bits of wood, or other vegetable matters, which burning in the proceſs, foul the ſpirit with an empyreumatic oil, giving it at the ſame time an high colour. If therefore common aquafortis be employed in any medicinal preparation, it ought to be previouſly purified; the moſt effectual method of doing which is the following.

Aqua fortis purificata.
Purified aquafortis.

Drop into the aquafortis a drop or two of ſolution of ſilver. If it becomes milky or cloudy, drop in a little more of the ſolution, till a freſh addition occaſions no further change; allowing proper intervals for the white matter to ſettle, that the effect of a new addition may be the better perceived. Then pour the liquor into a glaſs retort, and diſtil in a ſand-heat to dryneſs.

The milkineſs produced by the ſolution of ſilver is a certain mark of marine or vitriolic acid in the aquafortis; the ſilver abſorbing thoſe acids, and forming with them a concrete which the liquor is incapable of holding diſſolved. If the aquafortis is not made at all cloudy by this ſolution, we may be certain of its having been previouſly free from the leaſt admixture of thoſe heterogeneous acids; and when it ceaſes to become milky from a freſh addition, we may be equally certain, that how much ſoever it might have contained of them at firſt, they are now perfectly ſeparated.

The ſolution of ſilver is to be made in aquafortis already purified. Where this cannot be had, the little

quan-

quantity generally ſufficient for the preſent purpoſe may be made in the common impure ſort of aquafortis, which will be purified during the diſſolution itſelf. Put a thin bit of ſilver into a little of the aquafortis, and ſet the vial in a ſand-heat: If the aquafortis is pure, numerous minute bubbles will iſſue from the ſilver on all ſides, and the metal will gradually diſſolve without altering the tranſparency of the liquor: but if the aquafortis contains marine or vitriolic acid, it will quickly become milky, thoſe acids uniting with the ſilver, as in the above proceſs, as faſt as the nitrous acid diſſolves it. As the white matter precipitates upon, and adheres to the ſurface of the ſilver, ſo as to impede the further action of the menſtruum, the liquor muſt be filtered and treated in the ſame manner with a bit of freſh ſilver; if any milkineſs ſtill enſues, the operation muſt be repeated with another piece of the metal, till all the foreign acids are ſeparated, and the ſilver is found to diſſolve clear. Good aquafortis takes up about half its own weight of ſilver.

The ſilver may be recovered from the white ſettlings, without any conſiderable loſs, by the following method.

Let the matter be thoroughly dried, then mixed with a little potaſh, and the mixture made into a paſte with oil. Put this paſte into a crucible, ſurrounding it every where with a little more potaſh. Set the crucible in a proper furnace, and gradually raiſe the fire, ſo as to bring the whole into fuſion. When the crucible is grown cold, a lump of fine ſilver will be found in the bottom.

AQUA FORTIS COMPOSITA.

Compound aquafortis.
Lond.

Take ſixteen ounces of aquafortis, and one dram of ſea-ſalt. Diſtil them to dryneſs.

This is deſigned as a menſtruum for quickſilver, for the preparation of the red mercurial corroſive, or red precipitate, as it is called; which the marine acid in this compound liquor renders of a more ſparkling appearance, and more beautiful to the eye, than when made with the nitrous acid alone.

AQUA REGIA.

Edinb. +

Put an ounce of powdered ſal ammoniac into a large cucurbit, and add to it, by little and little at a time, four ounces of ſpirit of nitre or double aquafortis. Let them ſtand together in a ſand-heat till the ſalt is entirely diſſolved.

The glaſs in which the mixture is made ſhould be placed under a chimney (to carry up the offenſive vapour) and its orifice by no means ſtopt till ſuch time as the ſalt is perfectly diſſolved, and the fumes ceaſe to ariſe with impetuoſity. Theſe cautions are extremely neceſſary, if the proceſs be conducted according to the directions above. But if the ſal ammoniac, finely powdered, be gradually added to the acid ſpirit (which ought to be of a middle degree of ſtrength between ſingle aquafortis and ſtrong ſpirit of nitre) the ſolution will proceed without any inconvenience, and may be finiſhed in a reaſonable compaſs of time, provided the mixture be now and then ſtirred.—The only uſe of aqua regia and the aqua-

fortis, is as menſtrua for certain mineral ſubſtances.

'Aqua regia is a mixture of the nitrous and muriatic acids; but when prepared in the manner here directed, the alkali of the ſal ammoniac joins to part of the nitrous acid, whereby the aqua regia contains a quantity of nitrous ammoniacal ſalt: this neutral ſalt does not injure the diſſolving powers of the liquor, and this is the leaſt expenſive manner of preparing it; but it may produce conſiderable differences in the nature of the precipitates made from ſolutions of metals in this menſtruum, either by a portion of it adhering to the precipitates, or by ſeparating from them any metallic ſubſtances which it is capable of diſſolving. When therefore we want a pure aqua regia, it is beſt made, either by mixing the nitrous with the muriatic acid, or by diſtilling the nitrous from ſalts containing the muriatic acid, ſuch as the one above directed, viz ſal ammoniac, or common ſalt. The proportions of the two acids are alſo to be varied according to the different purpoſes for which the aqua regia is intended; the greater the proportion of marine acid, the diſſolving power of the aqua regia is in general the leſs: but we frequently uſe ſuch a quantity of the nitrous acid, that the liquor contains the two acids, each retaining its peculiar manner of acting and forming particular ſalts with all the bodies expoſed to their action. On this account we are at a loſs to aſcertain the preciſe condition of certain metallic ſolutions, or their precipitations from this menſtruum. Whether we ſuppoſe that the nitrous acid abſtracts phlogiſton from, or communicates a redundance of pure air to, the muriatic acid, it is agreed on the principles of both theories, that the peculiar diſſolving powers of aqua regia are very entirely to be aſcribed to ſome change made on the muriatic acid. This is the more evident, ſince a liquor, poſſeſſing all the properties of the beſt aqua regia, can be obtained without the intervention of the nitrous acid; and this is done by diſtilling the acid over the calx of the ſemimetal called *manganeſe*. Thus prepared, it is called by Mr Scheele the *dephlogiſticated marine acid*; and for the pharmaceutical purpoſes, to be afterwards noticed, it is preferable to the aqua regia prepared by a mixture of the two acids. See TARTARUM EMETICUM.'

ACETUM DESTILLATUM, vel SPIRITUS ACETI.

Diſtilled vinegar, or ſpirit of vinegar.

Lond.

Let vinegar be diſtilled with a gentle heat as long as the drops fall free from an empyreuma.

If ſome part of the ſpirit which comes over firſt be thrown away, the reſt will be the ſtronger.

Edinb.

'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

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 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 is employed, it ſhould likewiſe be occaſionally ſupplied with freſh vinegar in proportion as the ſpirit runs 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 of the London Diſpenſatory; 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 ſection of acids, page *83, and under the the article ACETUM, page 68. 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, though not uſed in medicine, would doubtleſs prove a ſerviceable detergent ſaponaceous acid: and in this light it ſtands recommended by Boerhaave.

ACIDUM TARTAREUM PURUM.

Pure tartarous acid.

'If cream of tartar be diſſolved in a ſufficient quantity of boiling water, and fine chalk in powder added to it till the effervescence ceaſes, a copious white ſediment will fall to the bottom, and the liquor which remains over it will, by evaporation, afford ſoluble tartar. The ſediment is a combination of the tartarous acid with the calcareous earth. If on this ſediment, or tartarous ſelenite, we pour a ſufficient quantity of diluted vitriolic acid, this laſt attaches itſelf to the chalk, forming a vitriolic ſelenite, and the diſengaged tartarous acid ſwims at top. We have then the

pure tartarous acid free from the vegetable alkali, with which it is united in the native tartar and in the cream of tartar. The tartarous acid, thus disengaged, may be inspissated and formed into crystals which are not deliquescent in the air. As the combination of the tartarous acid with chalk is a selenite possessing very little solubility, Mr Bergman proposes, for the separation of the acid, to wash this selenite or sediment with distilled water; then putting it into a phial with eight times its weight of a liquor formed of one part of vitriolic acid and eight parts of water. This mixture is digested twelve hours, and frequently stirred with a wooden spatula; the clear liquor above the sediment is poured off, and the sediment repeatedly washed with water till it has no taste, and the different leys are mixed together. But as the ley always contains a small quantity of vitriolic acid, it is to be purified from it by adding a quantity of tartarous selenite, part of which may be reserved for that purpose. For decomposing the solution of cream of tartar, Dr Black has found that quicklime is preferable to chalk, the quicklime absorbing the whole of the tartarous acid, whereby the supernatant liquor, instead of being a solution of soluble tartar, only contains the alkaline part of the tartar. By this method, then, we have a larger quantity of acid in the sediment.

'Tartarous acid has not hitherto been much employed in its pure state. As its quantity, in the cream of tartar, may probably vary under different circumstances, we should suppose that the pure acid might be used with more certainty for the preparation of emetic tartar, and such like nice purposes.'

AQUA MEPHITICA.

Mephitic water, commonly so called; or *water impregnated with fixed air, or aërial acid.*

'This liquor is prepared by receiving fixed air or aërial acid into vessels full of water, inverted in a bason containing the same. The fixed air is separated from various substances, and by different acids; but those most commonly employed are chalk and diluted vitriolic acid. The apparatus most convenient for preparing this liquor is an instrument contrived by Mr Nooth, and which we think should be kept in every laboratory. We cannot here describe this instrument, or the manner of using it; both are sufficiently simple, and pretty generally known. Water thus impregnated with fixed air has an agreeable acidulous taste, and might be kept in the shops as at least an excellent vehicle for many other medicines. See the article FIXED AIR.'

SECT. V.

COMBINATION OF ACID WITH VINOUS SPIRITS.

ALL the mineral acids, on being mixed with spirit of wine, raise a great ebullition and heat. If the acid is in small quantity, it unites intimately with the vinous spirit, so as to arise with it in distillation. The taste and all the characters of acidity are destroyed; and the

the mixture acquires a grateful flavour, which neither of the ingredients had before.

SPIRITUS VITRIOLI DULCIS.

Dulcified ſpirit of vitriol.
Lond.

Take of the ſtrong ſpirit or oil of vitriol, one pound; of rectified ſpirit of wine, one pint. Cautiouſly mix them together by little and little at a time, and diſtil the mixture, with a very gentle heat, till a black froth begins to ariſe; then immediately remove the whole from the fire, leſt this froth ſhould paſs over into the recipient and fruſtrate the operation.

ACIDUM VITRIOLICUM VINOSUM, vulgo SPIRITUS VITRIOLI DULCIS.

Vinous vitriolic acid, commonly called *Dulcified ſpirit of vitriol.*
Edinb.

'Take of
Vitriolic ethereal liquor, one part;
Rectified ſpirit of wine, two parts.
Mix them.

'This 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.'

The different proportions of the acid ſpirit to the vinous in the firſt proceſs, makes no variation in the quality of the produce, provided the diſtillation is duly conducted; all the redundant acid being left in the reſiduum.

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 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 is 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 is gradually imbibed, without any commotion, and the veſſel may then be ſafely ſhaken to complete the mixture: but if the ſpirit is poured in too haſtily at firſt, or if the veſſel is 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 is 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 vial may be occasionally removed with ease.

The true dulcified spirit arises in thin subtile 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 our 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 sulphureous mass; which, exposed to the fire in open vessels, readily burns, leaving a considerable quantity of fixt ashes; in close ones, explodes with violence; and with fixt alkaline salts, forms a compound nearly similar to one composed of alkalis and sulphur.

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; especially if rectified, as in the second of the above processes, from a little fixt alkaline salt, to separate any redundant acidity. As a medicine, it promotes perspiration and the urinary secretion, expels flatulences, 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.

Liquor anodynus mineralis Hoffmanni.

Hoffman's mineral anodyne liquor. Paris.

Into half a pound of concentrated oil of vitriol, placed in a large glass retort, pour by little and little, through a long-stemmed funnel, one pint and a half of highly rectified spirit of wine. Stop the mouth of the retort, digest for some days, and then distil with a very gentle heat. At first a fragrant spirit or wine will arise; and after it, a more fragrant volatile spirit, to be caught in a fresh receiver. The receiver being again changed, a sulphureous, volatile, acid phlegm comes over; and at length a *sweet oil of vitriol*, which should be immediately separated, lest it be absorbed

ed by the phlegm. Mix the firſt and ſecond ſpirits together, and in two ounces of this mixture diſſolve twelve drops of the ſweet oil. If the liquor has any ſulphureous ſmell, rediſtil it from a little ſalt of tartar.

WHETHER this is the exact preparation, ſo much recommended and ſo often preſcribed by Hoffman as an anodyne and antiſpaſmodic, we cannot determine. We learn from his own writings, that his anodyne liquor was compoſed of the dulcified ſpirit of vitriol, and the aromatic oil which ariſes after it; but not in what proportions he mixed them together. The college of Wirtemberg ſeem to think, that all the oil was mixed with all the ſpirit obtained in one operation, without regard to the preciſe quantities.

AQUA RABELLIANA.
Eau de Rabel.
Pariſ.

Take four ounces of oil of vitriol, and twelve ounces of rectified ſpirit of wine. Pour the vinous ſpirit gradually into the acid, and digeſt in a cloſe matraſs.

THIS liquor has been greatly celebrated in France as a reſtringent, and for the ſame purpoſes as the dulcified ſpirit; from which it differs in having a conſiderable acidity.

LIQUOR ÆTHEREUS VITRIOLICUS.
Vitriolic ethereal liquor.
Edinb.

'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 is 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 a public pharmacopœia, was formerly confined to a few hands; for though ſeveral 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. For preparing the dulcified ſpirit by the method directed by the London College,' the diſtillation is performed with an equable and gentle heat: here the fire ſhould be haſtily raiſed, ſo as to make the liquor boil; for on this circumſtance the produce of either principally depends. (See a paper on this ſubject by Dr Morris, in the ſecond volume of the Medical Obſervations and Inquiries, publiſhed by a ſociety of phyſicians in London. '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 ether which the liquor can afford will be formed and drawn off before this 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 ether, or etherial 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 lixivia, 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 ease in violent headachs, 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 drops to the quantity of half an ounce,' in a glass of wine or water; which should be swallowed as quick as possible, as the ether so speedily exhales.

SPIRITUS NITRI DULCIS.

Dulcified spirit of nitre.
Lond.

Take a quart of rectified spirit of wine, and half a pound of Glauber's spirit of nitre. Mix them, by pouring the nitrous spirit into the other; and distil with a gentle heat, as long as the liquor which comes over does not raise any effervescence with lixivial salts.

ACIDUM NITRI VINOSUM, vulgo SPIRITUS NITRI DULCIS.

Vinous acid of nitre, commonly called *Dulcified spirit of nitre.*
Edinb.

'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 one another, 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 unſcientifical 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 ether they are abſolutely neceſſary, and might perhaps 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 reaction on each other. By this method a quantity of nitrous ether 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

long held, and not undeſervedly, in great eſteem. It quenches thirſt, promotes the natural ſecretions, expels flatulences, 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 notably 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 SALIS DULCIS.

Dulcified ſpirit of ſalt.

Edinb. +

This is made with ſpirit of ſalt, after the ſame manner as dulcified ſpirit of nitre.

THE dulcification of the ſpirit of ſalt does not ſucceed ſo perfectly as that of the two foregoing acids, only a minute portion of it uniting with the ſpirit of wine, and unleſs the proceſs is ſkilfully managed, ſcarce any. Some have held this ſpirit in great eſteem againſt weakneſs of the ſtomach, indigeſtion, and the like, following from hard drinking; at preſent it is not often made uſe of or kept in the ſhops.

SECT. VI.

NEUTRAL SALTS.

WHEN any acid and any alkaline ſalts are mixed together, in ſuch proportion that neither of them may prevail, they form by their coalition a new compound, called NEUTRAL. In all the combinations of this kind (except ſome of thoſe with vegetable acids) the alkali and acid are ſo ſtrongly retained by one another, that they are NOT to be diſunited by any degree of fire. How volatile ſoever the acid was by itſelf, if combined with a fixt alkali, it proves almoſt as fixt as the pure alkali: if the alkali is of the volatile kind, the compound proves alſo volatile, ſubliming in its whole ſubſtance, without any ſeparation of its parts. There are, however, means of procuring this diſunion, by the intervention of other bodies, as we have already ſeen in the ſeparation of the volatile alkali of ſal ammoniac, and of the acids of nitre and ſea-ſalt: but in all caſes of this kind, only one of the ingredients of the neutral ſalt can poſſibly be obtained by itſelf, the ſeparation of this happening ſolely in virtue of the ſuperadded body uniting with the other.

There is another kind of compound ſalts, formed by the coalition of acids with earthy and metallic bodies. Theſe ſalts differ from the true neutral ones in ſeveral obvious properties; ſome of them change blue vegetable juices to a green like alkalis, and others to a red like acids, while neutral ſalts make no change in the colour: mixed with boiling milk, they coagulate it, while neutral ſalts rather prevent its coagulation: from moſt of them, the acid is diſunited by fire, without the intervention of any additional matter, of which we have ſeen an inſtance in the diſtillation of the acid of vitriol: but the moſt diſtinguiſhing and univerſal character of theſe ſalts is, that ſolutions of them, on the addition of any fixt alkali, grow turbid,

turbid, and depoſit their earth or metal. It were to be wiſhed that cuſtom had appropriated ſome particular name to the ſalts of this claſs, to prevent their being confounded, which ſeveral of them have often been, with the perfect neutral ſalts. See Table of ATTRACTIONS.

	VITRIOLIC ACID.	NITROUS ACID.	MARINE ACID.	ACETOUS ACID.
COMMON FIXT ALKALI.	Vitriolated tartar.	Common nitre.	Regenerated ſea-ſalt.	Sal diureticus.
ALKALI of SEA-SALT.	Glauber's ſalt.	Cubical nitre.	Sea-ſalt.	A ſalt ſimilar to ſal diuret.
VOLATILE ALKALI.	Philoſophic ſal ammon.	Volatile nitre.	Sal ammoniac.	Spiritus Mindereri.
CALCAREOUS EARTH.	Selenites.	Calcareous nitre.	Calcareous muriatic ſalt.	A ſubaſtringent ſalt.
MAGNESIA.	Sal cathartic. amarus.	Purging ſalts, not diſtinguiſhed by any particular name.		
Soluble earth of CLAY.	Alum.	Aſtringent ſalts, not diſtinguiſhed by any particular name.		

The preceding table exhibits, at one view, the ſeveral compound ſalts reſulting from the union of each of the pure acids with each of the common alkalis and ſoluble earths; the acids being placed on the top, the alkalis and earths on the left hand, and the compound ſalts in the reſpective interſections; and is thus to be underſtood. In the upright columns, under each of the acids, are ſeen the ſeveral compound ſalts reſulting from the union of that acid with the reſpective alkalis and earths on the left ſide. In the tranſverſe columns, oppoſite to each particular alkali and earth, are ſeen the compound ſalts reſulting from the union of that alkali or earth with the reſpective acids on the top; and converſely, of each of the compound ſalts expreſſed in the table, the component parts are found on the top of the upright column; and on the left ſide of the tranſverſe column, in whoſe interſection that particular ſalt is placed. Some of theſe ſalts have been already treated in the Materia Medica; but it was thought proper to unite them here into one view, for the greater perſpicuity in regard to their compoſition, and the different properties which their component parts aſſume in different combinations.

Cryſtallization of ſalts.

THIS is a general operation on neutral and moſt of the other compound ſalts. It depends upon theſe principles: that water, of a certain degree of heat, diſſolves, of any particular ſalt, only a certain determinate quantity; that on increaſing the heat, it diſſolves more and more (except only in one inſtance, common ſalt) till it comes to boil, at which time both its heat and diſſolving power are at their height: that

in

in returning to its firſt temperature, it throws off again all that the additional heat had enabled it to diſſolve: that independently of any increaſe or diminution of heat a gradual evaporation of the fluid itſelf will occaſion a proportional ſepara tion of the ſalt; and that the particles of the ſalt, in this ſeparation from the water, unleſs too haſtily forced together by ſudden cooling or ſtrong evaporation, or diſturbed by external cauſes, generally concrete into tranſparent and regularly figured maſſes, called cryſtals. The ſeveral ſalts aſſume, in cryſtallization, figures peculiar to each: thus the cryſtals of nitre are hexagonal priſms; thoſe of ſea-ſalt, cubes; thoſe of alum, octohedral maſſes; while ſal ammoniac ſhoots into thin fibrous plates like feathers.

The uſe of preparing ſalts in a cryſtalline form is not merely in regard to their elegance, but as a mark of, and the means of ſecuring, their purity and perfection. From ſubſtances not diſſoluble in water, they are purified by the previous ſolution and filtration: by cryſtallization, one ſalt is purified from an admixture of ſuch other ſaline bodies as diſſolve either more eaſily or more difficultly than itſelf. For if two or more ſalts be diſſolved together in a certain quantity of hot water, the ſalt, which requires the greateſt heat for its ſolution in that quantity of water, will firſt begin to ſeparate in cooling: and if the water is kept evaporating in an uniform heat, the ſalt which requires moſt water in that heat will be the firſt in cryſtallizing. In all caſes of this kind, if the proceſs is duly managed, the firſt ſhootings are generally well figured and pure: the ſucceeding ones, ſooner or later, according to the quantity of the other ſalts in the liquor, retain an admixture of thoſe ſalts, which they betray by their ſmallneſs and by their figure.

In order to the cryſtallization of ſaline ſolutions, it is cuſtomary to boil down the liquor, till ſo much of the fluid has exhaled, as that the ſalt begins to concrete from it even while hot, forming a pellicle upon the ſurface expoſed to the air; when this mark appears, the whole is removed into a cold place. This method ſeldom affords perfect cryſtals: for when water is thus ſaturated with the ſalt in a boiling heat, and then ſuddenly cooled; the particles of the ſalt run haſtily and irregularly together, and form only a confuſed ſemitranſparent maſs. It is by ſlow concretion that moſt ſalts aſſume their cryſtalline form in perfection. The evaporation ſhould be gentle, and continued no longer than till ſome drops of the liquor, in a heat below boiling, being let fall upon a cold glaſs plate, diſcover cryſtalline filaments: the liquor is then immediately to be removed from the fire into a leſs warm, but not a cold place; and the veſſel covered with a cloth to prevent the acceſs of cold air, and the formation of a pellicle, which, falling down through the fluid, would diſturb the regularity of the cryſtallization. This is the moſt effectual method for moſt ſalts; though there are ſome, whoſe cryſtallization is to be effected, not by an abatement of the heat, but by a continued equable evaporation of the fluid; ſuch in particular is ſea-ſalt.

Salts retain in cryſtallization a portion of the aqueous fluid, without betraying any marks of it to the eye; on this their cryſtalline form appears in great meaſure to depend. The quantity of phlegm or water varies in different ſalts; dry cryſtals of nitre were found, on ſeveral careful trials, to contain about one twentieth

twentieth of their weight; thoſe of alum, one ſixth; ſea-ſalt, one fourth; borax, green vitriol, and the purging ſalts, no leſs than one half. The ſame ſalt appears always to retain nearly the ſame quantity.

Some ſalts diſſolve in ſpirit of wine; and here alſo, as in water, the ſolution is limited, though the ſalt is not eaſily recovered in a cryſtalline form. Such, in particular, are combinations of the nitrous acid with volatile alkalis, and with calcareous earths; of the marine acid with all the ſoluble earths; of the acetous with fixt and volatile alkalis. Scarce any of the compound ſalts, whoſe acid is the vitriolic, are affected by vinous ſpirits.

Salts differ greatly in their diſpoſition to aſſume and retain a cryſtalline form. Many, even of the compound kind, imbibe humidity like fixt alkalis, ſo as to cryſtallize with difficulty; and when cryſtallized, or exſiccated by heat, to deliquate again in the air. Such are the combinations of the nitrous and marine acid with all the ſoluble earths, and of the acetous both with earths and alkalis. The vitriolic acid, on the other hand, forms with all the ſubſtances it diſſolves permanent cryſtals; as do likewiſe the other mineral acids with all alkalis.

The cryſtallization of thoſe ſalts, which are not diſſoluble in ſpirit of wine, is generally promoted by a ſmall addition of that ſpirit; which abſorbing the water, or weakening its diſſolving power on the ſalt, diſpoſes the ſalt to part from it more freely. The operator muſt be careful, however, not to add too much of the ſpirit, eſpecially where the ſalt is compoſed of an earthy or metallic body united with the acid; leſt it abſorb the acid as well as the water, and, inſtead of a gradual and regular cryſtallization, haſtily precipitate the earth or metal in a powdery form.

Mr Rouelle of the French academy of ſciences, has examined with great attention the phenomena of the cryſtallization of ſalts, and publiſhed the reſult of his obſervations in different volumes of the Memoirs of that academy. Among other curious particulars, he has given a general diſtribution of ſalts, in regard to their cryſtallization, which will be of practical utility to the artiſt.

He divides evaporation into three degrees; *inſenſible evaporation*, or that effected by the natural warmth of the atmoſphere, from freezing up to the heat of the ſummer's ſun; *mean evaporation*, commencing with the ſun's heat, and extending to that in which the exhaling ſteam is viſible to the eye, and the liquor too hot to be endured by the hand; and *ſtrong evaporation*, reaching from this period to boiling. He divides ſalts into ſix claſſes; the diſtinctions of which are taken from the degree of evaporation in which they cryſtallize moſt perfectly, from the figure of their cryſtals, their diſpoſition to remain ſingle or unite in cluſters, and their receiving an increaſe from a continuance of the cryſtallization.

I. The firſt claſs conſiſts of ſalts which cryſtallize into ſmall plates or very thin ſcales. The cryſtals are ſingle. They are, of all ſalts, thoſe which cryſtallize moſt frequently on the ſurface of their ſolutions, which retain leaſt water in their cryſtals, and require moſt to diſſolve in. They cryſtallize moſt perfectly by inſenſible evaporation. *Selenites. Sedative ſalt.*

II. Salts

II. Salts whoſe cryſtals are cubes, cubes with the angles truncated, or pyramids of four or ſix ſides. They form ſingle, and change their figure by new accretions. By inſenſible evaporation they cryſtallize at the bottom, by mean evaporation at the ſurface, and by both kinds they prove perfect and regular: by ſtrong evaporation, the liquor contracts a pellicle, and in cooling yields few cryſtals, and thoſe ill figured.

Spiritus ſalis. Sea-ſalt. Tartar. Vitriolated tartar. marini coagulatus.

III. Salts whoſe cryſtals are tetrahedral, pyramidal, parellelopipeds, rhomboidal, and rhomboidal parallelopipeds; with the angles variouſly truncated according to different circumſtances. They form ſingle (except that ſome few unite by the baſes) and change their figure by new accretions. They cryſtallize at the bottom, moſt perfectly by inſenſible evaporation: by mean and ſtrong evaporation, the liquor contracts a pellicle, and in cooling the cryſtals adhere to the pellicle, and prove confuſed and ill formed. They retain a large quantity of water.

Green vitriol. Alum. Borax. Cubical nitre. Seignett's ſalt. Blue vitriol. White vitriol. Verdigris.

IV. Salts whoſe cryſtals are flattened parallelopipeds, with the extremities terminating in two ſurfaces inclined to one another, ſo as to form a point and acute angles with the large ſides. They cluſter together, uniting, by the baſes, into tufts. The cryſtals are largeſt and moſt regular by inſenſible evaporation: by mean and haſty evaporation, a pellicle is formed, and in cooling the cryſtals prove very ſmall. They retain a large quantity of water in cryſtallization, and require little to diſſolve in.

Soluble tartar. Tartar united with volatile alkali. Tartar united with abſorbent earth.

V. Salts whoſe cryſtals are very long, in form of needles, priſms, or columns of different ſurfaces. They ſhoot at the bottom, and cluſter together into tufts of regular figures. By inſenſible evaporation they ſcarce ever cryſtallize well. By mean and ſtrong evaporation, they give a pellicle; and in ſlow cooling, if the evaporation was not carried too far, they yield perfectly well formed cryſtals, which at firſt ſwim, but ſoon fall to the bottom. If the evaporation was too long continued, the cryſtals prove confuſed and ill formed.

Sal ammon. Phil. ſal ammon. Nitre. Vol. nitre. Glaub. ſalt. Salt of amber. Vit. united with chalk. Vol. vit. acid united with fixt alk.

VI. Salts

VI. Salts whoſe cryſtals are in very ſmall needles, or of other indeterminate figures. None of them cryſtallize by inſenſible evaporation, and few of them by the mean degree. They require to be reduced, by ſtrong evaporation, to a thick conſiſtence; they then contract a pellicle, and cryſtallize with confuſion. If the cryſtals are wanted regular, ſpirit of wine muſt be uſed, or ſome other medium, if the ſalt is ſoluble in ſpirit. They readily diſſolve in water, and liquefy in the air.

Sal diureticus. *Marine acid united with abſorbent earths.* *Nitrous acid united with abſorbent earths.*

NITRUM PURIFICATUM.

Purified nitre.

Lond.

Boil nitre in water till it is diſſolved; filtre the ſolution through paper; and then, after due evaporation, ſet it by in a cold place, that the nitre may ſhoot into cryſtals.

Edinb. †

The liquor which remains after the cryſtallization, may be further evaporated, and ſet to ſhoot as before; but this proceſs muſt not be too long protracted.

COMMON nitre contains uſually a conſiderable proportion of ſea-ſalt, 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 tipt with little cubical glebes of ſea ſalt.

When rough nitre, in the ſtate wherein it is firſt extracted from the earths impregnated with it (ſee page 187.) 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 lixivia, 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 *Metallotheca 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 calcareous 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 ha-

ving a leſs powerful attraction for fixed air, and in not becoming cauſtic by calcination.'

SAL AMMONIACUS PURIFICATUS.

Purified ſal ammoniac.

Lond.

This ſalt is purified by ſolution in water, filtration, and cryſtallization, after the manner above directed for nitre.

Edinb. +

The liquor remaining after the cryſtallization is to be further evaporated, and the cryſtallization repeated, ſo long as any ſalt will ſhoot from it.

THE impurities of ſal ammoniac are commonly ſuch as will not diſſolve in water; and hence the purification is effected by the ſolution and filtration. The very laſt cryſtals ſeldom betray an admixture of any other ſalt.

FLOS SALIS AMMONIACI.

Flowers of ſal ammoniac.

Edinb. +

Take any convenient quantity of dry ſal ammoniac in powder: put it into an earthen cucurbit; and having fitted on a blind-head, ſublime the ſalt with a fire gradually increaſed.

THIS proceſs ſeems to be intended with a view to the further purification of the ſalt. As ſal ammoniac, however, carries up with it ſubſtances which of themſelves are not volatile; as it is originally prepared by a ſimilar proceſs, and may poſſibly ſuffer ſome alteration in its quality from repetitions of it; the ſublimation does not appear to be either needful or expedient. Neumann obſerves, that by repeated ſublimations, it acquires at length a yellowiſh tinge, and a particular ſmell, of which it diſcovered nothing at firſt, and which he attributes to the extrication of the oily or inflammable matter of its volatile animal ſalt; for that ſal ammoniac participates of an inflammable principle, appears from its deflagration with nitre.

VITRIOLUM PURIFICATUM, vulgo GILLA VITRIOLI.

Purified white vitriol, commonly called *Gilla of vitriol.*

Edinb. +

Diſſolve white vitriol in a ſufficient quantity of warm water, filtre the ſolution, and evaporate it to the conſumption of two-thirds: ſet the remainder in a cold place, that the ſalt may ſhoot into cryſtals upon the ſides of the veſſel, and afterwards dry the cryſtals in the ſun. The remaining liquor is to be further evaporated, and ſet to cryſtallize as before; and this proceſs repeated till no more ſalt will ſhoot.

SOLUTIONS of white vitriol depoſite, on ſtanding, a yellow ochery ſubſtance; which, if not ſuffered to ſeparate before the liquor is exhaled and ſet to ſhoot, will foul the cryſtals. Wilſon directs the vitriol to be diſſolved in juſt as much water as will keep it from cryſtallizing, viz. two pounds, or two pounds and a half of water to one of the vitriol; and the filtered ſolution kept warm, to ſettle, for twenty-four hours: being then evaporated to a proper pitch for cryſtallization, a yellow matter is ſtill frequently found at the bottom, from which the liquor muſt be decanted before it is ſet by to ſhoot. It may be obſerved, that the ſeparation is by far the moſt plentiful and ſpeedy while the liquor boils: ſolutions, which had

ſtood

ſtood in the cold for ſome days, and appeared perfectly clear, on being made to boil, became immediately turbid, and threw off a yellow ochre.

SAL VITRIOLI.

Salt of vitriol.

Lond.

Take of

White vitriol, one pound;

Strong ſpirit (called oil) of vitriol, one ounce by weight;

Water, as much as is ſufficient.

Boil them together till the vitriol is diſſolved; then filtre the liquor, and after due evaporation ſet it by in a cold place to cryſtallize.

HERE the intention is not to ſeparate the ochery matter of the vitriol, but to prevent its ſeparating and colouring the cryſtals. This is effectually anſwered by the addition of the acid, by which it is kept diſſolved.

ALUMEN USTUM.

Burnt alum.

Lond. and *Edinb.*

Let alum be calcined in an iron or earthen veſſel, ſo long as it bubbles and ſwells up.

THE bubbling or bliſtering proceeds from the phlegm retained in the cryſtals; after that is expelled, the ſalt cannot be made liquid by any degree of fire. Alum is compoſed of vitriolic acid and an earth: and it is remarkable, that combinations of that acid with all earths, with moſt metals, and even with vegetable fixt alkalis, are unfuſible.

The alum thus deprived of its phlegm, proves conſiderably ſtronger, and more acrid, inſomuch as to be ſometimes employed for conſuming fungous fleſh: it is ſaid to have an inconvenience of leaving a hardneſs upon the part.

VITRIOLUM CALCINATUM.

Calcined vitriol.

Lond.

Let green vitriol be calcined in an earthen veſſel, with an open fire, till it becomes thoroughly dry: then breaking the veſſel, take out the vitriol, and ſet it by for uſe, well cloſed from the air. The vitriol is ſufficiently calcined, if it has acquired a red colour at the ſides and bottom of the veſſel.

THIS proceſs ſucceeds tolerably well for ſmall quantities, but does not anſwer ſo perfectly for larger. As the action of the fire is exerted firſt on the external parts of the maſs, theſe will be calcined firſt, and, where the quantity is large, exhibit the mark of ſufficient calcination, whilſt the internal part remains almoſt unchanged: and even if the proceſs is ſtill farther continued, the effect required will not be produced; for the outſide growing firſt hard, prevents the evaporation of the aqueous parts from within.

Edinb.

Expoſe any quantity of green vitriol, in an unglazed earthen veſſel, to the action of a moderate fire, till it becomes white 'and thoroughly dry;' keeping the matter continually ſtirring, to prevent its ſticking to the veſſel, and acquiring a ſtony hardneſs.

COLCOTHAR VITRIOLI.

Colcothar of vitriol.

Edinb.

'Let the vitriolum calcinatum be urged with a vehement heat, till it paſſes into a deep red ſubſtance.'

THIS method is ſufficiently troubleſome: for unleſs the heat be very

gentle, and the matter ſpread very thin over the bottom of a broad ſhallow veſſel, it is almoſt impoſſible to avoid melting it, which makes it adhere to the ſides of the pan, and renders the previous pulveriſation an uſeleſs labour.

The method uſually practiſed by the chemiſts is, to place a deep earthen pan, with ſome vitriol in it, upon a gentle fire; the vitriol ſoon liquefies, boils up, and by degrees incruſtates to the ſides of the veſſel: ſome more vitriol is then thrown in and ſuffered to incruſtate in the ſame manner, and this procedure repeated till the pan is nearly full of the concreted matter, which proves of a whitiſh colour, except on the outſide next the pan (which muſt be broken to take it out) where it appears yellowiſh or reddiſh, according to the continuance and degree of fire. If the vitriol be deſired to be ſtill farther deplegmated, this may be commodiouſly effected, by reducing the maſs into a groſs powder (which will now no longer melt), and then calcining it over a ſtrong fire, in a ſhallow iron pan, till it has gained the degree of dryneſs required, which may be known from its colour.—The principal uſe of calcined vitriol is for the diſtillation of the ſpirit of vitriol: if employed for this purpoſe uncalcined, it would melt in the diſtilling veſſel, and running into a lump, ſcarce give out any ſpirit; and the little obtained would be very weak. 'The chief uſe of the colcothar is as a colouring matter in plaſters.'

TARTARUM VITRIOLATUM.

Vitriolated tartar.

Lond.

Diſſolve eight ounces of green vitriol in four pints of boiling water; and whilſt the liquor continues boiling, throw it into ſalt of tartar, or any other alkaline ſalt, till no farther effervеſcence ariſes upon a freſh addition; which generally happens when four ounces, or a little more, of the ſalt have been uſed. Filtre the liquor through paper, and after due evaporation ſet it by to cryſtallize.

Here the acid of the vitriol forſakes the iron which it was before in poſſeſſion of, to unite with the alkaline ſalt: particular care ought to be had that the quantity of alkali be ſufficient to fully ſaturate the acid, otherwiſe it will not depoſite all the metal. It is convenient, even after the ſaturation ſeems, from the effervеſcence ceaſing, to be completed, to throw in a little more of the alkali; for by this means the preparation is ſecured from containing any metallic matter; whilſt the ſuperfluous quantity of alkali can do no prejudice, as it remains uncryſtallized.

It is remarkable, that although the vitriolic acid and fixt alkaline ſalt do each readily unite with water, and ſtrongly attract moiſture even from the air; yet the neutral ſalt 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. Hence ſome have directed the liquor in this proceſs to be filtered whilſt very hot, ſuſpecting, that if it was ſuffered to cool, great part of the ſalt would be thrown off and left upon the paper. The college, however, has avoided this inconvenience, by ordering a quantity of water which is found to be ſufficient for keeping the ſalt diſſolved in the cold, or at leaſt in a moderate warmth.

ALKALI FIXUM VEGETABILE VITRIOLATUM, vulgo TARTARUM VITRIOLATUM.

Vitriolated fixed vegetable alkali, commonly called *Vitriolated tartar. Edinb.*

'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 dropt 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, 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. (See OLEUM TARTARI *per* DELIQUIUM.) 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 the moderate heat, ſuch as the hand can ſcarcely bear, that the water may ſlowly evaporate.

Vitriolated tartar, in ſmall doſes, as a ſcruple or half a dram, is an uſeful aperient; in larger ones, as four or five drams, 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.

NITRUM VITRIOLATUM.

Vitriolated nitre.
Lond.

Diſſolve in warm water the maſs which remains after the diſtillation of Glauber's ſpirit of nitre: filtre the ſolution through paper, and cryſtallize the ſalt.

THIS ſalt is not different from the *tartarum vitriolatum*, being compoſed of the vitriolic acid, and the alkaline baſis of nitre; which alkali is no other than the common vegetable fixt alkaline ſalt, as ſalt of tartar or potaſh: it is, in effect, from the aſhes of vegetables, that the nitre prepared in Europe receives its alkaline baſis. If any unchanged nitre remains in the maſs, it is left diſſolved in the water while the vitriolated alkali cryſtallizes.

SAL POLYCHRESTUM.

Salt of many virtues.
Edinb.

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 deflagration 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 decompounded 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 combined with the alkaline baſis of the nitre. The ſhops, accordingly, have ſubſtituted to the ſal polychreſt the foregoing preparation.

SAL PRUNELLÆ.

Edinb. +

Take of
Pure nitre reduced to powder, two pounds;
Flowers of ſulphur, one ounce.
Melt the nitre in a crucible, and ſprinkle into it the ſulphur by little at a time. When the deflagration is over, pour out the melted ſalt upon a clean, dry, and warm braſs plate, ſo as to form it into cakes.

THOSE who prepare ſal prunellæ in large quantities, make uſe of a clean iron pot inſtead of a crucible; and when the nitre is melted, and the ſulphur deflagrated, take out the ſalt with an iron ladle, and pour it into braſs moulds kept for this purpoſe. The previous pounding of the nitre, directed above, may be as well omitted, as occaſioning a needleſs trouble.

This preparation was formerly in great eſteem, and is ſometimes ſtill ordered in preſcription. It is nevertheleſs built upon an erroneous foundation, which ſuppoſed, that the nitre was purified by the deflagration it undergoes upon injecting a little ſulphur on it: from proper experiments it appears, that the ſulphur is ſo far from depurating the nitre, or tending to its improvement as a medicine, that it really alters ſome part of it into a ſalt, which has quite different properties. The real effect of this proceſs will be eaſily underſtood from the preceding one: there, nearly all the nitre is decompounded, and a ſalt, 'differing only from vitriolated tartar, in con-

containing leſs water,' is found in its place: here, only about one twenty-fourth part of it ſuffers this change. Boerhaave, inſtead of deflagrating the nitre with ſulphur, orders it to be only well purified after the common method, and then melted by itſelf and poured into moulds: the fuſion here ſerves to bring the ſalt into a leſs compaſs, by evaporating the aqueous moiſture which had concreted with it in its cryſtallization; though even in this intention it is not of much uſe, the quantity of water which nitre retains not being very conſiderable.

SAL CATHARTICUS GLAUBERI.

The cathartic ſalt of Glauber, commonly called *Sal mirabile*.
Lond.

SODA VITRIOLATA, vulgo SAL CATHARTICUS GLAUBERI.

Vitriolated ſoda, commonly called *Cathartic ſalt of Glauber*.
Edinb.

Diſſolve in warm water the maſs which remains after the diſtillation of ſpirit of ſea-ſalt: filtre the ſolution, and cryſtallize the ſalt.

'In a former edition of the Edinburgh Pharmacopœia, 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 largeſt 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 little 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 this ſalt 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* (ſee page 222), which is nearly of the ſame quality, but ſomewhat more unpleaſant, 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; as in the following proceſs.

MAGNESIA ALBA.

White magneſia.
Edinb.

'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 of 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 is 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 is altogether void of ſaline taſte.

'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 ſhall 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 atttraction 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 is 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 alkalis, as alſo calcareous earths, have a greater attraction for fixed air than magneſia has: Hence, if this laſt is precipitated from its ſolution in acids by cauſtic alkalis, it is then procured free of fixed air; but for this purpoſe calcination is more generally employed (See MAGNESIA USTA.) 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 (ſee AQUA MEPHITICA) 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

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 (ſee page 481.), 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 redundance of acid humours in the firſt paſſages: It is preferred, on account of its laxative quality, to the common abſorbents, which (unleſs gentle purgatives are 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 ſubtile 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 purging, 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 contains no acid to diſſolve it, does not purge or produce any ſenſible effect: a moderate one, if an acid is 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 under 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.

Calcined magneſia.

Edinb.

'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, by Dr Black's experiments, makes about $\frac{7}{12}$ of its weight. A kind of opake foggy

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 as 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 betwixt it and calcareous earths; all of which are 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 aërated magneſia in theſe complaints. It is proper to obſerve, that magneſia, whether combined with, or deprived of fixt 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 with baſe of this earth.'

NITRUM CUBICUM.

Cubical nitre.

Diſſolve chalk or lime in purified aquafortis, and add the ſolution by degrees to a ſolution of Glauber's ſalt in water, ſo long as a freſh addition produces any milkineſs: a white powder will precipitate; after which the liquor is to be filtered, and, after due evaporation, ſet to cryſtalliſe.

In this proceſs, both the ſolutions are decompounded, and two new compounds produced. The vitriolic acid of the Glauber's ſalt unites with the chalk, and forms with it an indiſſoluble ſelenitic concrete, which of courſe precipitates; while the alkali of the Glauber's ſalt and the nitrous acid unite into a neutral ſalt, which is ſeparated from the liquor by cryſtalliſation. The cryſtals are rhomboidal, of a cooling taſte, greatly reſembling that of common nitre. How far this ſalt differs from common nitre in its medical virtue, is not known. The proceſs is here inſerted, partly, as being a very inſtructive one in regard to the tranſpoſitions which happen on the mixture of different ſaline bodies; and partly as affording the moſt convenient means of obtaining the pure alkaline baſis of ſea-ſalt. In the diſtillation of ſpirit of ſalt, that baſis was diſunited from its own acid, and combined with the vitriolic: it is here tranſferred from the vitriolic to the nitrous; and in page 440, we have given a method of diſſipating or deſtroying the nitrous acid, and leaving the alkali that was combined with it pure.

SPIRITUS SALIS MARINI COAGULATUS.

Spirit of ſea-ſalt coagulated. Lond.

Drop into Glauber's ſpirit of ſea-ſalt, a ley of any fixt alkaline ſalt, till all effervеſcence ceaſes; then evaporate the mixture to dryneſs.

This preparation is inſerted, under the ſame title, in the Wirtemberg Pharmacopœia. It has been commonly called *regenerated ſea-*

ſea-ſalt, though with little propriety, as it differs from that ſalt in its baſis; the commou vegetable alkali being here ſubſtituted to the mineral alkali of ſea-ſalt. How far it differs from ſea-ſalt, in its medical qualities, I cannot take upon me to determine; it is manifeſtly ſharper in taſte, and ſomewhat more difficult both of ſolution in water, and of fuſion in the fire

'It is however obvious, that the words *any fixt alkaline ſalt*, are very indefinite and improper; as it is now well known, that the vegetable and mineral fixt alkalis differ widely in their ſeveral combinations with the acids.'

If the common alkalis are made uſe of for this proceſs, they ſhould be previouſly purified, by ſolution and cryſtalliſation, from the neutral ſalt which they generally contain. The diſtilled vinegar muſt be perfectly free from any empyreumatic taint: It is not neceſſary to dephlegmate it, or throw away the firſt runnings in the diſtillation, ſince theſe contain a portion of the acid (the part here wanted) as well as the phlegm.

It is difficult to hit the point of ſaturation betwixt the acetous acid and the alkaline ſalt. After about fourteen parts of ſtrong diſtilled vinegar have been gradually poured upon one of the fixed ſalt, the addition of a little more of the acid will not occaſion any further effervescence in the cold: But if the mixture be now ſtrongly ſtirred and well heated, the effervescence will appear afreſh; upon which ſome more vinegar is to be added till it again ceaſes. The ſaturation is not as yet complete; for upon exhaling the aqueous parts, the remaining ſalt ſtill effervesces with freſh vinegar. When ſo much of the acid has now been added, that no marks of fermentation any longer appear, a little more of the vinegar may be poured in before you proceed to the laſt evaporation; by this means the ſaturation of the alkali will be ſecured, whilſt, if the acid prevails, the ſuperfluous quantity of it will exhale.

The ſalt thus prepared is of a dark brown colour, a peculiar, not ungrateful odour, a penetrating ſaponaceous, ſaline taſte, in no wiſe alkaline or acid. Its brown colour and ſaponaceous quality proceed from the oily parts of the vinegar; the depuration of the ſalt from this oil is not in the foregoing proceſs inſiſted on. In the London Pharmacopœia, the ſalt is ordered to be purified to perfect whiteneſs, under the title of

SAL DIURETICUS.

Diuretic ſalt.

Lond.

Take a pound of any fixt alkaline ſalt, and boil it with a very gentle heat in four or five times its weight of diſtilled vinegar. When the fermentation ceaſes, add more diſtilled vinegar; and proceed with freſh additions thereof, until the vinegar being almoſt evaporated, freſh vinegar will no longer raiſe any fermentation; which generally happens by the time that twenty pounds of diſtilled vinegar have been uſed. Then ſlowly exhale to dryneſs.

