

A translation of the new pharmacopoeia of the Royal College of Physicians of London: with notes and criticisms / By G.F. Collier.

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PHARMACOPŒIAS, London,
R.C.P.

TRANSLATION

NEW PHARMACOPOEIA

ROYAL COLLEGE OF PHYSICIANS OF LONDON

£25.00

NOTES AND CRITICISMS

H. G. Y. COLLIER

20

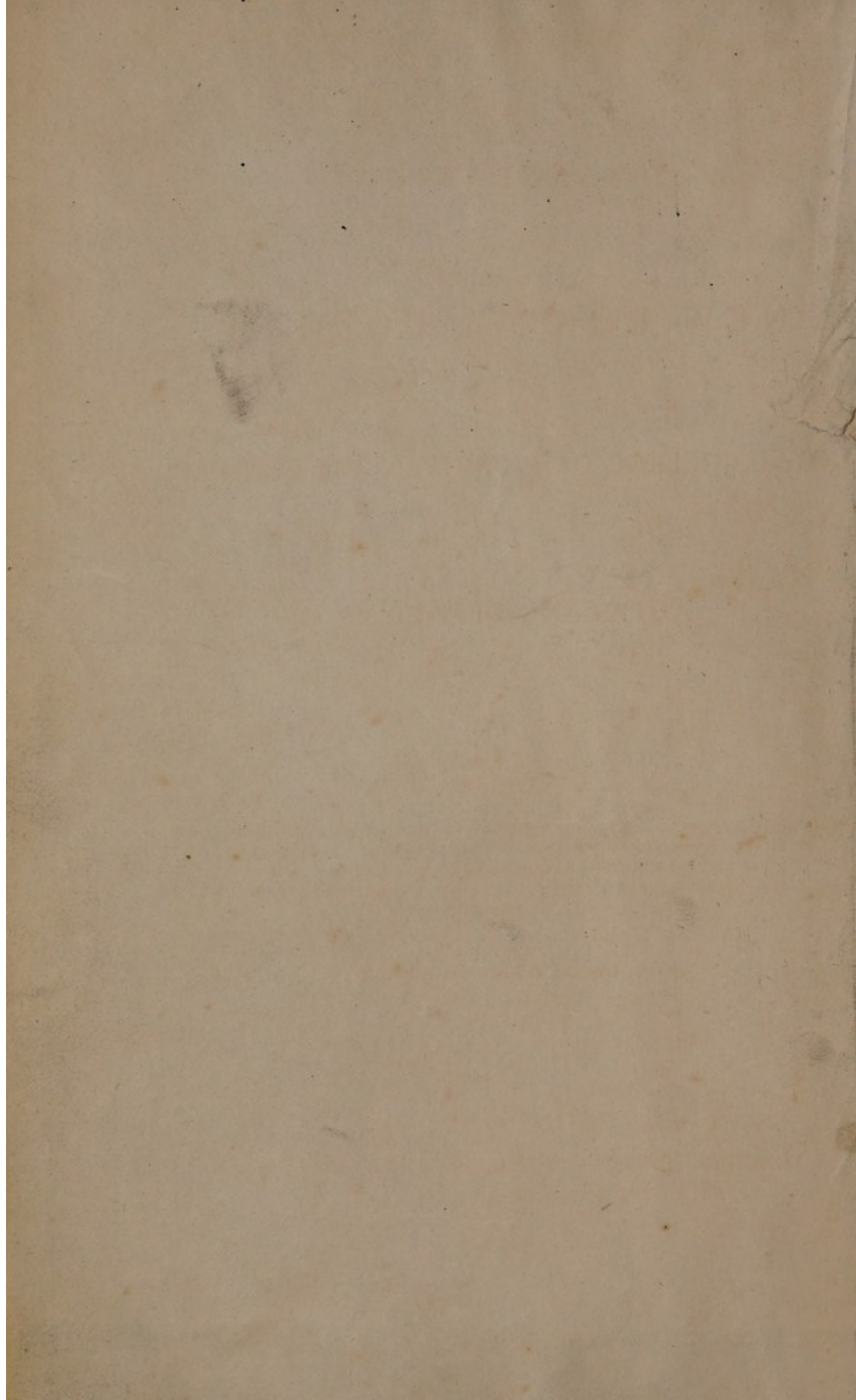
MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND TRANSLATOR
OF THE PHARMACOPOEIA IN 1864, AND OF THE PHARMACOPOEIA IN 1868
AS LONDON, FIRST OF THE PHARMACOPOEIA, SECONDLY AND
MATERIA MEDICA, AND ADVANCEMENT OF THE THEORY
AND PRACTICE OF MEDICINE.