Melt the remaining impure ſalt for a little time, but not too long, over a gentle fire; then diſſolve it in water, and filtre the ſolution through paper. If the melting has been duly performed, the filtered liquor will be limpid and colourleſs as water; but if otherwiſe, of a brown colour.

Evaporate the limpid ſolution, with an exceeding gentle heat, in a ſhallow glaſs veſſel; occaſionally ſtirring the ſalt as it dries, that

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its moiſture may be the ſooner exhaled. Afterwards keep it for uſe in a veſſel very cloſely ſtopt; for it will liquefy by the air.

This ſalt ought to be of perfect whiteneſs; and ſhould totally diſſolve both in water and in ſpirit of wine, without leaving any feces. If the ſalt, though ever ſo white, depoſites any feces in ſpirit of wine, the whole of it muſt be diſſolved in that ſpirit, the ſolution filtered, and exſiccated again.

'The ſubſequent proceſs ſcarcely differs from the above.

'ALCALI FIXUM VEGETABILE ACETATUM, vulgo TARTARUM REGENERATUM.

Acetated fixed vegetable alkali, commonly called *Regenerated tartar*. *Edinb.*

'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 ſuch time as, 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 ſtopt, to prevent it from liquefying in the air.'

The purification of this ſalt is not a little troubleſome. The operator muſt be particularly careful in melting it, not to uſe too great a heat, or to keep it liquefied too long; 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 of little brilliant ſilver-like plates. The matter is to be kept continually ſtirring, till it is 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 medicines; 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 of alkaline ſalt and vinegar, without exſiccation, is not perhaps much inferior as a medicine to the more elaborate ſalt. I have known two drams of the alkali, ſaturated with vinegar, occaſion ten or twelve ſtools in hydropic caſes, and a plentiful diſcharge of urine, without any inconvenience.

SPIRITUS MINDERERI.

Spirit of Mindererus.

Edinb.

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.

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 kindneys, 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 in great meaſure 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.

SECT. VII.

Anomalous Salts

CRYSTALLI TARTARI.

Cryſtals of tartar.

Edinb. +

LET powdered white tartar be boiled in twenty times its quantity of water till perfectly diſſolved; and the ſolution, whilſt it continues hot, paſſed through filtering paper or a woollen cloth, and received in a wooden veſſel; then expoſe it for a night or longer to the cold air, that cryſtals may form themſelves and ſhoot to the ſides of the veſſel; the water being now poured off, the cryſtals are to be collected and dried for uſe.

THE filtration of the ſolution of tartar through paper ſucceeds very ſlowly, and unleſs managed with a good deal of addreſs, not at all: for as ſoon the boiling liquor begins to grow ſenſibly leſs hot, it depoſites much of the tartar all over the ſurface of the paper, which hinders the remainder from paſſing through. Zwelffer, in his animadverſions on this proceſs in the Auguſtan pharmacopœia, directs the ſolution to be clarified with whites of eggs, and ſtrained only through a linen cloth: he likewiſe judiciouſly orders the veſſel to be cloſe covered, and the cryſtallization performed in a warm place: for if the ſolution be ſuffered to cool very faſt, it is in vain to expect any appearance of cryſtals; the tartar will inevitably be precipitated to the bottom of the veſſel in the form of ſand. And, indeed, the buſineſs of refining and cryſtalliſing tartar is ſo very troubleſome, and requires ſo large an apparatus, that ſcarce any of the apothecaries, or even of the trading chemiſts, are at the trouble of it; but either import it ready refined from Holland, or purchaſe it from ſome people here who make it their ſole buſineſs. See the article TARTAR.

CREMOR TARTARI.

Cream of tartar.

Edinb. +

Take any quantity of ſolution of tartar, made as in the foregoing proceſs, and paſſed through a filtre. Boil it over the fire till a thick cuticle appears on the ſurface, which is to be taken off with a wooden ſkimmer bored full of holes: continue the boiling till a freſh cuticle ariſes, which is to be taken off as the foregoing, and the operation repeated till the whole quantity of liquor is thus conſumed. Afterwards dry all the cuticles together in the ſun.

THIS proceſs ſeems inſerted only to retain a name long familiar to the ſhops; for the preparation itſelf in no reſpect differs from cryſtals of tartar reduced to powder. Indeed the purchaſer ought always to prefer the cryſtals; for the powder is often ſophiſticated with ſaline ſubſtances of another kind.

The College of Edinburgh, 'in a former edition, obſerved,' that both the cryſtals and cream are brought to us from abroad; that they are not different in quality from one another; and that good white tartar, unrefined, is not inferior to either of them.

TARTARUM SOLUBILE.

Soluble tartar.

Lond.

Diſſolve a pound of any fixt alkaline ſalt in a gallon of boiling water; and gradually throw in cryſtals of tartar, as long as a freſh addition thereof raiſes any effervescence; which generally ceaſes before three pounds of the cryſtals have been uſed; then filtre the liquor, and after due evaporation, ſet it by to cryſtallize; or evaporate it to dryneſs, and keep the remaining ſaline maſs for uſe.

ALCALI FIXUM VEGETABILE TARTARISATUM, vulgo TARTARUM SOLUBILE.

Tartariſed vegetable fixed alkali, commonly called *Soluble tartar.*

Edinb.

'Take of

Purified fixt vegetable alkaline ſalt, one pound;

Water, fifteen pounds.

To the ſalt diſſolved in the boiling water gradually add cryſtals of tartar 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 paper, and after due evaporation ſet it by to cryſtalliſe.'

Common white tartar is perhaps preferable for this operation to the cryſtals uſually met with, (ſee the article Tartar, page 246.) Its impurities can here be no objection; ſince it will be ſufficiently depurated 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 that is not at all wanted. They inſiſt upon hitting the very exact point of ſaturation betwixt 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 render the ſalt too acid or too alkaline. If the liquor be ſuffered to cool a little before it is committed to the filtre, and then properly exhaled and cryſtalliſed, 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 uncryſtalliſed. The cryſtalliſation 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. Malouin ſays, it is equal in purgative 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

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it muſt never be given in conjunction with any acid; for all acids decompound 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.'

Sal Rupellensis.
Sel de Seignette, or Rochel ſalt.
Pharm. Pariſ.

Let the ſalt extracted from the aſhes of the kelp or kali of Alicant be calcined till it melts; then diſſolved in water, the ſolution filtered, and after due evaporation ſet by, that the ſalt may ſhoot into pure white cryſtals. Diſſolve cryſtals of tartar in boiling water, and ſaturate the ſolution with the cryſtals of kali: the proportions neceſſary for this purpoſe will be, about ſixteen ounces of the latter to twenty of the former. Duly exhale the liquor in the heat of a water-bath; and, after filtration, ſet it in the cold to cryſtalliſe.

SODA TARTARIZATA, vulgo SAL RUPELLENSIS.
Tartariſed ſoda, commonly called *Rochel ſalt.*
Edinb.

'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: (ſee page 440.) 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 decompounded 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.

SAL ESSENTIALE ACETOSÆ.
Eſſential ſalt of ſorrel.
Edinb. †

Let the juice of ſorrel, after ſettling and decantation from the feces, be evaporated till only one third remains; then ſtrained through a flannel bag, and exhaled again till a pellicle appears upon the ſurface. Put the liquor into a glaſs veſſel; and, a little olive oil being poured upon the top, ſet it by in a cellar till plenty of cryſtals are formed: theſe are to be gently waſhed with water, and afterwards dried.

After the ſame manner, eſſential ſalts are obtained from all acid, auſtere, aſtringent, and bitteriſh plants that contain but a ſmall quantity of oil.

Herbs of a dry nature are to be moiſtened, in the bruiſing, with a little water, that the juice may be the more eaſily preſſed out.

The waters of theſe plants, which are in vain endeavoured to be drawn over by diſtillation, may be obtained by diſſolving a ſuitable quantity of their eſſential ſalts in common water.

Some Pharmaceutical writers direct the plants to be gathered early in the morning; but this is of very little moment. In order to make the ſubject yield its juice readily, it ſhould be chopt to pieces, and well bruiſed in a marble mortar, before it is committed to the preſs: the magma which remains in the bag, ſtill containing no inconſiderable quantity of ſaline matter, may be advantageouſly boiled in water, and the

the decoction added to the expreſſed juice. The whole may be afterwards depurated 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 in great meaſure depends.

The evaporation ſhould be performed either in ſhallow glaſs baſons, 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.

The directions for the time of diſcontinuing the ſecond evaporation are not ſo eaſily obſerved as one could wiſh. Theſe juices are ſo viſcid, and abound ſo much with heterogene matter, of a quite different nature from any thing ſaline, that a pellicle, or pure ſaline incruſtation 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 is 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, which of itſelf it is very averſe to: but as this addition is, with regard to its medical virtue, quite different from the ſalt here intended, we forbear to mention it.

The uſe of the oil is to preſerve the juice uncorrupted, and to prevent it from running into fermentation or putrefaction, during the great length of time which this proceſs requires: as much oil as will fully cover the ſurface of the liquor is ſufficient for this purpoſe. The waſhing of the cryſtals is intended to cleanſe them from the mucilaginous feculencies which adhere to them: it ought to be performed with the utmoſt caution, to prevent any of the ſalt itſelf from being diſſolved. 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 theſe ſalts is very tedious, inſomuch as ſcarce to be completed in leſs than ſeven or eight months; 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.' The chemiſts have contrived ſeveral other methods for expediting the proceſs; among which the two following ſeem the moſt remarkable.

Take any quantity of wormwood, carduus benedictus, or the like plants, gently dried in the ſhade. Pour thereon a ſuitable portion of ſpirit of wine, and digeſt them together with a ſoft heat till the menſtruum has acquired a green colour. This tincture is to be put into a glaſs cucurbit, and diſtilled with the heat of a water-bath, till ſo much of the ſpirit is come over as that the remainder may be left of the conſiſtence of honey. The whole being now ſuffered to remain unmoved till grown perfectly cold, beautiful pyramidal cryſtals will be found to have ſhot from the ſides of the diſtilling veſſel towards its centre. *Spieſſius, in Miſcell. Berolin. continuat.* ii. p. 91, 92.

This gentleman relates likewiſe, that having made an eſſence (that is, a ſaturated tincture) of elacampane roots with ſpirit of wine, and kept it unmoved for a year, he found a great number of cryſtals ſhot from the bottom of the glaſs upwards, of the thickneſs of a quill, and about an inch long.—The cryſtals obtained by this method are ſaid to be of the nitrous kind, but of a more ſubtile taſte than the common nitre, impreſſing only an agreeable coolneſs upon the tongue.

The ſecond proceſs is from the celebrated Dr Stahl:

Take wormwood, brooklime, pellitory, mercury, ſoapwort, or any other plants of the ſame kind, dried quick in a ſhady place. Cut the herb ſmall, and pour thereon a ſufficient quantity of highly-rectified ſpirit of wine: digeſt them together till the menſtruum becomes ſaturated with the oil or reſinous parts of the plant; then pour off the tinged liquor, add a freſh parcel of ſpirit, and digeſt as before, continuing to add more of the menſtruum, till ſuch time as it no longer extracts any colour from the vegetable. The plant thus freed from its oily matter, is to be gently exſiccated, and boiled in water, till the liquor has taken up its ſaline parts: the decoction being then paſſed through a filtre, afterwards evaporated to a due conſiſtence, and ſet by in a cool place, will ſhoot into ſaline cryſtals, which, on examination, prove manifeſtly nitrous. *Stahlii fund. chem.* pag. 68, *et alibi.*

The two foregoing proceſſes agree but ill with each other: how far they are adequate to the purpoſes intended by them, has not yet been ſufficiently examined. It is certain, that ſpirit of wine diſſolves the ſubtile oils and the reſins of vegetables, which prove a great impediment to the cryſtalliſation of ſalts; from whence it ſhould ſeem that the ſalt might afterwards be prepared by water from the reſiduum to much better advantage. But it is certain alſo, that this menſtruum diſſolves ſome of the native vegetable ſalts themſelves; and that if the tincture is ſufficiently loaded with the ſoluble parts of the ſubject, the ſalt ſeparates, while the oily and reſinous matter remain diſſolved. Thus manna, an eſſential ſalt of the ſweet kind, diſſolves totally in rectified ſpirit; and, however foul before, is recovered white as ſnow, its oily impurities being left in the menſtruum; and thus ſpirituous tinctures of celery, beet roots, and other plants of the ſweet kind, depoſit, on ſtanding, true ſaccharine concretions. It is probable that one proceſs is beſt adapted to ſome plants, and the other to others: the

firſt

firſt, doubtleſs, is for thoſe of the ſweet kind; and the ſecond for acid herbs, as ſorrel and woodſorrel

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, I have often obſerved fine ſaline effloreſcences on the ſurface, which had 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 alkalis): thoſe which were examined by the chemiſts of the French academy, deflagrated in the fire, and, being triturated with fixt alkalis, exhaled an urinous odour; plain marks of their containing thoſe two ingredients.

SACCHARUM LACTIS.

Sugar of milk.
Pharm. Pariſ.

Take common whey of cows milk, made with calves rennet. Clarify it with whites of eggs; and, if it is not perfectly limpid, paſs it through a filtre. Then evaporate it, in a glaſs veſſel, in the heat of a water-bath, and ſet it by in a cellar to cryſtallize. The cryſtals are to be waſhed with cold water.

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.

FLORES BENZOINI.

Flowers of benzoine.
Lond. and *Edinb.*

Put ſome powdered benzoine into an earthen pot (placed in ſand, *L.*) and with a gentle heat ſublime the flowers into a conical paper cap fitted to the pot.

(Or, the ſublimation may be performed in a retort; the flowers will ariſe with a ſoft heat, into the neck, *L.*)

If the flowers have any yellow tinge, mix them with tobacco-pipe clay, and ſublime again. '(If the flowers are rendered foul with oily matter, let them be purified by ſolution in warm water and cryſtalliſation, *E.*')

Benzoine, expoſed in a retort to a gentle fire, melts and ſends up into the neck white, ſhining cryſtalline flowers, which are followed by an oily ſubſtance. 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: that greateſt part of the flowers ariſes with a leſs degree of heat than what is neceſſary to elevate the oil; but that if the operation is haſtily conducted, or if the fire is not exceeding 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 threefore 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. 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 ſhould be ſcraped out of each of the veſſels before a freſh parcel is 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,' does not free them ſo effectually as might be wiſhed. The obſervations above related, point out the method of depurating them more perfectly, viz. by ſolution, filtration, and cryſtalliſation.

Sal sedativus.

Salt of borax, called *Sedative ſalt.*

Put eight ounces of powdered borax into a wide-necked retort; pour thereon three ounces of water; and then add three ounces of oil of vitriol. Place the retort in a proper furnace, adapt to it a receiver, and increaſe the fire till the veſſel becomes red hot. The ſedative ſalt will ariſe into the neck in form of thin ſhining plates, which are to be ſwept out with a feather; and a little liquor will paſs into the receiver. When the matter in the retort is grown cool, pour back upon it the diſtilled liquor, and ſublime again. Repeat this proceſs ſo long as the borax continues to yield any conſiderable quantity of ſaline flowers.

Or,

Diſſolve the borax in a ſufficient quantity of warm water, and add thereto the oil of vitriol. Evaporate this mixture till thin plates begin to appear upon the ſurface; then ſuffer the fire to decay, and let the veſſel ſtand unmoved till plenty of cryſtals are formed, which are to be well rinſed with cold water, and then dried for uſe.

In the preparation of this ſalt by ſublimation, the fire muſt be expeditiouſly

ditiouſly raiſed when the matter begins to grow dry; for it is only at this period that the ſalt ſublimes. The ſublimed ſalt itſelf, in a perfectly dry ſtate, proves fixt in the fire: if moiſtened with water, and then expoſed to a ſmart heat, part of it continues to riſe, till the moiſture is wholly exhaled; after which, nothing more can be forced up by heat, till the ſalt is again moiſtened. Hence the uſe of returning the diſtilled liquor, and repeating the ſublimations. Lemery ſays, he found flowers continue to riſe till the thirty-ſixth ſublimation; and that the quantity obtained by all theſe ſublimations amounted to half an ounce and thirty-five grains from two ounces of borax.

The part of the borax which does not ſublime, appears to be the ſame (when the common refined borax of the ſhops is made uſe of) with the alkaline ſalt of ſea-ſalt: the ſedative ſalt, united with that alkali, recompoſes borax again. The extrication of the ſedative ſalt from the borax happens on the ſame principle as that of the marine acid from ſea-ſalt, viz. the vitriolic acid uniting with the alkali; and the reſiduum is in both caſes the ſame, viz. the ſalt called *Sal mirabile*, or Glauber's ſalt: the ſedative ſalt may be extricated alſo from borax by other acids, but moſt commodiouſly and effectually by the vitriolic.

The proceſs by cryſtalliſation is leſs troubleſome than that by ſublimation; but the ſalt proves generally leſs white, and is apt likewiſe to retain a part of the Glauber's ſalt, eſpecially if the evaporation is too long protracted.

The ſedative ſalt appears to the taſte a neutral ſalt; but examined with alkalis has the properties of an acid, effervеſcing, uniting, and cryſtalliſing with them, and deſtroying their alkaline quality. It diſſolves both in water and in ſpirit of wine; though not very readily in either. As to its virtues, it is ſuppoſed to be a mild anodyne, (whence its name) to calm the heat of the blood in burning fevers, to prevent or remove delirious ſymptoms, and allay ſpaſmodic affections, whether hypochondriacal or hyſterical, at leaſt for a time. The doſe is from two to eighteen grains, in any proper liquor. See ACID of BORAX, Part I.

SPIRITUS, SAL, ET OLEUM SUCCINI.

Spirit, ſalt, and oil of amber.

Lond.

Diſtil amber in a ſand-heat gradually increaſed: there will come over a ſpirit, an oil, and a ſalt fouled with the oil.

The oil diſtilled again by itſelf, is divided into a thinner oil which ariſes; and a thicker part that remains behind, called balſam of amber.

The ſalt is to be boiled in the diſtilled ſpirit, or in common water, and ſet to cryſtalliſe; by this means it is freed from its adhering oil. The oftener this is repeated, the purer it will be.

OLEUM ET SAL SUCCINI.

Edinb.

Mix powdered white amber with thrice its weight of clean ſand, 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 to-

gether 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 cryſtalliſation.'

The oil may be ſeparated from the ſpirit by filtration.

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.

'The Edinburgh College have rejected what is here 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 was 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 other like intermedia are mixed with it, it is leſs ſubject to this rarefaction, and the fire may be raiſed ſomewhat more expeditiouſly; though 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 the 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 into the receiver, and afterwards ſeparate it by 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, with 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 portion of the ſalt in phlegm or water; and therefore is very properly employed for diſſolving the ſalt in order to its cryſtalliſation.

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 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

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 depurated 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 cryſtalliſation: 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 alkalis both fixt and volatile, and forms with them neutral compounds, greatly reſembling thoſe compoſed of the ſame alkalis and vegetable acids. Mixed with acid liquors, it makes no ſenſible commotion Ground with fixt 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, antihyſteric: Boerhaave gives it the character of *diureticorum et antihyſtericorum princeps*. Its great price, however, has prevented its coming much into uſe; and perhaps its real virrues are not equal to the opinion generally entertained of them.

The rectified oil has a ſtrong bituminous ſmell, and a pungent, acrid 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 lixivia, or volatile alkaline ſpirits; the oil, after long digeſtion or agitation, ſeparating as freely as common oil does from water.

CHAP. IX.

PREPARATIONS *of* SULPHUR.

FLORES SULPHURIS.
Flowers of ſulphur.
Lond.

SUBLIME ſulphur in proper veſſels; and reduce the flowers, that concrete, into powder, either in a wooden mill, or in a marble mortar with a wooden peſtle.

Edinb. +

Put any quantity of yelow ſulphur, groſsly powdered, into an earthen cucurbit placed in a ſand-furnace; and having fitted on a glaſs blind-head, or inverted upon it another earthen cucurbit, begin the ſublimation with a gentle heat, which may be afterwards increaſed. The flowers will ariſe into the uppermoſt part of the veſſels, from whence they are to be ſwept out and carefully waſhed with very hot water.

THIS proceſs is rarely attempted by the apothecaries, a large apparatus being neceſſary for performing it to advantage. Thoſe who prepare the flowers of brimſtone in quantity, uſe for the ſublimating veſſel a large iron pot, capable of holding two or three hundred weight; this communicates with an arched chamber, lined with glazed tiles, which ſerves for the recipient.

This preparation of ſulphur makes no change in its qualities; only ſeparating it impurities, and at the ſame time reducing it into a finer powder than it can eaſily be brought to by other means. At the bottom of the ſubliming veſſel there remains a ponderous grey-coloured maſs, compoſed of ſand, earth, ſtony, and ſometimes metallic matters, with a ſmall portion of ſulphur that has eſcaped the ſubliming heat. This is uſually broken in pieces, and vended in the ſhops under the name of *ſulphur vivum*.

FLORES SULPHURIS LOTI.
Waſhed flowers of ſulphur.
Lond.

Pour upon the flowers as much water as will ariſe to the height of four fingers above them, and boil them for ſome time; then pouring off this water, let ſome cold water be added, and thoroughly waſh

waſh the flowers; after which they are to be dried for uſe.

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 notable degree of acidity. In ſuch caſe, the ablution here directed is for the general uſe of the medicine abſolutely neceſſary; 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. The Edinburgh College, as appears in the foregoing proceſs, allow only the waſhed flowers to be kept in the ſhops: there are, however, ſome particular combinations, to which they are ſuppoſed to be better adapted when unwaſhed, as their union with mercury into æthiops mineral; and accordingly for that preparation the unwaſhed flowers are directed by the London College.

BALSAMUM SULPHURIS SIMPLEX.

Simple balſam of ſulphur.
Lond.

Boil flowers of ſulphur, with four times their weight of oil olive, in a pot lightly covered, until they unite into the conſiſtence of a balſam.

BALSAMUM SULPHURIS CRASSUM.

Thick balſam of ſulphur.
Edinb.

Take eight ounces of olive oil, and one ounce of flowers of ſulphur. Boil them together over a gentle fire, keeping them continually ſtirring till they come to the conſiſtence of a balſam.'

The veſſel they are boiled in ought to be capable of holding at leaſt three times the quanity of the ingredients. As ſoon as the oil begins to act upon the ſulphur, which happens nearly at the point of ebullition, the mixture rarifies very much, ſo as, if not prudently removed from the fire, to run over into the furnace; and as the matter is very ſuſceptible of flame, dangerous conſequences may enſue, eſpecially if the quantity is large. The operator ought therefore to be upon his guard in the management of this proceſs.

BALSAMUM SULPHURIS BARBADENSE.

Balſam of ſulphur with Barbadoes tar.
Lond.

This is made after the ſame manner as the foregoing, by uſing Barbadoes tar inſtead of the oil.

BALSAMUM SULPHURIS TEREBINTHINATUM.

Balſam of ſulphur with oil of turpentine.
Edinb. +

Take two ounces of waſhed flowers of ſulphur, and ſix ounces of oil of turpentine.

Digeſt them together, in a ſand-heat, till the oil is ſaturated with the ſulphur.

BALSAMUM SULPHURIS ANISATUM.

Balſam of ſulphur with oil of aniſeed.
Edinb. +

Take two ounces of waſhed flowers of ſulphur; ſix ounces of oil of turpentine; and four ounces of eſſential oil of aniſeeds.

Digeſt them together as in the preceding proceſs.

These

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 have commonly 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 are closed, or the orifices not sufficient to allow it a free exit, 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 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. Sixteen parts of essential oil, and six of the balsamum sulphuris crassum, compose a balsam more elegant than those made in the foregoing manner, 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.

HEPAR SULPHURIS.

Liver of sulphur.

Edinb. +

Take three ounces of flowers of sulphur, and one ounce and a half of powdered salt of tartar. Melt the sulphur in an earthen dish under a chimney, and add to it by degrees the salt of tartar; keeping the matter constantly stirring with a spatula till it has acquired a red colour: care must be had to prevent its taking fire.

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 di-

directed. Even in the preſent method a conſiderable part of the ſulphur will be diſſipated; and if it was 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 naufeous taſte. Solutions of it in water, made with ſugar into a ſyrup, have been recommended in the ſame intentions as the balſams above mentioned. 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.'

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.

SULPHUR PRÆCIPITATUM.

Precipitated ſulphur.

Lond.

Boil flowers of ſulphur in water, with thrice their weight of quicklime, till the ſulphur is diſſolved. Filtre the ſolution, and drop into it ſome of the weak ſpirit of vitriol: this will throw down a precipitate, which is to be waſhed in freſh portions of water, till it becomes inſipid.

LAC SULPHURIS.

Edinb. +

Boil the hepar ſulphuris, reduced to powder, in four times its quantity of water for three hours; adding more water if there is occaſion. Then filtre the ſolution whilſt hot, and drop into it ſpirit of vitriol till the effervescence ceaſes; a powder will be precipitated to the bottom, which is to be waſhed with hot water, and afterwards dried for uſe.

The method of preparing this *lac*, as it is called, with hepar ſulphuris, is the moſt expeditious, and leaſt troubleſome, provided the hepar be well made: and, on the other hand, quicklime gives the preparation a more ſaleable whiteneſs. Some have been accuſtomed to add to the quicklime a portion of alkaline ſalt, with a view to promote its diſſolving power.

The medicine is nearly the ſame in both caſes. It would be exactly the ſame, if the precipitation was performed with any other acid than the vitriolic: for this acid forms with the diſſolved lime a ſelenite concrete, which precipitates along with the ſulphur, and is not afterwards ſeparable by any ablution; whilſt the neutral ſalt, which the acid forms with the fixt alkali of the hepar, may be totally diſſolved and waſhed off by repeated ablution with hot water; and the combinations of all the other acids, both with the lime and alkali, are ſeparated by cold water. It is probably to the admixture of the white ſelenitic matter, reſulting from the vitriolic acid and lime, that the finer colour of the preparation made with lime is owing.

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

any new matter ſuperadded: for if common ſulphur be ground with alkaline ſalts, and ſet to ſublime, 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.

TINCTURA SULPHURIS VOLATILIS.

Volatile tincture of ſulphur.

Take of

Flowers of ſulphur, ſix ounces;
Sal ammoniac, one pound;
Quicklime, a pound and a half.

Sprinkle ſome water on the lime, and when ſlaked and fallen into powder, grind it firſt with the ſulphur, and afterwards with the ſal ammoniac in ſmall quantities at a time: then diſtil the mixture in a retort, with a fire gradually increaſed. The diſtilled liquor is to be kept in a bottle cloſe ſtopt for uſe.

This liquor has a ſtrong offenſive ſmell, ſomewhat ſimilar to that which ariſes in the precipitation of lac ſulphuris. The vapour in both caſes ſpreads to a conſiderable diſtance, changes ſilver or copper utenſils to a brown or blackiſh colour, and produces diſagreeable alterations in many medicinal preparations: to this circumſtance therefore due regard ought to be had in the performance of that proceſs, and in the keeping of this tincture. If a piece of paper, written upon with a ſaturated ſolution of lead in vegetable acids, and gently dried, be placed in the middle of a quire of paper, or of a prettty thick book, and brought near the unſtopt orifice of the bottle containing this tincture, the vapour will quickly reach it, and change the colourleſs writing to a legible black.

Hoffman has a great opinion of the virtues of this preparation. He ſays a mixture of one part of the tincture with three of ſpirit of wine, in a doſe of thirty or forty drops, proves a moſt powerful diaphoretic; and that a liquor compoſed of this and camphor, takes off the pain of the gout, by bathing the feet with it. This tincture may be a powerful medicine, but it is certainly a very unpleaſant one.

CHAP.

CHAP. X.

METALLIC PREPARATIONS.

SECT. I.

PREPARATIONS OF GOLD.

GOLD is the moſt ponderous and perfect of the metals: 'it abides fixt and unalterable in the ſtrongeſt fires employed in pharmacy,' and is not acted upon by alkaline or any ſimple acid menſtruum, 'except the muriatic acid, dephlogiſticated by manganeſe.' It diſſolves in aqua regia into a yellow tranſparent fluid: This ſolution ſtains the ſkin, &c. purple; the ethereal ſpirit of wine, and ſome eſſential oils, take up the gold from it: alkalis precipitate the metal in form of a yellowiſh mud, which exſiccated, and expoſed to a ſmall heat, violently explodes.

As to the medicinal virtues of this metal, experience has ſufficiently ſhown that it is not poſſeſſed of any valuable ones. In its metallic form, however finely comminuted, it proves inactive; when ſatiated with acid, corroſive; and in the intermediate ſtates, either inſignificant or unſafe.

AURUM POTABILE.

Potable gold.

Diſſolve, with a moderate heat, half a dram of fine gold in two ounces of aqua regia; and add to the ſolution one ounce of the eſſential oil of roſemary. Shake them together, and then ſuffer them to reſt: The acid loſes its gold yellow colour; and the oil, which ariſes to the ſurface, becomes richly impregnated therewith. Separate the oil by decantation, and add to it four or five ounces of rectified ſpirit of wine; digeſt this mixture for a month, and it will acquire a purpliſh colour.

THERE have been many preparations of this kind contrived by the deſigning pretenders to alchemy, and impoſed upon the credulous and unwary, as cordials and diaphoretics of ineſtimable value. The above ſeems to be one of the beſt and ſafeſt of them; though it would

would be equally ſerviceable as a medicine, if made without the ingredient which it receives its name from. The gold is indeed taken up from the acid, and kept for a time diſſolved by the oil; but on ſtanding it totally ſeparates, in form of fine yellow films, like leaf gold. The effect is the ſame, whether the oil or the vinous ſpirit be mixed with the ſolution of the gold in aqua regia: the only difference is, that the gold is thrown off from the oil to the ſides of the glaſs; while the ſpirit revives it into ſuch ſubtile films as to float upon the ſurface of the liquor. No means have yet been found of permanently combining gold with either oils or vinous ſpirits.

AURUM FULMINANS.

Fulminating gold.

Paris.

Put a dram of filings of gold, with half an ounce of aqua regia newly made, into a matraſs. placed in ſand. When the menſtruum ceaſes to act, pour off the ſolution; and, if any of the gold is left, add as much more aqua regia as ſhall be ſufficient to diſſolve it. Dilute the ſolution with ten times its quantity of warm water; and then drop in oil of tartar per deliquium till the effervescence and precipitation ceaſe. The whole being now ſuffered to ſettle, the clear liquor is to be poured off, and the precipitated matter waſhed with warm water till it becomes inſipid, and afterwards exſiccated.

This powder requires to be exſiccated with the utmoſt precaution; for in a ſmall heat it explodes with great violence; the ſame effect enſues likewiſe upon ſtrongly rubbing it. This property has given name to the preparation; and is the only one on account of which it is at preſent taken any notice of. It has been recommended indeed, in fevers, as a diaphoretic, in the doſe of a few grains. Its more certain effect, however, is to operate downwards, and that not always with ſafety: Konig and Ludovici relate, that in ſome febrile caſes, it has occaſioned almoſt mortal diarrhœas; and Stahl (*de Proexeucriſi Medica*, ſect. viii.) reports, that the inteſtines have been found eroded by it. The more thoroughly it is waſhed and edulcorated, the leſs corroſive it is in the human body, and the leſs violently it fulminates when heated.

'As metallic calces are known to abſorb fixed air, there is much reaſon to believe with Dr Black, that the fulmination of this ſubſtance may in part be owing to the diſcharge of that elaſtic fluid, transferred from the mild alkali to the calx. Some people, not contented with this theory, have alleged, that the exploſion was owing to the preſence of an alkaline air as a combuſtible matter. Mr Bergman, and ſome others, have accordingly found, that this property of the aurum fulminans could be entirely deſtroyed by a heat incapable of making it fulminate, but able, gradually, to diſſipate an elaſtic fluid, which was found to be alkaline air: But we are not informed whether it was not alſo mixed with fixed air.'

SECT. II.

PREPARATIONS OF SILVER.

SILVER is the moſt permanent in the fire of all the metals after gold. It diſſolves in the pure nitrous acid, into a colourleſs tranſparent liquor, intenſely bitter and corroſive. This ſolution exſiccated, furniſhes the ſhops with an uſeful cauſtic; which has likewiſe been taken internally in ſmall doſes, and mixed with other ſubſtances, as an hydragogue: it ſtains the ſkin black.

CAUSTICUM LUNARE.

The lunar cauſtic.

Lond.

Let pure ſilver be diſſolved in about twice its weight of aquafortis, upon warm ſand: then gently increaſe the heat until a dry maſs is left. Melt this in a crucible, that it may be poured into proper moulds, carefully avoiding overmuch heat, leſt the matter ſhould grow too thick.

SAL ARGENTI, vulgo CAUSTICUM LUNARE.

Salt of ſilver, commonly called *Lunar cauſtic.*

Edinb.

'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 and greaſed. Laſtly, put it up in glaſs veſſels cloſe ſtopped.'

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 is 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 remains clear, and grows 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, depoſites a white ſediment; from which it is warily decanted, examined afreſh, and, if need be, farther purified by a freſh addition of the ſolution. See page 466.

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 one another. 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 one another. Good aquafortis will diſſolve about half its weight of ſilver; and it is not adviſeable 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 was 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, and which the operator ought therefore to be on his guard againſt. 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 dry ſoft paper, not only to keep the air from acting upon them, but likewiſe to prevent their 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 like 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 to cryſtalliſe. 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 much milder than the foregoing. Boerhaave, Boyle, and others, greatly commend it 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

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.

SECT. VI.

PREPARATIONS OF IRON.

IRON calcines by fire the moſt eaſily, and melts the moſt difficultly, of all the metals. Sulphur promotes its fuſion, and changes it into a ſubſtance not greatly diſſimilar to a combination of the metal with vitriolic acid. All acids diſſolve this metal; even the air corrodes it into a ruſt or calx. 'But it is perhaps the fixed air or aërial acid, conſtantly floating in the atmoſphere, which produces this effect.'

Iron, in its metallic form, or lightly calcined, or combined with vegetable or with mineral acids, acts in the human body in the ſame manner, (but with different degrees of power), by conſtringing the fibres. In all theſe ſtates it promotes or reſtrains ſecretions, where the deficiency or exceſs proceeds from a laxity and debility of the veſſels; and in general raiſes the pulſe and quickens the circulation. The calces ſeem to be the leaſt active preparations; the crude metal, duly comminuted, is more eaſily ſoluble in the animal fluids; and, if aceſcent juices are lodged in the prime viæ, ſoon manifeſts its operation by nidorous eructations, and the black colour of the alvine feces: if previouſly combined with ſaline bodies, it ſcarce ever fails of taking effect.

As the calces of iron are ſcarcely diſſoluble in acids, it has been concluded that they are not ſoluble in the human body, and that therefore they are to be looked upon no otherwiſe than as a mere inactive earth. But admitting the abſolute indiſſolubility of iron while it continues a calx, it muſt be obſerved, that the calces of this metal are remarkably eaſy of revival into their metallic ſtate. Mr Baumé relates, that calx of iron, digeſted for an hour or two in oil olive, reſumes its perfect metallic nature, ſo as to be attracted by the magnet, and totally ſoluble in acids; from whence he infers, that a like revival of the metal happens in the human body. It is matter of common obſervation, that calces of iron tinge the excrements black, a ſure mark of their taking effect: though their effect appears to be neither ſo ſpeedy nor ſo great as that of iron in ſome other forms.

FERRI LIMATURA PURIFICATA.

Purified filings of iron.
Edinb.

'Apply a magnet to a ſieve placed upon filings of iron, ſo as the filings ſhall be attracted upwards through the ſieve.'

CHALYBIS RUBIGO PRÆPARATA.

Ruſt of ſteel prepared.
Lond.

Expoſe filings of ſteel to the air, frequently moiſtening them with vinegar or water until they change into ruſt; then grind them in a

mortar, and pouring on water, waſh over the more ſubtile powder. The remainder is to be expoſed afreſh to the air, and moiſtened as at firſt, then triturated and waſhed again, and the powders that have been waſhed over, dried, and kept for uſe.

FERRI RUBIGO, vulgo FERRI LIMATURA PREPARATA.

Ruſt of iron, commonly called *Shavings of iron prepared.*
Edinb.

'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 (Pyritolog. cap. *vom eiſen im kieſs*), 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.

FERRI SQUAMÆ PURICATÆ.

Scales of iron purified.
Edinb.

'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 others the moſt eligible form of obtaining the pure metal in ſuch a divided ſtate as to render it eaſily acted upon by different menſtrua.'

ÆTHIOPS MARTIALIS.

Martial ethiops.

Put filings of ſteel into an unglazed earthen veſſel, with ſo much water as will ſtand above them about four inches; the whole is to be well ſtirred every day, and more water ſupplied as that in the veſſel exhales, ſo that the filings may remain always covered: continue this procedure for ſeveral months, till they loſe their metallic aſpect, and are reduced to a fine powder of an inky blackneſs.

This preparation is deſcribed by Lemery in the Memoirs of the French Academy. It is ſaid, that if the filings are left unſtirred for ſome days, they unite together ſo firmly, that the maſs is ſcarcely to be beaten into powder by blows of a hammer: if they are left for a little while uncovered with water, the deep black colour does not ſucceed,

ceed, a part of them changing into ruſt. Mr Malouin obſerves, that this ethiops is better fitted for general uſe than any other preparation of iron; that the metal is here in as ſubtile a ſtate as in the croci of iron; and that it is no more decompounded or changed in its nature than the crude filings are. He therefore recommends ſubſtituting it to the filings and croci, in doſes of from four grains to eighteen. The tediouſneſs of the proceſs, however, has prevented its coming into uſe; eſpecially as it does not promiſe any advantage above the common chalybeate preparations, to counterbalance that inconvenience.

CHALYBS CUM SULPHURE PRÆPARATUS.

Steel prepared with ſulphur.

Lond.

Heat the ſteel with a very fierce fire to a ſtrong white heat; and in this ſtate apply it to a roll of ſulphur held over a veſſel of water; the ſteel will melt, and fall down in drops, which are to be picked out from the ſulphur that runs down with them, and ground into an impalpable powder.

It has been ſuppoſed by many, that this preparation is no other than common brimſtone, and that it contains nothing of the ſteel. If the ſteel indeed is not made extremely hot, it will not melt on applying it to the ſulphur, and the latter will run into the water by itſelf: but if the metal is heated to the degree above directed, it will readily melt and fall down in drops of a brown colour; whilſt the ſulphur runs into long yellow ſtrings.

The heat requiſite for this purpoſe, is not eaſily procurable in the common furnaces of the apothecary: and even if the ſteel is ſufficiently heated at firſt, it will ſoon become too cool to be corroded by the ſulphur. For this reaſon, and on account of the offenſive fumes which ariſe very copiouſly, and which are not avoidable by the operator, this proceſs has been long neglected. The ſhops have been generally ſupplied with a preparation of ſteel with ſulphur made at an eaſier rate in the following manner.

MARS SULPHURATUS.

Sulphurated iron.

Edinb. +

Mix filings of iron with twice their weight of powdered ſulphur, and as much water as is ſufficient to make them into a paſte; which on ſtanding at reſt for ſix hours, will ſwell up. The matter is then to be pulveriſed, put by degrees into a hot crucible to deflagrate, and keep continually ſtirring with an iron ſpatula till it falls into a deep black powder.

If the quantity of this mixture is conſiderable, and ſtrongly preſſed down, it will not only ſwell on ſtanding for ſome hours, but will heave up very weighty obſtacles, and burſt out into flame.

CROCUS MARTIS APERIENS.

Opening crocus of iron.

This is made by keeping the foregoing preparation longer over the fire, till it aſſumes a red colour.

CROCUS MARTIS ASTRINGENS.

Aſtringent crocus of iron.

Edinb.

This is made from the opening crocus of iron, by reverberating it for a long time in the moſt extreme degree of heat.

These preparations differ from one another in virtue; though the

difference is not of ſuch a kind as the titles they have been uſually diſtinguiſhed by import. All the preparations of ſteel act by an aſtringent quality; that above denominated *aſtringent*, ſeems to have the leaſt effect. They may be given in form of bolus, electary, or pill, from ſix grains to a ſcruple.

In ſome foreign pharmacopœias, the croci of iron are prepared from pure green vitriol. This ſtrongly calcined (or the cocothar remaining after the diſtillation of oil of vitriol) is the aſtringent crocus: when leſs calcined, it is called *aperient*. Theſe preparations differ little, if at all, from thoſe above diſtinguiſhed by the ſame appellations; and accordingly the Edinburgh College has now allowed the ſubſtitution of colcothar of vitriol to both the croci.

MARS SOLUBILIS, ſeu CHALYBS TARTARIZATUS.

Soluble, or tartarized ſteel.

Edinb. +

Mix equal parts of iron filings and cryſtals of tartar with as much water as is ſufficient to reduce them into a maſs: this maſs is to be dried in a ſand-heat; then powdered, moiſtened, and dried again; and this proceſs repeated, till ſuch time as the matter will eaſily grind into an impalpable powder.

This is an elegant and uſeful preparation of ſteel, and will in many caſes take effect after all the foregoing ones have failed; the ſalt here joined rendering the metal ſufficiently ſoluble in the animal fluids. It may be given either in a liquid form, or in that of a bolus, &c. in doſes of four or five grains, or half a ſcruple. Dr Willis is ſaid to have been the inventor of this preparation, and by his name it has been uſually diſtinguiſhed in the ſhops. The chemiſts have received another method of preparing iron with tartar; which is as follows.

MARS SOLUBILIS ALCALIZATUS.

Alkalized ſoluble ſteel.

Take equal quantities of filings of iron and of white tartar. Grind them together, and put them into a crucible, which is to be ſet in a fire ſtrong enough to make the materials red hot; in this ſtate let them continue for ſome time. When grown cold, powder the matter in a mortar; and the part which will not paſs thro' a fine ſieve, heat and pulveriſe again; repeating this until the whole be paſſed through. Mix the ſeveral ſiftings together, and keep them in a veſſel cloſe ſtopt from the air.

This preparation is ſoluble like the foregoing. Expoſed to the air, it deliquates like alkaline ſalts; and therefore it is not to be preſcribed in any dry form. It is very rarely made uſe of.

FLORES MARTIALES.

Martial flowers.

Lond.

Take of
Colcothor of green vitriol waſhed, or filings of iron, one pound;
Sal ammoniac, two pounds.

Mix and ſublime in a retort. Grind the flowers with the matter which remains in the bottom of the retort, and repeat the ſublimation until the flowers ariſe of a beautiful yellowiſh colour.

To the reſiduum you may add half a pound of freſh ſal ammoniac, and ſublime as before; repeating this as long as the flowers ariſe well coloured.

The

FLORES MARTIALES, vulgo ENS VENERIS.

Martial flowers, commonly called *Ens veneris*.

Edinb.

'Take of

Colcothar of martial vitriol, washed and well dried,

Sal ammoniac, equal weights.

Having mixed them well, sublime.

'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 depends principally upon the fire being hastily raised, that the sal ammoniac may not sublime before the heat is become strong enough to enable it to carry up a sufficient quantity of the iron. Hence glass vessels are not so proper as earthen or iron ones: for when the former are made use of, the fire cannot be raised quick enough, without endangering the breaking of them. The most convenient vessel is an iron pot: to which may be luted an inverted earthen jar, having a small hole in its bottom to suffer the elastic vapours, which arise during the operation, to escape. It is of advantage to thoroughly mix the ingredients together, moisten them with a little water, and then gently dry them; and to repeat the pulverisation, humectation, and exsiccation two or three times, or oftener. If this method is followed, the sal ammoniac may be increased to three times the quantity of the iron, or farther; and a single sublimation will oftentimes be sufficient to raise flowers of a very deep orange colour.

This preparation is supposed to be 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 good 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 a 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.

LIXIVIUM MARTIS.

Ley of iron,

Lond.

Let the matter which remains after the sublimation of the martial flowers, be set by in a moist place; it will run into a liquor, which is to be kept for use.

This liquor seems greatly to resemble a saturated solution of iron made in spirit of salt: its taste is highly astringent, and somewhat sweetish. It may be given in doses of a drop or two in any convenient vehicle, for the same intentions as the other chalybeates. It is called by some of the chemical writers, *Oleum martis per deliquium*, and *Essentia martis*.

SAL MARTIS.

Salt of steel.

Lond.

Take of

Strong spirit of oil of vitriol, eight ounces;

Iron filings, four ounces;

Water, two pints.

Mix them together; and after the ebullition ceases, let the mixture stand for some time upon warm

ſand: then pour off and filtre the liquor; and after proper exhalation ſet it by to cryſtalliſe.

VITRIOLUM MARTIS, ſeu SAL CHALYBIS.

Vitriol of iron, or ſalt of ſteel. Edinb.

'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 by to cryſtalliſe.'

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 cryſtalliſation. The only difference betwixt 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 is 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

its quantity 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 expells 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 chalybeate waters, and will in may caſes produce ſimilar effects.

SECT. IV.

Preparations of Copper.

COPPER is leſs eaſy of ſolution than iron; and in its metallic ſtate, does not appear to be acted on by the animal fluids, or to have any conſiderable effect in the body. Diſſolved, it proves externally an eſcharotic; internally, a violent purgative and emetic. Acids of every kind diſſolve it, and likewiſe volatile alkalis. With the vegetable and marine acids, it forms a green ſolution; with the vitriolic acid and volatile alkalis a blue.

ÆS USTUM.

Let thin copper plates be ſtratified in a crucible with ſulphur; and calcined with a ſtrong fire until they become pulverable.

Preparations of this kind, made with ſulphur, nitre, and common ſalt, or mixtures of theſe, or by calcining the copper without addition, have been ſometimes uſed in external applications, for drying and cleanſing ulcers, and preventing the growth of fungous fleſh; and ſometimes likewiſe internally. They are ſtill retained in ſome foreign pharmacopœias, but have not for a long time been taken notice of among us for any medicinal intention.

CRYSTALLI VENERIS.

Cryſtals of copper.

Diſſolve pure copper in thrice its weight of aquafortis, adding the metal to the acid by little and little at a time. Evaporate the liquor by a gentle heat, till one half of it is waſted; then ſet the remainder in a cool place to cryſtalliſe: afterwards dry the cryſtals, and keep them in a vial cloſe ſtopt from the air.

These cryſtals are ſtrongly cauſtic, ſimilar to the *Cauſticum lunare*; but are ſo much diſpoſed to liquefy, that they are ſcarce ever made uſe of, and cannot eaſily be preſerved.

TINCTURA VENERIS VOLATILIS.

Volatile tincture of copper.

Take of

Copper filings, one dram;
Spirit of ſal ammoniac, twelve drams.

Let them ſtand together in a cloſe veſſel, frequently ſhaking it until

the liquor is tinged of a beautiful violet colour.

'It is obſervable, that the colour of this liquor is variouſly modified by the different conditions of the copper, and the quantity of air admitted or excluded. If the veſſel is cloſe ſhut the colour entirely diſappears, and on taking out the cork is reproduced.'

THIS tincture, or ſolution of copper, has been given internally, in the doſe of a few drops, as a diuretic. Boerhaave directs at firſt three drops to be taken in a morning faſting with a glaſs of mead, and this doſe to be daily doubled till it comes to twenty-four drops; which laſt quantity is to be continued for ſome days. He ſays, that by this means, he cured an hydropic perſon labouring under a confirmed aſcites; and that the medicine procured ſurpriſing diſcharges of urine; that nevertheleſs, on trying it in another caſe of the ſame kind, it did not anſwer. See the article CUPRUM, page 133.

CUPRUM AMMONIACUM.

Ammoniacal copper.

Edinb.

'Take of

Pureſt blue vitriol, two parts;
Volatile alkali of ſal ammoniac, three parts.

Rub them briſkly in a glaſs mortar till, the effervescence being finiſhed, they run calmly into a violet-coloured maſs, which is to be rolled up in a piece of bibulous paper, and exſiccated, firſt upon a chalk-ſtone, and afterwards with a gentle heat. The maſs is next to be put up for uſe in a cloſe phial.

'IN this proceſs the copper is diſengaged from the vitriolic acid in a calciform ſtate, and more readily acted upon by the volatile alkali. The quantity of alkali, which is ſuperabundant to the neutralization of the vitriolic acid, is alſo ſufficient to take up the whole of the calx: But it is probable, that part of the calx is really combined with the united alkali and acid. We might therefore conſider the cuprum ammoniacum as a combination of copper with a kind of vitriolic ammoniac, the alkali of which is very much predominant.

'The retained acid, we allege, muſt anſwer two uſeful purpoſes: the firſt is to render the alkali ſomewhat more fixed, and thereby leſs liable to exhalation on keeping; and ſecondly, by uniting in part with the whole of the alkali, the acrimony of this laſt may be thereby rendered leſs conſiderable.

'The cuprum ammoniacum has of late years been much celebrated as a tonic remedy in epilepſy, and in ſeveral ſpaſmodic and convulſive affections. The doſe is gradually increaſed from one grain to four or five in the day. It is moſt conveniently taken in the form of the *Pilulæ e cupro*, (which ſee.) But as epilepſy, and various ſimilar diſeaſes, are not always to be treated with tonic remedies; ſo the cuprum ammoniacum has been blamed by ſome people, who are not pleaſed becauſe it is fallible; and by others who have been unhappy in not properly diſtinguiſhing the caſes in which it is alone admiſſible. It is undoubtedly a powerful tonic, and as ſuch may be uſed with advantage in a variety of affections. There is, however, an inconvenience attending it; that it produces different effects on different ſtomachs: Thus it is, that ſome patients ſhall bear four grains without the leaſt nauſea, whilſt others cannot take half a grain without ſevere vomiting. This, I apprehend, is to be explained, in part, from differences in the quantity and con-

condition of the acid in the ſtomachs of different perſons.'

ENS VENERIS.

Edinb. ✝

Take of

Colcothar of blue vitriol well edulcorated with water, and afterwards dried,

Sal ammoniac, of each equal parts.

Reduce them ſeparately into powder; then mix, and put them into an earthen cucurbit, ſo as to fill two-thirds thereof. Place the cucurbit in an open fire; and having adapted to it a glaſs blind-head, apply at firſt a gentle heat, which is to be increaſed by degrees, and continued as long as the flowers ariſe of a yellow colour inclining to red: when the veſſels are grown cold, let the flowers be carefully ſwept out with a feather.

If the blue vitriol be perfectly good, this proceſs will not ſucceed in the manner here ſet down: where it does ſucceed, that is, where the flowers prove of a reddiſh yellow colour *(ex luteo rubentes)*, it is to be preſumed, that the ſucceſs is owing to the vitriol partaking largely of iron, and that the preparation is not different from the *Flores martiales* of the preceding ſection. The colour of blue vitriol is undoubtedly owing to copper; but moſt of the common vitriols of this kind contain alſo no inconſiderable quantity of iron; and a reddiſh yellow colour of the flowers may be looked upon as a mark, that it is chiefly or ſolely the iron that the ſal ammoniac has carried up. For this is the colour which iron always gives in its ſublimates with ſal ammoniac; whereas copper, in all its ſolutions, or ſoluble combinations with ſal ammoniac, or other ſaline bodies, gives a blue or green, or a colour compounded of theſe two.

The proceſs is originally taken from Mr Boyle; who tells us, that he and a chemiſt, endeavouring to imitate Butler's ſtone by a preparation of calcined vitriol, and finding the medicine upon trial, though far ſhort of what Helmont aſcribes to his, yet no ordinary one, they called it, for the mineral's ſake it was made of, *Ens primum veneris*.

The compoſition of vitriols was at that time but imperfectly known; and this is not the only inſtance of an effect being aſcribed to the cupreous part of a vitriol, which was owing to the ferrugineous. Though Boyle looked on the preparation as proceeding from copper, and accordingly directs a good venereal vitriol to be uſed; yet, in the Goſlarian and Dantzick vitriol, which he recommends as being very fit for the purpoſe, iron is the prevailing metal, the quantity of copper being very inconſiderable; and it appears from his own words, that ſometimes, at leaſt, he uſed the Engliſh vitriol, which is ſcarcely ever found to contain any metallic matter beſides iron. The yellow or reddiſh colour which he aſcribes to his ſublimate, and its property of turning to an inky blackneſs with infuſion of galls, are marks of its having been truly a chalybeate preparation.

In the preceding edition of the London Pharmacopœia, agreeably to Boyle's opinion of the production of the ſublimate, the proceſs was inſerted with blue vitriol; and thoſe of Edinburgh and Paris followed the example. The London College, at the laſt reviſal of their book, have corrected this error, and ordered green vitriol, or filings of iron itſelf, to be uſed; but the miſtake was ſtill continued in the other pharmacopœias.

From good blue vitriol, or pure vitriol

vitriol of copper, the ſublimate here required cannot be obtained: and although it may be prepared from the common blue vitriol of the ſhops, as I have on trial found that it may, yet it is ſurely imprudent to endanger impregnating the preparation with that noxious metal; more eſpecially as pure vitriols of iron are procurable at a much cheaper rate than the others. Thoſe mixed vitriols in which the copper greatly prevails, give firſt a green or blue cupreous ſublimate, and afterwards a yellow or reddiſh ferrugineous one; and thoſe in which iron abounds moſt, give firſt the ferrugineous, and afterwards the cupreous flowers: though poſſibly neither ſublimate is entirely free from an admixture of the other.

SECT. V.

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 notably ſo; and taken internally, prove a powerful but dangerous ſtyptic.

PLUMBUM USTUM.

Burnt lead.

Edinb. +

Melt lead with a gentle fire, and keep it continually ſtirring, with an iron ſpatula, till it changes into powder.

MINIUM.

Red lead.

Edinb. +

Let any quantity of lead be melted in an unglazed earthen veſſel, and kept ſtirring with an iron ſpatula, till it falls into a 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

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, 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.

Edinb. +

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 are not totally calcined, ſcrape off the white powder, and expoſe them again to the ſteam of vinegar, till all the lead is 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° 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 aſtrictive.

SACCHARUM SATURNI.

Sugar of lead.

Lond.

Boil ceruſſe with diſtilled vinegar, in a leaden veſſel, until the vinegar becomes ſufficiently ſweet: then filtre the vinegar through paper, and after due evaporation ſet it to cryſtalliſe.

SAL PLUMBI, vulgo SACCHARUM SATURNI.

Salt, commonly called Sugar, of lead.

Edinb.

'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 poured on as often as it comes off ſweet. Then let all the liquor be evaporated in a glaſs veſſel to the conſiſtence of pretty thin honey, and ſet it by in a cold place, that cryſtals may be formed, which are to be afterwards dried in the ſhade. The remaining liquor is forthwith to be evaporated, that new cryſtals may be formed; the evaporation of the reſiduous liquor is to be repeated till no more cryſtals concrete.'

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 is 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 (ſee page 469.) may be employed for this proceſs to better advantage than the weaker, though purer acid, above

above directed. If a ſmall quantity of rectified ſpirit of wine be prudently added to the ſolution 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 are 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 is 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 reaſſumes 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 is any lead preſent, this addition will inſtantly occaſion the precipitation of a livid or dark-coloured cloud.'

The ſugar of lead is much more efficacious than the foregoing preparations, in the ſeveral intentions which they are applied to. 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, in ſo far as its acid happens to be *abſorbed* in the body; for in ſuch caſe, he ſays, "it returns again into "ceruſſe, which is violently poiſon-"ous." 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 ſo 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 ſaccharum ſaturni 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. The effects

of

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.'

SECT. VI.

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 is juſt ready to melt, proves extremely brittle, ſo as to fall in pieces from a blow, and by dextrous 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 cryſtalliſes with the vegetable and vitriolic acids; but with the others, deliquates.

The virtues of this metal are little known. It has been recommended as an antihyſteric, antihectic, &c. At preſent, it is chiefly uſed as an anthelmintic.

STANNUM PULVERATUM.

Powdered tin.

Lond.

Melt the tin, and pour it into a wooden box rubbed in the inſide with chalk: then immediately let the box be nimbly ſhaken, and a part of the tin will fall into powder. The remainder is to be melted a ſecond time, and treated in ſame manner, till the whole of the metal is thus reduced into powder.

This preparation has been uſed for ſome time 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 gives 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 adminiſtered: 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.

CALX JOVIS.

Calx of tin.

Edinb. +

Melt any quantity of tin in an unglazed earthen veſſel, and keep it continually ſtirring with an iron ſpatula until it falls into a calx.

This proceſs is not here intended to be carried ſo far as the pharmaceutical writers in general direct: it muſt be diſcontinued as ſoon as the metal is reduced into a duſky powder: if calcined to whiteneſs, the following operation would not well ſucceed. As to the virtues of the calx, they do not ſeem to be greatly different from thoſe of the foregoing preparation.

SAL

SAL JOVIS.

Salt of tin.

Edinb. +

Take one pound of the foregoing calx of tin; and four ounces of aqua regia, diluted with ſix times its quantity of ſpring water. Digeſt them together in a ſand-heat for two days: then ſhake the veſſel; and after the more ponderous parts of the calx have ſubſided, pour off the turbid liquor, and evaporate it almoſt to dryneſs: the further exſiccation of the matter is to be performed on bibulous paper. On the calx which is left, pour half as much of the diſſolvent as was employed at firſt; and proceed in the ſame manner as before.

In former editions, the menſtruum, after digeſtion upon the calx of tin, was ordered to be filtered, then evaporated till a pellicle appeared upon the ſurface, and ſet by to cryſtallize. But the cryſtalliſation ſucceeded very ill; and ſuch cryſtalline matter, as was with difficulty obtained, proved to be little other than a nitrous ammoniacal ſalt afforded by the aqua regia; for this menſtruum does not diſſolve, or diſſolves only an inconſiderable quantity of, the calx of tin. The proceſs is now rendered more practicable, by allowing the finer parts of the calx to be mixed with the liquor in an undiſſolved ſtate, and the whole to be inſpiſſated and exſiccated together. It is probable, however, that the preparation here intended, might be obtained in a manner ſtill more commodious.

I cannot apprehend what advantage there is in calcining the tin. Tin, in its metallic ſtate, diſſolves freely in aqua regia, but calcination renders it almoſt indiſſoluble in that menſtruum; the further it is calcined, the more does it loſe of its ſolubility. If tin and its calx were of equal ſolubility, it could ſcarcely be ſuſpected that the ſolutions of the two would be different in quality; for the phlogiſton, or inflammable principle, which fire expels from metals in their calcination, is equally extricated by acids in their diſſoſolution. A ſalt of tin with aqua regia may therefore be more advantageouſly prepared in the following manner.

Let melted tin be poured in ſmall ſtreams into a veſſel of cold water, that it may be reduced into grains. Drop theſe by little and little, as a grain at a time, into aqua regia, that the diſſolution may go on ſlowly, without effervеſcence or the diſcharge of fumes. When the metal is no longer acted on, pour off the ſolution, and evaporate it in a ſand-heat till a dry ſalt is left.

This preparation ſeems intended chiefly for external uſe, as a mild eſcharotic and detergent. It is not ſo corroſive as might be expected, nor much diſpoſed to liqueſy in the air, though it is not eaſily made to aſſume a cryſtalline form. A perfect cryſtalline ſalt may be obtained from tin by the vitriolic acid, in the following manner:

Take two ounces of tin, reduced into grains or filings; and five ounces of oil of vitriol. Put them into a wide-necked glaſs, in a ſand-heat, and increaſe the fire till the liquid boils and evaporates, and the matter remains almoſt dry. Then remove the veſſel from the fire, and when the ſaline reſiduum has concreted, add a proper quantity of water, which, by the aſſiſtance of a moderate heat,

will diſſolve nearly the whole. Filtre the ſolution, and after due evaporation ſet it to cryſtalliſe.

Salt of tin for internal uſe, has been commonly directed to be prepared with diſtilled vinegar; by digeſting the vinegar on calcined tin, and then evaporating and cryſtalliſing. Several of the chemiſts have denied that any cryſtals would by this means be obtained, or that the diſtilled vinegar would diſſolve any part of the calx: and indeed when the tin is but moderately calcined, as above directed, it does not appear that any ſolution happens.

There are two ſtates in which tin is conſiderably acted upon by vegetable acids: its perfect metallic ſtate, and that of a perfect calx. Plates of pure tin put into common vinegar, are in a few hours corroded; by degrees the liquor becomes quite opake and turbid, and depoſites great part of the corroded tin to the bottom in form of a whitiſh powder; but ſtill retains a part exquiſitely divided; for after ſtanding for many days, and after paſſing through a filtre, ſo much remained ſuſpended as to give a whitiſhneſs and opacity to the fluid. Acid juices of fruits, ſubſtituted to vinegar, exhibited the ſame phenomena. Theſe experiments, though they do not ſhow that the tin is thus ſufficiently diſſolved to afford a perfect cryſtalline ſalt, prove, nevertheleſs, what is of more importance to be known, that tin, or tinned veſſels, however pure the tin be, will give a metalline impregnation to light vegetable acids ſuffered to ſtand in them for a few hours.

In order to the obtaining a perfect ſolution of tin for cryſtalliſation, the metal muſt be highly calcined; for though its ſolution in mineral acids is prevented by calcination, it is otherwiſe in regard to the vegetable. Some take the common calx of tin, and having ſpread it thinly over the bottom of a proper veſſel, continue the calcination in a gentle heat, frequently ſtirring the powder, for three or four days, in a furnace where the air may paſs freely over the ſurface. Others mix the common calx or filings of tin with twice their weight of nitre, and inject the mixture by degrees into a veſſel ſtrongly heated, over which are fitted a number of aludels, or earthen pots with holes in their bottoms: the lowermoſt of theſe veſſels has a hole alſo in the ſide, through which the matter is thrown in: during the deflagration which happens on each injection, a part of the tin is volatiliſed, and adheres to the pots in form of a fine white powder, which is ſwept out and waſhed with water. Others obtain a calx of tin, perhaps not leſs perfect, more expeditiouſly, and with leſs trouble; by diſſolving the metal in aqua regia, (which, as already obſerved, has in this reſpect nearly the ſame effect as fire), and afterwards recovering the calx, by diluting the ſolution with about four times its quantity of water, and gradually adding to it ſpirit of ſal ammoniac till the effervescence ceaſes; a white curdly matter precipitates, which is to be waſhed with water and dried.

Take of calx of tin, prepared in either of the above methods, one pound; of diſtilled vinegar, one gallon. Digeſt them together, occaſionally ſtirring up the matter from the bottom till the vinegar has acquired a rough ſweetiſh taſte: then evaporate the liquor to the conſiſtence of a ſyrup, add to it about one-twentieth its weight of rectified ſpirit of wine, and ſuffer the heat ſlowly to decreaſe, that the ſalt may cryſtalliſe.

The

The cryſtals obtained by this method are hard, ſolid, colourleſs, tranſparent, void of acrimony. They have been recommended in the doſe of a few grains, in uterine diſorders: but it does not appear that experience has warranted the virtues attributed to them; nor are any of theſe ſalts at preſent made uſe of in common practice, or kept in the ſhops.

The powder precipitated from aqua regis, either by volatile alkalis, or by water alone, is ſometimes employed as a coſmetic, under the name of MAGISTERY OF TIN. A whiter, and more elegant, preparation of this kind might be obtained, by diſſolving the metal in the vitriolic acid, and precipitating with volatile ſpirits.

'The whole of theſe preparations are entirely rejected from modern practice. A ſolution of tin in aqua regia, prepared in nearly the ſame manner as here directed, is much uſed by the dyers for heightening the colour of cochineal, gum lac, &c. for the purpoſe of producing a fine ſcarlet colour.'

AURUM MUSIVUM.

Moſaic gold.
Lond.

Take of
Tin, one pound,
Flowers of ſulphur, ſeven ounces;
Sal ammoniac,
Purified quickſilver, of each half a pound.

Melt the tin by itſelf, add to it the quickſilver, and when the mixture is grown cold, reduce it into powder: mix this with the ſulphur and ſal ammoniac, and ſublime in a matraſs; the moſaic gold will be found under the ſublimed matter, with ſome droſs at the bottom.

THE management of this proceſs, ſo as to give to the preparation the beautiful colour and appearance for which it is admired, has been held as a ſecret. The chemiſts ſeem greatly divided as to the proportions which the ingredients ought to bear to each other, and in this ſome make the chief difficulty to conſiſt; while others make the due regulation of the fire to be the principal point. There does not however appear to be any very great nicety in either reſpect. I have found the proceſs to ſucceed equally with very different proportions of the materials, by mixing them thoroughly together; putting them into a wide-necked matraſs upon a little ſand in an iron pot; applying a gentle fire for ſome time, till the white fumes, which aroſe copiouſly at firſt, and paſſed out at the neck of the glaſs, begun to abate; then gradually increaſing the fire till the ſand became red-hot, and keeping it up in this ſtate for a conſiderable while, according to the quantity of the mixture.

The moſaic gold is chiefly valued, and receives its name from its ſparkling gold-like hue. As a medicine, it is at preſent little regarded; tho' formerly held in conſiderable eſteem, in hyſterical and hypochondriacal complaints, malignant fevers, and venereal diſorders. In theſe laſt it has been recommended, from a ſuppoſition of its being a mercurial; but on conſidering the circumſtances of the proceſs, and the phenomena that occur in it, there will appear little probability of any of the mercury being retained in the preparation.

The matraſs being broken when the proceſs is finiſhed, the moſaic gold is found in the bottom; and the ſublimed ſubſtance, above it, conſiſts partly of ſal ammoniac, partly of ſulphur, and partly of a cinnabar reſulting from the combination of part of the ſulphur and mercury.

The aurum moſaicum is found to weigh more than the tin employed; but pure tin, in being calcined by itſelf, gains very nearly as much as it does in this proceſs: the golden colour is probably owing to a minute portion of ſulphur adhering to the tin. On roaſting the aurum over a gentle fire, it ſmokes a little, and ſoon changes its golden hue to a dirty-coloured one, not unlike that of tin lightly calcined: being then mixed with a proper flux, and melted in a crucible, it yields a lump of tin not far ſhort of the original weight of the metal.

The College of Edinburgh, tho' they formerly divided this preparation into two proceſſes, one for amalgamating the tin with the mercury, the other for the ſublimation with the ſulphur and ſal ammoniac, have in a later edition entirely rejected it.

SECT. VII.

Preparations of Mercury.

Mercury, or quickſilver, 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 like 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 are, 'to communicate a conſiderable and very general ſtimulus to the 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 reuniting 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.

ARGENTI VIVI PURIFICATIO.

Purification of quickſilver.

L. E. +

Diſtil quickſilver in a retort; and afterwards waſh it with water and common ſalt, or with vinegar.

If a glaſs retort is made uſe of for this operation, it ought to have a low body and a long neck; and the neck ſhould be conſiderably inclined downwards, ſo as to allow the elevated mercury a quick deſcent: the receiver ſhould be filled almoſt to the neck of the retort with water; the uſe of this is not to condenſe, but to cool, the diſtilling quickſilver, leſt falling hot upon the bottom, it ſhould crack the glaſs. The diſtillation may be more conveniently performed in an iron retort, or an iron pot fitted with a head.

The fire ſhould be raiſed no higher than is ſufficient to elevate the mercury; for certain mineral ſub-

ſtances, which are ſaid to be ſometimes mixed with it, prove in part volatile in a degree of heat not much greater than that in which mercury diſtils. Mr Boyle relates, that he has known quickſilver carry up with it a portion even of lead, ſo as to have its weight very ſenſibly increaſed thereby; and this happened though only a moderate fire was uſed. 'It is therefore very uncertain whether any advantage is really gained by this proceſs; and the Edinburgh College have expunged it from their book.'

Mercurius alcalizatus.
Alkaliſed mercury.

Take of
Pure quickſilver, three drams;
Prepared crabs-eyes, five drams.
Grind them together in a glaſs mortar till the mercurial globules diſappear.

This preparation, which has never been received into the London Pharmacopœia, and is now rejected from the Edinburgh, is inſerted here on account of its being now and then called for, and held by ſome in conſiderable eſteem. It has never come much into common practice, the labour of making it having been a temptation to a grievous abuſe in its preparation, viz. the addition of an intermedium, which facilitates the union of the mercury with the crabs-eyes, but greatly abates its medical powers. The medicine, when duly prepared, is an uſeful alterative; and may be given, in cutaneous or venereal caſes, from two or three grains to a ſcruple.

MERCURIUS SACCHARATUS.
Sugared mercury.
Edinb.

Take of
Pure quickſilver,
Brown ſugar-candy, of each half an ounce;
Eſſential oil of juniper berries, ſixteen drops.
Grind them together in a glaſs mortar until the mercury ceaſes to appear.

The eſſential oil, here added, is ſaid to be a very uſeful ingredient; not only promoting the extinction of the quickſilver (which, however, is ſtill not a little difficult and tedious), but likewiſe improving the medicine. The intention, in this and the foregoing proceſs, is only to divide the mercury by the interpoſition of other bodies; for when thus managed (as already obſerved), it has very powerful effects; though, whilſt undivided, it ſeems to be altogether inactive. Sugar alone apparently anſwers this intention; but on the commixture of aqueous fluids, the ſugar diſſolves by itſelf, leaving the mercury to run together again in its original form: the addition of the oil is ſaid in great meaſure to prevent this inconvenience. The doſe of this medicine, as an alterative, is from two or three grains to a ſcruple. 'Both of them may be very well ſpared from the ſhops.'

ÆTHIOPS MINERALIS.
Ethiops mineral.
Lond.

Take of
Purified quickſilver,
Flowers of ſulphur, unwaſhed, of each equal weights.
Grind them together, in a glaſs or ſtone mortar, until they are united.

Edinb.

Take of
Quickſilver,
Flowers of ſulphur, each equal weights.
Grind them together in a glaſs mortar,

tar, with a glaſs peſtle, till the mercurial globules totally diſappear.

An ethiops is made alſo with a double quantity of mercury.

The union of the mercury and ſulphur might be greatly 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 is 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 electary or pills; 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 have boldly aſſerted its poſſeſſing extraordinary virtues; and moſt people imagine it 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 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 the Edinburgh Pharmacopœia, has a greater chance for operating as a mercurial; and probably the quantity of mercury might be ſtill further increaſed to advantage.

CINNABARIS FACTITIA.

Artificial cinnabar.

Lond.

Take of

Purified quickſilver, twenty-five ounces;

Sulphur, ſeven ounces.

Melt the ſulphur, and mix into it the quickſilver; if the mixture happens to catch flame, extinguiſh it by covering the veſſel. The matter is afterwards to be reduced into powder, and ſublimed.

Edinb. †

Take of
Purified quickſilver, three pounds and a half;
Flowers of ſulphur, waſhed, one pound.

Melt the ſulphur in a large iron veſſel over a gentle fire, and add to it by degrees the quickſilver previouſly heated, ſtirring them conſtantly together with an iron ſpatula, that they may be perfectly mixed. Immediately fit upon the veſſel a wooden cover, to prevent the mixture from taking fire: before the matter is grown cold, grind it into powder, and ſublime according to art.

It has been cuſtomary to order a larger quantity of ſulphur than here directed: but theſe 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 is 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 is 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 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 caſe, 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 (1) 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; (2) to put into the ſubliming veſſel only ſmall quantities of the mixture at a time.

A method is mentioned in the Practical Chemiſtry of making cinnabar without ſublimation, by agitating or digeſting mercury in the volatile tincture of ſulphur, already deſcribed. I have found a ſulphureous liquor more eaſily preparable to have a like effect: the ſolution for *lac ſulphuris* will, with ſome addreſs, ſucceed.

The

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 vertigoes 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 like manner; that when perfectly ſatiated with ſulphur, it may be inert: and that when the quantity of ſulphur is more and more leſſened, 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.

MERCURIUS CALCINATUS.

Calcined mercury.

Lond.

Put purified quickſilver into a broad-bottomed glaſs veſſel, having a ſmall hole open to the air; and keep it in a conſtant heat, in a ſand-furnace, for ſeveral months, until it is calcined into a red powder.

This very tedious proceſs might, in all probability, be greatly expedited, by employing, inſtead of a veſſel with a ſmall aperture, a very wide-mouthed, flat-bottomed glaſs body, of ſuch a height that the mercury may not eſcape: by this means, the air, which is eſſentially neceſſary to the calcination of all metallic ſubſtances, will be more freely admitted.

mitted. 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.

MERCURII SOLUTIO.

Solution of mercury.

Edinb. +

Take equal quantities of pure quickſilver and double aquafortis. Digeſt them together, in a phial placed in a ſand-furnace, that a limpid ſolution may be made.

AQUAFORTIS diſſolves mercury more eaſily, and in larger quantity, than any other acid: ſixteen ounces, if the menſtruum is very ſtrong and pure, will take up eleven or twelve. As the liquor grows cold, a conſiderable part concretes, at the bottom of the veſſel, into a cryſtalline form. If the whole is wanted to remain ſuſpended, a proper quantity of water ſhould be added after the ſolution is completed.

This proceſs is given only as preparatory to ſome of the following ones. The ſolution is highly cauſtic, ſo as ſcarce to be ſafely touched. It ſtains the ſkin purple or black.

CALX MERCURII.

Calx of mercury.

Edinb. +

Take any quantity of the ſolution of mercury, and evaporate it over a gentle fire till a white dry maſs remains.

THIS calx, or rather ſalt, of mercury, is violently corroſive. It is rarely made uſe of any otherwiſe than for making the following preparation and the corroſive ſublimate.

MERCURIUS CALCINATUS, vulgo PRÆCIPITATUS RUBER.

Red calx of mercury, commonly called *Red precipitate.*

Edinb.

Take any quantity of the calx of mercury, and reverberate it in a crucible, with ſucceſſive degrees of heat. Its white colour will change firſt into a brown, and afterwards a yellow; at length, upon increaſing the fire, it paſſes into a deep red.

MERCURIUS CORROSIVUS RUBER.

The red mercurial corroſive.

Lond.

Take of

Purified quickſilver,

Compound aquafortis, deſcribed in page 467, of each equal weights.

Mix, and ſet them in a broad-bottomed veſſel, in a ſand-heat, till all the humidity is exhaled, and the maſs has acquired a red colour.

THE marine acid in the compound menſtruum, ordered in this laſt proceſs, diſpoſes the mercurial calx to aſſume the bright ſparkling look admired in it; which, though perhaps no advantage to it as a medicine,

dicine, 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, is 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; inſomuch that we are under a neceſſity of importing it from abroad. This reflection ſeems to be founded on miſinformation: we ſometimes indeed receive conſiderable quantities 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 in 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 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, and 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 other ill conſequences, which the beſt management can ſcarcely prevent this corroſive preparation from ſometimes doing. 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 parable at an eaſier rate.

MERCURIUS CORALLINUS.

Coralline mercury.

Lond.

Pour on the red mercurial corroſive about thrice its weight of rectified ſpirit of wine, and digeſt them together, with a gentle heat, for two or three days, frequently ſhaking the veſſel: then ſet fire to the ſpirit, keeping the powder continually ſtirring till all the ſpirit is burnt away.

It is ſuppoſed, that all the more violent preparations of this kind, compoſed of metallic bodies united with acids, are rendered milder by digeſtion in ſpirit of wine: the acid being dulcified, or in part abſorbed by the ſpirit. This evidently happens in ſome caſes, where the proportion of acid is large, or ſufficient to render the compound ſoluble in water; but that it happens equally in others, I cannot affirm. This much is certain, that the mercurius corallinus, whether from this cauſe, or barely from ſome of the acid being diſſipated by the heat of the burning ſpirit, proves conſiderably milder than the corroſive was at firſt. It is ſtill, however, a medicine of great activity, and ſeems to be ſcarce ſufficiently ſafe for internal uſe: a few grains of it generally prove cathartic or emetic, and ſometimes occaſion violent ſymptoms.

Arcanum corallinum.
The coralline ſecret.

Take five ounces of the red mercurial corroſive, and eight ounces of ſpirit of nitre: diſtil off the ſpirit in a retort; return it with four ounces of freſh ſpirit of nitre upon the reſiduum, and draw it off again as before; repeat this proceſs with four ounces of new ſpirit; and at laſt keep the fire up very ſtrong for at leaſt two hours. The powder, which remains in the retort, is to be put into a crucible, and kept of a worm-red heat for ſeven or eight minutes: then boil it for half an hour in three pints of pure water: diſtil from it twelve ounces of tartariſed ſpirit of wine, cohobating the ſpirit twice: digeſt it for forty-eight hours in a ſand-heat with the ſame quantity of freſh tartariſed ſpirit; raiſing the fire towards the end, ſo as to make the ſpirit ſimmer a little: afterwards ſuffer the whole to cool, decant off the ſpirit, and dry the powder for uſe.

This preparation, notwithſtanding its pompous name, is a very unthrifty and injudicious one. The cohobation of ſpirit of nitre upon the corroſive, anſwers no uſeful purpoſe; for whatever the acid communicates, is afterwards diſſolved and ſeparated by the water: if the direction of keeping up a ſtrong fire for ſome time, after the laſt diſtillation, is not ſtrictly complied with, all the mercury will diſſolve in the water, and the ſolution will prove ſimilar to the *ſolutio mercurii* above deſcribed.

Pulvis principis.
Prince's powder.

Grind eight ounces of the red mercurial corroſive into a fine powder; and digeſt it with two quarts of water, in an almoſt boiling heat, for twelve hours, occaſionally ſtirring up the powder from the bottom: then pour off the liquor, and digeſt the powder in a freſh parcel of water as before; repeating this proceſs a third time. The laſt water being poured off, grind the powder with double its weight of fixt alkaline ſalt, and digeſt it as at firſt, in freſh waters, till it becomes inſipid. Afterwards boil it in ſpirit of wine; and laſtly, pouring off the ſpirit, dry the powder for uſe.

Panacea mercurii rubra.
Red panacea of mercury.

Digeſt the red mercurial corroſive with eight times its weight of water, for twenty-four hours, ſhaking the veſſel three or four times: pour off the water, dry the powder, and digeſt it with eight times its weight of ſpirit of wine, for fifteen days. The ſpirit being then decanted off, burn upon the calx twice its weight of tincture of ſulphur: afterwards digeſt it two or three days longer in freſh ſpirit of wine; and in the laſt place, exſiccate it for uſe.

The three foregoing preparations have been kept in particular hands as ſecrets. At bottom they are all nearly the ſame, and much too trivial to deſerve the pains taken about them. They are perhaps farther diveſted of acid than the *mercurius corallinus* of the ſhops; but have this diſadvantage, that the quantity of acid ſeparated in the troubleſome digeſtions, &c. muſt vary according to different circumſtances in the operation. All the four ſtand recommended in ſmall doſes, two grains for inſtance, as excellent alterants and diaphoretics: in larger ones, they prove emetic and cathartic.

MER-

MERCURIUS CORROSIVUS SUBLIMATUS, vel ALBUS.

The white mercurial corrosive, or Corrosive mercury sublimate.
Lond.

Take of
Purified quickſilver, forty ounces;
Sea-ſalt, thirty-three ounces;
Nitre, twenty-eight ounces;
Calcined green vitriol, ſixty-ſix ounces.

Grind the quickſilver, in a wooden or ſtone mortar, with an ounce or more of corroſive mercury ſublimate already made, until the quickſilver is divided into ſmall grains: this mixture is to be ground with the nitre, and afterwards with the ſea-ſalt; then add the calcined vitriol, continuing the triture only for a little time longer, leſt the quickſilver ſhould run together again. Laſtly, proceed to ſublimation, in a glaſs matraſs; to which you may adapt a head, in order to ſave a little ſpirit that will come over.

MERCURIUS SUBLIMATUS CORROSIVUS.

Sublimate corroſive mercury.
Edinb.

'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.' It has been ſuppoſed, that corroſive ſublimate participates of all the ingredients employed in this proceſs; though it is certain, that it conſiſts only of mercury and the acid of the ſea-ſalt united together. The materials being mixed and expoſed to the fire, firſt the vitriol parts with its acid; which, diſlodging thoſe of the nitre and marine ſalt, takes 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 deſign of adding a little ſublimate already made, is to facilitate the extinction of the mercury, or its mixture with the other

mate-

materials. 'But as this is a troublesome and uncertain process, it is certainly preferable to employ the mercurial nitre as directed in the Edinburgh Pharmacopœia.'

THERE are sundry other ways of making this preparation, or of combining mercury with the marine acid. If mercury, corroded by the vitriolic acid into a white mass (as for making the yellow mercurial emetic or turpeth mineral described hereafter), be mixed with an equal quantity of sea-salt and set to sublime; the vitriolic acid will quit the mercury to unite with the basis of the sea salt; and the acid of the sea-salt, now set at liberty, will unite with the mercury, and sublime with it into the compound required. The discovery of this method is generally attributed to Bouldic; tho' it is found also in Kunckel'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 matrass 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, I made sundry experiments with this view, which convinced me of the insufficiency of alkalis 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, differed 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

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 butyraceous conſiſtence; while the mercury, thus freed from the acid, diſtils in its running form: if the quantity of arſenic is inſufficient to decompound the whole of the ſublimate, the remainder of the ſublimate concretes diſtinct from the arſenical 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 (though I have never found any reaſon to ſuſpect that the abuſe is practiſed) 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, (page 557.) 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; I think we may be ſecure that the mixture contained no arſenic.

Sublimate is a moſt violent coroſive, 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 ſolution, ſoftened with ſyrup of violets, taken twice or thrice a-day, it will perform wonders in many reputed incurable diſtempers; but particularly cautions us not to venture upon it, unleſs the method of managing it is well known.

Sublimate diſſolved in vinous ſpirits 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 vogue 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,

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; combining with it ſo much freſh mercury as the acid is capable of taking up, and 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 SUBLIMATI CORROSIVI.

Solution of ſublimate corroſive mercury.
Edinb.

'Take of
Sublimate corroſive mercury, ſix grains;
Sal ammoniac, twelve grains.
Diſſolve in a pound of diſtilled water.
If hard water is uſed for this purpoſe, the ſolution ſuffers a kind of decompoſition from the nitrous ſelenite of the water.

'The ſolution of corroſive ſublimate 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 internal 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 purpoſe, and will require being weakened by adding a portion of water.

'We next proceed to certain changes produced on ſublimate corroſive mercury by various means.'

MERCURIUS DULCIS SUBLIMATUS.

Dulcified mercury ſublimate.
Lond.

Take of
Corroſive mercury ſublimate, one pound;
Purified quickſilver, nine ounces.
Having powdered the ſublimate, add to it the quickſilver, and digeſt them together in a matraſs, with a gentle heat of ſand, until they unite; then, increaſing the heat, let the mixture be ſublimed. The ſublimed matter, freed from the acrimonious part at top and ſuch mercurial globules as happen to appear diſtinct in it, is to be reduced into powder, and ſublimed again; and this ſublimation repeated ſix times.

MERCURIUS DULCIS.

Edinb.

'Take of
Corroſive mercury ſublimate, reduced to 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 ceaſes 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, ſucceſſively 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

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 ſublimate 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 operator's eyes and mouth. It is nevertheleſs of the utmoſt conſequence, that the ingredients be perfectly united before the ſublimation is begun: this may be moſt commodiouſly effected, by the digeſtion ordered in the firſt of the above proceſſes. It is indeed ſtill neceſſary to pulveriſe the ſublimate before the mercury is added to it; but this may be ſafely performed, with a little caution; eſpecially if during the pulveriſation the matter be now and then ſprinkled with a little ſpirit of wine: this addition does not at all impede the union of the ingredients, or prejudice 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 begins 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 was 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 is 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 Auguſtan, 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. 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 alkalis:

and

and therefore, for experiments of this kind, diſtilled water, or rain water, ought to be uſed.

Mercurius dulcis, ſeven times ſublimed, has been commonly called *Calomelas*, and *Aquila alba*; names which are now dropt both by the London and Edinburgh Colleges. *Calomelas* is indeed a very improper name for a white preparation, the word implying a black colour: by grinding mercurius dulcis with volatile ſpirits, it becomes blackiſh, and this perhaps is the true calomel.

MERCURIUS DULCIS PRÆCIPITATUS.

Sweet mercury by precipitation.

'Take of
Quickſilver,
Nitrous acid, of each four parts;
Common ſalt, three parts;
Water, forty parts.

Diſſolve the quickſilver in the nitrous acid, by mixing them together in a long-necked matraſs, which is to be placed in a ſand-bath: the heat is raiſed till it nearly boil, and kept ſo three or four hours, after which the ſolution is made to boil about twenty minutes. In this ſtate it is poured into the ſolution of the ſalt in the water, which laſt is alſo to be at a boiling heat: this mixture is to be carefully kept in conſtant motion during the whole time of its being performed. After the precipitate ſettles, the clear liquor is to be decanted off, and the precipitate waſhed with hot water till the water comes off taſteleſs.

'This proceſs has been lately recommended by Mr Scheele of Sweden, as an eaſy and expeditious method of preparing ſweet mercury. 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 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, 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 is 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 guts, that we can ſeldom adminiſter it in ſuch a manner as to produce ſuch permanent effects as are often required, but which we are able

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 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.'

Panacea mercurii.
Mercurial panacea.

Take any quantity of levigated calomel, and four times as much ſpirit of wine. Digeſt them together in a ſand-heat for twenty days, frequently ſhaking the veſſel; then pour off the ſpirit, and dry the powder for uſe.

This preparation differs very little, if at all, from the foregoing; for, as Lemery obſerves, the ſpirit of wine does not diſſolve any part of the calomel. Some chemiſts have therefore recommended a proof-ſpirit, or common water, as more ſuitable for this purpoſe than rectified ſpirit: if any part indeed of the calomel remains not ſufficiently dulcified, this will be diſſolved by boiling in water, and conſequently the preparation becomes milder; but if the calomel is well made, even water will have no effect upon it; the mercury and ſpirit of ſalt being ſo cloſely united to each other, as not to admit of any ſeparation by the means here propoſed. Nor indeed does good mercurius dulcis want any of its acid to be taken away, as being already ſufficiently ſafe and mild in its operation. The Edinburgh College therefore, who received this preparation in the former editions of their Pharmacopœia, have now rejected it.

Mercurius præcipitatus albus.
White precipitate of mercury.
Edinb.

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 upon a filtre, with ſeveral freſh quantities of warm water.

This preparation is uſed chiefly in ointments, in which intention its fine white colour is no ſmall recommendation to it. For internal purpoſes it is rarely employed, nor is it at all wanted: it is nearly ſimilar to mercurius dulcis, but leſs certain in its effects. 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 adviſeable to uſe the liquor itſelf as a ſolution of ſal ammoniac, or to ſeparate the ſal ammoniac from it by evaporation and cryſtalliſation, as a part of the mercury might be retained, and communicate danger-

ous

ous qualities: but the volatile ſalt ſeparated by 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 alkalis anſwer 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 alkalis will now, extricating the volatile alkali of the ſal ammoniac, occaſion as white a precipitation as if the volatile alkali had been previouſly ſeparated and employed in its pure ſtate: and this compendium is now allowed by the London College. The proceſs is as follows:

Lond.

Take
- Sublimate corroſive mercury,
- Sal ammoniac, of each equal weights.

Diſſolve them both together in water, filtre the ſolution, and precipitate it with a ſolution of any fixt alkaline ſalt. Waſh the precipitated powder till it is perfectly ſweet (that is, inſipid or void of acrimony.)

Here 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 is 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 loſe the elegant white colour for which it is valued.

A precipitate of a different nature from the preceding, has been commonly diſtinguiſhed by the ſame name, mercurius præcipitatus albus; the preparation of which, in a former edition of the Edinburgh Pharmacopœia, is as follows:

Take any quantity of the ſolution of mercury (made in aquafortis) and pour into it, by little and little, ſome very ſtrong brine of ſea-ſalt, until all the quickſilver is precipitated in form of a very white powder; which is to be waſhed upon a filtre with warm water, till the water comes off without any acrimony. The powder is then to be put betwixt the folds of paper, and dried with a very gentle heat.

This is a very unfrugal preparation: for ſea-ſalt, in whatever proportion it be added, will not precipitate all the mercury: this evidently appears upon adding a ſmall quantity of a ſolution of fixt alkaline ſalt, or volatile alkaline ſpirit, to the liquor which remains after the precipitate is fallen, when it will again grow turbid, and let fall a conſiderable quantity of freſh precipitate. Homberg obſerves, that if the acid ſpirit bears an over-proportion to the mercury in the ſolution, no precipitation at all will follow upon the affuſion of the brine of ſea-ſalt. If the precipitate be waſhed too often with hot water, it will all diſſolve and paſs the filtre: the ſame accident will likewiſe happen, if the brine employed at firſt to throw down the mercury be ſuffered to ſtand too long upon the precipitate.

Some have been accuſtomed to ſub-

ſubſtitute the above officinal white precipitate in the place of this; but very injudiciouſly: the firſt is ſo mild, as not improperly to deſerve the appellation by which it is diſtinguiſhed in a former Edinburgh Pharmacopœia, *dulcis;* whilſt this laſt is ſo far corroſive, as to be employed by the farriers for the purpoſes of an eſcharotic. Internally, it is among us very rarely made uſe of; notwithſtanding the character given of it by Boerhaave of being "perhaps "the beſt remedy hitherto afforded "by mercury." Mercurius dulcis produces the good effects which this is ſuppoſed to do, with a greater degree of certainty, and without diſordering the conſtitution, occaſioning vomiting, &c. which this precipitate, in a doſe of two or three grains, frequently does.

MERCURIUS PRÆCIPITATUS FUSCUS, vulgo WURTZII.

Brown, commonly called *Wurtz's, precipitate.*

Take any quantity of a ſolution of mercury (made in aquafortis) and gradually drop it into oil of tartar per deliquium, till the effervescence ceaſes. A powder will precipitate, which is to be edulcorated as the foregoing.

THIS preparation was in conſiderable eſteem ſome years ago, but at preſent is rarely or never made uſe of; and hence it is now rejected both by the London and Edinburgh Colleges. It does not ſeem to differ in ſtrength or effects from the ſweet precipitate.

MERCURIUS PRÆCIPITATUS VIRIDIS.

Green precipitate of mercury. Edinb. +

Diſſolve four ounces of corroſive ſublimate mercury (previouſly reduced to powder) in a quart of hot water.

Digeſt an ounce and a half of copper filings, with eight ounces of ſpirit of ſal ammoniac, in a matraſs, until a deep blue tincture is extracted.

Filtre the tincture, and drop it by degrees into the mercurial ſolution: when the precipitate has fallen, evaporate in a ſand-heat to dryneſs.

THIS differs from the ſweet precipitate, in containing an admixture of copper, which renders it an emetic too rough to be uſed internally with ſafety: and hence the preſent practice has almoſt entirely rejected it.

The preparation is conſiderably different from the green precipitate of foreign pharmacopœias. There, the proportion of copper, contained in the preparation when finiſhed, is much greater; for, though the quantity directed to be taken is leſs, yet aquafortis being employed for the menſtruum, the whole is diſſolved; whereas the volatile ſpirit, here employed, extracts but a very ſmall portion of it.

PULVIS MERCURII CINEREUS.

Aſh-coloured powder of mercury. Edinb.

'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 that 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 neutralifation 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.'

MERCURIUS EMETICUS FLAVUS.

The yellow mercurial emetic.
Lond.

Upon purified quickſilver, contained in a glaſs veſſel, pour double its weight of the ſtrong ſpirit, or oil of vitriol. Heat the liquor by degrees, ſo as at length to make it boil, till a white maſs remains, which is to be thoroughly dried with a ſtrong fire. This maſs, on the affuſion of warm water, grows yellowiſh, and falls into powder, which is to be diligently ground with the water in a glaſs mortar: then ſuffer it to ſettle, pour off the water, and waſh the powder in ſeveral parcels of freſh water, until it is ſufficiently dulcified.

MERCURIUS FLAVUS, vulgo TURPETHUM MINERALE.

Yellow mercury, commonly called *Turbith mineral.*
Edinb.

Take four ounces of quickſilver, and eight ounces of vitriolic acid. 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, and thrown into warm water, immediately grows of a yellow colour: purify this in freſh waters renewed ſeveral times.

The quantity of oil of vitriol, formerly directed, was double to that in the above preſcriptions: the reduction, now made in this article, greatly

greatly facilitates the proceſs: and even leſs than the preſent quantity would ſuffice.

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 exſiccated, 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 has been diſſipated, the leſs of the remaining mercury will diſſolve, and conſequently the yield of turbith will be greater; fire expelling only the acid (viz. ſuch part of the acid as is not completely ſatiated with mercury) while water takes up always, 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 akaline 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 ablution, 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 is uſed, the precipitate is white.'

It is obſervable, that though the ſuperfluous acid is 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 *nitrum vitriolatum* (i. e. a combination of vitriolic acid with fixt alkali), 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 the acid thereof into a regenerated nitre. On this principle depends the preparation deſcribed by Wilſon, under the title of *An excellent precipitate of mercury*; which is no other than a true turbith, tho' not generally known to be ſuch. It is made by diſſolving four ounces of nitrum vitriolatum in ſixteen ounces of ſpirit of nitre; diſſolving in this compound liquor four ounces of mercury; abſtracting the menſtruum in a ſand-heat; and edulcorating with water the gold-coloured maſs which remains.

Turbith mineral is a ſtrong emetic, and in this intention operates the moſt powerfully of all the mercurials that can be ſafely given in-

ternally. Its action however is not confined to the primæ viæ: it will sometimes excite a ptyalism, if a purgative is 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, it may 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 good 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, after the same manner as the *mercurius calcinatus* already spoken of. 'Dr Hope has found, that the turbith mineral is the most convenient errhine he has had occasion to employ.'

This medicine was lately recommended as the most effectual preservative against the hydrophobia. There are several examples of its preventing madness in dogs that had been bitten; and 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 other 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. See James's treatise on *Canine Madness*.

The washings of turbith mineral are used by some, externally, for the itch and other cutaneous foulnesses. 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 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.

Simple mercurial solution.

Joseph James Plenck.

'Take of

Purest quicksilver, one dram;
Gum arabic, two drams.

Beat them by turns in a stone mortar, adding by little and little distilled water of fumitory, till the mercury thoroughly disappear 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 also with the inconvenience of producing a salivation. By a long continued triture mercury seems to undergo a degree of calcination: at least

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 one another, till the triture requiſite to produce this change is 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 effecting the above change on 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 electric 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 diarrhœa and ſalivation to a remarkable degree. So far, then, 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.'

SECT. VIII.

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 regis.

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 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 is extremely ſmall, diaphoretic. Thus, though vegetable acids extract ſo little from this metal, that the remainder ſeems to have loſt nothing of its weight, the tinctures prove in no large 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, as eaſy of ſolution (partially) and as virulent in operation, as the regulus itſelf: the glaſs, thoroughly mingled with ſuch ſubſtances as prevent its ſolubility, as wax, reſins, and the like, is again rendered mild.