SECOND EDITION 30

LONDON

LONGMAN, ORME, BROWN, GREEN, AND LONGMANS
WHITAKER AND CO.

PHYSICAL



A
TRANSLATION
OF THE
NEW PHARMACOPŒIA
OF THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON:
WITH
NOTES AND CRITICISMS.

By G. F. COLLIER, M.D.

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, AND TRANSLATOR
OF THEIR PHARMACOPŒIA IN 1824, AND FOR TWENTY YEARS ENGAGED
AS LECTURER, FIRST ON PHARMACEUTICAL CHEMISTRY AND
MATERIA MEDICA, AND AFTERWARDS ON THE THEORY
AND PRACTICE OF MEDICINE.

Second Edition, Revised and Enlarged.

LONDON:
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P R E F A C E.

HAVING entered upon a second year since this work was declared to be out of print, it is evident that the author has tardily, and perhaps reluctantly, applied himself to revise and to republish it.

The Members of that College upon whose work this is a commentary, whether Fellows or Licentiates, will agree with me that, under all circumstances, there is nothing very inviting in the task,—nothing very pleasing,—nothing very profitable.

Without adverting to past collisions, which might have been prevented by words of grace, fewer in number than were those found in an imperious threat, I will now good-humouredly retort upon them, that if they rightly peruse their charter, and advert to their various bye-laws and usages from the time of Henry VIII. to the present period, they will be bound to confess that mine is the veritable College Translation, and the other directly opposed to the spirit with which Linacre asked, Wolsey supported, and the bluff King conceded their charter-royal; and furthermore, that by confiding the translation and remedial exposition of a public document, intended to lessen the sum of human misery, to one (however reputable as a chemist) inexperienced in disease, and absolutely and entirely an alien to every branch of the healing art, they have virtually abdicated all power, unwisely raised the question of their own competency, and voluntarily forfeited the charter aforesaid.

But discarding all personal grievances, looking only to the public, considering myself as an actor upon their stage, and finding that I have again and again been enquired after, and somewhat clamorously called for,—and that a repetition of my performance

has been unequivocally demanded,—I have at length obeyed the call, and having, to the best of my poor talents, done my duty, I leave the many-headed to do theirs.

Even if I could say that I publish this second edition with the sanction of the College, I should be sacrificing the principle which I advocated when I commenced the work in 1836.

I never asked for such sanction, and am quite content that it should be reserved as a reward (*quantum valeat*) for their own deserving and qualified agents, and if that reward were found to be insufficient, I for one would add my quota to supply the deficiency.

All that I ask is, that there shall be, for the future, no senseless cry of “contraband;” but if any future censors opine that they have a two-fold copyright, that they will consider my challenge still on record, and manfully try the question; or that if through any circumstance I may be found to stand in the way of better men, they will be graciously pleased to ask me to stand aside, and not attempt to remove me by violence.

With regard to the improvements of the work in this present edition, I shall only say that I have spared no pains to make it useful; and I feel a strong conviction not only of its utility, but that it has tended, and will tend, to the safety of human life.

Should the time arrive when some able and more experienced Physician shall be willing to undertake the same task committed to him by the College, I shall be found quite ready to delegate my share of the duty in any way that may be consistent with the dignity of the Profession of which I am a Member, and of the College of which I am a Licentiate.

G. F. C.

November, 1840,

32, Spring Gardens.

NOTICE TO THE READER OR DISPENSER.

According to the plan of this Work, it is arranged in two parts, for the convenience of the Dispenser and of the Student.

The College formulæ (together with much original matter) are found in the first part, as also additional formulæ of patent and other medicines, cautionary notes in the margin, and ample explanations of remedial use, and *modus operandi*, &c.

The chemical theories (that the Dispenser's attention may not be abstracted) are exclusively placed in the second or Supplementary part, which the Student can consult at his leisure.