Vegetable acids, as already 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 good meaſure 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

triolic 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 from one fourth to one half its weight of sulphur), 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 deflagration 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 is more than sufficient to consume the sulphur, the rest of it, deflagrating 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 is long continued, the regulus is taken up, and rendered soluble in water.

Crocus antimonii medicinalis.

Medicinal crocus of antimony.

Take of
Antimony, eight parts;
Nitre, one part.
Mix, and throw them by little at a time, into a red-hot crucible: when the deflagration ceases, take the crucible out of the fire, and reduce the matter into powder.

This preparation is sufficiently mild, though considerably more active than the crude mineral: eighteen or twenty grains will in some constitutions operate, though very gently, both upwards and downwards. It appears to be nearly similar to the *medicinal regulus* hereafter described.

In this and the following processes with nitre, the operator must observe to throw into the crucible only a little of the matter at a time, and to wait till the deflagration of one parcel is over before another is added; for if much was put in at once, the deflagration would be so violent, that great part of the matter would be thrown over the crucible. The powder is most conveniently introduced by means of a small iron ladle: care must be taken not to bring back with the ladle any spark of coal, which would set fire to the rest of the mixture.

CROCUS ANTIMONII MITIOR.

The milder crocus of antimony.

Take of
Antimony, two parts;
Nitre, one part.
Mix them together, and throw the powder by degrees into a red-hot crucible. As soon as the deflagration ceases, remove the matter from the fire (without suffering it to melt), and reduce it into powder.

This preparation is called *Mitior*, not in regard to the crocus above described, but to that which follows. It acts much more powerfully than the foregoing; the increase of the nitre occasioning a greater quantity of the sulphur of the antimony to be dissipated. The London Committee received it in their first draught, with the character of an antimonial of mild operation, which had proved a successful medicine in numerous instances, without any one example of its being unsafe. Some trials, however,

afterwards reported to them, where the operation of this and the following crocus were compared, induced them to lay this preparation aſide. It appears to differ from the other only in being leſs violent.

CROCUS ANTIMONII.

Crocus of antimony, commonly called *Crocus metallorum, and by foreign writers, Hepar antimony*, or *Liver of antimony*.

Lond.

Take
Antimony,
Nitre, of each equal weights.

Reduce them ſeparately into powder; then mix, and inject them into a crucible heated to a white heat, that the mixture (after deflagration) may melt. Then pour it out, ſeparate the ſcoriæ, and reſerve the matter underneath them for uſe: it proves different in colour, according to the continuance of the heat; the longer it has been kept in fuſion, the yellower it will be.

Edinb.

The mixture of antimony and nitre, made as above, is to be injected into a red-hot crucible; when the detonation is over, ſeparate the reddiſh metallic matter from the whitiſh cruſt; 'beat it into a 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 we ſhall afterwards ſhow, that their 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 directed above; and without any farther melting than what enſues from the heat that 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 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 are 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 firſt of the above proceſſes.

CROCUS ANTIMONII LOTUS.

Waſhed crocus of antimony.

Lond.

Reduce the crocus into a very ſubtile powder, and boil it in water; then, throwing away this water, waſh the powder ſeveral times in freſh warm water until it becomes perfectly inſipid.

This proceſs is deſigned chiefly to fit the crocus for the preparation of emetic tartar, of which hereafter,

and

and of the antimonial emetic wine, page 307. If the crocus was employed for thoſe purpoſes without waſhing, the alkaline ſalt, which it is in ſome degree impregnated with from the deflagration of the nitre, would in part ſatiate the acids of the tartar and of the wine, and thus impeding their action on the metallic part of the antimony, render the medicines very precarious in ſtrength. That uncertainties of this kind may be the more effectually guarded againſt, the glaſs, or rather the pure regulus of antimony, is by ſome preferred to the crocus, both for the emetic tartar and wine. The Edinburgh College, as appears in the foregoing proceſs, does not allow the crocus to be kept in its unwaſhed ſtate, making the ablution a part of the preparation of it.

EMETICUM MITE ANTIMONII.

A mild antimonial emetic.

Take of
Antimony, one part;
Nitre, two parts.

Grind them together, and throw them by little and little into a red-hot crucible: when the deflagration is over, the remaining matter, which proves white, is to be waſhed for uſe.

The quantity of nitre is here ſo large, as to conſume not only the ſulphur of the antimony, but likewiſe great part of the inflammable principle of the regulus. Boerhaave, from whom this preparation is taken, informs us, that it is ſo mild as often to occaſion only ſome light nauſea and gentle vomiting, with a large diſcharge of ſaliva and thick urine. Its effects ſeem to be nearly the ſame with thoſe of the *Regulus medicinalis* and *Crocus medicinalis*.

CALX ANTIMONII.

Calx of antimony, commonly called *Diaphoretic antimony.*

Lond.

Take of
Antimony, one part;
Nitre, three parts.

Let the powdered antimony be well mixed with the nitre, and gradually injected into a crucible, heated to a light white heat; the matter being afterwards taken from the fire, is to be waſhed with water, both from the ſalt which adheres to it, and from the groſſer part that is leſs perfectly calcined.

Edinb. +

Take of
Antimony, half a pound;
Nitre, a pound and a half.

Reduce them ſeparately into powder, then mix them together, and throw the mixture, by a ſmall ladleful at a time, into a red-hot crucible: when the detonation is over, let the white maſs be calcined in the fire for half an hour longer; then powder, and keep it in a glaſs veſſel cloſely ſtopt.

This powder, unwaſhed, is called

ANTIMONIUM DIAPHORETICUM NITRATUM.

Nitrated diaphoretic antimony. +

When the powder is waſhed with freſh quantities of water, till the water comes off inſipid, it is called

ANTIMONIUM DIAPHORETICUM LOTUM.

Waſhed diaphoretic antimony.

The ſeveral waſhings, mixed together, filtered, and evaporated over a gentle fire till a cuticle forms

forms on the ſurface, yield in the cold cryſtals, called

NITRUM STIBIATUM.

Antimoniated nitre. +

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 (that under which it ſtands in the laſt of the above proceſſes) 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, as it is certainly among the mildeſt preparations of that mineral, may be uſed for children, and ſuch 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 in page 267, 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 ſtibiatum* is produced by the deflagration of the ſulphur of the antimony with the nitre, in the ſame manner as the *Sal polychreſt*, (page 486.) from which it differs no otherwiſe than in retaining ſome portion of the antimonial calx.

CALX ANTIMONII NITRATA.

Nitrated calx of antimony.
Edinb.

'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 as the matter ſhall be of a red colour, for an hour; then let it be taken out of the crucible, and, after

after beating it, waſh it repeatedly with warm water till it is inſipid.

'THIS preparation differs little from the *Antimonium diaphoreticum lotum*. Both of them are nearly complete calces of antimony. 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 theſe laſt proceſſes, 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 neutralized by the alkaline baſe of the nitre adhering to the calx. The *Calx antimonii nitrata* is ſuppoſed to be the famous James's powder, which has been ſo much celebrated of late years. But I know, that the original preparation, and on which the Doctor's heirs at preſent ſubſiſt, is conſiderably different from the one here directed.

'The *calx antimonii nitrata* has been thought preferable to 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 churliſh in its effects. The doſe is generally ten or twelve grains, and this is to be given all at once; an inconvenience not attending the emetic tartar, the quantity and effects of which we can generally meaſure with ſurpriſing minuteneſs.'

CERUSSA ANTIMONII.

Ceruſſe of antimony

Take of

Regulus of antimony, one part;
Nitre, three parts.

Deflagrate them together, as in the foregoing proceſs.

THE reſults of both proceſſes appear to be altogether 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 over-proportion of nitre than an under 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, (page 486.) As the regulus contains the phlogiſtic, or inflammable principle, but no ſulphur, the nitre is alkaliſed, as it would be by charcoal or other like inflammable bodies, (page 441.) 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.

RE-

REGULUS ANTIMONII MEDICINALIS.

Medicinal regulus of antimony. Edinb. †

Take of
Antimony, five ounces;
Sea-salt, four ounces;
Salt of tartar, one ounce.

Grind them into powder, and throw the mixture, by little at a time, into a red-hot crucible; occasionally breaking with an iron rod the crust that forms on the surface. When the fusion is completed, pour out the matter into a heated cone, gently shaking it now and then, or striking it on the sides, that the regulus may settle to the bottom: when grown cold, beat off the scoriæ, and grind the regulus into a powder, which is to be kept in a close-stopped phial.

This medicine is nearly similar in quality to one made with one-eighth of nitre, already described: in both processes the antimony is freed from a small portion of its sulphur, which is dissipated in flame by the nitre, and absorbed by the alkaline salt. This preparation is greatly celebrated by Hoffman, and other German physicians, in sundry obstinate chronical disorders, and esteemed one of the best antimonials that can be given with safety as alterants. It operates chiefly as a diaphoretic, and sometimes, though rarely, proves emetic. The dose is from three or four grains to twenty.

This regulus, reduced to a subtile powder, is the genuine *Febrifuge powder* of Craanius (*Pharm. Borusso-Brandenburg*, edit. 1734. page 107.) and has been greatly commended in all kinds of fevers, both of the intermittent and continual kind, (*Pharm. Argent.* 1725. page 252.) It is said that a dose or two have frequently removed these disorders, by occasioning either a salutary diaphoresis, or acting mildy by a stool or vomit. The colour of the levigated powder is a purplish brown. The antimonial emetic of Boerhaave, already mentioned, which is white, is nearly similar to it in its medicinal effects.

The common salt seems to be of no further use in the process, than as it serves to promote the fusion; and even for this it is not necessary. The medicine is said to be rather more mild and certain in operation if prepared without it.

'In regard to the uncertainty of its operation, see CALX ANTIMONII NITRATA.'

REGULUS ANTIMONII.

Regulus of antimony.

Take of
Antimony,
Nitre,
Crude tartar, of each equal parts.

Grind them separately into a powder; then mix, and rub them altogether. Throw the powder, at several times, into a red-hot crucible, taking care to break the crust which forms on the surface with an iron rod: when the detonation is over, let a strong fire be made, that the matter may flow like water: then pour it out into a warm greased cone, which is to be gently struck on the sides that the regulus may separate and fall to the bottom: when grown cold, let the regulus be cleared from the scoriæ that lie a-top of it.

In this process, (which is taken from the edition of the Edinburgh Pharmacopœia, published in the year 1744) an alkaline salt is produced from the nitre and tartar, in such quantity, as entirely to absorb the sulphur of the antimony: the alkali,

alkali, thus ſulphurated, will take up more or leſs of the reguline part, according to its quantity, and the continuance of the fuſion.

As the ingredients are above proportioned, the yield of regulus proves extremely ſmall, and if the fuſion is long continued, ſcarce perceptible, almoſt the whole of it being taken up into the ſcoriæ: in order to obtain the largeſt quantity, the nitre ought to be diminiſhed one half. It is convenient to rub the nitre and tartar together, and deflagrate them in an iron ladle or pan before their mixture with the antimony; for by this means, the loſs of ſome part of the antimony, which otherwiſe happens from the vehemence of the deflagration, will be prevented, a ſmaller crucible will ſerve, and leſs time and labour complete the proceſs.

The mixture of nitre and tartar deflagrated together, will reduce any of the antimonial calces (as the diaphoretic antimony, ceruſſe, or antimony calcined by itſelf) into regulus; the oily matter of the tartar ſupplying the inflammable principle, which all calces require for their revival into a metallic form; and the alkaline ſalt promoting their fuſion. It is the common reducing flux of the chemiſts; by whom it is called, from its colour, the *black flux*. The largeſt yield of regulus hitherto obtained from antimony, has been got by calcining it without addition, as directed hereafter for making glaſs of antimony, and reviving the calx by fuſion with this or other like compoſitions. Mr Geoffroy, who firſt communicated this method to the French Academy, ſeems to look upon ſoap (the ſubſtance he happened to make uſe of himſelf) as the only one that will ſucceed; but the effects of this are not different from thoſe of the foregoing flux. Both conſiſt of an alkaline ſalt, and an inflammable (not ſulphureous) ſubſtance, which are the only materials here neceſſary. Upon the whole, the moſt advantageous proceſs for obtaining this regulus, appears to be the following:

Let powdered antimony be calcined or roaſted over a gentle fire, as directed hereafter for making the the glaſs. Mix the calx with about equal its weight of ſome reducing flux, ſuch as the black flux above mentioned. Melt the mixture in a crucible, with a quick fire, and when in thin fuſion pour it into a cone, heated over a ſmoaky flame; the pure regulus will fall to the bottom, the ſcoriæ floating on the top.

REGULUS ANTIMONII MARTIALIS.

Martial regulus of antimony.

Take of
Antimony,
Nitre,
Crude tartar, of each one pound;
Small pieces of iron, half a pound.

Heat the iron in a crucible to a white heat; then gradually add the other ingredients, firſt powdered and mixed together, and proceed in the ſame manner as in the foregoing proceſs.

The nitre might here be diminiſhed to one-fourth its weight, and the tartar to half that quantity. The pieces of iron may be ſmall nails; the filings of the metal, lying cloſer together, are not ſo readily acted upon by the antimony.

REGULUS ANTIMONII STELLATUS.

Stellated regulus of antimony.

This is made by melting the martial regulus ſeveral times with freſh nitre and tartar.

The

The ſimple regulus of antimony is more readily made to exhibit a ſtarry appearance on its ſurface, than the martial; which it will alſo do by one, as well as by any number of fuſions: the phenomenon entirely depends upon the regulus being pure, brought into extreme thin fuſion, and cooled ſlowly in the cone, without ſhaking or moving it. If the martial regulus is employed, it is convenient to add ſome freſh antimony (about one-fourth the weight of the regulus) to abſorb ſuch part of the iron as may be retained in it: when the whole is in perfect fuſion, inject, at times, about one-eighth of nitre, or fixt alkaline ſalt, previouſly dried, and made very hot.

The foregoing reguli are at preſent rarely, if ever, made uſe of in medicine; the emetic cups, and perpetual pills, formerly made from them, have long been laid aſide as precarious and unſafe. Hence the Edinburgh College, which retained them all in the edition of their Pharmacopœia publiſhed in 1744, have at the late reviſal rejected them. It ſhould ſeem, however, that the pure regulus, though greatly too virulent to be taken by itſelf, might be employed to advantage for the making of ſome other preparations, particularly the antimonial wine and emetic tartar: for the uncertainty in ſtrength, which has often been complained of in thoſe medicines, appears to proceed chiefly from ſaline or ſulphureous matter in the antimonial preparation made uſe of for communicating the impregnation to the wine or tartar; and (except the calces, which are diveſted of the proper antimonial virtues) the regulus is the only form in which we can expect to have the metallic part of the antimony free from ſuch admixtures, the only antimonial preparation which we can depend on being always equal in its own degree of power.

The ſcoriæ produced in the foregoing proceſſes, afford medicines leſs violent than the regulus itſelf, ſome of which are in conſiderable eſteem. Theſe ſcoriæ conſiſt of the ſulphur of the antimony united with an alkaline ſalt, and a part of the regulus taken up by this compound, and rendered ſoluble in water.

SULPHUR AURATUM ANTIMONII.

Golden ſulphur of antimony.

Let the ſcoriæ of regulus of antimony be reduced into powder, whilſt warm, and then boiled for a conſiderable time in thrice their quantity of water. Filtre the yellowiſh red ſolution, and drop into it a proper quantity of ſpirit of vitriol: a powder will precipitate, which is to be waſhed with water, till perfectly edulcorated and freed from its ill ſmell.

SULPHUR ANTIMONII PRÆCIPITATUM.

Precipitated ſulphur of antimony. Lond.

Take of

Antimony, ſixteen ounces;
Tartar, a pound;
Nitre, half a pound.

Let theſe be reduced ſeparately into powder, then mixed, thrown by degrees into a red hot crucible, and melted with a ſtrong fire. Pour out the matter into a conical mould; the metallic part, commonly called *regulus of antimony*, will ſink to the bottom, the ſcoriæ ſwimming above it. Diſſolve theſe ſcoriæ in water, filtre the ſolution through paper, and precipitate the ſulphur by dropping in ſome ſpirit of ſea-

ſalt:

ſalt: laſtly, waſh the ſulphur from the ſalts, and dry it for uſe.

SULPHUR AURATUM ANTIMONII.

Golden ſulphur of antimony. Edinb.

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 thro' 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. That made by the firſt of the above proceſſes, contains greateſt part of the metal; for, as we have already ſeen, very little, ſometimes ſcarce any at all, ſeparates in the fuſion. The quantity of regulus taken up in the ſecond alſo will be different, according to the degreee of fire employed, and the length of time that the fuſion is continued. Theſe medicines therefore 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.

The foregoing preparations 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 ever preſcribed in 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 their effect.

'For the reaſon of the uncertainty of their operarion, ſee CALX ANTIMONII NITRATA.'

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 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. See the *Edinburgh Eſſays*. vol. i. and the *Acta Natur. Curioſ.* vol. v.

KERMES MINERALIS.

Kermes mineral.

Take of

Antimony ſixteen ounces;

Any

Any fixt 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 Chartreaux*, *&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 above-mentioned; 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 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 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 churliſhly. This laſt appears to be nearly of the ſame nature with the *Crocus antimonii*, and the former with the *Sulphur auratum*.

VI-

VITRUM ANTIMONII.

Glaſs of antimony.

Edinb.

'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 it at the ſame time continually ſtirring to prevent it 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 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 covered with a tile, and placed in a wind-furnace. Gradually increaſe the fire till the calx is 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 copper plate, 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 in the requiſite perfection without any addition.

As we have ſeen, in a former proceſs, antimony 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. It is employed chiefly in the preſent practice as being ſubſervient to ſome other preparations, particularly the emetic tartar and antimonial wine; and in combination with wax and ſome other ſubſtances by which its power is obtunded.

VITRUM ANTIMONII CERATUM.

Cerated glaſs of antimony. Edinb.

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 has for ſome time been greatly eſteemed in dyſenteries: ſeveral inſtances of its good effects, in theſe caſes, may be ſeen in the fifth volnme 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 its 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.

Mr Geoffroy gives two pretty ſingular preparations of glaſs of antimony, which ſeem to have ſome affinity with this. One is made by digeſting the glaſs, moſt ſubtilely 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 Hartmann, 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.

ANTIMONIUM CATHARTICUM

The purging antimony of Wilſon.

Take four ounces of glaſs of antimony, finely powdered, and gradually pour thereon twelve ounces of oil of vitriol; diſtil in a ſand-heat; and waſh the powder, which remains in the bottom of the retort, till all its acrimony it is loſt: then dry it, and grind it with an equal weight of Glauber's cathartic ſalt, and a double quantity of vitriolated nitre. Let this mixture be kept a quarter of an hour in gentle fuſion in a crucible; and afterwards pulveriſed, waſhed, and dried for uſe.

Mr Wilſon, the inventor of this preparation, informs us, that it is the moſt certain antimonial purge he ever met with; that it operates without naufeating the ſtomach; and that by the uſe of this powder only,

only, he knew three confirmed poxes cured. His dose is from two grains to ten.

We have already observed, that the glass of antimony contains a part of the regulus not fully divested of its inflammable principle. The vitriolic acid and neutral salts containing this acid, absorb the inflammable principle from sundry metallic and other bodies; and on this probably depends the mitigation of the glass in the present process.

CAUSTICUM ANTIMONIALE.

The antimonial caustic.
Lond.

Take of
Crude antimony, one pound;
Corrosive mercury sublimate, two pounds.

Reduce them separately into powder; then mix, and distil them in a wide-necked retort, with a gentle sand-heat. The matter which arises into the neck of the retort is to be exposed to the air, that it may run into a liquor.

CAUSTICUM ANTIMONIALE, vulgo BUTYRUM ANTIMONII.

Butter of antimony.
Edinb.

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.

These processes are extremely dangerous, insomuch that even the life of the operator, though tolerably versed in common pharmacy, may be affected for want of taking due care herein. 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 in its liquid state, and cannot be effected, unless (as in the case of making sublimate) either the acid is 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. We owe the account of this simpler and less expensive method to the author of the notes to the English translation of Fourcroy's Chemistry.' If regulus

of antimony was added in the diſtillation of ſpirit of ſea-ſalt without water, a ſolution would alſo be made.

When the congealed matter that ariſes into the neck of the retort is liquefied 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 liquefied by the air, the addition of water will precipitate the ſolution.

CINNABARIS ANTIMONII.

Cinnabar of antimony.

Lond.

Let the matter, which remains in the retort after the diſtillation of the cauſtic, be ſublimed in a coated matraſs, in an open fire.

Edinb. †

As ſoon as red vapours begin to appear in the diſtillation of the butter, change the receiver, without luting the junctures; and increaſe the fire until the retort becomes intenſely red-hot: in an hour or two the whole of the black powder will be ſublimed, and its colour changed into red. Then break the retort, and diligently ſeparate the cinnabar, which will be found in the neck, from the black droſſy matter.

The cinnabar of antimony is compoſed of the ſulphur of the antimony, and the mercury of the ſublimate, which are perfectly the ſame with the common brimſtone and quickſilver, of which the *cinnabaris factitia* is made. The antimonial cinnabar therefore, whoſe ingredients are laborioufly extracted from other ſubſtances, is not different from the common cinnabar made with the ſame materials, procured at a much cheaper rate. The former indeed is generally of a darker colour than the other, and has ſomewhat of a needled appearance, like that of antimony itſelf; from whence it has been ſuppoſed to participate of the metallic part of that mineral. But it appears from experiment, that both the colour and needled form are entirely accidental, and owing to the mixture containing a larger proportion of ſulphur, and being ſublimed in a more languid manner.

MERCURIUS VITÆ, ſeu PULVIS ALGEROTHI.

Mercury of life, or *Algeroth's powder.*

Take of

Rectified butter of antimony, as much as you pleaſe.

Pour to it a ſufficient quantity of ſpring water, and an exceeding white powder will be precipitated; edulcorate this by repeated affuſions of warm water, and dry it by a ſlow fire.

This powder has not, as its name ſhould ſeem to imply, any thing of mercury in it; but is ſolely compoſed of the reguline part of the antimony, corroded by the acid ſpirit of ſea-ſalt; which acid is ſo cloſely united, as not to be ſeparated by any ablution with water. Le Mort directs ſome alkaline ſalt to be diſſolved in the water, in order to obtund the acid: Several other methods alſo have been contrived for correcting and abating the force of this violent emetic; but they either leave

leave it ſtill virulent, or render it inert. It has therefore for a long time been laid aſide by practitioners. 'The Edinburgh College have lately received a proceſs of this kind as ſubſervient to the preparation of emetic tartar.'

BEZOARDICUM MINERALE.

Bezoar mineral.

Take any quantity of butter of antimony newly rectified, and gradually drop into it ſpirit of nitre till the effervescence ceaſes. Draw off the ſpirit in a glaſs veſſel, placed in a ſand-heat, till a dry powder remains behind: add to this a little freſh ſpirit of nitre, and again exſiccate it. Repeat this a third time; then commit the powder in a crucible to a naked fire till it has received an almoſt white heat, and detain it in this ſtate for half an hour.

This preparation may be eaſier made, and with greater ſafety to the operator, by dropping the butter of antimony into three or four times its weight in ſpirit of nitre, and diſtilling the mixture in a retort, until a dry white maſs is left behind, which is afterwards to be calcined, as above directed. It may likewiſe be made by diſtilling ſpirit of nitre from the mercurius vitæ, and calcining the remainder; or by deflagrating the mercurius vitæ with thrice its weight of pure nitre. This laſt method, propoſed by Wedelius, is followed by the Auguſtan College.

Bezoar mineral was formerly held in great eſteem as a diaphoretic; but its reputation is at preſent almoſt loſt. It is not different in medical virtue, or in any ſenſible quality, from the calces of antimony made directly by deflagration with nitre; ſome of which have generally ſupplied its place in the ſhops. It appears at firſt pretty extraordinary, that the violent cauſtic butter of antimony ſhould be rendered indolent by the corroſive ſpirit of nitre. How this happens will be eaſily underſtood, upon conſidering, that the nitrous acid expels the marine (to which the cauſtic quality of the butter is owing), and is itſelf expelled from moſt metallic ſubſtances by fire.

TARTARUM EMETICUM.

Emetic tartar.

Lond.

Take of
- Waſhed crocus of antimony,
- Cryſtals of tartar, each half a pound;
- Water, three pints.

Boil them together for half an hour; then filtre the liquor, and after due evaporation ſet it by to cryſtalliſe.

Edinb. †

Take of
- Cream of tartar, four ounces;
- Glaſs of antimony, powdered, two ounces.

Boil them together in ſix pints of water for ten hours, ſtirring them frequently with a ſpatula, and adding more water as there is occaſion. Filtre the liquor while warm, and evaporate it either to dryneſs, or only till a pellicle forms, that it may ſhoot into cryſtals.

It may likewiſe be prepared in the ſame manner from the *Crocus metallorum* waſhed.

'Take of
- Antimonial cauſtic what quantity you pleaſe.

Infuſe it in warm water in which purified fixed vegetable alkali alone hath 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, crystals of tartar, beat into a very fine powder, two ounces and a half; boil for a little till the powders are dissolved.

Let the strained solution be slowly evaporated in a glass vessel to a pellicle, so as crystals may be formed.

'We have retained the formula directed for this preparation in the former editions of the Edinburgh Pharmacopœia. The reason of this innovation, and which was first started by Mr Macquer, seems to have been a suspicion, that the degree of calcination suffered by the metal before its fusion must be various in different glasses of antimony. But we are not certain whether the transparency of the glass may not be taken for an equally sure test of the degree of calcination of the regulus, as the precipitation from an acid, and by an alkali, both of which must frequently differ, and considerably vary the process in the hands of different apothecaries. Whether the glass of antimony or this precipitated powder is employed, some attention is required in collecting the crystals, as some of them shoot which contain no metal. 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 other 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 those 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 of sulphur and phlogiston. It is equally plain, that the preparations coming under our second head, must be always constant and certain in their operation. Such a one is emetic tartar, whose dose and effects we can measure with amazing 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 vegetable 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 like 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.'

SECT.

SECT. IX.

Preparations of Bismuth.

THIS metal resembles in appearance the regulus of antimony, but differs greatly from it in its pharmaceutical properties and medical qualities. It melts in a very small heat, long before ignition; and totally dissolves, with great effervescence, in aquafortis, which only corrodes the antimonial metal. As a medicine, it seems, when pure, to have little or no effect, though some preparations of it were formerly accounted diaphoretic. At present, only one preparation comes under the notice of the apothecary or chemist, and that designed for external use.

Magisterium bismuthi.
Magistery of bismuth.

Dissolve bismuth in a proper quantity of aquafortis, without heat, adding the bismuth by little and little at a time. Pour the solution into sixteen times its quantity of fair water; it will grow milky, and on standing for some time deposite a bright white precipitate: the addition of spirit of wine will expedite the precipitation. Wash the powder in fresh parcels of water, and dry it in a shady place betwixt two papers.

This preparation is of some esteem as a cosmetic, which is the only use it is now applied to. The diaphoretic virtues attributed to it when taken internally, have very little foundation, and by the present practice are not at all regarded. It was proposed to be received in our Pharmacopœia at the late revisal, but was found much too insignificant to be admitted there.

SECT. X.

Preparations of Zinc.

THIS metal melts in a red heat; and, if the air is admitted, flames, and sublimes into light, white, and down flowers; if the air is excluded, it arises, by a strong fire, in its metallic form. Sulphur, which unites with, or scorifies all the other metals except gold, does not act on zinc. Acids of every kind dissolve it.

Zinc, its flowers or calces, and solutions, taken internally, prove strong and quick emetics: in small doses, they are said to be diaphoretic. Externally, they are cooling, astringent, and deiccative.

Purificatio zinci.
Purification of zinc.

Melt zinc with a heat no greater than is just sufficient to keep it fluid. Stir it strongly with an iron rod, and throw in alternately pieces of sulphur and of tallow, the first in largest quantity. If any consistent matter, or scoria, forms on the top, take it off, and continue the process, until the sulphur is found to burn freely and totally away on the surface of the fluid zinc.

Zinc usually contains a portion

of lead, which this process effectually separates. Sulphur united with lead forms a mass which does not melt in any degree of fire that zinc is capable of sustaining.

Flores zinci.
Flowers of zinc.
Edinb.

'Let a large crucible be placed in a furnace, in an inclined situation, only half upright; when the bottom of the vessel is moderately red, put a small piece of zinc, about 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 combustion 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 repeated as often as you please. Lastly, the calx is to be prepared like antimony.'

These flowers are preferable for medicinal purposes to tutty, and the more impure sublimates of zinc, which are obtained in the brass works; and likewise to calamine, the natural ore of this metal, which contains a large quantity of earth, and frequently a portion of heterogeneous metallic matter. 'The flowers of zinc, in doses from one to seven or eight grains, have been much celebrated of late years in the cure of epilepsy and several spasmodic affections; and there are sufficient testimonies of their good effects, where tonic remedies in those affections are proper.'

VITRIOLUM ALBUM.
White vitriol.
Edinb.

'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.

SECT. XI.

Compound Metallic Preparations.

LAPIS MEDICAMENTOSUS.
The medicinal stone.
Lond.

TAKE of
Litharge,
Bole armenic, or French bole,
Alum, each half a pound;
Colcothar of green vitriol, three ounces;
Vinegar, a quarter of a pint.
Mix and dry them till they grow hard.

This preparation is employed externally as an astringent, for fastening loose teeth, preserving the gums, healing and drying up ulcers and wounds, and repressing defluxions of thin acrid humours upon the eyes. It is sometimes used in injections for

for checking a gonorrhœa, after the virulence is expelled. A preparation much reſembling this is ſaid, in the Memoirs of the French academy, to be greatly eſteemed among the ſurgeons in the army as a vulnerary.

Specificum adstringens Maetzii.

An aſtringent preparation taken from Maetz, which has been ſold under the name of Colbatch's ſtyptic powder.

Take any quantity of iron filings, and as much ſpirit of ſalt as will riſe above them three or four inches. Digeſt them together with a gentle heat till the ſpirit ceaſes to act on the metal; then pour off the liquor, evaporate it to one half, and add thereto an equal weight of ſugar of lead. Continue the evaporation, with a ſmall heat, until the matter remains dry, and aſſumes a red colour.

If the proceſs is ſtopt as ſoon as it becomes dry, it has exactly the appearance of Colbatch's powder. It muſt be kept cloſe from the air, otherwiſe it deliquates.

This is ſaid to be the ſtyptic with which ſo much noiſe was made ſome time ago, by the author of the *Novum lumen chirurgiæ*, and for the ſale of which a patent was procured: only in that was uſed oil of vitriol, inſtead of the ſpirit of ſalt in this; a difference not very material. The preparation ſtands recommended in all kinds of hæmorrhagies and immoderate fluxes, both internally and externally; the doſe is from four grains to twelve. It is undoubtedly an efficacious ſtyptic, but for internal uſe a dangerous one. See the article Lead, and its *Preparations*.

Antihecticum Poterii.

Poterius's antihectic.

Take of

Martial regulus of antimony, ſix ounces;

Fine tin, three ounces.

Melt theſe together in a crucible; then pour them out into a warm greaſed mortar, and when the maſs is grown cold, grind it into a powder. Add to this thrice its weight of pure nitre, and deflagrate the mixture in a crucible, throwing in only a ſpoonful at a time; then calcine it [that is, keep it in fuſion] for an hour; and having afterwards ground it into an impalpable powder, pour thereon a ſufficient quantity of warm water: ſtir them well together with a peſtle, till the water grows milky; which, thus loaded with the finer parts of the powder, is to be poured off, and freſh water put to the remainder: repeat this operation till nothing but indiſſoluble feces remain behind. Suffer all the milky liquors to reſt; a powder will fall to the bottom, which is to be waſhed with repeated affuſions of warm water, and laſtly dried for uſe.

The regulus of antimony ſhould be melted before the tin is added to it; for if they both are put into the crucible together, a part of the tin will be diſſipated by the heat requiſite for the fuſion of the regulus.

The chemiſts have been greatly divided with regard to the proportion which theſe two ingredients ought to bear to one another. Some vary ſo much from the above preſcription, as to order two parts of the antimonial regulus to one of tin; others no more than one part of the former to ſix of the latter. Nor have they agreed upon the colour which this preparation ought to have; ſome preferring that which is perfectly

fectly white; whilſt others look upon a blueiſh tinge as a mark of the proportions having been duly obſerved, and the operation regularly performed: in the proceſs above, it ſeems intended to be white; for without the obſervance of certain encheireſes, not there mentioned, as particularly calcining the powder after the ablution, it will ſcarce have any thing of a blueiſh caſt.

Practical phyſicians do not differ leſs in the accounts which they give of the virtues of this celebrated medicine. Some extol it as an excellent diaphoretic, &c. others are ready to vouch, that it has done moſt eminent ſervice in hectical caſes; whilſt many, of no ſmall note, are not only confident that it has none of the virtues attributed to it, but utterly condemn is as unſafe, and capable of producing the very diſorders ſaid to be remedied by its uſe. This affair probably will not be ſatisfactorily determined till the virtues of *calx of tin* and *calx of antimony* (which this medicine is a mixture of) ſhall be better aſcertained than they are at preſent. In the mean time, the uſe of the *antihectic* is in common practice laid aſide; and is not likely to be ever introduced again.

Bezoardicum Joviale.
Bezoar with tin.

Take of
- Regulus of antimony, three ounces;
- Pure tin, two ounces;
- Corroſive ſublimate mercury, five ounces;

Melt the regulus of antimony in a crucible, and put to it the tin, ſo as to make a new regulus; to which, after being levigated, add the corroſive ſublimate, and diſtil the mixture in a retort. Let the butter which ariſes in this proceſs be fixed by three repeated diſtillations with thrice its own quantity of ſpirit of nitre. The powder is then to be calcined; thrown, whilſt ignited, into a proper quantity of ſpirit of wine, and afterwards dried for uſe.

This preparation is not greatly different from the foregoing. The butter ſeems to contain more of the tin than of the antimonial regulus, united with the marine acid of the ſublimate: the nitrous ſpirit expels the marine, and is itſelf afterwards expelled in the calcination; leaving the powder a mere calx, ſimilar to one prepared from the ſame ingredients in a leſs troubleſome manner, by deflagration with nitre.

Æthiops antimonialis.
Antimonial ethiops.

Let equal quantities of antimony and ſea ſalt be melted together in a crucible for an hour; when grown cold, a regulus (improperly ſo called) will be found in the bottom; which is to be ſeparated from the ſcoriæ that lie above it, and ground with an equal weight of purified quickſilver until they are united.

This medicine is ſaid to be of remarkable efficacy in venereal caſes of long ſtanding in cancerous tumours, ſcorbutic and ſcrophulous diſorders, obſtinate glandular obſtructions, and ſundry other chronical diſtempers which elude the force of the common medicines. A few grains may be given at firſt; and the doſe gradually increaſed according to its operation, to a ſcruple or more. It acts chiefly by promoting perſpiration: in ſome conſtitutions, it proves purgative; and in others, if the doſe is conſiderable, emetic.

Sundry other preparations of this kind have of late been held by ſome people in conſiderable eſteem, tho'

not

not taken notice of by common practice They have been generally compoſed of mercury united by triture either with crude antimony, the medicinal regulus, or the golden or precipitated ſulphur.

Mr Malouin, of the faculty of Paris, made trial of different methods for uniting mercury and crude antimony into an ethiops. Thoſe which ſucceeded, I ſhall here extract from his *Chemie Medicinale.*

On grinding together two parts of antimony and one of mercury, the mercurial globules diſappeared in three hours, and the compound proved ſimilar in appearance to the ethiops made with the ſame proportions of mercury and common ſulphur. Equal parts of the antimony and mercury were much more difficultly united, requiring the triture to be continued for two days; tho' it was found alſo, even with theſe proportions, that when the mercury was added, not all at once, but by little and little, the union might be effected in five hours. As common ethiops is made more perfect, in regard to the intimate union of the ingredients, by heat than by triture; the moſt perfect antimonial ethiops alſo was obtained by means of fire in the following manner:

A heated crucible is to be rubbed in the inſide with tallow, immediately covered, and ſet in the fire. When red-hot, throw in the antimony beaten into coarſe powder, and cover the veſſel again. When the antimony is melted, take the crucible out of the fire, throw in a ſmall bit of tallow, pour an equal weight of heated mercury on different parts of the ſurface, cover the crucible for a moment, and, while the mixture is ſtill fluid, pour it out into a heated iron mortar. When grown cold, reduce it into a powder, which is be levigated on a marble.

On this black powder the author directs ſome ſpirit of wine to be burnt two or three times; an article which may very ſafely be omitted, as it can nowiſe affect the medicine. The only difficulty in the proceſs relates to the degree of heat of the melted antimony: if it is not ſufficiently fluid, the mercury cannot equally unite with it; and if over hot, great part of the mercury will be diſſipated.

Mr Malouin commends this ethiops as a medicine of great efficacy in glandular obſtructions, obſtinate cutaneous maladies of different kinds, inveterate rheumatiſms, &c. It acts moſt commonly by urine and perſpiration, rarely purges, or occaſions only ſome ſlight nauſea. The doſe is from one grain to twenty, two or three times a-day, that is, from one to ſixty grains in a day. In ſome perſons a dram has no ſenſible operation; others are moved by ſix grains.

PART IV.

Medicinal Compoſitions.

CHAP. I.

POWDERS.

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 tenacious in the mouth; fixt alkaline ſalts liquefy upon expoſing the compoſition to the air; and volatile alkalis 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 is 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 in, 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

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 [*E.*] +

II.

The dry aromatics ought to be ſprinkled, during their pulveriſation, with a few drops of any proper water [*E.*] +

III.

The moiſter aromatics may be dried with a very gentle heat, before they are committed to the mortar [*E.*] +

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 [*E.*] +

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 ſtopt [*E.*] +

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, as the college of Wirtemberg obſerves, if the powdered root be expoſed for a length of time to the air, it loſes its emetic quality.

PULVIS ANTILYSSUS.

Powder againſt the bite of a mad dog.

L. E. +

Take of

Aſh-coloured ground liverwort, two ounces;

Black pepper, one ounce.

Beat them together into a powder.

In our former Pharmacopœia, the quantity of pepper was equal to that of the herb; which rendering the powder greatly too hot, the above diminution of it became neceſſary. 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. See page 169.

PULVIS ARI COMPOSITUS.

Compound powder of arum.

Lond.

Take of

Arum root, freſh dried, two ounces;

Yellow water-flag roots,

Burnet ſaxifrage roots, each one ounce;

Crabs-eyes prepared,

Cinnamon, each half an ounce;

Salt of wormwood, two drams.

Beat them into a powder, which is to be kept in a cloſe veſſel.

In former editions of the London Pharmacopœia, 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 compounders generally took the former. But as the medicine

medicine was firſt contrived by a German phyſician, Birkmann, and as in ſome of the German pharmacopœias the *acorus vulgaris* is explained to be the water-flag, the London College have now, 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 one another only in name (ſee page 439.), one of them is here juſtly omitted, and ſupplied by a proportionable increaſe of the other. Poſſibly the prepared crabs-eyes might alſo have been dropt, unleſs they are intended to augment the volume of the medicine (an intention not very neceſſary in this compoſition), for they do not appear to have any medicinal virtue which alkaline ſalts do not poſſeſs in a greater degree.

Agreeably to the above remark in a former edition of this book, the College of Edinburgh, in a reviſal of their Pharmacopœia, 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:

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.

The *pulvis ari compoſitus* 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, of which I have known ſome inſtances: 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 e BOLO COMPOSITUS ſine OPIO.

Compound powder of bole without opium.
Lond.

Take of
- Bole armenic, or French bole, half a pound;
- Cinnamon, four ounces;
- Tormentil root,
- Gum arabic, each three ounces;
- Long pepper, half an ounce.

Reduce theſe ingredients into powder.

PULVIS e BOLO COMPOSITUS cum OPIO.

Compound powder of bole with opium.
Lond.

Take of opium ſtrained, three drams.

Dry it a little, ſo as to render it eaſily pulverable; and add to it the foregoing ſpecies, that they may all beat into a powder together.

THIS powder, with opium, is a reform of the ſpecies of Fracaſtorius's confection, commonly called *diaſcordium;* conſiſting only of ſuch of the ingredients of that compoſition as are moſt conducive to the intention for which it is at preſent preſcribed. Forty-five grains of the powder contain one of opium.

The powder is directed to be kept in the ſhops without opium, for caſes where the aſſiſtance of that drug is not wanted. It is a warm, glutinous aſtringent; and is given in fluxes, or other diſorders, where medicines of this claſs are proper, in doſes of a ſcruple or half a dram.

PULVIS e CERUSSA. COMPOSITUS.

Compound powder of ceruſſe. Lond.

Take of
Ceruſſe, five ounces;
Sarcocolla, an ounce and a half;
Gum tragacanth, half an ounce.
Beat them together into a powder.

THIS compoſition is the *trochiſci albi* of Razi, 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.

Compound powder of crabs-claws. Lond.

Take of
The tips of crabs-claws prepared, one pound;
Pearls prepared,
Red coral prepared, each three ounces.
Mix them together.

Edinb. †

Take of
Red coral prepared, one ounce;
Black tips of crabs-claws prepared, two ounces.
Mix them together.

THESE powders have loſt ſeveral of their ingredients, without any injury to their virtues; and poſſibly they would ſtill bear a farther reduction; for both the crabs eyes and claws are by themſelves at leaſt as effectual as any compoſition of them with pearls and coral. In ſome of our hoſpitals, the following compoſition is ſubſtituted.

PULVIS TESTACEUS COMPOSITUS.

Compound teſtaceous powder.

Take of
Oyſterſhells prepared, one pound;
White chalk, half a pound.
Mix them together.

THIS cheap abſorbent powder is at leaſt equally valuable, as a medicine, with the more coſtly and compounded crabs-claw and bezoardic powders of the ſhops. Theſe kinds of preparations are given from half a ſcruple to half a dram, for abſorbing or deſtroying acidities in the firſt paſſages; which ſeems to be the only good effect that can be reaſonably expected from theſe ſimple antacid earths. If they meet with no acid to diſſolve them, they promiſe to be injurious rather than beneficial (ſee page 85.) They have often been given in fevers, under the notion of alexipharmacs and ſudorifics, from a ſuppoſition that theſe diſorders are occaſioned by a latent acid; and, though this theory is now exploded, the practice built upon it is, in good meaſure, ſtill continued. So far are abſorbents from being uſeful in theſe caſes, that ſubſtances of a directly con-

contrary quality, mild acidulous liquors, are in general the moſt ſucceſsful remedies, wherever the vis vitæ is not too far depreſſed; and where it is, the inſipid indolent earths can contribute nothing to ſupport or raiſe it.

It may here be proper to take notice of a quality hitherto little expected from theſe kinds of ſubſtances; that of ſtrongly promoting putrefaction. Fleſh mixed with a ſmall proportion of chalk, and expoſed to a heat equal to that of the human body, not only corrupts ſooner than without this addition, but likewiſe in a far greater degree, reſolving in a few days into a perfect mucus. This quality of the abſorbent powders (for the diſcovery of which, with many other curious experiments on the ſame ſubject, the public is obliged to the ingenious Dr Pringle), ſeems to forbid their uſe in all thoſe kinds of fevers where the animal juices are already too much diſpoſed to a putrefactive ſtate. We have above obſerved, that, in theſe caſes, though very frequently employed, they are at beſt unſerviceable; perhaps their ill effects would be oftener ſeen, if it was not for the quantity of acids uſually given in acute diſeaſes.

'The moſt eligible formula for this kind of powder, is the following:

PULVIS CRETACEUS.

Chalk powder.

Edinb.

'Take of
White chalk prepared, four ounces;
Nutmeg, half a dram;
Cinnamon, one dram.
Mix and make them into a 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.'

PULVIS BEZOARDICUS.

Bezoardic powder.

Lond.

Take of
Compound powder of crabs-claws, one pound;
Oriental bezoar prepared, one ounce.
Mix them together.

Bezoar has hitherto been an ingredient in the foregoing compoſition, which was then called Gaſcoigne's powder; though notwithſtanding the addition which this article made to the price, it added nothing to the virtue of the medicine. The College of London has therefore very prudently directed an abſorbent powder without this coſtly article; and compoſed another, diſtinguiſhed by its name, for the uſe of thoſe who expect any particular virtues from it. The Edinburgh College have entirely expunged this unneceſſary drug; and take no farther notice of it in their Pharmacopœia, than barely giving it a place in the catalogue of ſimples.

PULVIS CONTRAYERVÆ COMPOSITUS.

Compound powder of contrayerva.

Lond.

Take of
Compound powder of crabs-claws, a pound and a half;
Contrayerva root, five ounces.
Make them into a powder.

Edinb. †

Take of
Contrayerva root, ſix drams;
Virginian ſnakeroot, two drams;
Engliſh ſaffron, one dram;

Compound powder of crabs-claws, two ounces.
Make them into a powder.

THESE powders were formerly directed to be made up into balls with water, (and 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. Theſe medicines have a much better claim to the title of an alexipharmac and ſudorific than the two foregoing compoſitions. The contrayerva, ſnakeroot, and ſaffron, by themſelves are ſuch, and prove 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 theſe powerful ingredients, and render them ſupportable to the ſtomach.

PULVIS ad EPILEPTICOS de GUTTETA dictus.

Epileptic powder.
Edinb. †

Take of
Wild valerian root,
Peony root, of each equal parts.
Make them into a powder.

THIS powder has undergone a great reduction of its ingredients, to its advantage as a medicine; the articles rejected being either inſignificant, or at beſt far inferior to thoſe retained, and conſequently increaſing the bulk of the compoſition, without communicating a proportionable ſhare of efficacy. Perhaps, for the ſame reaſon, the peony roots are not altogether unexceptionable. The powder, however, as now reformed, may be looked on as a medicine of ſome importance for the purpoſes expreſſed in its title; far ſuperior to thoſe of ſimilar intention in other pharmacopœias. The doſe is from ten grains to half a dram for children, and from half a dram to two drams for adults. The abſorbent powders, generally directed in theſe kinds of compoſitions, are here more prudently omitted, as they may eaſily be mixed extemporaneouſly, where particular caſes may require them. For children, theſe additions are often neceſſary, as in moſt of their diſorders acidities in the firſt paſſages have a conſiderable ſhare: in adults, they are rarely of uſe.

PULVIS e MYRRHA COMPOSITUS.

Compound powder of myrrh.
Lond.

Take of
Rue leaves, dried,
Dittany of Crete,
Myrrh, each an ounce and a half;
Aſafetida,
Sagapenum,
Ruſſia caſtor,
Opoponax, each one ounce.
Beat them together into a powder.

THIS is a reformation of the *trochiſci e myrrha*, a compoſition contrived by Razi 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 ad PARTUM.

Powder to promote delivery.
Edinb. †

Take of
Borax, half an ounce,

Caſtor,
Saffron, each a dram and a half;
Oil of cinnamon, eight drops.
Oil of amber, ſix drops.
Beat the ſpecies together into a powder, to which add the oils, and mix the whole well together.

THIS medicine has long been held in eſteem for the purpoſe expreſſed in its title: nevertheleſs its real efficacy, and what ſhare thereof is owing to each of the ingredients, has not been ſufficiently determined. The doſe is from a ſcruple to a dram, or ſo much as can be conveniently taken up at once on the point of a knife. It ſhould be kept in a very cloſe veſſel, otherwiſe it will ſoon loſe a conſiderable deal of its more valuable parts. 'It is not, however, probable that any ſubſtances of this kind are by any means equal to wine, opium, and leſs complicated remedies. Nor do we think that any ſubſtance in nature deſerves ſuch a general title as is given to this trifling powder. The impediments to delivery muſt depend on a variety of circumſtances, to obviate which, an equal variety of remedies is required. Such a general title to any one remedy, might therefore do much harm with empirical people, by leading the more timid to an inert and trifling, and the bold to a ſevere and baneful practice.'

PULVIS e SCAMMONIO COMPOSITUS.

Compound powder of ſcammony. Lond.

Take of
Scammony, four ounces;
Calcined harſhorn prepared, three ounces;
Grind them diligently together into a powder.

HERE the ſcammony is divided by the earthy calx, and thus rendered ſomewhat more ſoluble, and leſs adheſive; hence its purgative quality is promoted at the ſame time that it becomes leſs griping. The doſe of the compound is from fifteen grains to half a dram.

This powder has been uſually prepared with diaphoretic antimony and cryſtals of tartar (inſtead of the calcined hartſhorn above directed) and called from its firſt publiſher, PULVIS CORNACHINI; which, in 'a former edition of' the Edinburgh Pharmacopœia, was thus directed:

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 in the preceding formula. It appears probable, that neither of theſe ingredients are of any farther uſe, than as they divide the texture of the ſcammony; tho' Cornachini propoſes notable 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.

'In the preſent edition of the Edinburgh Pharmacopœia, this preparation ſtands thus:

'Take of
Scammony,
Cryſtals of tartar, of each two ounces.
Mix, and grind them diligently into a powder.'

PUL-

PULVIS e SENA COMPOSITUS.

Compound powder of ſenna.
Lond.

Take of
Cryſtals of tartar,
Senna, each two ounces;
Scammony, half an ounce;
Cloves,
Cinnamon,
Ginger, each two drams.
Powder the ſcammony by itſelf; and all the other ingredients together; then mix them.

PULVIS DIASENNÆ.

Edinb. †

Take of
Cream of tartar,
Senna, each two ounces;
Scammony,
Ginger, each half an ounce.
Make them into a powder.

THESE powders are given as cathartics, in the doſe of two ſcruples, or a dram. The ſpices are 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.

PULVIS STERNUTATORIUS.

Sternutatory powder.
Lond.

Take of
Aſarum,
Marjoram,
Marum Syriacum leaves, dried,
Lavender flowers, dried, each equal weights.
Rub them together into a powder.

PULVIS STERNUTATORIUS, ſive CEPHALICUS.

Sternutatory, or *Cephalic powder.*
Edinb.

'Take of
The leaves of aſarum, three parts;
Marjoram, one part.
Beat them together into a powder.'

THE titles of theſe powders ſufficiently expreſs their intention. They are both agreeable and efficacious errhines, and ſuperior to moſt of thoſe uſually ſold under the name of *herb ſnuff.*

PULVIS STYPTICUS.

Styptic powder.
Edinb.

'Take of
Alum, an ounce and a half;
Gum kino, three drams.
Grind them together into a fine powder.

'IN former editions of this 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 certain aſtringent. The chief uſe of this powder is in hæmorrhagies, eſpecially of the uterus.'

PULVIS e SUCCINO COMPOSITUS.

Compound powder of amber.
Lond.

Take of
Amber prepared,
Gum arabic, each ten drams;
Juice of hypociſtis,
Balauſtines,
Japan earth, each five drams;
Olibanum, half an ounce;
Strained opium, one dram.
Beat them together into a powder.

THIS powder is compoſed of the more unexceptionable ingredients of the TROCHISCI E CARABE of our former Pharmacopœia. The articles omitted, which are as many in number as thoſe now retained, were manifeſtly abſurd or ſuperfluous; and the making it up into troches a very unneceſſary trouble. The medicine, as now reformed, may be looked upon as a tolerably elegant aſtringent; though poſſibly the ingredient, which it receives name from, contributes little to its virtue. Two ſcruples of the compoſition contain one grain of opium.

PULVIS e TRAGACANTHA COMPOSITUS.

Compound powder of gum tragacanth.
Lond.

Take of
Gum tragacanth,
Gum arabic,
Marſhmallow root, each an ounce and a half;
Starch,
Liquorice, each half an ounce;
Double-refined ſugar, three ounces.
Grind them into a powder.

PULVIS DIATRAGACANTHI.

Edinb. †

Take of
Gum tragacanth, one ounce and a half;
Marſhmallow root,
Liquorice,
Starch, each half an ounce.
Beat them together into a powder.

BOTH theſe powders are mild emollients; and hence become 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 marſhmallow root, however, is ſomewhat too bulky for this form, and likewiſe ſubjects the compoſition to grow mouldy in keeping, an inconvenience which the cold ſeeds formerly employed in theſe powders were particularly liable to. The doſe is from half a dram to two or three drams, which may be frequently repeated.

HIERA PICRA.

Lond.

Take of
The gum extracted from Socotorine aloes, one pound;
Canella alba, three ounces.
Beat them ſeparately into powder, and then mix them together.

Pulvis HIERA PICRA dictus.

Edinb. †

Take of
Socotorine aloes, four ounces;
Virginian ſnakeroot,
Ginger, each half an ounce.
Mix, and beat them into a powder.

THESE compoſitions were originally directed to be made into an electary: with us, they have been rarely uſed in that form, and not often in this of a powder, on account of their great nauſeouſneſs. They are chiefly employed as the baſis of a tincture called *Tinctura ſacra*. See page 311.

SPECIES AROMATICÆ.

Aromatic ſpecies.
Lond.

Take of
Cinnamon, two ounces;
Leſſer cardamom ſeeds, huſked,
Ginger,
Long pepper, each one ounce.
Beat them together into a powder.

PULVIS DIAROMATON, ſive SPECIES AROMATICÆ.

Aromatic powder, or *Aromatic ſpecies.*
Edinb.

'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.

SPECIES e SCORDIO ſine OPIO.

Species of ſcordium without opium.
Lond.

Take of
Bole armenic, or French bole, four ounces;
Scordium, two ounces;
Cinnamon, an ounce and a half;
Storax ſtrained,
Tormentil root,
Biſtort root,
Gentian,
Dittany of Crete,
Galbanum ſtrained,
Gum Arabic,
Red roſes, each one ounce;
Long pepper,
Ginger, each half an ounce.
Reduce them into powder.

SPECIES e SCORDIO cum OPIO.

Species of ſcordium with opium.
Lond.

Take of ſtrained opium, three drams
Dry it a little, that it may eaſily pulverize; and add it to the foregoing ſpecies in the beating, that they may be all reduced into a powder together.

This is the ſpecies of Fracaſtorius's confection or diaſcordium, which has been hitherto kept in the ſhops in the form of an electary only, but is now judiciouſly directed in that of a powder alſo, both with and without the opium; when made into an electary, the medicine, in keeping, loſes of its aſtringency, in which conſiſts great part of its virtue. As this compoſition has in common practice been looked upon as a medicine of great conſequence, and its effects determined by long experience; the College has made no farther alteration in its ingredients, than ſubſtituting red roſes themſelves to the ſugar of roſes, omitting ſorrel ſeeds, which are certainly inſignificant, and ſupplying the Lemnian earth, which with us is ſcarce ever met with genuine, by a proper increaſe of the bole. They have nevertheleſs given an elegant reformation of it, in the *pulvis e bolo, cum et ſine opio*; there, the ſcordium, ſtorax, gentian, dittany, ginger, and galbanum, are rejected, as being either ſuperfluous or contrary to the intention; whilſt an increaſe of the tormentil root amply ſupplies the loſs of the biſtort and roſes. The quantity of opium is the ſame in both, viz. one grain in forty-five of the compoſition.

PULVIS TESTACEUS CERATUS.

Cerated teſtaceous powder.
Edinb. †

Melt ſome yellow bees-wax over a gentle fire; and carefully ſtir into it, by little and little, as much of the compound powder of crabs-claws as the wax will take up.

This preparation, made with oyſterſhells inſtead of the crabs-claw powder, was in uſe formerly in the Edinburgh infirmary, and was thence received into the Pharmacopœia of the College. It is given to the quantity of a dram, twice a-day, in diarrhœas and dyſenteries wherever the viſcera are ſubject to be eroded by acrimonious humours, and in immoderate uterine diſcharges. Its virtue ſeems to depend wholly upon the wax, the earthy powder being of no farther uſe than to divide that concrete, and render it miſcible with the animal fluids; 'though it may, in certain caſes, do good, by abſorbing acidity.'

PULVIS e JALAPPA COMPOSITUS.

Compound powder of jalap.
Edinb.

'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 the ſame as in that of the *Pulvis e ſcammonio compoſitus*, viz. to break down and divide the jalap into very minute particles, whereby its operation is thought to be meliorated.'

PULVIS SUDORIFCUS, ſive DOVERI.

Sudorific, or *Dover's powder.*
Edinb.

'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."

'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 ARTHRITCUS AMARUS.

Bitter gout powder.
Pariſ.

Take of
Gentian root,
Round birthwort root,
Rhapontic root,
Germander leaves,
Groundpine leaves,
Leſſer centaury tops, of each equal parts.
Make them into a powder.

Compoſitions of this kind were in uſe among the ancient Greek phyſicians, and made a conſiderable part of their practice in gouty and arthritic complaints. But while they beſtow great praiſes on them in cold

and

and phlegmatic conſtitutions, they very properly condemn them as being extremely hurtful in the hot and bilious. Afterwards, on account probably of the ill conſequences ariſing from their indiſcriminate uſe, theſe medicines fell into neglect, till the introduction of the Greek volumes into the weſtern parts of Europe, when they were tranſcribed by ſome of the earlier medical writers, and brought into ſome eſteem in Italy, Germany, Switzerland, &c. A form differing from the above only in the omiſſion of the rhapontic root, was ſome years ago brought from thence, as a family receipt, by a perſon of high rank, who having experienced remarkable benefit from it in a hereditary gout, ordered it to be printed, and copies delivered to all who ſhould aſk for them. (See the Medical Obſervations and Inquiries publiſhed by a ſociety of phyſicians in London, vol. i. p. 126.) The directions for uſing this medicine are to the following effect:

"Take one dram of the powder "every morning faſting, in a cup of "any agreeable liquor, keeping faſting an hour and a half after it. "Continue this for three months "without interruption, then diminiſh the doſe to three quarters of "a dram for three months longer, "then to half a dram for ſix months "more. After the firſt year, it will "be ſufficient to take half a dram "every other day. As this medicine operates inſenſibly, it will "take perhaps two years before any "great benefit is received. In rheumatiſms that are only accidental, "a few of the dram doſes may do: "but in habitual rheumatiſms, and "ſuch as are of long ſtanding, it "muſt be taken as for the gout: the "remedy requires patience, as it operates but ſlow in both caſes."

Dr Clephane remarks (in the learned and judicious paper above referred to), that this medicine will probably do good in many caſes, for in many caſes there is reaſon to believe it extremely proper; but that an indiſcriminate uſe of it will probably again do what a like abuſe formerly did, bring a good medicine into diſrepute.

Pulvis catharticus salinus.
Saline cathartic powder.

Take of
- Vitriolated tartar,
- Cryſtals of tartar, each one dram;
- Sal prunel, or purified nitre, one ſcruple.

Make them into a powder.

This is an uſeful cathartic in inflammatory diſorders. The quantity above directed is intended for one doſe, which ſhould be accompanied with plentiful dilution.

Pulvis carminativus.
Carminative powder.

Take of
- Aniſeed,
- Sweet fennel ſeed, each two ſcruples;
- Ginger, one ſcruple;
- Nutmegs, half a ſcruple;
- Fine ſugar, half a dram.

Reduce them into a powder, for four doſes.

This powder is employed for expelling flatulencies ariſing from indigeſtion, particularly thoſe to which hypochondriacal and hyſterical perſons are ſubject. It is likewiſe uſefully given in the gripes of young children, either mixed with their food or otherwiſe.

Pulvis diureticus.
Diuretic powder.

Take of
- Sal prunel, ten grains;

Salt of amber, four grains;
Oil of turpentine, three drops;
Fine ſugar, one ſcruple.
Drop the oil upon the ſugar, then add the ſalts, and grind the whole together.

THIS powder is a very efficacious diuretic, and may be given to advantage in caſes where the aſſiſtance of ſuch forcing medicines are required. The ſalts ſomewhat abate the heating quality of the oil, and at the ſame time cool and relax the paſſages,

PULVIS ROBORANS.
Strengthening powder.

Take of
Extract of Peruvian bark, twelve grains;
Salt of ſteel, two grains;
Oil of cinnamon, one drop;
Fine ſugar, half a dram.
Having mixed the oil with the ſugar, add the other ingredients, and grind the whole well together, for two doſes.

THIS medicine has a much better title to the appellation of a ſtrengthener, than thoſe uſually met with under that name in diſpenſatories. In lax habits, debilities of the nervous ſyſtem, and the weakneſſes peculiar to either ſex, it has generally good effects.

PULVIS ad STRUMAS.
Powder againſt the king's evil.

Take of
Burnt ſponge, one ſcruple;
Nitre,
Coralline,
Fine ſugar, each half a ſcruple.
Reduce them into powder.

THIS powder is recommended in ſcrophulous diſorders and obſtructions of the glands: it is ſuppoſed to open and deterge the minute veſſels, and carry off the offending matter by urine. Dr Mead informs us, in his *Monita Medica*, that he very frequently experienced its good effects: he uſed to give the quantity above preſcribed twice a-day, with three or four glaſſes of the leſs compounded lime-water along with each doſe; if the patient was much emaciated, the lime-water was mixed with about an equal quantity of milk.

PULVIS VERMIFUGUS.
Vermifuge powder.

Take of 1.
Tanſy flowers,
Worm-ſeed, each three drams;
Salt of ſteel, one dram.
Make them into a powder.

Take of 2.
Tin reduced into fine powder, two drams;
Ethiops mineral, half a dram;
Fine ſugar, one ſcruple.
Mix them well together.

Take of 3.
Choice rhubarb, three drams;
Scammony,
Calomel, each one dram.
Mix and make them into a powder.

ALL theſe compoſitions are well calculated for the purpoſe expreſſed in the title. The firſt is given in the hoſpitals, in doſes of half a dram twice a-day; which quantity contains about four grains and a half of the ſalt of ſteel. The ſecond is divided into three or four doſes, one of which is taken every morning, and a cathartic on the day following. The third, which is a briſk purgative, is uſed in the quantity of half a dram, after the others have been premiſed; or it is taken once or twice a-week without their aſſiſtance.

CHAP. II.

TROCHES AND LOZENGES.

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* TROCHES.

I.

THE three firſt rules laid down for making powders, are alſo to be obſerved in the powders for troches [*E.* +]

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 oil; or elſe ſprinkled with powder of ſtarch, or with that of liquorice [*E.* +]

III.

In order to thoroughly dry the troches, put them on an inverted ſieve, in a ſhady airy place, and frequently turn them [*E.* +]

IV.

Troches are to be kept in glaſs veſſels, or in earthen ones well glazed [*E.* +]

TROCHISCI ALBI RHASIS, ſeu SIEF ALBUM.

The white troches, or dry collyrium of Razi.

Edinb. +

Take of
- Ceruſſe, three ounces;
- Sarcocolla, one ounce;
- Gum tragacanth, three drams;
- Camphor, one dram:
- Roſe-water, as much as is ſufficient.

Make them into troches according to art.

THE making theſe ingredients into troches is an unneceſſary trouble;

ble; since, before they are used, they must be powdered again, for being mixed with rose-water or other liquors for the purposes of a cooling, antacrid, and moderately astrictive collyrium, injection, &c. The London College has therefore directed them to be kept in the form of powder (under the title of *Pulvis e cerussa compositus*), omitting the camphor, which is not found in the original of Razi.

TROCHISCI BECHICI ALBI.

White pectoral troches.

Lond.

Take of
Double-refined sugar, a pound and a half;
Starch, an ounce and a half;
Liquorice, six drams;
Florence orris root, half an ounce.
Reduce these ingredients into powder, which is to be made up into troches with a proper quantity of mucilage of gum tragacanth.

Edinb.

'Take of
Purest sugar, one pound;
Gum Arabic, four ounces;
Starch, one ounce;
Flowers of benzoin, 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.

TROCHISCI BECHICI NIGRI.

Black pectoral troches.

Lond.

Take of
Extract of liquorice,
Double-refined sugar, each ten ounces;
Gum tragacanth, half a pound.
Drop upon these ingredients, so much water as will make the mass soft enough to be formed into troches.

Edinb.

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 is 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.

Pectoral troches with opium.

Edinb.

'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 is thoroughly dissolved; then add, by degrees,

Of
Common ſyrup, eight ounces;
Extract of liquorice, ſoftened in warm water, five ounces.
Whilſt beating them diligently, gradually 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 particular, that no farther explanation is neceſſary. Six of the troches prepared in the manner here ordered, contain about one grain of opium. Theſe troches are medicines of approved efficacy in tickling coughs depending on an irritation of the fauces. Beſides the mechanical effect of the inviſcating matters in involving acrid humours, or lining and defending the tender membranes, the opium muſt, no doubt, have a conſiderable ſhare, by more immediately diminiſhing the irritability of the parts themſelves.'

TROCHISCI de MINIO.
Red-lead troches.
Edinb. +

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 de MYRRHA.
Troches of myrrh.
Edinb. +

Take of
Myrrh, one ounce and a half;
Lovage ſeed,
Pennyroyal leaves,
Ruſſia caſtor,
Galbanum, each one ounce;
Eſſential oil of ſavin, half a dram;
Elixir proprietatis, as much as is ſufficient.
Let the gum be ſoftened with the elixir into a maſs of the conſiſtence of honey; then add the oil and powders, and make the whole into troches according to art.

THESE troches are very well contrived in regard to efficacy, and ſuperior to thoſe in moſt other pharmacopœias under the ſame title. Madder and cummin ſeed, two of their former ingredients, which were objected to in a former edition of this work, are now expunged; the the one as being an unneceſſary article; the other, as being an offenſive one, and not of ſimilar intention with the reſt. In the place of this laſt, lovage ſeed is introduced, which is doubleſs more agreeable to the intention of the medicine. Aſafetida is ſupplied by an increaſe of the galbanum, and the eſſential oil of the rue by an increaſe of the oil of the ſavin. There ſeems to be no occaſion for making a medicine of this kind into troches, as it cannot be conveniently taken in that form: the London College have therefore exchanged their *Trochiſci e myrrha* for a *Pulvis e myrrha compoſitus*, which ſee.

TROCHISCI e NITRO.
Troches of nitre.
L. and E.

Take of
Nitre purified, four ounces ('three *E.*');
Double-refined ſugar, one pound ('nine ounces *E.*').
Make them into troches with mucilage of gum tragacanth.

THE

This is a very agreeable form for the exhibition of nitre; though, when the ſalt is thus taken without any liquid (if the quantity is conſiderable), it is apt to occaſion uneaſineſs about the ſtomach, which can only be prevented by large dilution with aqueous liquors.

TROCHISCI e SCILLA.
Troches of ſquills.
Lond.

Take of
Baked ſquills, half a pound;
Wheat flour, four ounces.
Beat them together, and form the maſs into troches, which are to be dried with a gentle heat.

This preparation is uſed only as an ingredient in the theriaca. The deſign of baking the ſquill is to abate its acrimony; and making it afterwards into troches ſeems the moſt convenient way of drying it: common wheat flour is as fit for this purpoſe as any, though that of the white vetch has been generally directed.

'As the ſquill is ſo exceedingly naufeous, it is a very unfit ſubſtance for being uſed in the form of troches.'

TROCHISCI e SULPHURE.
Troches of ſulphur.
Lond.

Take of
Flowers of ſulphur, waſhed, two ounces;
Double-refined ſugar, four ounces.
Beat them together, and adding ſome mucilage of quince ſeeds, form them into troches.

TROCHISCI e SULPHURE, ſive DIASULPHURIS.
Troches of ſulpur.
Edinb.

'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 TERRA JAPONICA.
Troches of Japan earth.
Lond.

Take of
Japan earth,
Gum Arabic, each two ounces;
Sugar of roſes, ſixteen ounces.
Beat them together, and dropping in ſome water, make them into troches.

Edinb. †

Take of
Japan earth, two ounces;
Gum tragacanth, half an ounce;
White ſugar, one pound;
Roſe-water, a ſufficient quantity.
Make them into troches.

A preparation of this kind, with the addition of ambergris and muſk, which are here more prudently omitted, has long been in ſome eſteem as a mild reſtringent, &c. under the title of *Catechu*. Medicines of this claſs, in general, are excellently fitted for the form of troches: for when ſlowly and gradually received into

into the ſtomach, as this form occaſions them to be, they produce much better effects than if an equal quantity was taken down at once. The above troches are ſufficiently palatable, and of conſiderable ſervice in ſome kinds of coughs, thin acrid defluxions, diarrhœas, &c.

TABELLÆ CARDIALGICÆ.
Cardialgic lozenges.
Lond.

Take of
- Chalk, prepared, four ounces;
- Crabs-claws, prepared, two ounces;
- Bole armenic, or French bole, half an ounce;
- Nutmegs, one ſcruple;
- Double-refined ſugar, three ounces.

Reduce theſe ingredients into powder, and make them into troches with water.

TROSCHSICI CARDIALGICI.
Edinb. +

Take of
- Oyſter-ſhells, prepared,
- White chalk, powdered, each two ounces;
- Gum Arabic, half an ounce;
- Nutmegs, half a dram;
- White ſugar, ſix ounces;
- Common water, a ſufficient quantity.

Make them into troches according to art.

'In the preſent edition of the Edinburgh Pharmacopœia, the above troches are ſuperſeded by *Pulvis cretaceus*.'

These compoſitions are calculated againſt that uneaſy ſenſation at ſtomach, improperly called the *heartburn*; in which they oftentimes 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, though there does not ſeem to be any occaſion for uſing more than one of them. Some have preſcribed the following formula.

TABELLÆ ANTACIDÆ.
Antacid lozenges.

Take of
- Prepared white chalk, four drams;
- Candied ginger, three drams;
- Cinnamon, one dram;
- Fine ſugar diſſolved in water, as much as is ſufficient to reduce the whole into a due conſiſtence for being formed into lozenges.

Here it may be obſerved, that all theſe compoſitions, though very effectual for the intention, are accompanied with an inconvenience, which is frequently complained of in their uſe; their binding the belly. The uſe of the chalk, oyſter-ſhells, and crabs-claws, is to abſorb acidities; and both theſe and the other common abſorbents, united with acids, compoſe therewith aſtringent concretes. The following compoſition is free from this inconvenience.

TABELLÆ ANTACIDÆ LAXANTES.
Laxative antacid lozenges.

Take of
- Magneſia alba, ſix ounces;
- Double-refined ſugar, three ounces;
- Nutmegs, one ſcruple.

Mix them well together, and form them into troches with mucilage of gum tragacanth.

SACCHARUM ROSACEUM.
Sugar of roſes.
Lond.

Take of
- Red roſe-buds, freed from the heels,

heels, and haſtily dried, one ounce;
Double-refined ſugar, one pound.
Reduce them ſeparately into powder, then mix, and moiſten them with water, that they may be formed into troches, which are to be dried by a gentle heat.

'In a former edition of the Edinburgh Pharmacopœia, this preparation was directed as follows.'

TABELLÆ ROSACEÆ.
Roſe tablets.
Edinb. +

Take of
Conſerve of red roſes, four ounces;
White ſugar in powder, one pound.
If any moiſture is required, take of ſyrup of dry roſes, a ſufficient quantity for forming them into troches, which are to be dried with a gentle heat.

THE ſugar of roſes was formerly made by boiling a pound of fine ſugar with four ounces of the juice of red roſes over a gentle fire till the juice was almoſt all evaporated; then throwing in an ounce of dry red roſes reduced to a very fine powder; after which the matter was poured out upon a marble, and formed into lozenges. The two methods above directed, are more ſimple and commodious; though, if any virtue be expected from the roſes, the medicine is not at all improved by the alteration. As the conſerve contains only one-fourth its weight of roſes in a freſh ſtate, it is obvious that the quantity of freſh roſes in the ſecond preſcription is leſs than that of the dry ones in the firſt.

Theſe preparations are chiefly valued for their agreeableneſs to the eye and palate. Some likewiſe eſteem them, medicinally, as light reſtringents, and look upon them, not undeſervedly, as an excellent addition to milk in phthiſical and hectic caſes. Some have been accuſtomed to add a portion of acid in making theſe preparations: this improves the colour, but renders them unfit to be taken with milk.

TABELLÆ ANTHELMINTICÆ.
Anthelmintic ſugar-cakes.

Take of 1.
Powdered tin, half a dram;
Fine ſugar, half an ounce;
Roſe-water, a ſufficient quantity to make them into a maſs for tablets.

Take of 2.
Scammony,
Mercurius dulcis, each four grains;
Fine ſugar, half an ounce;
Roſe-water, a ſufficient quantity to make them into tablets.

THESE compoſitions are calculated for children, who are not eaſily prevailed on to take anthelmintic medicines in leſs agreeable forms. If the firſt is made uſe of, it muſt be repeated three or four mornings ſucceſſively, after which a purge is to be taken: The ſecond, if it requires repetition, is to be given only every other morning. The proportions of the ingredients are to be varied, according to the age and ſtrength of the patient.

TROCHISCI NERVINI.
Nerve troches.

Take of
Compound ſpirit of lavender, ſixty drops;
Oil of cinnamon,
Oil of roſemary, each four drops;
Florence orris root, two drams;
Fine ſugar, one dram;
Mucilage of gum tragacanth, as much as will reduce them into a maſs, which is to be formed into

into troches of about half a ſcruple each.

ONE or two of theſe troches taken occaſionally, and ſuffered to diſſolve in the mouth, prove ſerviceable to thoſe who are ſubject to paralytic and other nervous diſorders. Warm aromatic medicines, given in this form and manner, are ſuppoſed, from their ſlow diſſolution in the mouth, to affect the nervous ſyſtem more immediately than if received at once into the ſtomach.

MORSULI PURGANTES.
Purging tablets.

Take of
- Cryſtals of tartar, half an ounce;
- Scammony, three drams;
- Oil of cinnamon, four drops;
- Double-refined ſugar, eight ounces.

Make them up with roſe water into troches, weighing each about a dram.

THIS is a ſufficiently elegant form for purgative troches. Each of the *morſuli* contains two grains and a half of ſcammony.

MORSULI de RHABARBARO.
Rhubarb troches.

Take of
- Cream of tartar,
- Rhubarb, each two drams;
- Freſh lemon-peel, half a dram;
- Fine ſugar, four ounces.

Make them into troches with roſe-water.

Two drams of theſe troches contain about ſeven grains of rhubarb, and as much cream of tartar. Both this and the preceding compoſition are among the officinals of the Brandenburgh Pharmacopœia.

MORSULI RESTAURANTES KUNCKELII.
Kunckel's antimonial tablets.

Take of
- The beſt Hungarian antimony, levigated into an impalpable powder, three drams and a half;
- Sweet almonds, peeled,
- Freſh pine nuts, each half an ounce;
- Cinnamon, one dram;
- Leſſer cardamom-ſeeds, huſked, half a dram;
- Double refined ſugar, four ounces.

Diſſolve the ſugar in equal quantities of cinnamon water and roſe-water; then mix therewith the other ingredients, and form the whole into tablets, weighing one dram each.

THESE tablets were brought into eſteem by Kunckel, at a time when the internal uſe of crude antimony was almoſt univerſally reckoned poiſonous. He had recourſe to them as a deſperate medicine, in violent pains and contractions of the arms, after all the common methods of cure had been uſed without any relief; and being happily, in a ſhort time, perfectly freed from his complaints, he made trial of them in ſeveral other caſes, with remarkable ſucceſs. He ſeems to have begun with doſes of four or five grains (that is, one of the tablets above preſcribed), which were repeated thrice a-day, and gradually increaſed to a dram or more of the antimony every day.

TROCHISCI SIALAGOGI.
Sialagogue troches.

Take of
- Pellitory of Spain, half an ounce;
- Maſtich, two drams;
- Oil of cloves and marjoram, each one dram;

Yel-

Yellow wax, a ſufficient quantity.
Make them into troches or pellets.

One of theſe troches is to be occaſionally held in the mouth, and chewed, to promote a diſcharge of ſaliva; which they effect by warming and ſtimulating the ſalival glands.

Trochisci stomachici
Stomachic troches.

Take of
Hard extract of Peruvian bark, one dram;
Oil of cinnamon,
Oil of mint, each ten drops;
Fine ſugar, four ounces.
Make them into troches with mucilage of gum tragacanth.

These troches are of ſervice for warming and ſtrengthening the ſtomach, expelling flatulences, and promoting digeſtion: for theſe purpoſes they are as effectual as any thing that can well be contrived in this form.

Trochisci suaveolentes.
Sweet-ſmelling troches.

Take of
Strained ſtorax, one ſcruple;
Ambergris, fifteen grains;
Muſk, ſeven grains;
Oil of cinnamon, ſix drops;
Fine ſugar, one ounce.
Make them into ſmall troches with mucilage of gum Arabic.

CHAP.

CHAP. III.

PILLS.

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 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, *from the* Edinburgh Pharmacopœia.

I.

THE three firſt rules, formerly laid down for making powders, are here alſo to be carefully obſerved.

II.

Gums and inſpiſſated juices, are to be firſt ſoftened with the liquid preſcribed: then add the powders, and continue beating them all together till they are perfectly mixed.

III.

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 AROMATICÆ.
Aromatic pills.
Lond.

Take of
Socotorine aloes, an ounce and a half;
Gum guaiacum, one ounce;
Aromatic ſpecies,
Balſam of Peru, each half an ounce.
Reduce the aloes and gum guaiacum ſeparately into powder, then mix them with the reſt, and make the whole into a maſs with a ſufficient quantity of ſyrup of orange-peel.

It is ſomewhat difficult to unite theſe ingredients into a maſs fit for making pills of. The beſt way is, firſt to rub the aromatic ſpecies with the balſam, then to add the powdered aloes, and afterwards the guaiacum; when theſe are well mixed together, drop in the ſyrup by little and little at a time. Theſe pills are contrived to ſupply the place of the *Pilulæ diambræ* of our former Pharmacopœia. They are far more elegant as well as ſimple, truly uniform in their ingredients, and excellently adapted to the purpoſes they ſeem deſigned for. Taken in ſmall doſes, as half a ſcruple or little more, and occaſionally repeated, they warm the ſtomach, and by degrees the whole habit, promote perſpiration, and all the natural ſecretions. If the doſe is conſiderable, they operate gently by ſtool; and if continued for ſome time in ſmaller doſes, they prove at length purgative, or introduce a ſalutary looſeneſs.

PILULÆ ALOETICÆ.
Aloetic pills.
Edinb.

'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 is required, a ſcruple or half a dram of the maſs may be made into pills of a moderate ſize for one doſe.'

PILULÆ de JALAPPA.
Jalap pills.
Edinb.

'Take of
Extract of jalap, two ounces;
Powder of aromatics, half an ounce.
Beat them into a maſs with ſimple ſyrup.'

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 E SCAMMONIO CUM ALLIO.

Pills of ſcammony with aloes.

Take of
Socotorine aloes, one dram;
Aromatic ſpecies, half a dram;
Scammony, one ſcruple;
Soft extract of liquorice, as much as is ſufficient to reduce them into a maſs of a due conſiſtence for being formed into pills.

THIS warm purgative is recommended for removing the crudities, &c. after a ſurfeit or debauch, and for preventing arthritic and other complaints incident to thoſe who live high. The quantity above deſcribed may be made into thirty pills, of which five or ſix are to be taken for a doſe.

PILULÆ ex COLOCYNTHIDE SIMPLICIORES.

The more ſimple colocynth pills.
Lond.

Take of
Pith of colocynth,
Scammony, each two ounces;
Oil of cloves, two drams.
Pulveriſe the coloquintida and ſcammony by themſelves, then mix in the oil, and make the whole into a maſs with ſyrup of buckthorn.

THE operator ſhould be careful, in pulveriſing the colocynth, to avoid the finer particles that fly off from it; which, though they do not conſiderably affect the mouth or fauces, have ſometimes been obſerved to occaſion violent purging. The drug ſhould firſt be well dried, cut with ſheers into ſmall pieces, and freed from the ſeeds; then rub it in an oiled mortar, adding a few drops of ſweet oil occaſionally during the trituration: afterwards mix this powder with the powdered ſcammony, add the eſſential oil preſcribed, and make the mixture into a maſs as above directed. The compoſition is apt to grow ſtiff and dry in keeping, and therefore ought to be made pretty ſoft at firſt; the pills ſhould be formed as they are wanted; for, when long kept, they become ſo hard, as to have ſometimes paſſed through the inteſtines undiſſolved.

Theſe pills (formerly called *Pilulæ de duobus*, or *pills of two ingredients*) are very ſtrong cathartics, and ought not to be ventured upon in caſes where leſs violent medicines will take effect. They have been often made uſe of in large doſes, along with large doſes alſo of mercurials in venereal complaints, both in recent gonorrhœæ, and in the ſwellings and inflammations which ſometimes follow from the ſuppreſſion of the diſcharge: but in both theſe caſes they are apparently improper, as they generally injure the conſtitution, and as the latter complaint is for the moſt part aggravated by them. The eſſential oil, which is added as a corrector to the purgative ingredients, does not contribute ſo much, as is commonly ſuppoſed, to abate the roughneſs of their operation. See page 373. The doſe of theſe pills is from fifteen grains to haf a dram; ſome have imprudently gone as far as two ſcruples. Half a dram contains ten grains of coloquintida, and as much ſcammony.

PILULÆ ex COLOCYNTHIDE CUM ALOE, vulgo PILULÆ COCCIÆ.

Colocynth pills with aloes, commonly called *Cocciæ*.
Edinb.

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.'

PILULÆ ex COLOCYNTHIDE cum ALOE.

Colocynth pills with aloes.
Lond.

Take of
Socotorine aloes,
Scammony, each two ounces;
Pith of colocynth, one ounce;
Oil of cloves, two drams.

Let the dry ſpecies be ſeparately reduced into powder; then mix in the oil, and make the whole into a maſs with ſyrup of buckthorn.

'These two formulæ are nearly the ſame; the ſalt may perhaps aſſiſt in dividing the aloes and ſcammony.' The ingredients are reduced to the proportions wherein they are ſet down in the original of Galen; and what is of greater conſequence, the medicine becomes leſs ungrateful to the ſtomach, and leſs virulent in its operation. Half a dram of the maſs contains nearly four grains of coloquintida, eight of aloes, and eight of ſcammony.

PILULÆ ECPHRACTICÆ.

Deobſtruent pills.
Lond.

Take of the
Aromatic pills, three ounces;
Rhubarb,
Extract of gentian,
Salt of ſteel, each one ounce;
Salt of wormwood, half an ounce.

Beat them together into a maſs with ſolutive ſyrup of roſes.

It is difficult to bring this maſs into the due conſiſtence, the two ſalts acting upon one another, ſo as to make it ſwell and crumble. Notwithſtanding the alkaline ſalt employed, the pill does not prove at all alkaline; for the acid of the ſalt of ſteel forſakes its metal, and unites with the alkali into a vitriolated tartar; whence ſome have propoſed uſing, inſtead of the two ſalts here directed, an ounce of vitriolated tartar already made, and half an ounce of any of the calces of iron: this, they obſerve, prevents the inconvenience above mentioned, without making any apparent alteration in the quality of the medicine.

PILULÆ ECPHRACTICÆ CHALYBEATÆ.

Chalybeate ecphractic pills.
Edinb. †

Take of
The maſs of common pills, called *Rufus*'s *pills*, deſcribed hereafter, one ounce and a half;
Gum ammoniacum,
Reſin of guaiacum, each half an ounce;
Salt of ſteel, five drams;
Syrup of orange-peel, as much as is ſufficient to reduce the whole into a maſs.

The ſalt of ſteel, which is one of the moſt active preparations of that metal, remains here undecompounded. Both theſe and the foregoing pills are very well calculated for anſwering the intention expreſſed in the title. A dram of the maſs may be made into twelve pills, and two or three of theſe taken every night, or oftener, in chlorotic or other caſes, where warm aperient or deobſtruent medicines are proper.

PILULÆ ECPHRACTICÆ PURGANTES.

Purging deobſtruent pills.
Edinb. +

Take of
Socotorine aloes,
Extract of black hellebore,
Scammony, each one ounce;
Gum ammoniacum,
Reſin of guaiacum, each half an ounce;
Vitriolated tartar, two drams;
Eſſential oil of juniper berries, one dram.
Beat them into a maſs, with a ſufficient quantity of ſyrup of buckthorn.

This compoſition may be given from eight or ten grains to a ſcruple or half a dram, according as it is intended to keep the belly open or to purge. Half a dram of the maſs contains about ſix grains of each of the capital purgative ingredients, aloes, ſcammony, and extract of hellebore.

PILULÆ FŒTIDÆ.

Fetid pills.
Edinb. +

Take of
Aſafetida,
Ruſſia caſtor, each one dram and a half;
Camphor, half a dram;
Oil of hartſhorn, twenty-four drops.
Beat the camphor with the aſafetida; then add the caſtor and oil of hartſhorn, and make the whole into a maſs.

PILULÆ GUMMOSÆ.

Gum pills.
Lond.

Take of
Galbanum,
Opoponax,
Myrrh,
Sagapenum, each one ounce;
Aſafetida, half an ounce.
Make them into a maſs with ſyrup of ſaffron.

Edinb.

'Take of
Aſafetida,
Galbanum
Myrrh, each one ounce;
Rectified oil of amber, one dram.
Beat them into a maſs with ſimple ſyrup.'

All 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.

The following compoſitions are calculated for the ſame intentions as the foregoing deobſtruent, fetid, and gum pills.

Take of 1.
Aſafetida,
Wood-ſoot.
Myrrh, each two ounces;
Oil of amber, one dram and a half;
Syrup of ſugar, a ſufficient quantity.
Mix, and make them into a maſs, according to art.

Take of 2.
Aſafetida, one dram;
Martial flowers, half a dram;
Oil of amber, eight drops;
Balſam of Peru, a ſufficient quantity to reduce them into a maſs.

Take of 3.
Aſafetida,
Gum ammoniacum,
Myrrh,
Aloes,
Ruſt of ſteel prepared,
Extract of gentian, each one ſcruple;
Syrup of ginger as much as will make the other ingredients into a maſs.

Take of 4.
Galbanum, one dram;
Salt of ſteel, half a dram;
Aſafetida,
Aromatic ſpecies, each one ſcruple;
Tincture of myrrh, as much as will make them into a maſs.

In hyſterical diſorders, after bleeding and purging, where a ſanguine and plethoric habit indicates theſe evacuations, chalybeate medicines are in general the moſt to be relied upon; eſpecially when joined, as in theſe compoſitions, with bitters and deobſtruent gums. At firſt taking, they are apt to increaſe the complaints (as the experienced Sydenham obſerves), and occaſion great diſorders both of body and mind; which however ſoon go off, or may be relieved by a proper doſe of opium given at bed-time. A dram of either of the maſſes is to be made into twelve pills; one or two of which may be taken for a doſe twice or thrice a-day.

PILULÆ MERCURIALES.
Mercurial pills.
Edinb.

'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, is of all others 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 honey, or brought to a ſtate ſimilar to that in Plenck's ſolution.

'The mercurial pill is one of the beſt preparations of mercury, and may in general ſuperſede every other form 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.'

Lond.

Take of
Quickſilver, five drams;
Straſburgh turpentine, two drams;
Cathartic extract, four ſcruples;
Rhubarb, powdered, one dram.
Grind the quickſilver with the turpentine until they are pefectly incorporated; then let the other ingredients be beat up with this mixture into a maſs. If the turpentine happens to be too thick, ſoften it with a little oil olive.

PILULÆ MERCURIALES LAXANTES.

Laxative mercurial pills.
Edinb. +

Take of
Pure quickſilver, one ounce;
Reſin of guaiacum,
Extract of black hellebore,
Powdered rhubarb, each half an ounce;
Common ſyrup, a ſufficient quantity.
Grind the quickſilver with the reſin of guaiacum until they are perfectly incorporated; then add the other ingredients, and beat the whole into a maſs according to art.

These compoſitions are uſeful purgative mercurials. They are, however, liable to an inconvenience, uncertainty in regard to their ſtrength: for the mercury is but looſely united with the other ingredients, and very apt to ſeparate and run together in its original form; in which ſtate it never exerts its proper virtue. Although it appears perfectly extinguiſhed by the matters it is ground with at firſt, part of it is apt to be ſpued out on beating up the mixture with the other ingredients into a maſs.

PILULÆ de GAMBOGIA.

Gamboge pills.
Edinb. +

Take of
Socotorine aloes,
Extract of black hellebore,
Gamboge,
Mercurius dulcis, each two drams;
Eſſential oil of juniper berries, half a dram;
Syrup of buckthorn, a ſufficient quantity.
Beat them into a maſs.

This is a ſtrong mercurial purgative, in which the mercurial preparation is not liable to the uncertainty which the crude quickſilver is accompanied with in the foregoing compoſitions. The doſe is from ten or fifteen grains to half a dram. This laſt quantity contains of aloes, extract of hellebore, gamboge, and mercurius dulcis, about five grains of each.

PILULÆ ÆTHIOPICÆ.

Ethiopic pills.
Edinb.

'Take of
Quickſilver, ſix drams;
Golden ſulphur of antimony,
Reſin 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 ethiops mineral, there ordered, being exchanged for a more active compoſition. In their preſent form, they reſemble Dr Plum-

mer's pills, described in the Edin. Essays, (see page 559 and 601 of this work), to which 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 diforders. 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.

I shall here insert some other formulæ of mercurial pills, which may be occasionally had recourse to, and of which the greatest part has been kept as secrets in particular hands.

Take of 1.
Crude quicksilver,
Hard extract of guaiacum, each one dram and a half;
Essential oil of sassafras, twenty drops;
Venice turpentine, a sufficient quantity.
Grind the quicksilver with the turpentine, till they are perfectly incorporated: then add the other ingredients, and reduce the whole into an uniform mass; which is to be made into forty pills. Two, three, or more of these, may be taken for a dose.

Take of 2.
Mercurius dulcis,
Prepared chalk, each one scruple:
Mucilage of gum arabic, a sufficient quantity.
Make them into twelve pills, of which the dose is from one to three.

Take of 3.
Mercurius dulcis, half a scruple;
Softer extract of guaiacum, one dram;
Essential oil of sassafras, ten drops.
Mix, and make them into a mass, for twenty pills; the dose of which is from one to six.

Take of 4.
Mercurius dulcis, half a scruple;
Camphor, half a dram;
Soft extract of guaiacum, as much as is sufficient to make them into a mass, which is to be formed into twenty pills; the dose is from one to six.

Take of 5.
Mercurius dulcis, half a scruple;
Venice turpentine, as much as will reduce it into a mass of a proper consistence; which is to be formed into five pills, for as many doses.

Take of 6.
Calcined mercury, commonly called *precipitate per se.*
Thebaic extract, each two grains;
Balsam of Peru, as much as will make them into a mass: which is to be formed into two pills, for two doses.

Take of 7.
Turbith mineral, two scruples;
Thebaic extract, one scruple;
Mucilage of gum arabic, as much as is sufficient to reduce them into a mass, which is to be formed into twenty pills, for as many doses.
The *mercurius corallinus* may be made into pills in the same manner, and taken in the same dose.

Take of 8.
Mercurius dulcis, half a scruple;
Crude antimony, finely levigated, one dram;
Conserve of orange-peel, as much as will reduce them into a mass.
This is to be formed into ten pills;

of

of which the doſe is from one to three.

Take of 9.
Mercurius dulcis,
Precipitated ſulphur of antimony, each five grains;
Socotorine aloes, fifteen grains;
Balſamic ſyrup, a ſufficient quantity to reduce them into a maſs; which is to be made into five pills, for as many doſes.

The method of managing the above mercurial medicines, as alteratives, is, to give ſmall doſes every morning and evening; and rather prolong the time of continuing their uſe than increaſe the doſe. The patient ought to keep warm, and drink of warm diaphoretic liquors, as infuſion of ſaſſafras, decoction of the woods, the ſimple or compound lime-water, &c.

PILULÆ PLUMMERI.

Plummer's pills.
Edinb.

'Take of
Sweet mercury,
Golden ſulphur of antimony, each ſix drams;
Extract of gentian,
Caſtile ſoap, each two drams.
Grind the mercury with the ſulphur of antimony, that they may be intimately mixed; then add the extract and ſoap, and form them into a proper maſs with ſimple ſyrup.

'It has been thought that the antimony in this preparation diſpoſes the mercury more eſpecially to the ſkin. Theſe pills have been accordingly employed, and with ſucceſs, in many cutaneous affections, in chronic rheumatiſm, and in pains of the bones from a venereal affection.'

PILULÆ THEBAICÆ, vulgo PACIFICÆ.

Thebaic, commonly called *Pacific pills.*
Edinb.

'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.'

Pills ſimilar to the above 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 conſiderably 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. Eight grains of the compoſition contain nearly one of opium.

PILULÆ SAPONACEÆ.

Saponaceous pills.
Lond.

Take of
Almond ſoap, four ounces;
Strained opium, half an ounce;
Eſſence of lemons, one dram.
Soften the opium with a little wine, and then beat it with the reſt until they are perfectly mixed.

This pill is introduced in the room of Matthews's. The eſſence of lemons gives an agreeable flavour, makes the medicine ſit eaſier on the ſtomach;

ſtomach, and prevents a nauſea, which it would otherwiſe be apt to occaſion. Ten grains of the pill contain nearly one grain of opium.

PILULÆ e STYRACE.

Storax pills.
Lond.

Take of
Strained ſtorax, two ounces;
Saffron, one ounce;
Strained opium, five drams.
Beat them together till perfectly united.

THESE are contrived for diſſolving more ſlowly in the ſtomach than the ſaponaceous or Matthews's pills, and conſequently producing more gradual and laſting effects. One grain of opium is contained in five grains and four-fifths of a grain of the maſs.

PILULÆ ex OLIBANO.

Olibanum pills.
Edinb. +

Take of
Olibanum, two ounces;
Myrrh, one ounce;
Opium, five drams;
Balſam of Peru, two drams;
Common ſyrup, a ſufficient quantity.
Make them into a maſs, which ſupplies the place of the ſtorax pills.

PILULÆ PECTORALES.

Pectoral pills.
Edinb. +

Take of
Gum ammoniacum, half an ounce;
Balſam of Tolu, two drams;
Flowers of benzoine,
Engliſh ſaffron, each one dram;
Common ſyrup, a ſufficient quantity.
Make them into a maſs according to art.

THIS compoſition is very well contrived for promoting expectoration, and may be uſefully given in common colds, and in difficulty of breathing proceeding from viſcid phlegm: the doſe is from ſix or eight grains to a ſcruple or more. It is here conſiderably improved from the laſt edition: the balſam of Tolu is introduced in the room of myrrh, the flowers of benzoine for benzoine in ſubſtance, and aniſated balſam of ſulphur, which encumbered the old form, is omitted. Here it may be obſerved, that though ſeveral compoſitions are denominated pectorals, they are nevertheleſs, in virtue, very diſſimilar. Thus, the pectoral decoction, the ſyrup, and the troches, are calculated for ſoftening, lubricating, and incraſſating thin tickling humours; whilſt the pectoral pills, the elixir and the oxymel, tend to ſtimulate and deterge the veſſels, and attenuate or diſſolve thick, tenacious juices.

PILULÆ RUFI.

Rufus's pills.
Lond.

Take of
Socotorine aloes, two ounces;
Myrrh,
Saffron, each one ounce.
Make them into a maſs with ſyrup of ſaffron.

PILULÆ COMMUNES, vulgo RUFI.

The common pills, vulgarly called
Rufus's pills.
Edinb.

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

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. See *Elixir proprietatis*, page 306 and 336. The 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 STOMACHICÆ.

Stomachic pills.

Edinb.

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 warming and ſtrengthening the ſtomach, and evacuating crude viſcid humours. A ſcruple of the maſs may be taken twice a-day.

PILULÆ SCILLITICÆ.

Squill pills.

Take of
- Spaniſh ſoap, one ounce;
- Gum ammoniacum,
- Millepedes prepared,
- Freſh ſquills, each half an ounce;
- Balſam of Copaiba, as much as is ſufficient.

Reduce them into a maſs according to art.

This is an elegant and commodious form for the exhibition of ſquills, whether for promoting expectoration, or in 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: the ſoap is commonly omitted, as being of no great uſe in the quantity that goes to a doſe of the compoſition; and other powders, as the leſſer cardamom ſeeds, are ſubſtituted for the millepedes; whoſe virtues, in ſuch ſmall doſes, are very inſignificant. In any of theſe forms, if the ſquills are freſh and juicy, there is no need of balſam; but as the maſs ſoon dries and hardens, it muſt be formed immediately into pills.

'To obviate this inconvenience, the Edinburgh College direct the dried root as follows:

'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.'

PI-

PILULÆ e CUPRO.
Copper pills.
Edinb.

'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.

'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 AD DYSENTERIAM.
Pills againſt the dyſentery.

Take of
Yellow wax, half an ounce;
Spermaceti,
Japan earth, each one dram;
Oil of cinnamon, twelve drops.
Make them into a maſs.

THIS medicine has often been of great benefit for the purpoſe expreſſed in its title, at the ſame time ſtrengthening the inteſtines, and covering them with a ſoft mucus, which defends them from being irritated by the acrimony of the humours. Each half dram of the maſs may be formed into five or ſix pills for one or two doſes.

PILULÆ PICEÆ.
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 for taking, 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 ROBORANTES.
Strengthening pills.

Take of 1.
Hard extract of Peruvian bark, one dram;
Salt of ſteel, ten grains;
Oil of cinnamon, five drops;
Balſam of Peru, as much as will reduce them into a maſs.

2.

Take of
Olibanum, one dram;
Styptic powder, two ſcruples;
Salt of ſteel, one ſcruple;
Syrup of ſugar, a ſufficient quantity to make them into a maſs.

IN a lax ſtate of the fibres, debilities of the nervous ſyſtem, and ſome decays of conſtitution, the firſt of theſe compoſitions is an effectual ſtrengthener and reſtorative: if the quantity above preſcribed is made into twenty pills, one or two of theſe may be taken for a doſe, and repeated twice a-day. The other is a ſtronger ſtyptic, and is uſed for reſtraining immoderate alvine evacuations, and ſanguineous or ſerous diſcharges from remoter parts.

3.

Take of
Aromatic ſpecies,
Extract of gentian, each one dram;
Extract of Peruvian bark, half a dram;

Elixir

Elixir of aloes, as much as will reduce them into a maſs.

These pills are ſerviceable for warming and ſtrengthening a weak cold ſtomach, expelling flatulences, and promoting digeſtion. If ten pills are made out of a dram of the maſs, two may be taken thrice a-day, about an hour before meals.

Pilulæ e spermate ceti.
Spermaceti pills.

Take of
Spermaceti, one dram;
White ſugar-candy in powder, two drams;
Balſamic ſyrup, as much as is ſufficient.

Grind the ſpermaceti with the ſugar till they are perfectly mixed; then adding the ſyrup, rub them with a warm peſtle into an uniform maſs.

Where ſpermaceti cannot be commodiouſly exhibited in any other form, three or four moderate-ſized pills, made from this maſs, may be taken two or three times a-day, in eroſions of the viſcera by acrimonious humours, tickling coughs, and other like diſorders.

CHAP.

CHAP IV.

BOLUSES.

BOLUSES differ little in conſiſtence from electaries, being only ſomewhat ſtiffer, ſo as to retain their figure without ſpreading or falling flat.

This form is very convenient for the exhibition of the more powerful medicines, which require their doſe to be exactly adjuſted, as the ſtronger alexipharmacs, cathartics, and opiates. As boluſes are chiefly intended for immediate uſe, volatile ſalts, and other materials, which, if the maſs was to be kept, would exhale or ſwell it, are frequently admitted into them.

The quantity of a bolus very ſeldom exceeds a dram: if the ingredients are of the lighter kind, even this will be too bulky to be commodiouſly ſwallowed down.

The lighter powders are made up with ſyrup; a ſcruple or twenty-ſix grains of the powder, with as much ſyrup as will bring it to a due conſiſtence, makes a bolus ſufficiently large.

The more ponderous powders, as the mercurial ones, are commonly made up with conſerve: ſyrups ſcarce holding them together. For the teſtaceous powders alſo an addition of conſerve is uſed; though if made up with this alone, they would be too bulky.

Both the light and ponderous powders may be conveniently made up with mucilage, which increaſes the bulk leſs than the other additions, and occaſions them to paſs down more freely.

The officinal pharmacopœias have no formula of this kind: moſt of the following compoſitions are taken from our hoſpitals.

BOLUS ALEXIPHARMACUS.
Alexipharmac bolus.

Take of 1.
- Compound powder of contrayerva, half a ſcruple;
- Syrup of wild poppies, a ſufficient quantity to make it into a bolus.

2.

Take of
- Contrayerva root, half a ſcruple;
- Syrup of ſaffron, as much as is ſufficient.

Make them into a bolus.

3.

Take of
Virginian ſnakeroot, half a ſcruple;
Confection of kermes, as much as is ſufficient.
Mix and make them into a bolus.

4.

Take of
Virginian ſnakeroot,
Contrayerva root, each eight grains;
Saffron, three grains;
Syrup of meconium, a ſufficient quantity to reduce them into a bolus.

5.

Take of
Virginian ſnakeroot, fifteen grains;
Caſtor, ten grains;
Syrup of ſugar, as much as is ſufficient.
Mix and make them into a bolus.

6.

Take of
Camphor, two grains;
Saffron, five grains;
Cordial confection, one ſcruple;
Mix and make them into a bolus.

7.

Take of
Camphor, two grains;
Nitre,
Contrayerva root, each ten grains;
Syrup of clove-julyflowers, as much as will make them into a bolus.

8.

Take of
Muſk, ten grains;
Cordial confection, one ſcruple.
Make them into a bolus.

9.

Take of
Muſk, ten grains;
Salt of hartſhorn, or of ſal ammoniac, five grains;
Thebaic extract, half a grain;
Syrup of ſaffron, a ſufficient quantity.
Make them into a bolus.

THESE boluſes are deſigned for low depreſſed fevers, in which medicines of this kind are generally preſcribed, for keeping up the vis vitæ, raiſing the pulſe, and promoting a diaphoreſis. The compoſitions differ in ſtrength nearly according to the order in which they ſtand. The two laſt are of great power, and are deſigned chiefly for caſes accompanied with convulſive ſymptoms, which are often abated by them.

BOLUS EX ALUMINE.
Alum bolus.

Take of
Alum,
Extract of Peruvian bark,
Nutmeg, each ten grains;
Simple ſyrup, as much as will reduce them into a proper conſiſtence for a bolus.

THIS compoſition is a very ſtrong aſtringent, and as ſuch is uſed with ſucceſs in violent uterine hæmorrhagies, and other immoderate ſecretions which require to be ſpeedily reſtrained. It may be taken twice a-day; or if the flux is very violent, every four or ſix hours till it abates.

BOLUS E CAMPHORA.
Camphor bolus.

Take of
Camphor, half a ſcruple;
Gum Arabic, half a dram;
Syrup of marſhmallows, a ſufficient quantity to make them into a bolus.

THIS is a very convenient form for the exhibition of camphor: this drug, however, when thus given by itſelf in large doſes, is apt to nauſeate the ſtomach; and rarely has

ſo

ſo good effects as when mixed in ſmall quantities with nitre or other like ſubſtances, and frequently repeated.

Bolus e castoreo.
Caſtor bolus.

Take of
Caſtor, one ſcruple;
Salt of hartſhorn five grains, or oil of hartſhorn five drops;
Simple ſyrup, a ſufficient quantity.
Make them into a bolus.

This medicine is given in hyſterical and hypochondriacal diſorders, and likewiſe as an alexipharmac in fevers. Its virtues, which are great and unqueſtionable, ſeem to depend more upon the fetid animal oil, or volatile ſalt, than on the drug from which it takes its name.

Bolus catharticus.
Purgative bolus.

Take of 1.
Rhubarb, half a dram;
Solutive ſyrup of roſes, a ſufficient quantity to make a bolus.

Take of 2.
Jalap, one ſcruple;
Jamaica pepper;
Cryſtals of tartar, each five grains;
Syrup of buckthorn, as much as will reduce them into a maſs of a due conſiſtence.

Take of 3.
Scammony, ten grains;
Soluble tartar, one ſcruple;
Soft extract of liquorice, a ſufficient quantity.
Let the ſcammony be well ground with the ſoluble tartar; then add the extract, and make them into a bolus.

Take of 4.
Gamboge,
Cryſtals of tartar, each eight grains;
Syrup of ginger, a ſufficient quantity to reduce them into a bolus.

Take of 5.
Elaterium, two grains;
Extract of jalap, half a ſcruple;
Cryſtals of tartar, one ſcruple;
Syrup of orange-peel, a ſufficient quantity to make them into a bolus.

The virtues of theſe compoſitions are ſufficiently obvious; the firſt is a mild purgative; the two laſt too ſtrong to be in general ventured on; and the other two, of intermediate degrees of ſtrength.

Bolus catharticus cum mercurio.
Purgative bolus with mercury.

Take of 1.
Jalap, one ſcruple;
Mercurius dulcis, five grains;
Solutive ſyrup of roſes, as much as is ſufficient to make them into a bolus.

Take of 2.
Gamboge, ſeven grains;
Mercurius dulcis,
Aromatic ſpecies, each half a ſcruple;
Syrup of buckthorn, a ſufficient quantity to make a bolus.

The firſt of theſe compoſitions is a ſafe and mild mercurial cathartic; the ſecond is too ſtrong for general uſe.

Bolus diaphoreticus.
Diaphoretic bolus.

Take of
Compound powder of contrayerva,
Crude ſal ammoniac, each one ſcruple;

Simple

Simple Syrup, a ſufficient quantity to form them into a bolus.

THIS bolus is given in fevers, and other caſes where a diaphoreſis is to be promoted. Sal ammoniac is for this purpoſe one of the moſt efficacious of the neutral ſalts. It requires, however, when thus given in a ſolid form, to be aſſiſted by warm diluents frequently repeated; which not only promote its action, but likewiſe prevent its ſitting uneaſy on the ſtomach.

BOLUS DIURETICUS.
Diuretic bolus.

Take of
Freſh ſquills, ſix grains;
Compound powder of arum, ten grains;
Ginger, five grains;
Syrup of orange-peel, a ſufficient quantity.
Make them into a bolus.

THIS compoſition is recommended by Dr Mead, to be taken every morning in hydropic caſes, for promoting urine. He obſerves, that in theſe diſorders, diuretic medicines vary greatly in their effects, thoſe which anſwer ſufficiently in one perſon, failing in another; and that the ſquill and its preparations are of all others thoſe which moſt generally ſucceed.

BOLUS AD DYSENTERIAM.
Bolus againſt the dyſentery.

Take of
The cordial confection,
French bole, each one ſcruple;
Thebaic extract, one grain.
Make them into a bolus.

THIS compoſition is excellently well calculated for the purpoſe expreſſed in its title. Dr Mead aſſures us, that he has never found any one medicine more effectual, either for reſtraining the flux, or healing the exulcerated membranes. Previous to the uſe of this or other like medicines, the firſt paſſages muſt be cleanſed by mild emetics and cathartics, as ipecacuanha and rhubarb. See page 614.

BOLUS EMMENAGOGUS.
Emmenagogue bolus.

Take of 1.
Socotorine aloes, eight grains;
Saffron, four grains;
Guinea pepper, two grains;
Oil of ſavin, two drops;
Conſerve of rue, as much as is ſufficient to reduce them into a due conſiſtence.

Take of 2.
Salt of ſteel, one grain;
Myrrh, half a ſcruple;
Cordial confection, fifteen grains.
Make them into a bolus.

Take of 3.
Black hellebore root, eight grains;
Freſh ſquills, four grains;
Eſſential oil of pepper-mint, two drops;
Conſerve of orange-peel, as much as is ſufficient to make them into a bolus.

ALL theſe are medicines of great power for promoting or exciting the menſtrual flux. The two firſt are calculated for lax phlegmatic habits; the third, for perſons of a ſanguine temperament, where chalybeate medicines cannot be borne.

BOLUS FEBRIFUGUS.
Febrifuge bolus.

Take of
Peruvian bark, one ſcruple;
Caſcarilla, half a ſcruple;
Mucilage of quince ſeeds, a ſufficient

ficient quantity to make them into a bolus.

This elegant compoſition is excellently well adapted to the cure of intermittent fevers; and may be given in caſes where the Peruvian bark by itſelf would be leſs proper. Where aromatics, chalybeates, bitters, &c. are alſo requiſite, they are either to be premiſed, or occaſionally interpoſed. See page 201.

Bolus hystericus.
Hyſteric bolus.

Take of
- Muſk,
- Aſafetida, each ſix grains;
- Caſtor, half a ſcruple;
- Syrup of ſaffron, as much as is ſufficient to make them into a bolus.

This medicine is a very well contrived one for the purpoſe expreſſed in its title. It is of great ſervice both in hyſterical and hypochondriacal diſorders; and often gives relief in the depreſſions, faintings, flatulent colics, headachs, and other ſymptoms attending them. It may be taken twice a-day, along with any ſuitable liquor.

Bolus iliacus.
Iliac bolus.

Take of
- Cathartic extract, one ſcruple;
- Thebaic extract, one grain.

Make them into a bolus.

This bolus is preſcribed by Dr Mead, for eaſing the pain, and procuring ſtools, in the iliac paſſion and dry belly-ach; where the irritating cathartics, exhibited by themſelves, are thrown up by vomit. The uſe of this medicine is to be preceded by plentiful bleeding, and accompanied with purgative glyſters of the more acrid kind; and its operation promoted by infuſion of ſenna mixed with a little of the elixir ſalutis, or tincture of ſenna.

Bolus mercurialis.
Mercurial bolus.

Take of
- Calomel, from five to fifteen grains;
- Conſerve of roſes, half a dram.

Mix and make them into a bolus.

This bolus is given every night, or oftener, for raiſing a ſalivation, in venereal, and other diſorders, which require that Herculean operation. It is likewiſe taken at night as an alterative, to be carried off next morning by a cathartic: mercurials, exhibited in this manner, have generally better effects than when joined with purgatives directly.

Bolus mercurialis emeticus.
Emetic mercurial bolus.

Take of
- Yellow emetic mercury, ſix grains;
- Conſerve of roſes, a ſufficient quantity.

Make them into a bolus.

This ſtrong emetic is given in venereal and leprous diſeaſes; particularly in the caſe of foul ulcers of long ſtanding, the cleanſing and cure of which are frequently promoted by it. The violence of its operation limits its uſe to robuſt conſtitutions.

Bolus pectoralis.
Pectoral bolus.

Take of
- Spermaceti, fifteen grains;
- Gum ammoniacum, ten grains;
- Salt of hartſhorn, five grains;
- Simple ſyrup, as much as is ſufficient.

Mix and make them into a bolus.

In colds of long ſtanding, old coughs, and aſthmas, this bolus generally gives relief; eſpecially if bleeding is premiſed, and repeated, if neceſſary, at proper intervals.

Bolus rhei cum mercurio.
Bolus of rhubarb with mercury.

Take of
- Choice rhubarb, twenty-five grains;
- Calomel, five grains;
- Simple ſyrup, as much as will form them into a bolus.

This is a very mild mercurial purgative. It is given to deſtroy worms, and in cachectic, chlorotic, and other like diſorders.

Bolus rheumaticus.
Rheumatic bolus.

Take of
- Extract of guaiacum, half a dram;
- Salt of hartſhorn, ſeven grains;
- Simple ſyrup, a ſufficient quantity.

Make them into a bolus.

In chronical rheumatiſms, whether the remains of a rheumatic fever, or a continuation of pains that proceeded at firſt from neglected colds, this bolus has been given with good effects, once a-week or oftener: the patient keeping warm and drinking warm liquors, to promote its operation as a cathartic and diaphoretic. Its uſe ought to be accompanied by veneſection, which is to be repeated every eight or ten days as long as the blood is ſizy. This medicine is likewiſe exhibited in ſciatic, arthritic, and other pains not accompanied with a ſizineſs of blood: in theſe it much more frequently fails than in the true rheumatiſm.

Bolus scilliticus.
Scillitic bolus.

Take of
- Freſh ſquills, twelve grains;
- Aromatic ſpecies, half a ſcruple;
- Oil of pepper-mint, one drop.

Beat them well together into an uniform maſs, of a due conſiſtence for a bolus.

This is a warm, ſtimulating, and attenuating medicine, and may be given to great advantage in caſes where the natural ſecretions are obſtructed or ſuppreſſed from a 'laxity of the ſolids.' The efficacy of the ſquills is promoted by the additional ingredients, which at the ſame time warm and ſtrengthen the ſtomach and inteſtines, and prevent the compoſition from being thrown up by vomit, which this quantity of ſquills, given by itſelf, would in many conſtitutions be.

Bolus theriacalis.
Treacle bolus.

Take of
- Theriaca, two ſcruples;
- Salt of hartſhorn, ſeven grains;
- Camphor, three grains.

Mix and form them into a bolus.

Camphor and ſalt of hartſhorn, when thus joined with opiates, have in many caſes better effects than if exhibited by themſelves, their diaphoretic virtue being greatly promoted by the relaxation which the opium occaſions. The quantity of theriaca in this bolus contains ſomewhat more than a quarter of a grain of opium.

Bolus sudorificus.
Sudorific bolus.

Take of
- Camphor, five grains;
- Thebaic extract, one grain;
- Syrup of orange-peel, a ſufficient

quantity to reduce them into a bolus.

THIS medicine is one of the moſt effectual ſudorifics, generally exciting a copious ſweat. In many caſes, where this intention is to be anſwered, whether acute or chronical, it may be given to great advantage.

BOLUS TEREBINTHINATUS.
Turpentine bolus.

Take of
Chio turpentine, one ſcruple;
Powdered liquorice, a ſufficient quantity.
Make them into a bolus.

THIS is a convenient form for the exhibition of turpentine, the liquorice powder anſwering the ſame intention here as the elecampane root in the *Pilulæ piceæ*, page 604.

CHAP.

CHAP. V.

ELECTARIES.

ELECTARIES 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.

Electaries 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 electaries to be diſpenſed by weight), are ſeldom truſted in this form, on account of the uncertainty of the doſe; diſguſtful ones, acrids, bitters, fetids, cannot be conveniently taken in it; nor is the form of an electary well fitted for the more ponderous ſubſtances, as mercurials, their being apt to ſubſide in keeping, unleſs the compoſition is made too 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 electary; 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. Electaries 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 mucilages than with ſyrups, 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 electary directed at a time, in extemporaneous preſcription, is rarely leſs than an ounce, or more than three ounces.

General rules for making electaries.

I.

The rules already laid down for decoctions and powders in general,

are likewiſe to be obſerved in making decoctions and powders for electaries [*E.*] +

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 [*E.*] +

III.

Aſtringent electaries, and ſuch as have pulps of fruits in their compoſition, ſhould be prepared only in ſmall quantities at a time [*E.*] +

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 [*E.*] +

V.

Electaries, if they grow dry in keeping, are to be reduced to the due conſiſtence, with the addition of a little Canary wine [*L. E.*] + 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 large quantity of opium, as the *Confectio Paulina*, and *Philonium* [*L.*]

ELECTARIUM ad DYSENTERICOS.

Antidyſenteric electary.
Edinb. +

Take of
Japonic confection, two ounces;
Locatelli's balſam (beaten up with a ſufficient quantity of yolk of eggs) one ounce;
Powdered rhubarb, half an ounce;
Syrup of marſhmallows, a ſufficient quantity.

Mix and make them into an electary.

THIS compoſition is extremely well contrived for the purpoſe expreſſed in its title. Aſtringents or opiates by themſelves rarely have place in dyſenteries, even after the firſt paſſages have been evacuated by an emetic or a full doſe of rhubarb: they eaſe the pain and moderate the flux for a time; but the ſhort relief is apt to be followed by dangerous or even fatal conſequences from the retention of the acrid and corrupted humours. The rhubarb, which the College of Edinburgh has now added from the practice of the infirmary, in good meaſure prevents this accumulation, without much counteracting the ſalutary effects of the other materials: in many caſes, however, it may be ſtill neceſſary to interpoſe that laxative drug by itſelf. The doſe of the electary is the bulk of a large nutmeg, once or twice a-day, according to the urgency of the ſymptoms. One dram contains about one ſixth part of a grain of opium.

ELECTARIUM e BACCIS LAURI.

Electary of bay-berries.
Lond.

Take of
Rue leaves dried,
Caraway ſeeds,
Parſley ſeeds,
Bay-berries, each one ounce;
Sagapenum, half an ounce;
Black pepper,
Ruſſia caſtor, each two drams;
Clarified honey, thrice the weight of the powdered ſpecies.

Mix the ſpecies with the honey, and make them into an electary.

THIS

THIS compoſition is ſometimes taken, in flatulent colics and hyſterical diſorders, from a ſcruple to two drams: but its principal uſe is in carminative glyſters, nor is it often employed in theſe. The College of Edinburgh have entirely dropt it.

ELECTARIUM e CASIA.

Electary of caſia.
Lond.

Take of
Solutive ſyrup of roſes,
Pulp of caſia, freſh extracted, each half a pound;
Manna, two ounces;
Pulp of tamarinds, one ounce.

Grind the manna in a mortar; and, with a gentle heat, diſſolve it in the ſyrup: then add the pulps, and continue the heat until the whole is reduced to a due conſiſtence.

ELECTARIUM e CASIA, vulgo DIACASIA.

Electary of caſia, commonly called
Diacaſia.
Edinb.

'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 electary.'

THESE compoſitions are very convenient officinals, to ſerve as a baſis for purgative electaries and other like purpoſes; as the pulping a ſmall quantity of the fruits, for extemporaneous preſcription, is ſufficiently troubleſome: the tamarinds give them a pretty taſte, and do not ſubject them, as might be expected, to turn ſour: after ſtanding for four months, the compoſition was found no ſourer than when firſt made up. They are likewiſe uſefully taken by themſelves, in the quantity of two or three drams occaſionally, for gently looſening the belly in coſtive habits.

ELECTARIUM LENITIVUM.

Lenitive electary.
Lond.

Take of
Figs, one pound;
Senna, eight ounces;
Pulp of tamarinds,
Pulp of caſia,
Pulp of French prunes, each half a pound;
Coriander ſeeds, four ounces;
Liquorice, three ounces;
Double-refined ſugar, two pounds and a half.

Pulverize the ſenna along with the coriander ſeeds, and ſift out ten ounces of the powder: the remainder is to be boiled with the figs and liquorice, in four pints of water, to one half; then ſtrain and preſs out the liquor, and evaporate it to the weight of a pound and a half, or ſomewhat leſs: in this diſſolve the ſugar, ſo as to make it into a ſyrup, and add this ſyrup, by little and little, to the pulps: laſtly, mix in the powder before ſeparated by the ſieve.

THIS electary may be occaſionally taken to the quantity of a nutmeg or more, for looſening the belly in coſtive habits.

Edinb.

'Take of
Pulp of French prunes, one pound;
Pulp of caſia,
Pulp of tamarinds, each two ounces 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 electary.'

THIS electary 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. Melaſſes is preferable to either honey or ſugar, as it coincides with the intention, and is not only of itſelf inapt to ferment, but likewiſe prevents ſuch ſubſtances as are this way diſpoſed from running into fermentation.

ELECTARIUM PECTORALE.

Pectoral electary.
Edinb. +

Take of
Rob of elder berries, two ounces;
Spermaceti diſſolved in a ſufficient quantity of yolk of eggs, half an ounce;
Flowers of benzoine, one dram;
Balſamic ſyrup, as much as is ſufficient to make the other ingredients into an electary.

THIS is a very uſeful medicine, in tickling coughs and common colds, calculated both to obtund acrimony and promote expectoration. It may be uſed two or three times a-day, in doſes of about the quantity of a ſmall nutmeg. Taken to the bulk of a large nutmeg, at bed-time, it generally not only relieves the breaſt, but tends to procure a ſalutary diaphoreſis or ſweat in the night. It is here improved from the former editions, by ſubſtituting rob of elder berries to conſerve of roſes, and ſpermaceti to compound powder of gum tragacanth.

ELECTARIUM e SCAMMONIO.

Electary of ſcammony.
Lond.

Take of
Scammony, an ounce and a half;
Cloves,
Ginger, each ſix drams;
Eſſential oil of caraway ſeeds, half a dram;
Honey, half a pound.

Let the ſpices be ground together, and mixed with the honey; then add the powdered ſcammony, and afterwards the oil.

THIS electary is a warm, briſk purgative. It is a reform of the *Electarium caryocoſtinum* of our preceding diſpenſatories, a compoſition 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.

ELECTARIUM e SCORDIO.

Electary of ſcordium, commonly called *Diaſcordium.*
Lond.

Take of
The ſpecies of ſcordium with opium, any quantity;
Syrup of meconium, boiled to the conſiſtence of honey, thrice as much by weight.

Mix the ſpecies with the ſyrup, ſo as to make an electary.

IN our former diſpenſatories, the ſpecies were ordered to be made up with honey: this is now exchanged for a ſyrup, more agreeable to the intention of the medicine, which is that of an opiate aſtringent, whilſt honey

honey is manifeſtly aperient and detergent. It is not perhaps neceſſary, for the purpoſes of the ſhops, to make the ſpecies into an electary at all: by keeping in this form, the ingredients loſe greatly of their aromatic flavour and aſtringency, becoming ſoft and ſmooth upon the palate; and the red colour, imparted by the bole, decays. The London College have therefore very juſtly ordered them to be kept in powder as well as in an electary; and directed the powder both with and without opium, for different occaſions. See *Species e ſcordio*, and *Pulvis e bolo, cum et ſine opio*. Eiof theſe powders may be made up extemporaneouſly into an electary, with any ſyrup that ſhall be judged proper.

Diaſcordium was intended by its author Fracaſtorius for an antipeſtilential: but we have been ſo happy as to have little occaſion for medicines in that intention; nor could this be anywiſe depended on. It is a moderately warm aſtringent and opiate; and in this light only is conſidered by the preſent practice. One grain of opium is contained in nine ſcruples of the electary.

The *Species e ſcordio*, which make the baſis of this electary, contain, as we have already ſeen (page 581) ſeveral ſuperfluous ingredients; for though the London College has given a judicious reformation of the powder under the title of *Pulvis e bolo*, the electary is made with the powder unreformed; partly, that no material alteration might be made in a medicine which is ſo much depended on, and whoſe effects have been ſo long experienced; and partly becauſe the phyſician, if he prefers the *Pulvis e bolo*, may direct an electary to be made with it in extemporaneous preſcription. In the Edinburgh Pharmacopœia, this medicine is not ordered to be kept in powder, but the electary is reformed to a great degree of elegance and ſimplicity. And as the ingredient from which it received its name, being a very unimportant one, is now omitted, the compoſition is diſtinguiſhed by another title, viz.

ELECTARIUM JAPONICUM, vulgo CONFECTIO JAPONICA.

Japonic electary, commonly called *Japonic confection*.
Edinb.

'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 electary.'

The ingredients in this electary 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.'

BALSAMUM LOCATELLI.

Locatelli's balſam.
Lond.

Take of
Oil olive, one pint;
Straſburgh turpentine,
Yellow wax, each half a pound;
Red ſaunders, ſix drams.
Melt the wax over a gentle fire with ſome part of the oil; then add the reſt of the oil and the turpentine; afterwards mix in the ſaunders, and keep them ſtirring together,

ther, until the mixture is grown cold.

Edinb. †

Take of
Yellow wax, one pound;
Oil olive, a pint and a half;
Chio or Straſburgh turpentine, a pound and a half;
Balſam of Peru, two ounces;
Dragon's blood, in powder, one ounce.

Melt the wax in the oil over a gentle fire, then add the turpentine; and having taken them from the fire, mix in the balſam of Peru and dragons blood, keeping them continually ſtirring till grown cold.

Dragons blood gives a more elegant colour to this compoſition than red ſaunders, though on another account it is ſomewhat leſs proper, having been found, when diſſolved in oil, to communicate ſome degree of heat and pungency, qualities quite foreign to the intention of the medicine. This balſam is uſed in internal bruiſes and hæmorrhagies, eroſions of the inteſtines, dyſenteries, and in ſome kinds of coughs and aſthmas: the doſe is from two ſcuples to two drams: it may be commodiouſly taken with about double its weight of conſerve of roſes: as directed hereafter. Some have likewiſe applied it externally, for deterging and incarnating recent wounds and ulcers.

BALSAMUM CEPHALICUM.

Cephalic balſam.

Edinb. †

Take of
Expreſſed oil of nutmegs, one ounce;
Diſtilled oil of cloves,
of lavender,
Diſtilled oil of roſemary, each half a dram;
Diſtilled oil of amber, half a ſcruple;
Balſam of Peru, one dram.

Liquefy the oil of nutmegs in a ſilver veſſel; and when taken from the fire, mix into it the diſtilled oils and the balſam, according to art.

This medicine is recommended to be rubbed on the temples, and on paralytic limbs, for warming the part and comforting the nerves; and to be ſmelt to, for refreſhing and enlivening the ſpirits. Some have alſo given it inwardly as a warm cordial, in languid caſes, and in debilities of the nervous ſyſtem. There are abundance of preparations of this kind in foreign pharmacopœias, compoſed each of only one eſſential oil, incorporated with the expreſſed oil of nutmegs; which laſt is to be previouſly freed from its flavour (by diſtillation with water) that the ſmell of the former may not be injured thereby: in the room of this prepared ſebaceous matter, a mixture of white wax and oil olive might be uſed. In the *Practical Chemiſtry*, a general proceſs is given for the making of theſe kinds of preparations, under the title of

BALSAMUM ODORIFERUM.

An odoriferous balſam.

Take of
Oil olive,
White bees wax, each two ounces.

Put the oil into a china baſon, placed in a pan of boiling water, and ſlice the wax into it. Stir them together with a clean knife, or ſmall ſpatula, till the wax is melted: then remove the veſſel out of the hot water, and when the matter begins to thicken, drop in four drams of any odoriferous eſſential oil, as that of cinnamon, nutmegs, mace, lemon-peel, rhodium,

dium, lavender, roſemary, &c. or of a mixture of two or three of theſe oils: to which may be added one dram of eſſence of ambergris, which will heighten the ſmell of the oils, without communicating any of its own. Keep the whole conſtantly ſtirring, that they may be perfectly mixed; and as ſoon as this is done, plunge the veſſel into cold water, to prevent the diſſipation of the eſſential oils.

THESE kinds of balſams may be made of any colour, ſo as to reſemble in this reſpect alſo, as well as in ſmell, the vegetable from which the eſſential oil you make uſe of was drawn. A little of the pigment, called by the painters *ſap-green*, being previouſly ground with the oil olive, will give a fine green; a little cinnabar, a ſcarlet; turmeric, a lemon colour; Pruſſian blue, a violet; and cochineal, a fine purpliſh hue.

CONFECTIO PAULINA.

The confection called Paulina.
Lond.

Take of
Coſtus, or in its ſtead zedoary,
Cinnamon,
Long pepper,
Black pepper,
Storax, } ſtrained,
Galbanum, }
Opium, }
Ruſſia caſtor, each two ounces;
Simple ſyrup, boiled to the conſiſtence of honey, thrice the weight of the other ingredients.

Warm the ſyrup, and carefully mix with it the opium firſt diſſolved in wine: gradually add this mixture, whilſt it continues warm, to the ſtorax and galbanum previouſly melted together; and afterwards ſprinkle in the other ſpecies reduced into powder.

THIS is the CONFECTIO ARCHIGENIS of our former diſpenſatory, brought back to its firſt form and author. It is a warm opiate medicine, and as ſuch is ſometimes made uſe of in practice: thirty-two grains contain one grain of opium.

MITHRIDATIUM, ſive CONFECTIO DAMOCRATIS.

Mithridate, or the confection of Damocrates.
Lond.

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,
Opopanax,
Galbanum ſtrained,
Opobalſam, or in its ſtead expreſſed oil of nutmegs,
Ruſſia caſtor, each one ounce;
Poley mountain,
Scordium,
Carpobalſam, or in its ſtead cubebs.
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

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 Japonica,
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 powder.

THERIACA ANDROMACHI.

Venice treacle.
Lond.

Take of
Troches of ſquills, half a pound;
Long pepper,
Opium ſtrained,
Vipers dried, each three ounces;
Cinnamon.
Opobalſam, or in its ſtead expreſſed oil of nutmegs, each two ounces;
Agaric,
Florence orris 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,
Camels 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.
Chio turpentine,
Wild valerian root, each ſix drams;
Gentian root,
Celtic nard,
Spignel,
Poley mountain, St John's wort, Groundpine } leaves,
Germander tops, with the ſeed,
Carpobalſam, or in its ſtead cubebs,
Aniſeed,
Sweet fennel ſeed,
Leſſer cardamom ſeeds, huſked,
Biſhops-weed, Hartwort, Treacle muſtard } ſeeds,
Hypociſtis,
Acacia, or in its ſtead Japan earth,
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

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 together, after the ſame manner as directed in making the mithridate.

THESE celebrated electaries are almoſt the only remains which the late reformation has left in the ſhops, 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, though 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. The London college has however thought proper to retrench, from forms originally complex, all ſubſequent additions that have 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 pharmacopœias, is alſo a ſupernumerary ingredient, not warranted by the original: theſe therefore are rejected.

Nor

Nor is the aſarum in 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.

One innovation on both theſe medicines, the college has alſo allowed themſelves. In each of theſe compoſitions are found both cinnamon and caſia 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 caſia, now that cinnamon is ſo common, is a blind following of theſe writers, without any attention to their meaning: the caſia 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 Indian nard; 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 all the editions of our Pharmacopœia, except the preſent: this is, the ſubſtituting Roman vitriol to the ancient chalcitis, 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 chalcitis, which was certainly a chalybeate, and gives the medicine its black colour. What has chiefly occaſioned chalcitis to be ſuppoſed a cupreous vitriol, ſeems to be its name, derived from χαλκος, 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 *Kupfferwaſſer*, and by us *copperas*. It is probable, that the ancient chalcitis 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 London College has likewiſe ſomewhat facilitated the preparation of theſe medicines, by omitting the *trochiſci cypheos* uſed in the mithridate, and the *hedychroi* and *viperini* for the theriaca; and inſerting their ingredients, after *Zwelfer*'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: they adjuſted the proportions of the ingredients in the *trochiſci cypheos* from the original deſcription in Galen; the numbers in our former Pharmacopœia being very erroneous.

The College of Edinburgh, paying very little deference to antiquity or common prejudice, has ventured

tured at length to diſcard theſe venerable reliques; and have ſubſtituted in their room an elegant and ſimple form, equivalent to them both in efficacy, under the title of

THERIACA EDINENSIS.

Edinburgh theriaca.
Edinb.

'In later editions they have entirely baniſhed the name of *theriaca* from their book, and have put in its place the following preparation:

ELECTARIUM THEBAICUM.

Thebaic electary.
Edinb.

'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 electary.'

This compoſition conſiſts of very powerful ingredients, and is 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 purpoſe, by the way of cataplaſm, the *Theriaca Londinenſis* is now omitted, and its place ſupplied by a cataplaſm compoſed of a few well-choſen articles, under the name of *Cataplaſma e cymino*; of which hereafter. For internal uſe, none of the theriacas 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 four drams of the mithridates, in three ſcruples fifteen grains of the Venice treacle, and in five ſcruples of the *Thebaic electary*. 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 exalting and improving the virtues of one another.

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 electaries, is, that it may be more uniformly mingled with the reſt.

PHILONIUM LONDINENSE.

London philonium.
Lond.

Take of
White pepper,
Ginger,
Caraway ſeeds, each two ounces;
Strained opium, ſix drams;

Syrup

This warm cordial medicine is of uſe in nervous complaints and decays of conſtitution. The bulk of a ſmall nutmeg may be taken two or three times a-day with a glaſs of wine, or any other proper liquor, after it.

Electarium balsamicum,
Balſamic electary.

Take of
Conſerve of roſes, two ounces;
Locatelli's balſam, one ounce.
Diſſolve the balſam in the yolk of an egg, and then mix therewith the conſerve,

This electary is uſed in ſome coughs and diſorders of the breaſt; as alſo in the vomica, or ſuppuration in the ſtomach, which ſometimes happens after dyſenteries, and where there is an eroſion or rupture of the blood-veſſels, as in hæmoptoës. In theſe caſes, the bulk of a nutmeg may be taken for a doſe twice or thrice a-day.

Electarium chalybeatum.
Chalybeate electary.

Take of 1.
Salt of ſteel, one dram;
Candied nutmegs,
Candied ginger, each half an ounce;
Oil of cinnamon, five drops;
Conſerve of orange-peel, one ounce;
Balſamic ſyrup, as much as is ſufficient to make them into an electary.

Take of 2.
Ruſt of ſteel, or ſteel prepared with ſulphur, ſix drams;
Candied ginger, one ounce;
Conſerve of orange-peel, three ounces;
Syrup of orange-peel, as much as will reduce them into a proper conſiſtence.

These elegant chalybeate medicines are given not only in cachectic and chlorotic caſes, and menſtrual obſtructions; but likewiſe in low hyſteric and melancholic diſorders, and for warming and invigorating the habit in great debilities and decays of conſtitution. In either of theſe intentions, the bulk of a ſmall nutmeg is to be taken twice a-day, and its effects promoted by moderate exerciſe.

Electarium deobstruens,
Deobſtruent electary.

Take of
Gum ammoniacum,
Hard ſoap, each a dram;
Powdered ſquills, one ſcruple;
Conſerve of orange-peel, half an ounce;
Syrup of ginger, as much as is ſufficient to reduce the other ingredients into the conſiſtence of an electary.

Where the breaſt is oppreſſed by thick phlegm, or the viſcera obſtructed, this electary may be taken twice or thrice a-day to the bulk of a ſmall nutmeg at a time. The quantity above preſcribed is ſufficient for ſix or eight doſes.

Electarium ad gonorrhoeam.
Electary for a gonorrhœa.

Take of 1.
Lenitive electary, three ounces;
Jalap, three drams;
Nitre, one dram and a half;
Simple ſyrup, a ſufficient quantity to make them into an electary.

Take of 2.
Lenitive electary, three ounces and a half;
Balſam of Copaiva, one ounce;
Rhubarb,
Gum guaiacum,
Nitre, each one ounce;
Syrup of orange-peel, as much as

as will reduce them into a proper conſiſtence for an electary.

THESE compoſitions are ſaid to be uſed in ſome of the military hoſpitals; the firſt as a cooling laxative, for the inflammation and tenſion of the urinary paſſages, which always accompany a virulent gonorrhœa; in this intention, a dram and a half is directed to be taken every morning and evening. The ſecond is deſigned for ſtrengthening the parts after the virulence is expelled, and the heat and inflammation have ceaſed: the bulk of a nutmeg may be taken twice or thrice a-day.

ELECTARIUM E GUMMI GUAIACO.
Electary of gum guaiacum.

Take of
Gum guaiacum,
Compound powder of arum,
Canella alba, each ſix drams;
Conſerve of ſcurvy-graſs, two ounces;
Syrup of orange-peel, as much as will bring them into a proper conſiſtence.

IN chronical rheumatiſms, pains, and aches in general, that are not accompanied with inflammation, and ſome kinds of paralytic numbneſſes, this warm ſtimulating electary may be taken to the quantity of a nutmeg twice a-day.

ELECTARIUM EX HELLEBORO NIGRO.
Electary of black hellebore.

Take of
Black hellebore root,
Extract of ſavin,
Compound powder of myrrh, each half an ounce;
Canella alba, two drams;
Syrup of orange-peel, as much as is ſufficient.
Mix, and make them into an electary.

THIS electary is employed in one of our hoſpitals for promoting the natural evacuations from the uterus; for which purpoſe, it is undoubtedly a medicine of great power. It may be taken to the quantity of half a dram twice a-day.

ELECTARIUM INCRASSANS.
Incraſſating electary.

Take of
Gum tragacanth,
Pulp of freſh comfry root, each one ounce;
Conſerve of mallows, half an ounce;
Syrup of marſhmallows, as much as is ſufficient to reduce the whole into the conſiſtence of an electary.

THIS electary is taken to the quantity of a cheſnut, three or four times a-day, along with a milk diet, for incraſſating and obtunding thin ſerous humours in hectic diſorders, in coughs proceeding from thin tickling rheums, in fluxes and heat of urine, where the natural mucus of the parts is abraded.

ELECTARIUM AD NEPHRITICOS.
Nephritic electary.

Take of
Lenitive electary, an ounce and a half;
Venice turpentine, one ounce;
Egg-ſhells, prepared (or prepared oyſter-ſhells), half an ounce;
Choice rhubarb, one dram;
Syrup of marſhmallows, as much as is ſufficient.
Diſſolve the turpentine in the yolk of an egg, and then mix the whole together according to art, ſo as to make thereof an electary.

THIS compoſition, taken from the Edinburgh Infirmary, is contrived for cleanſing the urinary paſſages in nephritic diſorders. Tur-

pentine, properly divided by earthy powders, is a safe, and at the same time one of the most powerful diuretics that can in these cases be ventured on: the rhubarb and laxative electary are very useful additions; for the belly ought here to be always kept open, though the stronger purgatives are very improper. A dram of the electary may be taken once or twice a-day, along with an infusion of marshmallow roots, sweetened with a spoonful of honey.

ELECTARIUM PARALYTICUM.
Paralytic electary.

Take of
Mustard seed,
Conserve of rosemary tops, each one ounce;
Compound spirit of lavender, two drams.

Beat the mustard seed with a little water, that the pulp may be pressed through a hair sieve; then mix with it the conserve and the spirit.

THIS is a very efficacious medicine for paralytic disorders, tremors and numbness of the limbs, the decays accompanying old age, and in all cases where the solids require to be stimulated, or sluggish stagnant juices to be put in motion. It ought to be taken every morning and evening, or oftener, to the bulk of a large nutmeg; with a glass of rich wine, or any proper julep, after it.

ELECTARIUM E CORTICE PERUVIANO.
Electary of Peruvian bark.

Take of 1.
Peruvian bark, three ounces;
Cascarilla, half an ounce;
Syrup of orange-peel, a sufficient quantity.

Take of 2.
Peruvian bark, three ounces;
Virginian snakeroot, one ounce;
Syrup of orange peel, a sufficient quantity.

Take of
Peruvian bark, three ounces;
Crude sal ammoniac, three drams;
Syrup of lemon juice, a sufficient quantity.

Take of 4.
Peruvian bark, three ounces;
Colcothar of vitriol, six drams;
Simple syrup, a sufficient quantity.

Take of 5.
Peruvian bark, three ounces;
Alum, one ounce;
Syrup of lemon juice, as much as is sufficient.

Take of 6.
Extract of Peruvian bark, one ounce;
Extract of logwood,
Extract of liquorice, each half an ounce;
Mucilage of quince seeds, as much as is sufficient to reduce the other ingredients into the consistence of an electary.

ALL these compositions are very elegant and efficacious in the intentions for which they are designed. The first is calculated for common intermittent fevers; in the cure of which the virtues of the bark are greatly assisted by the cascarilla. The second and third are given in those intermittents which happen in cachectic habits, and persons subject to obstructions of the viscera, where the bark by itself, on account of its great astringency, would be prejudicial. The fourth is a good strengthener in laxities of the solids and decays of constitution; and the fifth, a powerful styptic in fluxes and hemorrhagies, particularly in the diabetes and fluor albus. The bulk of a nutmeg of each may be taken at a time, and repeated according to the exigency of the case. The sixth is a very agreeable form for the exhibition

hibition of Peruvian bark to thoſe who are more than ordinarily offended with its taſte; the ſubſtances here joined, effectually covering its taſte, at the ſame time that they coincide with it in virtue. The compoſition is a very elegant and pleaſant one, and well deſerves a place in the ſhops: It may either be given in the form of a bolus or electary, in the doſe of a dram or more; or diſſolved in any ſuitable liquor into a draught.

Electarium purgans acidum.
An acid purgative electary.

Take of
Pulp of tamarinds, two ounces;
Cryſtals of tartar, two drams.
Make them into an electary.

This is an uſeful cooling laxative in hot bilious diſpoſitions, or inflammatory diſeaſes. The bulk of a nutmeg may be taken every hour, or oftener, till it begins to operate, or the ſame quantity may be taken once a-day occaſionally in dry coſtive habits.

Electarium saponaceum.
Saponaceous electary.

Take of
Hard Spaniſh ſoap, two ounces;
Pareira brava, one ounce;
Rhubarb,
Gum of aloes, each three drams;
Syrup of orange-peel, a ſufficient quantity.
Mix, and make them into an electary.

This electary is calculated for jaundices ariſing from an obſtruction of the biliary ducts, or a viſcidity of the bile itſelf; ſuch are thoſe which moſt commonly occur, in which the ſtools are of a whitiſh or aſh colour, and voided with difficulty. The doſe is from half a dram to a dram, twice a-day. How far the pareira brava in this compoſition contributes to its virtues, I ſhall not take upon me to determine. Some have recommended this root as a moſt powerful attenuant, in a great variety of diſorders; whilſt others look upon it as not ſuperior, if equal, to the common aperient roots. The ſenſible qualities of the pareira diſcover little foundation for the great character given of it; and a competency of fair trials of its virtue is as yet wanting. The London College has not received it into their Pharmacopœia.

Electarium sistens.
Binding electary.

Take of
The japonic confection, two ounces;
Extract of logwood, one ounce;
Syrup of dry roſes, as much as will reduce them into a proper conſiſtence for an electary.

This electary is calculated for the relief of dyſenteries, and other inteſtinal fluxes, after the acrid humours have been duly evacuated by mild cathartics, &c. The quantity of a nutmeg may be taken every four or five hours.

Electarium e sulphure.
Electary of ſulphur.

Take of
Flowers of ſulphur, half an ounce;
Lenitive electary, two ounces;
Syrup of marſhmallows, a ſufficient quantity to make them into an electary.

This electary is deſigned againſt the piles, and generally diſtinguiſhed in the hoſpitals by the title of *Electarium hemorrhoidale*. Where the diſorder is accompanied with febrile or inflammatory ſymptoms, ſome nitre is occaſionally added, in the proportion of two drams to the quantity here directed. It may be given from a dram to half an ounce at a time.

CHAP VI.

LOHOCHS.

A *LOHOCH, Eclegma, Linctus*, or *Lambative*, is a ſoft compound, deſigned to be licked or ſlowly ſwallowed down, of a middle conſiſtence between a ſyrup and electary; at leaſt never ſo thin as the former, nor ſo thick as the latter.

Theſe preparations are generally compoſed of expreſſed oils, mixed with ſyrups, and other like ſubſtances. In making them, the ſyrup is firſt to be mixed with a little ſugar, and then briſkly beat up in a mortar with the oil; which will thus readily incorporate, eſpecially if the ſyrup is of the acid kind. Two ounces of ſyrup, a dram of ſugar, and an ounce of expreſſed oil, form a linctus of a due conſiſtence; which may be made thicker at pleaſure by adding more oil, or thinner by an increaſe of the ſyrup.

Any oily ſubſtance, as Locatelli's balſam, ſpermacetti, &c. may likewiſe be reduced into this form: and inſtead of ſugar, powders more agreeable to the intention of emollients or pectorals may be uſed; as the compound powder of gum tragacanth, or the white or black bechic troches of the ſhops. But the form at beſt is very unſightly and diſagreeable, and ſubſtances of this kind render it more ſo. 'On theſe accounts this kind of preparations is entirely baniſhed from the preſent Edinburgh Pharmacopœia.'

LOHOCH COMMUNE.

Common lohoch.
Edinb. +

Take of
Freſh-drawn oil of almonds,
Syrup of marſhmallows, or balſamic ſyrup, each one ounce;
White ſugar, two drams.
Mix, and make them into a lohoch.

LOHOCH ex AMYLO.

Starch lohoch.
Edinb. +

Take of
Starch, two drams;
Japan earth, one dram;
Balſamic ſyrup,
Whites of eggs, beaten up into a thin fluid, each one ounce.
Mix, and make them into a lohoch.

LOHOCH de LINO.

Lohoch of linſeed.
Edinb. +

Take of
Freſh-drawn linſeed oil,

Bal-

Balſamic ſyrup, each one ounce;
Flowers of ſulphur, waſhed,
White ſugar, each two drams.
Mix, and make them into a lohoch.

LOHOCH de MANNA.
Lohoch of manna.
Edinb. +

Take of
Calabrian manna,
Freſh-drawn oil of almonds.
Syrup of violets, each equal parts.
Mix, and make them into a lohoch.

LOHOCH SAPONACEUM.
Saponaceous lohoch.
Edinb. +

Take of
Caſtile ſoap, one dram;
Oil of almonds, one ounce;
Syrup of lemon juice, one ounce and a half.
Mix, and make them into a lohoch according to art.

LOHOCH de SPERMACETI.
Lohoch of ſpermaceti.
Edinb. +

Take of
Spermaceti, two drams;
Freſh-drawn oil of almonds, half an ounce;
Balſamic ſyrup, one ounce.
Mix the ſpermaceti with a ſufficient quantity of yolk of eggs, then add the oil and ſyrup, and make them into a lohoch.

LOHOCH BALSAMICUM.
Balſamic lohoch.

Take of
Spermaceti, two drams;
Balſam of Peru, one dram;
Syrup of marſhmallows, two ounces.
Let the ſpermaceti and balſam be well worked up with a ſufficient quantity of yolks of eggs; and then mix with them the ſyrup.

LINCTUS SOLUTIVUS.
Solutive lohoch.

Take of
Conſerve of hips, one ounce;
Solutive ſyrup of roſes,
Oil of olive, each four ounces.
Mix, and make them into a lohoch.

THE principal uſe of lohochs is in diſorders of the internal parts of the mouth, fauces, and œſophagus; as in aphthæ, and tickling coughs from defluxions in the firſt paſſages; for however they may have been celebrated, under the vague appellation of *pectorals*, in affections of the breaſt and lungs, it is not to be expected that their emollient lubricating quality can reach thoſe parts, or that they can give any relief in the true pulmonary cough. The ſlow manner in which they are ſwallowed down renders them well adapted to correct acrimony and irritation in the throat and about the mouth of the ſtomach; though the free uſe of ſuch unctuous compoſitions is ſoon liable to pall the appetite. Indeed the form is an inelegant one, and in the preſent practice is little regarded.

LINCTUS ACIDULUS.
Acidulous linctus.

Take of
Conſerve of red roſes, two ounces;
Weak ſpirit of vitriol, four ſcruples, or as much as is ſufficient to give a grateful acidity.
Mix them together.

THIS linctus is of a different nature from the foregoing preparations, and is uſed as a light reſtringent and detergent. It rather ſtrengthens than relaxes the ſtomach, is ſufficiently agreeable in taſte, and of a fine red colour.

CHAP. VII.

EMULSIONS.

IN the foregoing chapter, oils were united with watery liquors, by the mediation of ſugars and ſyrups, into thick unctuous compounds. The preſent chapter contains mixtures of oily, reſinous, and other like bodies, with water, in a liquid form, of a white colour reſembling milk, and hence called *emulſions*.

Emulſions have been generally prepared by grinding the oily ſeeds of plants, or kernels of fruits, along with common water, or any agreeable ſimple diſtilled water. In this proceſs, the oil of the ſubject is, by the mediation of the other matter, united with the aqueous fluid: and hence they poſſeſs ſome ſhare of the emollient virtue of the pure oil; with this advantage, that they are agreeable to the palate, and not apt to turn rancid or acrimonious by the heat of the body, which the pure oils in ſome inflammatory caſes may do.

Emulſions, beſides their uſe as medicines themſelves, are excellent vehicles for certain ſubſtances which cannot otherwiſe be ſo conveniently taken in a liquid form. Thus camphor, triturated with almonds, readily unites with water, into an emulſion; and in this form is conveyed into the remoted parts of the body, with ſufficient efficacy to anſwer intentions of moment, at the ſame time that its heat and pungency are ſoftened by the unctuoſity of the almonds.

Pure oils, balſams, reſins, and other ſimilar ſubſtances, are likewiſe rendered miſcible with water, into emulſions or milky liquors, by the intervention of mucilages. The white or yolk of an egg unites theſe bodies alſo with water, but leſs elegantly.

Several of the gummy reſins, as ammoniacum, galbanum, myrrh, and others, are reducible into emulſions by trituration with water alone; their reſinous part being rendered diſſoluble by the mediation of the gummy.

EMULSIO COMMUNIS.

Common emulſion.
Lond.

Take of
Sweet almonds blanched, one ounce;
Gum Arabic, half an ounce;

Double-

Double-refined ſugar, ſix drams;
Barley water, two pints.

Diſſolve the gum in the barley water warmed; as ſoon as the water is grown thoroughly cold, pour it by little at a time upon the almonds and ſugar, firſt beat together, continuing to grind the whole, that the liquor may grow milky; after which, it is to be paſſed through a ſtrainer.

Edinb.

'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.

Arabic emulſion.

Edinb.

'This is made in the ſame manner as the preceding; only adding, whilſt beating the almonds,
Of mucilage of gum Arabic, two ounces.'

GREAT care ſhould be taken, that the almonds are 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 in preparing theſe emulſions, may perhaps preſerve them in ſome degree from ſuffering the above changes.' Theſe liquors are principally made uſe of for diluting and obtunding acrimonious humours; particularly in heat of urine and ſtranguries ariſing either from a natural ſharpneſs of the juices, or the operation of cantharides, or other irritating medicines: in theſe caſes, they are to be drank frequently, in 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 diſtinct 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 its 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.

EMULSIO CAMPHORATA.

Camphorated emulſion.

Edinb. †

Take of
Camphor, half a dram;
Sweet almonds, ſix in number;
White ſugar, half an ounce;
Simple pennyroyal water, half a pint.

Grind the camphor and almonds well together in a ſtone mortar, and add by degrees the pennyroyal water; then ſtrain the liquor, and diſſolve in it the ſugar.

THIS is a very commodious form for the exhibition of camphor; the unctuous quality of the almonds in great meaſure covering its pungency. In fevers that require the aſſiſtance of this powerful diaphoretic drug, a ſpoonful of the emulſion may be taken every three or four hours.

LAC

LAC AMMONIACI.
Milk of ammoniacum.
Lond.

Take of
Gum ammoniacum, two drams;
Simple pennyroyal water, half a pint.
Grind the ammoniacum with the water, in a mortar, until the gum is diſſolved.

This liquor 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.

EMULSIO PURGANS.
A purging emulſion.

Take of
Sweet almonds, blanched, two drams;
Fine ſugar, one dram;
Gum Arabic, half a dram;
Scammony, ten grains;
Simple cinnamon water, one ounce.
Diſſolve the gum in the cinnamon water; and having ground the ſcammony with almonds and ſugar, pour on the liquor by little at a time, continuing to grind them together, ſo as to make them into an emulſion.

This emulſion is an agreeable and an effectual purgative. It may be prepared with different proportions of the ſcammony, at pleaſure: other purgative reſins, as that of jalap, may be ſubſtituted to the ſcammony; a proper quantity of any ſyrup to the ſugar; and to the cinnamon water, any other ſimple water that may be more acceptable: but ſpirituous waters, for reaſons already mentioned, have no place. Some have employed an infuſion of liquorice, which appears to be a very proper addition in theſe kinds of preparations, as it coincides with the almonds in correcting the irritating power of the purgative material.

EMULSIO OLEOSA.
Oily emulſion.

Take of
Oil olive, a quarter of a pint;
Spirit of hartſhorn, two drams;
Simple pennyroyal water, twelve ounces;
Pectoral ſyrup, an ounce and a half.
Mix them together.

This compoſition is often uſed againſt recent colds, for alleviating the cough, and promoting expectoration. Where the complaints are of long ſtanding, theſe kinds of medicines have no place; nor is their uſe in any caſe to be long continued, as they relax the ſtomach, pall the appetite, and increaſe the diſorder.

'The union of the oil with the water is more perfect when the cauſtic ſpirit of ſal ammoniac is employed; but whichſoever is uſed, there is frequently a quantity of acid in the ſtomach ſufficient to neutralize the alkali, whereby the oil is ſeparated in its entire ſtate, only to be overcome by the Herculean ſtomach of a London alderman.'

A much more elegant oily emulſion, for all the intentions in which the ſimple lubricating quality of expreſſed oils is wanted, may be prepared in the following manner:

Take an ounce of powdered gum Arabic, and the ſame quantity of common water: diſſolve the gum in the water, that it may form a thick mucilage; to which add by degrees four ounces of freſh-drawn oil of almonds, rubbing them well together in a mortar till they incorporate into a ſmooth white

white maſs. Then pour in by little and little, continuing the agitation, four ounces of common water; to which may be added nutmeg-water, roſe-water, and ſimple ſyrup, of each two ounces.

THIS appears to be the beſt form that oils can be given in; 'but is notwithſtanding liable to the ſame objections as the preceding.' The union is alſo more perfect, and the oil leſs diſpoſed to ſeparate on ſtanding, than in the emulſions obtained by other means. Even ſtrong acids added to the emulſion, produce no decompoſition in it. But alkalis can have no place in this form; for theſe, as we have obſerved upon another occaſion, precipitate pure gums themſelves from water.

EMULSIO SPERMATIS CETI.
Emulſion of ſpermaceti.

Take equal parts of ſpermaceti and of mucilage of gum Arabic. Rub them together in a mortar till they are incorporated into a thick maſs, which may be diluted at pleaſure with water, as in the foregoing proceſs.

EMULSIONS of ſpermaceti, or ſpermaceti draughts, are commonly prepared by means of yolks of eggs; and the emulſions, ſo prepared, are ſufficiently uniform. Thoſe made with mucilage, as here directed, have this advantage, that they are leſs diſagreeable in taſte, and not liable to grow rancid. The mixture of the ſpermaceti and mucilage may be kept, for many days, in a ſtate fit for being diluted, by gradual additions of water, into a ſmooth emulſion.

EMULSIO CUM ARO.
Emulſion with arum root.

Take of
Freſh arum root,
Gum Arabic, each two drams;
Spermaceti, two ſcruples;
Common water, five ounces;
Nutmeg-water,
Syrup of orange-peel, each half an ounce.

Diſſolve the gum Arabic, with a part of the water, into a mucilage, which is to be beaten with the ſpermaceti into a ſmooth paſte. To this add the arum root, previouſly beaten by itſelf into a pulp; and rub them well together, that they may be thoroughly mixed; then gradually pour in the waters and the ſyrup.

FRESH arum root may be taken in this form without the leaſt inconvenience from the pungency, with which the root itſelf ſo violently affects the mouth. I have given a ſpoonful of the emulſion every ſix hours, or oftener, in caſes of the rheumatic kind, and generally with great benefit. The more immediate effect experienced from it was that of warming the ſtomach, and promoting ſweat, which in ſome inſtances it did profuſely.

CHAP.

CHAP. VIII.

JULEPS, MIXTURES, and DRAUGHTS.

BY *Julep* is commonly underſtood, an agreeable liquor, deſigned as a vehicle for medicines of greater efficacy, or to be drank after them, or to be taken occaſionally as an auxiliary. In this light their baſis is generally common water, or a ſimple diſtilled water, with one-fourth or one-third its quantity of a diſtilled ſpirituous water: this mixture is ſweetened with ſugar or any proper ſyrup, or acidulated with vegetable or mineral acids, or impregnated with other medicines ſuitable to the intention; care being taken that theſe additions be ſuch, as will not render the compound unſightly or unpalatable. The quantity uſually directed at a time, in common preſcription, is ſix or eight ounces, to be taken by ſpoonfuls.

A *Mixture*, more ſtrictly ſo called, receives more efficacious materials, whether ſoluble in water, as extracts or ſalts, or indiſſoluble, as powders; more regard being here had to the medicinal intention than to the ſightlineſs or palatableneſs of the compound. There is indeed no preciſe diſtinction between the two; the ſame compoſition being often called by one a julep, and by another a mixture; though in general, few would give the name of julep to a very diſagreeable liquor, or that of mixture to a very pleaſant one.

A *Draught* differs from a julep or mixture, only in being preſcribed in leſs quantity, the whole being intended for one doſe.

JULEPUM e CAMPHORA.

Julep of camphor.
Lond.

Take of
- Camphor, one dram;
- Double-refined ſugar, half an ounce;
- Boiling water, one pint.

Grind the camphor firſt with a little rectified ſpirit of wine until it grows ſoft; and afterwards with the ſugar till they are perfectly mixed: then add the water by little and little, let the mixture cool in a cloſe veſſel, and laſtly, paſs it through a ſtrainer.

THIS is a more eaſy and effectual way of mingling camphor with aqueous liquors than grinding it with water alone, or ſetting it on fire, and then quenching it in water, as directed in our former diſpenſatory, and in other books of pharmacy: though even this method is liable to ſome

ſome inconveniences; part of the camphor exhaling, unleſs an extraordinary deal of care is taken, upon the affuſion of the boiling water; and part remaining upon the ſtrainer. The julep taſtes ſtrong of the camphor, and may be given, in caſes where this drug is proper, in the doſe of a ſpoonful or two. In extemporaneous preſcription, vinegar is ſometimes employed inſtead of water; this acid not only rendering the julep more grateful to the palate and ſtomach, but likewiſe promoting and extending the efficacy of the camphor, rendering it ſerviceable in ſome fevers where that hot pungent medicine by itſelf would be leſs proper. In this view the following form is a very elegant one.

JULEPUM E CAMPHORA ACETOSUM.

Camphor julep with vinegar.

Take of
- Camphor, one dram;
- Gum Arabic, two drams;
- Double-refined ſugar, half an ounce;
- Vinegar, one pint.

Grind the camphor with a few drops of rectified ſpirit of wine till it grows ſoft; then add the gum previouſly reduced to a mucilage with equal its quantity of water, and rub them together till they are perfectly mixed. To this mixture add by degrees the vinegar with the ſugar diſſolved in it.

By this management, the whole ſubſtance of the camphor is united with, and kept ſuſpended in, the liquor; and conſequently every ſpoonful of the mixture is equivalent to one grain and ſeven-eighths of a grain of camphor in ſubſtance. The ſame treatment ſucceeds equally when water is uſed for the menſtruum; and if the aſſiſtance of nitre is required, this alſo may be added in either form.

JULEPUM e CRETA.

Chalk julep.
Lond.

Take of
- The whiteſt chalk, prepared, one ounce;
- Double-refined ſugar, ſix drams;
- Gum Arabic, two drams;
- Water, two pints.

Mix them together.

This julep is deſigned for heart-burns and other like diſorders ariſing from acid juices in the firſt paſſages. The chief uſe of the gum is to give a greater degree of conſiſtence to the water, and enable it to keep the powdered chalk ſuſpended. See POTIO CRETACEA.

JULEPUM e MOSCHO.

Muſk julep.
Lond.

Take of
- Damaſk-roſe water, ſix ounces by meaſure
- Muſk, twelve grains;
- Double-refined ſugar, one dram.

Grind the ſugar and the muſk together, and gradually add to them the roſe-water.

This is 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 depoſites 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

two

two or three drams of mucilage of gum Arabic, before the addition of the water, as directed in the preceding chapter for making emulſions: 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. The following compoſition of this kind is uſed in ſome of our hoſpitals.

JULEPUM MOSCHATUM.
Muſk julep.

Take of
Roſe-water, ſix ounces;
Volatile oily ſpirit, one dram and a half
Muſk, fifteen grains;
White ſugar, half an ounce;
Grind the muſk with the ſugar, and then mix therewith the other ingredients.

JULEPUM ALEXIPHARMACUM.
Alexipharmac julep.

Take of 1.
Simple alexeterial water, ſix ounces;
Spirituous alexeterial water, two ounces;
Syrup of clove-julyflowers, two drams.
Mix them together.

Take of 2.
Simple alexeterial water, ſix ounces;
Spirituous alexeterial water with vinegar, two ounces;
Syrup of lemon juice, two drams.
Mix them together.

JULEPUM CARDIACUM.
Cordial julep.

Take of
Simple cinnamon water,
Simple orange-peel water, each three ounces;
Nutmeg water, two ounces;
Syrup of orange-peel, half an ounce.
Mix them together.

Take of 2.
Dill-ſeed water, ſix ounces;
Cardamom-ſeed water, two ounces;
Compound ſpirit of lavender,
Syrup of ſaffron, each two drams.
Mix them together.

JULEPUM CARMINATIVUM.
Carminative julep.

Take of 1.
Fennel-ſeed water, ſix ounces;
Compound juniper water, two ounces;
Syrup of clove-julyflowers, half an ounce.

Take of 2.
Jamaica-pepper water, ſix ounces;
Compound aniſeed water, two ounces;
Syrup of orange-peel, half an ounce.

Take of 3.
Dill-ſeed water, ſix ounces;
Compound caraway water, two ounces;
Syrup of ginger, half an ounce.

JULEPUM HYSTERICUM.
Hyſteric julep.

Take of 1.
Simple pennyroyal water,
Caſtor water, each three ounces;
Spirituous pennyroyal water, two ounces;
Simple ſyrup, two drams.

Take of 2.
Simple alexeterial water, ſix ounces;

Car-

Cardamom-seed water, two ounces;
Compound spirit of lavender,
Volatile aromatic spirit, each one dram;
Syrup of clove-julyflowers, half an ounce.

Take of 3.
Dill-seed water, four ounces;
Simple peppermint water, two ounces;
Tincture of cardamoms,
Syrup of ginger, each two drams.

JULEPUM REFRIGERANS.
A cooling julep.

Take of
Rhenish wine, five ounces;
Damask-rose water, two ounces;
Seville orange juice,
Syrup of violets, each six drams.

JULEPUM STOMACHICUM.
Stomachic julep.

Take of 1.
Simple mint water, six ounces;
Spirituous mint water, two ounces;
Syrup of saffron, two drams.

Take of 2.
Tincture of mint, six ounces;
Cardamom water, two ounces;
Simple syrup, half an ounce.

Take of 3.
Cinnamon water, six ounces;
Nutmeg water,
Stomachic tincture, each one ounce;
Syrup of orange-peel, half an ounce.

THE titles of these mixtures express the intentions for which they are calculated: four or five spoonfuls of either may be taken occasionally, or used as vehicles and diluters of medicines of greater efficacy.

The following *julapia* were formerly used in the Edinburgh infirmary.

JULAPIUM AMMONIACUM.
Ammoniacum julep.

Take of
Milk of ammoniacum, four ounces;
Syrup of squills, three ounces.
Mix them together.

Two spoonfuls of this mixture may be given twice a-day, in coughs, asthmas, and oppressions at the breast. It is a medicine of considerable efficacy, but not a little unpleasant, though called a julep in the hospitals where it is used.

JULAPIUM ANTIHYSTERICUM.
Antihysteric julep.

Take of
Pennyroyal water, four ounces;
Compound valerian water, two ounces;
Tincture of castor, two drams;
Salt of hartshorn, ten grains;
White sugar, six drams.
Mix them together.

THE virtues of this composition are sufficiently obvious from its title: the dose is two spoonfuls, to be taken twice or thrice a-day.

JULAPIUM CARDIACUM.
Cordial julep.

Take of
Alexeterial water, four ounces;
Aromatic water, two ounces;
Volatile oily spirit,
Tincture of saffron, each two drams;
White sugar, half an ounce.
Mix, and make them into a julep.

THIS mixture is an useful cordial in all depressions of the spirits, in the sinkings of low fevers, and the languors to which hysterical and hypochondriacal

pochondriacal perſons are ſubject. An ounce, or two ſpoonfuls, may be taken for a doſe, two or three times a-day.

Julapium diaphoreticum.
Diaphoretic julep.

Take of
Alexeterial water, four ounces;
Spirit of Mindererus, two ounces;
Salt of hartſhorn, ten grains;
White ſugar, ſix drams.
Mix them for a julep.

This excellent compoſition is a very powerful ſudorific, and anſwers its intention more effectually, and with greater certainty, than many others calculated for the ſame purpoſe. Where a copious ſweat is to be excited, as in rheumatic diſeaſes, two ſpoonfuls are to be taken warm in bed every hour, or two hours, till the ſweat breaks out; if warm diluting liquors are not afterwards ſufficient to keep it up, the ſame medicine is to be occaſionally repeated.

Julapium diaphoreticum acidum.
Acid diaphoretic julep.

Take of
Alexeterial water, four ounces;
Treacle vinegar, two ounces;
Tincture of ſaffron, half an ounce;
Spirit of amber, one dram;
White ſugar, one ounce.
Mix them together.

The acid quality of this diaphoretic julep adapts it more particularly to thoſe diſorders in which any of the internal parts are inflamed, as in pleuriſies and peripneumonies. It is given in the ſame doſe as the preceding.

Julapium diureticum.
Diuretic julep.

Take of
Spirit of Mindererus, four ounces;
Compound horſeradiſh water, two ounces;
Syrup of marſhmallows, three ounces.
Mix them together.

The ſpirit of Mindererus is an excellent aperient ſaline liquor, capable of promoting evacuation either by the cutaneous pores, or the urinary paſſages, according to the manner of exhibiting it. We have ſeen above, that when taken warm in bed, it proves a powerful ſudorific; eſpecially if aſſiſted by volatile ſalts, ſmall doſes of opiates, or other ſubſtances which tend to determine its action to the ſkin. If the patient walks about, in a cool air, it operates gently, but for the moſt part effectually, by urine: the additions here joined to it correſpond with this intention, and promote its operation. As this medicine excites the urinary diſcharge, without heating or irritating the parts, it takes place not only in dropſies, but likewiſe in inflammatory diſorders, wherever this ſalutary ſecretion is to be promoted. It is given to the quantity of two ſpoonfuls, thrice a-day.

A dram of ſpirit of amber is ſometimes mixed with this julep, which nevertheleſs does not ſeem to receive from that ingredient any additional virtue: whatever virtues the *ſalt* of amber may poſſeſs (which probably are not ſo great as is generally ſuppoſed) the *ſpirit* is impregnated therewith in an extremely low degree.

Julapium foetidum.
Fetid julep.

Take of
Aſafetida, one dram and a half;

Rue

Rue water, ſix ounces;
Compound valerian water, two ounces;
Oil of hartſhorn, twenty drops;
White ſugar, ten drams.

Rub the aſafetida in the rue water till it diſſolves; and having dropt the oil upon the ſugar, mix the whole together.

This compoſition is not a little fetid and unſightly; it is nevertheleſs a medicine of great efficacy in hypochondriacal and hyſteric diſorders, aſthmas, and other nervous complaints: the doſe is one ſpoonful, to be taken thrice a-day. It is ſometimes prepared without the oil of hartſhorn.

Julapium hydragogum.
Hydragogue julep.

Take of
Chamomile-flower water, ſix ounces;
Emetic tartar, ten grains;
Syrup of buckthorn, two ounces.

Mix them together.

Two ſpoonfuls of this julep are given, in hydropic caſes, every two hours, till it takes ſufficient effect as a purgative; which it generally does before the quantity here preſcribed has been made uſe of. Emetic tartar, thus exhibited in ſmall doſes, and frequently repeated, proves as certain and powerful a cathartic as it does an emetic when given in a larger quantity at once. It operates nevertheleſs, for the moſt part, with ſufficient eaſe.

Julapium sistens.
Binding julep.

Take of
Alexeterial water, four ounces;
Aromatic water, two ounces;
Japonic confection, two drams;
Japan earth, in powder, one dram;
Liquid laudanum, forty drops;
White ſugar, half an ounce.

Mix them well together.

This julep is calculated againſt dyſenteries and diarrhœas; in which, after proper evacuations, it generally eaſes the gripes and reſtrains the flux. It is to be given three or four times a-day, in the quantity of a ſpoonful at a time.

Mistura alexeteria.
Alexeterial mixture.

Take of
Common water, four ounces;
Spirituous alexeterial water with vinegar,
Julep of camphor, each one ounce and a half;
Compound powder of contrayerva, four ſcruples;
Nitre, two ſcruples;
Syrup of orange-peel, ſix drams.

Mix them together.

In hoſpitals, and places ill aired, common inflammatory fevers ſometimes change into putrid and malignant ones. To guard againſt any accident of this kind, as ſoon as the inflammation begins to abate, or the pulſe to ſoften, three or four ſpoonfuls of this alexipharmac mixture may be given every ſix hours. Camphor ſeems to anſwer beſt when thus given in a liquid form; and to be moſt efficacious in ſuch ſmall doſes, for abating inflammation and nervous ſymptoms, and likewiſe for promoting a gentle diaphoreſis.

Mistura antidysenterica.
Antidyſenteric mixture.

Take of 1.
Simple cinnamon water, ſeven ounces;
Spirituous cinnamon water, one ounce;
Electary of ſcordium with opium, half an ounce.

Mix them together.

Take of 2.
Extract of logwood, three drams;
Tincture of Japan earth, two drams;
Spirituous cinnamon water, one ounce;
Common water, ſeven ounces.
Diſſolve the extract in the cinnamon water, and then add the common water and the tincture.

In recent dyſenteries, after the neceſſary evacuations, a ſpoonful or two of either of theſe mixtures may be given after every motion, or once in four or five hours: if the firſt, which is a mild opiate, fails of procuring reſt, it is a ſign that ſome of the corrupted humours ſtill remain in the bowels, and that it is more proper to go on with the evacuation than to ſuppreſs the flux. Theſe medicines will ſometimes likewiſe take place in the laſt ſtage of the diſeaſe, when through neglect or miſmanagement it has continued till the ſtrength is much impaired, the inteſtines greatly relaxed, and their villous coat abraded; provided there are neither ichorous or involuntary ſtools, aphthæ, petechiæ, hiccup, or great anxiety at the breaſt. Rhubarb, and theſe aſtringents, are to be ſo interpoſed, that at the ſame time that the putrid humours are diſlodged, the ſtrength may be ſupported, and the inteſtines braced. See Dr Pringle's excellent Obſervations on the Diſeaſes of the Army, page 254, *& ſeq.* where the reader will find a full and ſatisfactory hiſtory of the ſymptoms and cure of this diſtemper, ſo frequent and fatal in the camp.

Mistura antiemetica salina.
Saline antiemetic mixture.

Take of
Salt of wormwood, half a dram;
Lemon juice, ſix drams;
Simple cinnamon water, one ounce;
Fine ſugar, one ſcruple.
Mix them together.

This mixture is frequently preſcribed, not only for the purpoſe expreſſed in its title, but likewiſe as a ſaline aperient in icterical, inflammatory, and other diſorders, where medicines of that claſs are proper. For ſtopping vomiting it is moſt effectual when given in the ſtate of efferveſcence. See Fixed air.

Mistura cardiaca.
Cordial mixture.

Take of
Simple cinnamon water, four ounces;
Spirituous cinnamon water, two ounces;
Extract of ſaffron, one ſcruple;
Confection of kermes, ſix drams.
Mix them together.

In great languors and depreſſions, a ſpoonful of this rich cordial mixture may be taken every half hour.

Mistura ad phthisin.
Mixture againſt the phthiſis.

Take of 1.
Balſam of Copaiba, one dram;
Common water, four ounces;
Spirituous cinnamon water, one ounce;
Syrup of orange-peel, half an ounce.
Let the balſam be diſſolved in a proper quantity of yolk of egg, and then mixed with the other ingredients.

Take of 2.
Thebaic extract, one grain;
Conſerve of roſes, half a dram.
Mix them together for a bolus.

Take

Take of 3.
Oxymel of ſquills, a dram and a half;
Thebaic tincture, fifteen drops;
Spirituous cinnamon water, two drams;
Common water, two ounces.
Mix them together.

In the advanced ſtate of a conſumption, we may diſtinguiſh two ſorts of coughs; one occaſioned by the ulcers, and the other by a thin rheum falling upon the fauces and trachea; which parts being then deprived of their mucus, become extremely ſenſible to irritation. It is the laſt kind, perhaps, which is moſt painful and teazing to the patient. The firſt ſort requires balſamics, if the ulcer is open, and the matter can be expectorated. For this purpoſe, the firſt of the above mixtures is a very elegant and effectual formula: two ſpoonfuls are to be taken at a time, twice a-day: if the balſam purges, two drams of the paregoric elixir, added to the quantity of the mixture here preſcribed, will prevent that effect. The other kind of cough can only be palliated by incraſſants; and for that purpoſe, the ſecond of the above compoſitions is one of the moſt ſucceſsful medicines: the conſerve is altogether ſafe, and otherwiſe well adapted to the nature of the diſeaſe, but of weak virtues: the opiate extract is the moſt efficacious ingredient, but is to be given with great caution, as opiates in general are apt to heat, to bind the body, and to obſtruct expectoration. As theſe bad qualities are in good meaſure corrected by ſquills; as ſoon as the patient begins to complain of reſtleſs nights from coughing, the third mixture may be given at bed-time. See Pringle's Obſervations on the Diſeaſes of the Army.

'Notwithſtanding theſe ideal diſtinctions, and the practice founded on them, it muſt be acknowledged, that there is very much ambiguity on the uſe of the medicines called *Balſamics*. They are generally ſtimulating ſubſtances, fitted to inflame ulcers, and aggravate the hectic ſymptoms. Their antiſeptic powers are too trifling to overbalance theſe diſadvantages; but to ſay with ſome, that theſe ſtimulating ſubſtances may cure phthiſis by producing an adheſion of the ulcers to the pleura, is a piece of reaſoning too ſportive to be gravely applied in the treament of a diſeaſe ſo fatal to the moſt amiable part of ſociety.'

Mistura e valeriana.
Valerian mixture.

Take of
Simple peppermint water, twelve ounces;
Wild valerian root in powder, one ounce;
Compound ſpirit of lavender, half an ounce;
Syrup of orange-peel, one ounce.
Mix them together.

Wild valerian root, one of the principal medicines in epilepſies and vertigoes, ſeems to anſwer better when thus exhibited in ſubſtance, than if given in form of tincture or infuſion. The liquors here joined to it excellently coincide with, and by their warmth and pungency greatly improve its virtues. Two ſpoonfuls of the mixture may be taken twice or thrice a-day.

Haustus catharticus.
Cathartic draught.

Take of 1.
Scammony, ten grains;
Spirit of roſemary, two drams;
Syrup of buckthorn, ſix drams.
Grind the ſcammony with the ſpirit in a glaſs mortar; and when

perfectly incorporated, mix in the ſyrup.

Take of 2.
Jalap in powder, one ſcruple;
Ipecacuanha, three grains;
Compound juniper water, one ounce;
Infuſion of linſeed, an ounce and half;
Simple ſyrup, one dram.
Mix them together.

Both theſe compoſitions are ſtrong cathartics, yet for the moſt part eaſy and ſafe in operation. They are calculated chiefly for hydropic caſes, in which they procure copious evacuations, without weakening or fatiguing the patient ſo much as many other medicines of this kind.

Haustus catharticus salinus.
Saline cathartic draught.
Take of
Glauber's cathartic ſalt,
Manna, each ſix drams;
Boiling water, three ounces;
Tincture of cardamoms, one dram.
Diſſolve the ſalt and manna in the water; and having ſtrained off the liquor, add to it the tincture of cardamoms.

This is a very elegant and agreeable ſaline purgative. Tincture of cardamoms is one of the beſt additions to liquors of this kind, or to the purging mineral waters, for rendering them acceptable to the ſtomach.

Haustus diaphoreticus.
Diaphoretic draught.
Take of
Spirit of Mindererus,
Syrup of meconium, each half an ounce;
Salt of hartſhorn, five grains.
Mix them together.

This draught is a very powerful ſaline diaphoretic. It is given with ſafety, and often with great benefit, in the beginning of inflammatory fevers, after bleeding; where theriaca, and other warm ſubſtances uſually employed, if they fail in bringing out a ſweat, increaſe the fever.

Haustus diureticus.
Diuretic draughts.
Take of 1.
Oxymel of ſquills, one dram and a half;
Simple cinnamon water, one ounce;
Compound ſpirit of lavender,
Syrup of orange-peel, each one dram.
Mix them together.

Take of 2.
Vinegar of ſquills, one dram (or one dram and a half;
Salt of wormwood, half a dram;
Lemon juice, ſix drams;
Simple cinnamon water, an ounce and a half;
Spirituous peppermint water, half an ounce;
Syrup of orange-peel, one dram.
Let the ſalt of wormwood and lemon juice be firſt mixed together, and then add to them the other ingredients.

Take of 3.
Diuretic ſalt, two ſcruples;
Oxymel of ſquills, one dram by meaſure;
Water, an ounce and a half.
Mix them together.

Take of 4.
Tincture of cantharides, fifteen drops;
Salt of wormwood, half a dram;
Lemon juice, ſix drams;
Simple

Simple pennyroyal water, an ounce and a half;
Simple syrup, two drams.
Mix them together.

THE two first of these elegant and efficacious compositions are commended by Dr Mead for promoting urine in hydropic cases. He directs them to be taken every night or oftener, according to the urgency of the symptoms. The squill, one of the most powerful diuretics, is, by the additions here joined to it, rendered not only more grateful to the palate and stomach, but likewise enabled more effectually to answer the purposes intended by it. The other two are taken from our hospitals; in which the former, composed on the same plan with the two preceding, is justly distinguished by the title of *mitior*, or milder; and the latter, containing besides the saline matter a moderate dose of cantharides, by that of *fortior*, or stronger.

HAUSTUS ANODYNO-DIURETICUS.
An anodyne diuretic draught.
Take of
Ley of tartar, half a dram;
Thebaic tincture, forty drops;
Peppermint water, one ounce;
Simple cinnamon water, half an ounce;
Spirituous cinnamon water, two drams;
Syrup of marshmallows, one dram.
Mix them together.

THOUGH practitioners have rarely ventured to exhibit opium in dropsies; yet in those which are accompanied with great pain, this anodyne drug, by easing the pain, and removing the stricture of the passages, which painful sensations always occasion, proves a medicine of great service, and notably promotes the urinary discharge. Dr Mead has given a remarkable instance of the good effects of the mixture above prescribed, in a person labouring under an ascites and tympany at the same time, where the pain was intolerable, the thirst intense, and the urine in very small quantity: the stronger purgatives increased the distemper; soap, alkaline salts, nitre, and other diuretics, were tried in vain: this draught (when the patient seemed to be beyond any assistance from medicine) procured unexpected relief, not only a gentle sleep, and truce from the pain, but likewise a copious discharge of urine: by repeating the medicine, for a little time, every eight hours, and afterwards using corroborants, the cure was perfectly completed.

CHAP IX.

LOTIONS, GARGARISMS, INJECTIONS, &c.

AQUA ALUMINOSA BATEANA.
Bates's alum water.
Lond.

TAKE of
Alum,
White vitriol, each half an ounce;
Water, two pints.
Boil the ſalts in the water till they are diſſolved; let the ſolution ſettle, and afterwards filtre it through paper.

BATES directs 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 ALUMINOSA.
Alum water.
Edinb. +

Take of
Corroſive mercury ſublimate,
Alum, each two drams;
Water, two pints.
Let the ſublimate and alum be ground into powder, and boiled with the water, in a glaſs veſſel, to the conſumption of half the water; then ſuffer the liquor to ſettle, and pour it off clear from the ſediment.

THIS is taken from Fallopius, with the exchange of roſe and plantane waters for common water, which is equally fit for the purpoſe. The compoſition is deſigned chiefly for cutaneous puſtules and ulcerations.

AQUA SAPPHIRINA.
Sapphire-coloured water.
Lond.

Take of
Lime-water, newly made, one pint;

Sal ammoniac, one dram;
Let them ſtand together, in a copper veſſel, or along with ſome plates of copper, until the liquor has acquired a ſapphire colour.

Edinb.

'Take of
Lime water, newly made, eight ounces;
Sal ammoniac, two ſcruples;
Verdigris, beat, four grains.
Mix them, and after twenty-four hours ſtrain the liquor.

'THIS is a much more cheap 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 minute.

AQUA VITRIOLICA CÆRULEA.

Blue vitriolic water.
Lond.

Take of
Blue vitriol, three ounces;
Alum,
Strong ſpirit (or oil) of vitriol, each two ounces;
Water, a pint and a half.
Boil the ſalts in the water until they are diſſolved; then add the acid ſpirit, and filtre the mixture through paper.

AQUA STYPTICA.

Styptic water.
Edinb.

'Take of
Blue vitriol,
Alum, each three ounces;
Water, two pounds.
Boil them until the ſalts are diſſolved; then filtre the liquor, and add an ounce and a half of vitriolic acid.'

THESE compoſitions are 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 VITRIOLICA CAMPHORATA.

Camphorated vitriolic water.
Lond.

Take of
White vitriol, half an ounce;
Camphor, two drams;
Boiling water, two pints.
Mix them, that the vitriol may be diſſolved; and after the feces have ſubſided, filtre the liquor through paper.

THIS is an unfrugal method of managing camphor, the greateſt part of which ſeparates with the feces of the vitriol, very little of it remaining ſuſpended in the water. The Edinburgh College, in the preceding edition of their Pharmacopœia, had a preparation under the title of AQUA OPHTHALMICA, differing little otherwiſe from the above than in the quantity of water being greater, and in an addition of tutty and bole; ingredients which could be of no uſe, as not being ſoluble in water, and ſubſiding from it in ſtanding.

AQUA VITRIOLICA.

Vitriolic water.
Edinb. †

Take of
White vitriol, two drams;
Water, two pints.
Boil till the vitriol is diſſolved, and then filtre the liquor.

WHERE the eyes are watery or inflamed, theſe ſolutions of white vi-

triol are very uſeful applications: 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.

AQUA PHAGEDÆNICA.
Phagedenic Water.
Edinb.

Take of
Lime-water, one pint;
Corroſive mercury ſublimate, half a dram.
Let a ſolution be made.

This is deſigned for waſhing and cleanſing old foul ulcers, and preventing the growth of fungous fleſh. It is for moſt purpoſes rather too acrid to be uſed without dilution.

Gargarisma astringens.
Aſtringent gargariſm.

Take of
Oak bark, one ounce;
Alum, one dram;
Honey of roſes, one ounce;
Water, a pint and a half.
Boil the water with the oak bark, till ſuch time as the liquor, when ſtrained, will amount only to one pint; to which add the alum and the honey.

Gargarisma commune.
Common gargariſm.

Take of
Tincture of roſes, one pint;
Honey of roſes, two ounces.
Mix them together.

Or,

Take of
Water, ſix ounces;
Nitre, one dram;
Honey of roſes, one ounce.
Mix them together. Where acids are requiſite, forty drops of the weak ſpirit of vitriol are added to this compoſition.

Gargarisma detergens.
Detergent gargariſm.

Take of
Emollient decoction, one pint;
Tincture of myrrh, one ounce;
Honey, an ounce and a half.
Mix them together.

Gargarisma emolliens.
Emollient gargariſm.

Take of
Marſhmallow root, two ounces;
Figs, four in number;
Water, three pints.
Boil them till one pint is waſted, and then ſtrain the liquor.

These liquors are uſed for waſhing the mouth and fauces; the firſt, where the parts are extremely relaxed; the ſecond and third, where ulcerations require to be deterged, or the excretion of thick viſcid ſaliva promoted; and the fourth, where the mouth is dry, parched, and rigid, to moiſten and ſoften it. In ſome caſes, volatile ſpirits may be advantageouſly joined to theſe kinds of preparations. Dr Pringle informs us, that in the inflammatory quinſey, or ſtrangulation of the fauces, he has obſerved little benefit ariſing from the common gargles; that ſuch as were of an acid nature ſeemed to do more harm than good, by contracting the emunctories of the ſaliva and mucus, and thickening thoſe humours; that the decoction of figs in milk and water ſeemed to have a contrary effect, eſpecially if ſome ſpirit of ſal ammoniac was added, by which the ſaliva was made thinner, and the glands brought to ſecrete more freely; a circumſtance always conducive to the cure.

Enema de amylo.
Starch glyſter.

Take of
Gelly of ſtarch, four ounces;

Lin-

Linseed oil, half an ounce.
Liquefy the gelly over a gentle fire, and then mix in the oil. Forty drops of liquid laudanum are sometimes added.

ENEMA ANODYNUM, sive OPIATUM.
Anodyne, or opiate glyster.
Take of
Infusion of linseed, six ounces;
Liquid laudanum, forty drops.
Or,
Mutton broth, five ounces;
Thebaic extract, three grains.

ENEMA ANTICOLICUM.
Glyster against the colic.
Take of
Common decoction, half a pint;
Tinctura sacra, one ounce;
Common salt, one dram;
Linseed oil, two ounces.
Mix them together.

ENEMA ASTRINGENS.
Astringent glyster.
Take of
Lime-water, ten ounces;
Japonic confection, half an ounce.
Mix them together for a glyster, of which one half is to be injected at a time.

ENEMA ASTRINGENS BALSAMICUM.
Astringent balsamic glyster.
This is made by adding to the foregoing half an ounce of Locatelli's balsam, dissolved in the yolk of an egg.

ENEMA COMMUNE.
Common glyster.
Take of
Common decoction, twelve ounces;
Lenitive electary, one ounce;
Common salt, half an ounce;
Oil olive, two ounces.
Mix them together.

ENEMA DOMESTICUM.
Domestic glyster.
Take of
Cows milk, half a pint;
Brown sugar,
Oil olive, each one ounce.
Mix them together.

ENEMA EMOLLIENS.
Emollient glyster.
Take of
Palm oil, an ounce and a half;
Cows milk, half a pound.
Let the oil be beat up with the yolk of one egg, and then add the milk.

ENEMA FOETIDUM.
Fetid glyster.
Take of
Asafetida, two drams;
Rue,
Savin, each half an ounce;
Oil olive, one ounce;
Oil of amber, half a dram;
Water, one pint and a half.
Boil the water with the rue and savin till half a pint is wasted; then strain off the remaining decoction, and mix with it the asafetida and the oils. Half the quantity of the composition here directed is to be injected at a time.

ENEMA PURGANS.
Purging glyster.
Take of
Common decoction, half a pint;
White soap, one ounce;
Syrup of buckthorn, an ounce and a half.
Mix them together.

ENEMA TEREBINTHINATUM.
Turpentine glyster.
Take of
Common decoction, ten ounces;
Venice turpentine (dissolved in the

the yolk of an egg) half an ounce;
Linſeed oil, one ounce.
Mix them together.

The uſes of theſe compoſitions are ſufficiently obvious from their titles. The ſtarch, anodyne, emollient, and aſtringent glyſters, are uſed in dyſenteries, and other alvine fluxes, to ſtrengthen the tone of the inteſtines, defend them from being corroded by the acrimonious humours, to heal their exulcerations, and eaſe the pains which accompany theſe diſorders. The turpentine glyſter is injected in nephritic caſes; the fetid in hyſteric ones. The others are calculated for unloading the inteſtines of their contents, where the exhibition of purgatives in other forms is improper or unſafe. Glyſters have been looked upon by ſome as mere topical applications, whoſe operation was confined to the inteſtine into which they are received. But experience has ſhown, that in many caſes their action is extended much farther: thus the turpentine glyſter, above deſcribed, promotes the diſcharge of the kidneys, and communicates to the urine a violet ſmell; and the anodyne glyſter proves narcotic, as if a moderate doſe of opium had been ſwallowed: perſons have been inebriated by ſpirituous glyſters; and ſome affirm, that life has been ſupported for ſeveral days by thoſe of a nutritious kind.

Injectio balsamica.
Balſamic injection.

Take of
Balſam of Copaiba, half an ounce;
Lime-water, ſix ounces;
Honey of roſes, two ounces.
Let the balſam be well beaten up with the yolk of one egg; and then gradually add the lime-water and honey.

Injectio mercurialis.
Mercurial injection.

Take of
Quickſilver,
Balſam of Copaiba, each half an ounce;
Roſe-water, half a pint.
Rub the quickſilver with the balſam till they are perfectly incorporated; then mix with them the yolk of an egg, and afterwards add the roſe-water.

This and the foregoing preparation are deſigned to be injected into the urethra in virulent gonorrhœas, for cleanſing and deterging the parts.

CHAP.

CHAP. X.

PLASTERS.

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 ſmall 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 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 coction 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 relative to their uſe 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

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 is extremely hot.

EMPLASTRUM ANODYNUM.

Anodyne plaſter.
Edinb. +

Take of
White reſin, eight ounces;
Tacamahaca, in powder,
Galbanum, each four ounces;
Cummin ſeeds, three ounces;
Black ſoap, four ounces.

Melt the reſin and the gums together; then add the powdered ſeeds and the ſoap, and make the whole into a plaſter.

This plaſter ſometimes gives eaſe in ſlight rheumatic pains.

EMPLASTRUM FŒTIDUM, vulgo ANTIHYSTERICUM.

Fetid, commonly called *Antihyſteric plaſter.*
Edinb.

Take of
Common plaſter,
Aſafœtida, 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.

EMPLASTRUM ATTRAHENS.

Drawing plaſter.
Lond.

Take of
Yellow wax, each three pounds;
Tried mutton ſuet, one pound.

Melt them together, and whilſt the the maſs remains fluid, paſs it through a ſtrainer.

This is a very well contrived plaſter for the purpoſe expreſſed in its title. 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 for that reaſon retrenched. It ſhould 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 album* will ſerve for general uſe; and for ſome particular purpoſes, the *Ceratum citrinum* may be applied.

EMPLASTRUM CEREUM.

Wax plaſter.
Edinb.

Take of
Yellow wax, three parts;
White reſin,
Mutton ſuet, each two parts.

Melt them together into a plaſter; which

which ſupplies the place of melilot plaſter.'

THIS plaſter is ſimilar to the foregoing, but the further reduction of the reſin renders it for ſome purpoſes more eligible.

EMPLASTRUM CEPHALICUM.

Cephalic plaſter.

Lond.

Take of
- Burgundy pitch, two pounds;
- Soft labdanum, one pound;
- Yellow reſin,
- Yellow wax, each four ounces;
- The expreſſed oil, called *oil of mace*, one ounce.

Melt the pitch, reſin, and wax together; then add, firſt the labdanum, and afterwards the oil of mace.

Edinb. +

Take of
- Tacamahaca in powder,
- Yellow wax,
- Venice turpentine, each four ounces;
- Oil of lavender, two drams;
- Oil of amber, one dram.

Melt the tacamahaca with the wax, and then add the turpentine, that a plaſter may be formed: when this compound is taken from the fire and grown almoſt cold, mix in the oils.

THESE plaſters are 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.

EMPLASTRUM de CICUTA cum AMMONIACO.

Plaſter of hemlock with ammoniacum.

Edinb. +

Take of
- Juice of hemlock leaves, four ounces;
- Gum ammoniacum, eight ounces;
- Vinegar of ſquills, as much as is ſufficient to diſſolve the gum.

Add the juice to this ſolution; and having ſtrained the mixture, boil it to the conſiſtence of a plaſter.

THIS plaſter was formerly 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; and hence the London College, at the late reviſal of their Pharmacopœia, omitted it. But the high reſolvent power which Dr Stork 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 COMMUNE.

Common plaſter, uſually called *Diachylon.*

Lond.

Take of
- Oil olive, one gallon;
- Litharge, ground into a moſt ſubtile powder, five pounds.

Boil them over a gentle fire, with about two pints of water, keeping them continually ſtirring till the oil and litharge unite, and

ac-

acquire the consistence of a plaster. If all the water should be consumed before this happens, add some more water previously made hot.

Edinb.

'Take of
Oil olive, two parts;
Litharge, one part;
Boil them, as above directed, into a plaster.'

The heat in these 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 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 COMMUNE ADHÆSIVUM.

Common sticking plaster.
Lond.

Take of
Common plaster, three pounds;
Yellow resin, half a pound.
Melt the common plaster over a very gentle fire; then add the resin, first reduced into powder, that it may melt the sooner; and mix them all together.

This plaster may otherwise be made, by taking, instead of the common plaster, its ingredients oil and litharge; and adding the resin a little before they have come to the due consistence; then continue the boiling till the plaster is finished.

It turns out the most elegant when made by this last method.

EMPLASTRUM ADHÆSIVUM.

Sticking plaster.
Edinb.

'Take of
Common plaster, five parts;
White rosin, 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 COMMUNE cum GUMMI.

Common plaster with gums.
Lond.

Take of
Common plaster, three pounds;
Galbanum, strained, eight ounces;
Common turpentine,
Frankincense, each three ounces.
Melt the galbanum with the turpentine over a gentle fire, and sprinkle in the frankincense, reduced to powder; then gradually mix with these the common plaster, previously liquefied by a very gentle heat.

Or, instead of the common plaster already made, you may take the oil and litharge boiled together: as soon as these unite, before they have acquired the consistence of

a

a plaſter, the other ingredients are to be added.

EMPASTRUM GUMMOSUM.

Gum plaſter.
Edinb.

'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 maturated and diſcharged, for ſuppurating or diſcuſſing the remaining hard part.

EMPLASTRUM CROCEUM, vulgo OXYCROCEUM.

Saffron plaſter, commonly called *Oxycroceum.*
Edinb. +

Take of
Burgandy pitch,
Yellow wax, each one pound;
Galbanum,
Tar, each half a pound;
Saffron, rubbed into powder, two ounces.
Let the Burgandy pitch, wax, and galbanum, be melted together over a gentle fire; then add the tar and ſaffron, and make the whole into a plaſter.

This infrugal and injudicious compoſition is ſaid to ſtrengthen the parts to which it is applied, eſpecially the tendinous ones; to warm in a great degree, and to reſolve and diſcuſs cold tumors. Tar is now introduced as an ingredient, in the room of Venice turpentine, myrrh, and olibanum.

EMPLASTRUM e CYMINO.

Cummin plaſter.
Lond.

Take of
Burgandy pitch, three pounds;
Yellow wax,
Cummin ſeeds,
Caraway ſeeds,
Bay berries, each three ounces.
Melt the pitch with the wax; then ſprinkle in the other ingredients, firſt reduced into a powder, and mix the whole well together.

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 flatulences.

EMPLASTRUM DEFENSIVUM, ſive ROBORANS.

Defenſive, or *Strengthening plaſter.*
Edinb.

'Take of
Common plaſter, twenty-four parts;
White roſin, ſix parts;
Yellow wax,
Olive oil, each three parts;
Colcothar of vitriol, 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 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

by any other plaſter which adheres with equal firmneſs.'

EMPLASTRUM e MELILOTO.
Melilot plaſter.

Take of
Melilot leaves, freſh, ſix pounds;
Beef ſuet, three pounds;
White reſin, eight pounds;
Yellow wax, four pounds.

Boil the herb in the melted ſuet till it is almoſt criſp; then ſtrongly preſs out the ſuet, and adding the reſin and wax, boil the whole a little, ſo as to make a plaſter thereof.

THIS plaſter has been frequently made uſe of for dreſſing bliſters: ſee EMPLASTRUM ATTRAHANS. The London College have diminiſhed the quantity of reſin, to render the compoſition leſs irritating; and likewiſe omitted the herb, as being of no ſignificancy towards the uſe of the plaſter, and of a very diſagreeable ſcent; a circumſtance of primary conſequence to be avoided in diſorders, where freedom from diſturbance, and every means that can contribute to quiet reſt, ought by all poſſible endeavours to be procured: not to mention the miſchievous adulterations ſometimes practiſed in this plaſter with irritating materials, for procurring the green colour, which is made its marketable characteriſtic, more compendiouſly than by the decoction of the herb. The moſt certain method of diſcovering abuſes of this kind, is to put a little of the plaſter into ſome ſpirit of ſal ammoniac; if it tinges the ſpirit blue, we may be certain it is adulterated. The London College has ſubſtituted to this plaſter the *Emplaſtrum attrahens*, and the Edinburgh the *Emplaſtrum cereum*.

EMPLASTRUM ex AMMONIACO cum MERCURIO.
Plaſter of ammoniacum with mercury.
Lond.

Take of
Gum ammoniacum, ſtrained, one pound;
Quickſilver, three ounces;
Simple balſam of ſulphur, one dram.

Grind the quickſilver with the balſam of ſulphur till it ceaſes to appear; then, having melted the ammoniacum, add it gradually a little before it cools to this mixture; and let the whole be perfectly mingled together.

THIS is a very well contrived mercurial plaſter: if in ſome caſes it ſhould not prove adheſive enough, the addition of a ſmall quantity of turpentine will readily make it ſo.

EMPLASTRUM COMMUNE cum MERCURIO.
Common plaſter with mercury.
Lond.

Take of
Common plaſter, one pound;
Quickſilver, three ounces;
Simple balſam of ſulphur, one dram.

Make them into a plaſter, after the ſame manner as the foregoing.

EMPLASTRUM e HYDRARGYRO, ſive COERULEUM.
Mercurial, or *blue plaſter.*
Edinb.

'Take of
Olive oil,
White roſin, each one part;
Quickſilver, three parts;
Common plaſter, ſix parts.

Let the quickſilver be ground with the oil and roſin, melted together, and then cooled till the globules diſappear; then add by degrees

grees 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 in 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, tophs, and beginning indurations of the glands, are ſaid ſometimes to yield to them.

EMPLASTRUM e MINIO.

Red lead plaſter.

Lond.

Take of

Oil olive, four pints;

Red lead, reduced to a moſt ſubtile powder, two pounds and a half.

Make them into a plaſter, after the manner directed for preparing the common plaſter: but more water is here required, and greater care is neceſſary to prevent the compoſition from burning and growing black.

THIS is uſed for the ſame purpoſes as the common or diachylon plaſter, from which it differs little otherwiſe than in colour. It has an inconvenience of not ſticking ſo well; and therefore the Edinburgh College have now omitted this compoſition.

EMPLASTRUM de MINIO cum SAPONE.

Red lead plaſter with ſoap.

This is made by adding to the foregoing plaſter taken from the fire as ſoon as the moiſture is evaporated, and whilſt hot, half a pound of Spaniſh ſoap cut into thin ſlices: ſtir the whole ſtrongly together until the ſoap is liquefied, and a plaſter formed according to art.

THIS is much eſteemed by ſome, for diſcuſſing gouty tumors, and the juices ſtagnating after ſprains. Whatever virtues it may have diſtinct from the general ones of the applications of this claſs, they depend entirely upon the ſoap; and ſoap in the form of plaſters does not appear to exert much of the efficacy which it does in forms of a ſofter conſiſtence.

EMPLASTRUM e MUCILAGINIBUS.

Plaſter of mucilages.

Lond.

Take of

Yellow wax, forty ounces;

Oil of mucilages, half a pint;

Gum ammoniacum, ſtrained, half a pound;

Common turpentine, two ounces.

Melt the ammoniacum with the turpentine; and having, in another veſſel, liquefied the wax with the oil, add this latter mixture to the other.

SOME have been accuſtomed to uſe, inſtead of the oil of mucilages, common oil olive, flavoured with fenugreek ſeeds; and poſſibly this ſubſtitution may be admitted as a venial one: for the oil of mucilages, genuinely made, contains ſcarce any thing of any of the ingredients, except that part of the fenugreek ſeeds wherein their flavour reſides, the mucilaginous materials ſerving only to provide it with a name. See page 344.

EMPLASTRUM ROBORANS.

Strengthening plaſter.

Lond.

Take of

Common plaſter, two pounds;

Frankincenſe, half a pound;

Dragons-blood, three ounces.

Melt the common plaster, and add to it the other ingredients reduced into a powder.

The dragons-blood should be reduced into a very fine powder, otherwise the mixture will not be of an uniform colour.

This is a reformation of the laborious and injudicious composition described in our preceding Pharmacopœias, under the title of *Emplastrum ad herniam;* and though far the most elegant and simple, 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 e SAPONE.

Soap plaster.

Lond.

Take of

Common plaster, three pounds;
Hard soap, half a pound.

Having melted the common plaster, mix with it the soap, and boil them to the consistence of a plaster. Take care not to let it grow too cold before you form it into rolls, for then it will prove too brittle.

This plaster differs only in colour from the red-lead plaster with soap above mentioned.

EMPLASTRUM SAPONACEUM.

Saponaceous plaster.

Edinb.

'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.'

Here the addition of the gums is supposed to promote the resolvent virtue of the soap.

EMPLASTRUM STOMACHICUM.

Stomach plaster.

Lond.

Take of

Soft labdanum, three ounces;
Frankincense, one ounce;
Cinnamon,
The expressed oil, called oil of mace, each half an ounce;
Essential oil of mint, one dram.

Having melted the frankincese, add to it, first the labdanum softened by heat, and then the oil of mace; afterwards mix these with the cinnamon and oil of mint; and beat them together in a warm mortar into a mass, which is to be kept in a close vessel.

This is 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.

Edinb.

Edinb. †

Take of
Yellow wax, eight ounces;
Tacamahaca, in powder, four ounces;
Cloves, powdered, two ounces;
Palm oil, ſix ounces;
Expreſſed oil of mace, an ounce and a half;
Eſſential oil of mint, two drams.

Melt the wax and tacamahaca with the palm oil; then removing the mixture from the fire, add the other ingredients, and make them into a plaſter according to art.

These plaſters are applied to the pit of the ſtomach, in weakneſs of that viſcus, in vomitings, the diſorder improperly called the *heart-burn*, &c. and ſometimes with good ſucceſs. The pit of the ſtomach, however, as Hoffman has obſerved, is not always the moſt proper place for applications of this kind to be made to: if applied to the five lower ribs of the left ſide towards the back, the ſtomach will in general receive more benefit from them; for it appears from anatomical inſpection, that greateſt part of it is ſituated there.

EMPLASTRUM VESICATORIUM.

Bliſtering plaſter, or *Epiſpaſtic plaſter.*

Lond.

Take of
Drawing plaſter, two pounds;
Cantharides, one pound;
Vinegar, half a pint.

Melt the drawing plaſter; and a little before it grows ſtiff, mix in the cantharides, reduced into a moſt ſubtile powder; then add the vinegar, and work them well together.

Edinb.

'Take of
Hogs-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.'

Compound epiſpaſtic plaſter.

Edinb.

Take of
Burgundy pitch, twelve ounces;
Yellow wax, four ounces;
Venice turpentine, eighteen ounces;
Muſtard ſeed,
Black pepper, each one ounce;
Verdegris, two ounces;
Cantharides, twelve ounces.

Melt the wax and pitch together; then add the turpentine; and when this is liquefied, ſprinkle in the other ingredients, firſt powdered and mixed together; keeping them continually ſtirring, ſo as to make a plaſter thereof according to art.

The bliſtering plaſters are to be kept in oiled bladders.

This laſt compoſition has long been uſed in ſome particular ſhops as the moſt infallible bliſter; though either of the other two anſwers the purpoſe very ſucceſsfully. Whether the vinegar in the firſt is of any advantage, is greatly to be doubted. In ſome caſes indeed, it has been obſerved, that the plaſter without this addition ſeemed at firſt to fail of its effect; and that on taking it off and rubbing the part with vinegar, the ſame plaſter applied again has bliſtered freely: but this does not appear to be ſo much owing to any

peculiar quality of the vinegar, as to its ſoftening the ſkin when applied in this manner, and fitting it for the action of the cantharides: when mixed with the other ingredients of the plaſter, it has not this effect. It likewiſe exhales in keeping, inſomuch that the compoſition, though ſufficiently ſoft at firſt, becomes in no long time too dry. Some have been accuſtomed to ſpare the trouble of making any plaſter on purpoſe for bliſtering, by occaſionally ſpreading ſome of the cantharides, in powder, upon a common plaſter.

EMPLASTRUM ANODYNO-DISCUTIENS.

An anodyne and diſcutient plaſter.

Take of
Cummin plaſter, two ounces;
Camphor, three drams;
Thebaic extract, one dram and a half.
Grind the camphor, with ſome drops of oil olive, into a very ſubtile powder, and then mix it with the other ingredients according to art into a plaſter.

EMPLASTRUM CALIDUM.

Warm plaſter.

Take of
Gum plaſter, one ounce;
Bliſtering plaſter, two drams.
Melt them together over a gentle fire.

EMPLASTRUM SUPPURANS.

Suppurating plaſter.

Take of
Gum plaſter, an ounce and a half;
Burgundy pitch, half an ounce.
Melt them together.

THE uſes of the three foregoing compoſitions, which are taken from our hoſpitals, are ſufficiently obvious from their titles. The warm plaſter is a very ſtimulating application, of great uſe in fixt pains, as in the rheumatiſm, ſciatica, beginning chilblains, &c.

CHAP.

CHAP. XI.

OINTMENTS, LINIMENTS, *and* CERATES.

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, 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. *Edinb.*

'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 Pharmacopœia. 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 ÆGYPTIACUM.

Edinb. †

Take of

Verdegris, finely powdered, five ounces;
Honey, fourteen ounces;
Vinegar, ſeven ounces.

Boil them over a gentle fire to the conſiſtence of an ointment.

MEL ÆGYPTIACUM.

Lond.

Take of

Verdegris, reduced into a very ſubtile powder, five ounces;
Honey, fourteen ounces by weight;
Vinegar, ſeven ounces by meaſure.

Boil theſe ingredients together over a gentle fire, till they have acquired a due conſiſtence and a reddiſh colour. On keeping this mixture for ſome time, the thicker part falls to the bottom; the thinner, which floats on the top, is called *Mel Ægyptiacum.*

THESE preparations are deſigned only for external uſe, for cleanſing and deterging ulcers, and keeping down fungous fleſh: they are ſerviceable alſo in venereal ulcerations of the mouth and tonſils. If, for particular purpoſes, they ſhould be wanted more acrid, they may be occaſionally rendered ſo by ſhaking the veſſel, ſo as to mix up the thick matter at the bottom (which con-

tains greateſt part of the verdegris) with the upper thin one.

UNGUENTUM ALBUM.
White ointment.
Lond.

Take of
Oil olive, one pint;
White wax, four ounces;
Spermaceti, three ounces.
Liquefy them by a gentle fire, and keep them conſtantly and briſkly ſtirring, till grown thoroughly cold.

UNGUENTUM e CERUSSA vulgo ALBUM.
Edinb.

Take of
Simple ointment, five parts;
Ceruſſe, one part.

THESE are uſeful, cooling, emollient ointments, of good ſervice in excoriations, and other like frettings of the ſkin. The ceruſſe is omitted in the firſt preſcription, 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 there is another ointment containing a more active preparation of the ſame metal, the *unguentum ſaturninum*; which may be occaſionally mixed with this, or employed by itſelf, in caſes where ſaturnine applications are wanted.

UNGUENTUM ALBUM CAMPHORATUM.
Camphorated white ointment.
Lond.

This is made by adding to the white ointment a dram and a half of camphor, previouſly ground with ſome drops of oil of almonds.

Edinb. +

Take of
The white ointment, one pound;
Camphor, rubbed with a little oil, one dram and a half.
Mix them together.

THESE ointments are ſuppoſed to be more diſcutient than the foregoing, and ſerviceable againſt cutaneous heats, itching, and ſerpiginous eruptions. They ſhould be kept in cloſe veſſels, otherwiſe the camphor will ſoon exhale: their ſmelling ſtrong of this ingredient is the beſt mark of their goodneſs.

UNGUENTUM ex ALTHÆA.
Ointment of marſhmallows.
Lond.

Take of
Oil of mucilages, three pints;
Yellow wax, one pound;
Yellow reſin, half a pound;
Common turpentine, two ounces.
Melt the reſin and wax with the oil; then, having taken them from the fire, add the turpentine, and while the mixture remains hot ſtrain it.

THIS ointment receives no virtue from the ingredient which it takes its name from; and therefore the Edinburgh College has omitted it.

UNGUENTUM ANTIPSORICUM.
Ointment againſt the itch.

Take of
Elecampane root, freſh,
Sharp-pointed dock root, freſh, each three ounces;
Water-creſſes, freſh and bruiſed, ten ounces;
Hogs lard, four pounds;
Yellow wax,
Oil of bays, each four ounces;
Vinegar, one pint;
Water, three pints.
Bruiſe the roots, and boil them in the water and vinegar till half the liquor is conſumed: ſtrain, and

and ſtrongly preſs out the remainder, add to it the water-creſſes and the lard, and boil them till the moiſture is exhaled; then preſs out the ointment, and liquefy in it the wax and the oil of bays.

Sulphur is added to this ointment occaſionally.

UNGUENTUM ANTIPSORICUM cum MERCURIO.

Ointment againſt the itch with mercury.

This is made by adding to the foregoing ointment four ounces of quickſilver, killed with a ſufficient quantity of Venice turpentine, and mixing them together according to art, into an unguent.

THESE ointments are very inelegant ones, and rarely made uſe of. The firſt is likewiſe precarious in its effects; and though thoſe with ſulphur and mercury are of undoubted efficacy, yet they are by no means ſuperior to the more ſimple ointments of thoſe drugs deſcribed hereafter.

UNGUENTUM BASILICUM FLAVUM.

Yellow baſilicum ointment.

Lond.

Take of
- Oil olive, one pint;
- Yellow wax,
- Yellow reſin,
- Burgundy pitch, each one pound;
- Common turpentine, three ounces.

Melt the wax, reſin, and pitch, along with the oil, over a gentle fire; then take them from the fire, add the turpentine, and whilſt the mixture remains hot ſtrain it.

Edinb.

Take of
- Hogs 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 Arcæi.*

UNGUENTUM BASILICUM NIGRUM vel TETRAPHARMACUM.

Black baſilicum ointment, or ointment of four ingredients.

Lond.

Take of
- Oil olive, one pint;
- Yellow wax,
- Yellow reſin,
- Dry pitch, each nine ounces.

Melt them all together; and whilſt the mixture is hot ſtrain it off.

THIS ointment was formerly of conſiderable eſteem for healing and incarnating wounds, &c. but is ſaid to have an inconvenience of being apt to render them foul, and produce fungous fleſh; at preſent it is rarely made uſe of; the yellow baſilicum, and the liniment of Arcæus, being in general preferred.

In the Edinburgh Pharmacopœia, the black baſilicum was directed as follows:

Take of
- Yellow wax,
- White reſin,
- Mutton ſuet,
- Tar, each half a pound;
- Olive oil, a pint and a half.

Melt them over a gentle fire, ſtirring them well together; and then ſtrain the ointment.

How far the alterations here made may contribute to prevent the inconveniences above complained of, or indeed whether the objections to the old ointment were well

founded, I cannot take upon me to determine. Those who are the most conversant in the use of these sorts of applications, are apt to ascribe more to the composition than it has any share in producing.

UNGUENTUM BASILICUM VIRIDE.

Green basilicum ointment.
Lond.

Take of
Yellow basilicum, eight ounces;
Oil olive, three ounces by measure;
Verdegris, prepared, one ounce.
Mix, and make them into an ointment.

UNGUENTUM ex AERUGINE.

Ointment of verdegris.
Edinb.

'Take of
Basilicum ointment, fifteen parts;
Verdegris, one part.

'These ointments are 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.'

UNGUENTUM CITRINUM.

Yellow ointment.
Edinb.

Take of
Quicksilver, one ounce;
Spirit of nitre, two ounces;
Hogs-lard, tried, 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.

UNGUENTUM CÆRULEUM FORTIUS.

The stronger blue ointment.
Lond.

Take of
Hogs-lard, tried, two pounds;
Quicksilver, one pound;
Simple balsam of sulphur, half an ounce.
Grind the quicksilver with the balsam of sulphur till they are perfectly incorporated; then gradually add the lard heated, and mix them carefully together.

UNGUENTUM ex HYDRARGYRO, five CÆRULEUM.

Mercurial, or blue ointment.
Edinb.

'Take of
Quicksilver,
Mutton suet, each one part;
Hogs-lard, three parts.
Grind them diligently in a mortar till the globules disappear.
This ointment may also be prepared with a double or triple proportion of quicksilver.

'It is probable, that in preparing this ointment a similar effect takes place, as we have alleged to happen in making Plenck's solution, which see. For the reasons for omitting the turpentine ordered in a former edition, and for directing the suet in this, see UNGUENTUM MERCURIALE.'

This unguent turns out of a much better blue colour than the foregoing, which is of a very dingy hue. Mercurial unguents have in many cases the same effects with the preparations of this mineral taken internally; and are at present frequently employed, not only against cutaneous disorders, as alterants; but likewise in venereal and other obstinate cases, for raising a salivation. The ptyalism excited by unction is said to be attended with the fewest

feweſt inconveniences, and to perform the moſt complete cure. In ſome conſtitutions, mercurials taken inwardly run off by the inteſtines, without affecting the mouth; and in others, they affect the ſalival glands ſo quickly, as to occaſion a copious ptyaliſm, without extending their action to the remoter parts, and conſequently without removing the cauſe of the diſeaſe.

UNGUENTUM DESICCATIVUM RUBRUM.

Red deſiccative ointment.

Take of
- Oil olive, a pint and a half;
- White wax, half a pound;
- Calamine prepared, ſix ounces;
- Litharge prepared,
- Bole armenic, each four ounces;
- Camphor, three drams.

Melt the wax in the oil; and having taken them from the fire, gradually ſprinkle in the other ingredients, ſtirring them briſkly together into an ointment. The camphor muſt be previouſly ground with a little oil of almonds.

THIS is ſaid to be an excellent dryer and healer; but is at preſent in no great eſteem, and rarely kept in the ſhops.

UNGUENTUM DIAPOMPHOLYGOS.

Ointment of pompholyx.

Take of
- Oil olive, twenty ounces;
- Juice of the berries of common, or deadly nightſhade, eight ounces;
- White wax, five ounces;
- Ceruſſe, four ounces;
- Burnt lead,
- Pompholyx, each two ounces;
- Pure frankincenſe, one ounce.

Boil the oil and the juice over a gentle fire till the juice is exhaled; and towards the end of the coction melt the wax in the oil: then take the mixture from the fire, and add to it, whilſt hot, the other ingredients reduced to powder. Mix and make them into an ointment.

THIS is taken, as the preceding, from a former edition of the Edinburgh Pharmacopœia. It ſtands recommended againſt hot inflammatory ulcers and ſharp defluctions on the eyes; but is very rarely made uſe of, having for ſome time given place to compoſitions more ſimple, though at leaſt equal in efficacy: for which reaſon it is now omitted by the College.

UNGUENTUM e GUMMI ELEMI.

Ointment of gum elemi. Lond.

Take of
- Mutton ſuet, freſh and tried, two pounds;
- Gum elemi, one pound;
- Common turpentine, ten ounces.

Melt the gum with the ſuet, and having taken them from the fire, immediately mix in the turpentine; then, whilſt the maſs remains fluid, ſtrain it off.

UNGUENTUM, vulgo LINIMENTUM, ARCÆI.

The ointment, commonly called Liniment, of Arceus. Edinb. †

Take of
- Hogs-lard, one pound;
- Goats ſuet, or mutton ſuet, two pounds;
- Venice turpentine,
- Gum elemi, each a pound and a half.

Melt and ſtrain them, ſo as to make an ointment, according to art.

THIS unguent 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.

UN-

UNGUENTUM EMOLLIENS.

Emollient ointment.

Edinb. +

Take of
Palm oil, four pints;
Freſh-drawn linſeed oil, three pints;
Yellow wax, one pound;
Venice turpentine, half a pound.

Melt the wax in the oils, over a gentle fire; then mix in turpentine, and ſtrain the ointment; which ſupplies the place of the ointment of marſhmallows.

It is at leaſt equal to that ointment for the purpoſe expreſſed in its title, nothing of the mucilage or emollient matter of the marſhmallows being there retained. And indeed, if mucilages were blended with ointments, they would poſſibly diminiſh, rather than increaſe their emollient virtue; as they render oils ſenſibly leſs unctuous, forming with them a new compound different from the ingredients, and miſcible with water into a milky liquor, as we have ſeen in Chap. vii.

UNGUENTUM MERCURIALE.

Mercurial ointment.

Take of
Hogs-lard, two ounces;
Quickſilver, one ounce.

Beat them diligently together till the quickſilver diſappears. It may likewiſe be made with two, three, or more times the quantity of quickſilver.

This is the moſt ſimple of the mercurial ointments, though poſſibly as efficacious as any. It requires indeed a great deal more labour to extinguiſh the mercury in the lard alone, than when turpentine or other like ſubſtances are joined: but in recompence the compoſition with lard is free from an inconvenience which the others are accompanied with, viz. being apt, by frequent rubbing, to fret tender ſkins. Some chuſe to ſtiffen this ointment with a fourth part of ſuet (proportionably diminiſhing the lard) which gives it a better conſiſtence for uſe.

UNGUENTUM e MERCURIO PRÆCIPITATO.

Ointment of mercury precipitate.

Lond.

Take of
Simple ointment, an ounce and a half;
Precipitated ſulphur, two drams;
White mercury precipitate, two ſcruples.

Mix them well together, and moiſten them with ley of tartar, that they may be made into an ointment.

This is a very elegant mercurial ointment, and frequently made uſe of againſt cutaneous diſorders. The preparations of mercury and ſulphur here directed are choſen on account of their colour.

UNGUENTUM NERVINUM.

Nerve ointment.

Take of
Southernwood,
Marjoram, (or origanum,)
Mint,
Pennyroyal,
Rue,
Roſemary, each, freſh gathered, ſix ounces;
Neats-foot oil, five pints;
Beef ſuet, three pounds;
Oil of bays, half a pint.

Boil the herbs, with the neats-foot oil and ſuet, till the aqueous moiſture is exhaled; then preſs and ſtrain out the liquid, and adding to it the oil of bays, make the whole into an ointment.

This ointment is deſigned, as its title

title expreſſes, for warming and ſtrengthening the nerves. The above form is from a former edition of the Edinburgh Pharmacopœia. It is an ill contrived one: for beſides the ingredients being more numerous than there is any occaſion for, the method of treating them is very exceptionable. The warm, ſtimulating, nervine virtues of the herbs conſiſt in their volatile parts, which are loſt in the boiling of them with the oil. The moſt effectual method of impregnating ointments with theſe virtues of vegetables, is that which we have formerly propoſed, and which the College has now received, adding a ſuitable quantity of the eſſential oil of the ſubject. 'In a later edition it ſtood as follows:'

Edinb.

Take of
- Mutton ſuet, two pounds;
- Oil of chamomile (by decoction) one pint;
- Oil of bays, a pint and a half;
- Eſſential oil of origanum, or of roſemary, two ounces.

Melt the ſuet, over a gentle fire, in the oil of chamomile, ſo as to make an ointment thereof; which being removed from the fire, ſtir into it the oil of bays and eſſential oil.

Some, inſtead of mixing any eſſential oil with the compoſition, are accuſtomed to rub a few drops of it upon the ſurface of the plaſter when ſpread.

UNGUENTUM NUTRITUM.

The ointment called Nutritum.

Edinb. †

Take of
- Litharge,
- Vinegar, each two ounces;
- Oil olive, ſix ounces.

Rub them in a mortar, adding the oil and vinegar, alternately, by little and little at a time, till the vinegar ceaſes to appear, and the ointment becomes uniform and white.

This ointment is troubleſome to make, and does not keep well, the vinegar exhaling, ſo as to leave the compound too ſtiff: for which reaſon, it is now directed to be made in leſs quantity than in former editions. It is ſuppoſed to be a good cooler and deſiccative; and is occaſionally uſed in excoriations, ſlight ſerpiginous eruptions, and for anointing the lips of wounds or ulcers that itch much, or tend to inflammation.

UNGUENTUM OPHTHALMICUM.

Eye ointment.

Take of
- Ointment of tutty, an ounce and a half;
- Saturnine ointment, half an ounce;
- Camphor, half a dram.

Mix and make them into an ointment according to art.

This ointment may likewiſe be made with two, three, or more times the quantity of camphor.

This unguent is very well contrived for the purpoſe expreſſed in its title; ſcarce any of thoſe commonly met with being of equal efficacy in inflammations and hot acrid defluxions on the eyes. But as a good deal of caution is requiſite in the uſe of ſaturnine applications for ſo tender an organ as the eye; and as compoſitions of this kind may be eaſily formed extemporaneouſly, with ſuch proportions of the ingredients as the preſcriber ſhall think fit; the Edinburgh Pharmacopœia (from a former edition of which the above form is taken) has now omitted it.

UN-

UNGUENTUM e PICE.

Ointment of tar.

Lond.

Take of
Mutton suet, tried,
Tar, each equal weights.
Melt them together, and strain the mixture whilst hot.

Edinb.

'Take of
Tar, five parts;
Yellow wax, two parts.

'The first of these compositions, with the addition of half its weight of resin, has long been used in the shops as a cheap substitute to the black basilicum.'

UNGUENTUM SAMBUCINUM.

Ointment of elder.

Lond.

Take of
Elder flowers, full blown, four pounds;
Mutton suet, tried, three pounds;
Oil olive, one pint.
Melt the suet with the oil, and in this mixture boil the flowers till they are almost crisp; then strain and press out the ointment.

Edinb. †

Take of
The inner bark of the elder tree,
The leaves of elder, fresh, each four ounces;
Linseed oil, two pints;
White wax, six ounces.
Let the bark and leaves be well bruised, and boiled in the oil till the humidity is consumed; then press out the oil through a strainer, and melt in it the wax, so as to make an ointment.

These ointments do not seem superior to some others, which are much neater, and preparable at less expence. They can scarce be supposed to receive any considerable virtue from the ingredients which they take their name from.

UNGUENT. SATURNINUM.

Saturnine ointment.

Lond.

Take of
Oil olive, half a pint;
White wax, an ounce and a half;
Sugar of lead, two drams.
Let the sugar of lead, reduced into a very subtile powder, be ground with some part of the oil, and the wax melted with the rest of the oil: mix both together, and keep them stirring till the ointment is grown cold.

Edinb.

'Take of
Simple ointment, twenty parts;
Sugar of lead, one part.'

Both these ointments are useful coolers and deiccatives; much superior both in elegance and efficacy to the *nutritum* or *tripharmacum.*

UNGUENTUM SIMPLEX.

The simple ointment.

Lond.

Take of
Hogs lard, tried, two pounds;
Rose water, three ounces by measure.
Beat the lard with the rose water till they are well mixed; then melt them over a very gentle fire, and set them by for some time, that the water may subside: pour the lard off from the water, and keep incessantly stirring and beating it about till it grows cold, so as to reduce it into a light incoherent mass: lastly, add so much essence of lemons as will be sufficient to give a grateful odour.

UN-

UNGUENTUM SIMPLEX.
Simple ointment.
Edinb.

'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 it contains not the ſtimulating eſſential oils of the former. For the ſame reaſon it is alſo to be preferred as the baſis of other more compounded ointments.'

UNGUENTUM e SULPHURE.
Ointment of ſulphur.
Lond.

Take of
The ſimple ointment, half a pound;
Flowers of ſulphur, unwaſhed, two ounces;
Eſſence of lemons, one ſcruple.
Mix them together.

UNGUENTUM e SULPHURE, ſive ANTIPSORICUM.
Ointment of ſulphur, or *antipſoric ointment.*
Edinb.

'Take of
Hogs 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.'

UNGUENTUM AD PSORAM.
Ointment againſt the itch.

Take of
Sulphur, one ounce;
White hellebore root, in powder, or crude ſal ammoniac, two drams.
Hogs-lard, two ounces.
Mix, and make them into an ointment.

SULPHUR is a certain remedy for the itch, more ſafe than mercury. Dr Pringle obſerves, unleſs a mercurial unction was to touch every part of the ſkin, there can be no certainty of ſucceſs; whereas, by a ſulphureous one, a cure may be obtained by only partial unction, 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 unctions: 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 is 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 through the ſkin; there being reaſon to believe, that the animalcula may ſometimes lie too deep to be thoroughly deſtroyed by external applications.

UNGUENTUM TRIPHARMACUM.

Ointment of three ingredients.
Lond.

Take of
Common plaster, four ounces;
Oil olive, two ounces by measure;
Vinegar, one ounce by measure.
Boil them together over a gentle fire, keeping them continually stirring till they are reduced to the consistence of an ointment.

This is a new method of preparing the *Unguentum nutritum*, much less troublesome than the one already described under that title. The composition proves likewise more smooth and uniform, and not so liable to grow dry in keeping. This ointment is nevertheless inferior, both in respect of elegance and efficacy, to the *Unguentum saturninum*.

UNGUENTUM TUTIÆ.

Ointment of tutty.
Lond.

Let any quantity of prepared tutty be mixed with as much purified vipers fat as is sufficient to reduce it into the consistence of a soft ointment.

Edinb.

'Take of
Simple liniment, five parts;
Prepared tutty, one part.'

Both calamine and tutty act only by virtue 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.

'The Edinburgh College has therefore now given the following formula.

UNGUENTUM e CALCE ZINCI.

Ointment of calx of zinc.
Edinb.

'Take of
Simple liniment, six parts;
Calx of zinc, one part.'

UNGUENTUM TUTIÆ CAMPHORATUM.

Camphorated ointment of tutty.
Edinb. +

This is made by adding to the foregoing ointment two drams of camphor. It is prepared also with a double quantity of camphor.

'The chief use of the foregoing ointments is in inflammations of the eye. The viper's fat in the first of them is a trifling singularity.'

UNGUENTUM VERMIFUGUM.

Ointment against worms.

Take of
Lavender cotton,
Wormwood,
Rue,
Savin,
Tansy leaves, fresh gathered, each two ounces;
Oil olive, a pint and half;
Hogs lard, one pound;
Yellow wax, three ounces;
Ox gall,
Socotorine aloes, each an ounce and a half;
Coloquintida,
Wormseed, each one ounce.
Bruise the herbs, and boil them with the oil and lard till the aqueous moisture is evaporated; then press the liquor through a strainer, melt in it the wax, and afterwards add the other ingredients, boiling and stirring them together, so as to make an ointment. The aloes, coloquintida, and worm-seed, must be previously reduced into a very subtile powder.

This ointment is rubbed on the bellies of children for deſtroying worms, and ſometimes, as is ſaid, with good ſucceſs. It is taken from a former edition of the Edinburgh Pharmacopœia.

UNGUENTUM ad VESICATORIA [*L.*]

Ointment for bliſters.

Lond.

Take of
Hogs lard, tried,
Bliſtering plaſter, each equal weight.
Melt them together over a very gentle fire, and keep them conſtantly ſtirring till grown cold.

UNGUENTUM EPISPASTICUM e PULVERE CANTHARIDUM.

Epiſpaſtic ointment from powder of cantharides.

Edinb.

'Take of
Baſilicum ointment, ſeven parts;
Powdered cantharides, one part.'

These ointments are added 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, they are required to be. 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.

UNGUENTUM EPISPASTICUM ex INFUSO CANTHARIDUM.

Epiſpaſtic ointment from infuſion of cantharides.

Edinb.

'Take of
Cantharides,
White reſin,
Yellow wax, each one ounce;
Hogs 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 is conſumed; then add the reſin, wax, and turpentine, and make the whole into an ointment.

This ointment, containing the ſoluble parts of the cantharides uniformly blended with the other ingredients, is more commodious, and occaſions leſs pain, though not leſs effectual in its intention, than the two foregoing compoſitions with the fly in ſubſtance.

UNGUENTUM VIRIDE.

Green ointment.

Lond.

Take of
The green oil, three pints;
Yellow wax, ten ounces.
Melt them together over a gentle fire, and keep the mixture continually ſtirring until it is grown cold.

This ointment does not ſeem to receive any particular virtue from the ingredients to which its colour is owing.

LINIMENTUM ALBUM.

White liniment.

Lond.

Take of
Oil olive, three ounces by meaſure;
Spermaceti, ſix drams;
White wax, two drams.
Melt them together over a gentle fire, and keep them conſtantly and briſkly ſtirring till grown cold.

LINIMENTUM SIMPLEX.
Simple liniment.
Edinb.

'Take of
Olive oil, four parts;
White wax, one part.

'THE former of theſe only differs in conſiſtence from the *Unguentum album* of the London, and the latter from that of the *Unguentum ſimplex* of the Edinburgh, Pharmacopœia.'

BALSAMUM VIRIDE.
Green balſam.
Edinb. +

Take of
Linſeed oil,
Oil of turpentine, each one pound;
Verdegris, in powder, three drams.
Boil and ſtir them well together till the verdegris is diſſolved.

A BALSAM, ſimilar to this, is ſaid to have been greatly valued by our ſurgeons as a detergent.

LINIMENTUM TRIPHARMACUM.
Liniment of three ingredients.
Lond.

Take of
Common plaſter, four ounces;
Oil olive, a quarter of a pint;
Vinegar, one ounce by meaſure.
Boil them over a gentle fire, continually ſtirring them until they acquire the conſiſtence of a liniment.

THIS is the ſame with the *Unguentum tripharmacum*, except that the quantity of oil is here increaſed, to give the compound the ſofter conſiſtence of a liniment.

LINIMENTUM VOLATILE.
Volatile liniment.

Take of
Oil of hartſhorn,
Spirit of hartſhorn, each equal parts.
Mix them together.

DR Pringle obſerves, that in the inflammatory quinſey, or ſtrangulation of the fauces; a piece of flannel, moiſtened with this mixture, and applied to the throat, to be 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, the volatile liniment of the ſhops may be made trial of.

CERATUM ALBUM.
White cerate.
Lond.

Take of
Oil olive, a quarter of a pint;
White wax, four ounces;
Spermaceti, half an ounce.
Liquefy them all together, and keep them ſtirring till the cerate is grown quite cold.

CERATUM SIMPLEX.
Simple cerate.
Edinb.

'Take of
Olive oil, ſix parts;
White wax, three parts;
Spermaceti, one part.

'THE former of theſe differs from the white ointment and liniment of the London, and the latter from the ſimple ointment and liniment of the Edinburgh Pharmacopœia, only in being of a thicker conſiſtence.'

CERATUM CITRINUM.
Yellow cerate.
Lond.

Take of
Yellow baſilicum ointment, half a pound;

Yellow wax, one ounce.
Melt them together.

THIS is no otherwiſe different from the yellow baſilicum than being of a ſtiffer conſiſtence, which renders it for ſome purpoſes more commodious.

CERATUM EPULOTICUM.
Epulotic cerate.
Lond.

Take of
Oil olive, one pint;
Yellow wax,
Calamine prepared, each half a pound.
Liquefy the wax with the oil, and as ſoon as the mixture begins to grow ſtiff, ſprinkle in the calamine; keeping them conſtantly ſtirring together till the cerate is grown quite cold.

CERATUM e LAPIDE CALAMINARI.
Cerate of Calamine.
Edinb.

'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.

CEAATUM MERCURIALE.
Mercurial cerate.
Lond.

Take of
Yellow wax,
Hogs lard, tried, each half a pound;
Quickſilver, three ounces;
Simple balſam of ſulphur, one dram,
Melt the wax with the lard; then gradually add this mixture to the quickſilver and balſam of ſulphur previouſly ground together.

UNGUENTUM PARALYTICUM.
Palſy ointment.

Take of
Hogs lard,
Oil of bays, each four ounces;
Strong ſpirit of vitriol, one ounce.
Mix, and make them into an unguent.

THIS irritating compoſition is applied to numbed or paralytic limbs: it ſoon reddens and inflames the ſkin, and when this effect is produced, muſt be taken off; after which, the part is to be anointed with any emollient unguent, as that of elder.

UNGUENTUM DIGESTIVUM.
Digeſtive ointment.

Take of
Yellow baſilicum,
Black baſilicum, each eight ounces;
Balſam of turpentine, four ounces;
Mix, and make them into an ointment.

LINIMENTUM ANODYNUM.
Anodyne liniment.

Take of
Nerve ointment, three ounces;
Balſam of turpentine, one ounce.
Mix them together.

LINIMENTUM HÆMORRHOIDALE.
Liniment for the piles.

Take of
Emollient ointment, two ounces;
Liquid laudanum, half an ounce.
Mix theſe ingredients with the yolk of an egg, and work them well together.

CHAP. XII.

EPITHEMS.

EPITHEMA VESICATORIUM.
Bliſtering epithem.
Lond.

TAKE of
Cantharides, reduced into a moſt ſubtile powder,
Wheat flour, each equal weights.
Make them into a paſte with vinegar.

THIS compoſition is of a ſofter conſiſtence than the bliſtering plaſters, and for this reaſon is in ſome caſes preferred. Practitioners differ with regard to the degree of conſiſtence and adheſiveneſs moſt proper for applications of this kind, and ſometimes vary them occaſionally.

CATAPLASMA e CYMINO.
Cataplaſm of cummin.
Lond.

Take of
Cummin ſeeds, half a pound;
Bay berries,
Scordium leaves dried,
Virginian ſnakeroot, each three ounces;
Cloves, one ounce;
Honey, thrice the weight of the powdered ſpecies.
Make them into a cataplaſm.

THIS is a reformation of the THERIACA LONDINENSIS, which for ſome time paſt has been ſcarce otherwiſe made uſe of than as a warm cataplaſm: only ſuch of its ingredients are retained as contribute moſt to this intention.

CATAPLASMA AROMATICUM.
Aromatic cataplaſm.
Edinb. +

Take of
Long birthwort root,
Bay berries, each four ounces;
Sweet fennel ſeeds,
Mint leaves, each three ounces;
Jamaica pepper,
Myrrh, each two ounces;
Honey, thrice the weight of the powders.
Mix and make them into a cataplaſm; which ſupplies the place of theriaca for external purpoſes.

CATAPLASMA DISCUTIENS.
Diſcutient cataplaſm.
Edinb. +

Take of
Bryony root, three ounces;
Elder flowers, one ounce;
Gum ammoniac, half an ounce;

Sal

Sal ammoniac, crude, two drams;
Camphorated ſpirit of wine, one ounce.

Boil the roots and flowers in a ſufficient quantity of water till they become tender; and having then bruiſed them, add to them the gum ammoniacum, diſſolved in a ſufficient quantity of vinegar, and likewiſe the ſal ammoniac and ſpirit: mix the whole together, ſo as to make them into a cataplaſm.

THIS compoſition is as good a diſcutient as any thing that can well be contrived in this form of a cataplaſm. In ſome of our hoſpitals the following more ſimple form is made uſe of.

CATAPLASMA DISCUTIENS.
Diſcutient cataplaſm.

Take of
Barley-meal, ſix ounces;
Freſh hemlock, well bruiſed, two ounces;
Crude ſal ammoniac, half an ounce;
Vinegar, a ſufficient quantity.

Boil the meal and the hemlock leaves for a little time in the vinegar, and then mix with them the ſal ammoniac.

CATAPLASMA MATURANS.
Ripening cataplaſm.
Lond.

Take of
Figs, four ounces;
Yellow baſilicum ointment, one ounce;
Galbanum, ſtrained, half an ounce.

Beat the figs thoroughly in a mortar, occaſionally dropping in ſome ſpirit of wine or ſtrong ale; then carefully mix with them the ointment, firſt liquefied along with the galbanum.

CATAPLASMA SUPPURANS.
Suppurating cataplaſm.
Edinb. +

Take of
White lily (or marſhmallow) roots, four ounces;
Fat figs, one ounce;
Raw onions bruiſed, ſix drams;
Galbanum, half an ounce;
Yellow baſilicum ointment,
Oil of camomile by decoction, each one ounce;
Linſeed meal, as much as is ſufficient.

Let the lily (or marſhmallow) roots be boiled along with the figs in a ſufficient quantity of water till they become tender; then bruiſe, and add to them the other ingredients, and make the whole into a cataplaſm, according to art. The galbanum muſt be previouſly diſſolved in the yolk of an egg.

BOTH theſe compoſitions are good ſuppurants or ripeners; though their effects probably depend more on their keeping the part ſoft, moiſt, and warm, than on any particular qualities of the ingredients.

SINAPISMUS.
A ſinapiſm.
Edinb. +

Take of
Muſtard ſeed, in powder,
Crumb of bread, each equal parts;
Strong vinegar as much as is ſufficient.

Mix and make them into a cataplaſm; to which is ſometimes added a little bruiſed garlic.

IN a former edition two ſinapiſms were deſcribed; a *ſimple*, which is that above directed, without the garlic; and a *compound*, which is as follows.

Take of
Mustard seed in powder,
Crumb of bread, each two ounces;
Garlic, bruised, half an ounce;
Black soap, one ounce;
Strong vinegar, a sufficient quantity.
Mix, and make them into a cataplasm according to art.

Both these compositions 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.

COAGULUM ALUMINOSUM.
Alum curd.
Lond.

Take of
Any quantity of the white of eggs.
Agitate it with a sufficiently large lump of alum, in a tin dish, until it is coagulated.

This preparation is taken from Riverius. It is an useful astringent epithem for sore, moist eyes, and excellently cools and represses thin defluxions. Slighter inflammations of the eyes, occasioned by dust, exposure to the sun, or other like 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.

CATAPLASMA EMOLLIENS.
Emollient cataplasm.

Take of
Crumb of bread, eight ounces;
White soap, one ounce;
Cows milk, fresh, a sufficient quantity.
Boil them a little together.

CATAPLASMA STOMACHICUM.
Stomachic cataplasm.

Take of
The aromatic cataplasm, one ounce;
Expressed oil of mace, two drams;
Anodyne balsam, as much as is sufficient to reduce them into a proper consistnce.

CATAPLASMA CAMPHORATUM.
Camphorated cataplasm.

Take of
Aromatic cataplasm, one ounce;
Camphor, one dram.
Mix them together.

CATAPLASMA ISCHIADICUM.
Ischiadic cataplasm.

Take of
Mustard seed, half a pound;
White pepper,
Ginger, each one dram;
Simple oxymel, as much as will reduce them into a cataplasm.

The use of these compositions, which are taken from our hospitals, may be easily understood from their titles. The last is a very stimulating application, and frequently vesicates the skin.

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N. B. None of the plates to be cut into ſingle leaves.

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