The Editor's notes upon the Notæ of the London College will be found in pages 26 to 46.

The College Table of preceding names (namely, the P. L. 1824,) will be found at page 245.

The Posological Table at page 249.

Tabular views of the composition of mineral waters, domestic and foreign, will be found to face page 260.

For Latin and English Indices of the contents of the first part, refer to page 263—272.

Tables of atomic or equivalent weights and symbols, follow after page 148 in Supplement.

A Table of the composition and equivalents of compound substances commences at page 152 of Supplement.

A concise explanation of symbols, as commonly employed, occurs at page 162 of Supplement.

For a short notice of poisons, their effects, antidotes and tests, refer to page 163 and following.

For a concise notice of trade chemicals the reader will refer to page 174 in Supplement.

The Tables of weights and measures, domestic and foreign, occupy pages 178, 179, and 180, in Supplement.

A Table, shewing in what ratio opium and other active principles are contained in certain compounds, &c., will be found facing page 180 of Supplement.

Latin and English Indices, referring to the supplementary matter only, extend from page 183 to page 192; and, lastly,

An Index of all old terms, from P. L. 1720 to P. L. 1824, is directed to be placed at the end of the Supplement.

G. F. C.

For any further explanations of processes, or additional information that the practical chemist may require, I shall, as heretofore, be accessible daily at 11 A. M., and from 5 to 6 P. M.

32, Spring Gardens.

ORDO CAPITUM.

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PREFACE OF THE CENSORS' BOARD.

SINCE the present age has seen every art included in medicine extended, and all but entirely remodelled, it is not surprising that our Pharmacopœia, published twelve years ago, should have become in a measure imperfect and obsolete. The College of Physicians had long ago applied themselves to this task of revision and reform, but many circumstances prevented its completion. For not only is it an arduous undertaking to collect and to weigh well the opinions of a considerable body of men, but we had, moreover, to labour at trivial matters, and carefully to consider how much that was old required to be rejected or to be improved, and what new substances it might be expedient to introduce, and at the same time clearly to set forth the best mode of preparing each. To these points we have devoted much of our time. However, before we had made considerable progress, a new difficulty presented itself; for we were desirous of completing, not as before, a "London Pharmacopœia," but a National one, to include Scotland and Ireland with England. Hence it became necessary to consult the Academies of both the sister kingdoms; and as, on account of the great distance, this was extremely difficult, or altogether impracticable, we were at last obliged to abandon the affair, after having made a beginning. This is not the fit time to shew by what worthies, or by what scholarship, the empire of science has been extended; although there are those, also, among its promoters, who belong to the College of Physicians. But since our knowledge of universal nature has advanced with such rapid strides, it would have been a disgrace to us, had we suffered the

department of Pharmacology, as far as relates to our duties (*in hac parte*), to loiter, hobbling in the rear. But it will be proper to explain what we have at last accomplished. We have not contented ourselves with describing a series of medicines, without a thorough examination of the whole; and the chemical remedies which have yearly increased, both in number and importance, we have especially subjected to the rigid test of experiment. Although some of these appear to be barely confirmed by experience, nevertheless we have included them here, that whoever may think fit to administer them may have each accurately prepared.

Furthermore; lest the work might be imperfect, or the safety of the sick endangered, we have now for the first time added short notes, by which the purity of the medicines we require may, for the most part, be easily ascertained; and although they may not always suffice for the exact analysis of the chemists, they will be useful, both to the medical practitioners, and to the student. With regard to some remedies herein mentioned, since they can be easily procured sufficiently pure from the drug-traders, we have omitted the form for preparing them; although we prefer ordering some of these after a method of our own, rather than to trust to the attention, or inattention, of others. And even if more beautiful crystals, and brighter colours, are elsewhere produced from the more abundant material employed, these qualities contribute nothing to the relief of the afflicted.

The alphabetical arrangement is, also, another novelty which we have resolved upon in our Pharmacopœia. If any one think this less systematic, let him know we are working for the convenience of medical practitioners, and are not subservient either to the will and pleasure of philosophers, or to the gratification of the indolent. Notwithstanding this, some chemical substances are exempt from such arrangement, since they are so intimately connected that they could not properly be separated. To discuss the propriety of a change of nomenclature, would in the present day be superfluous; for, though all admit that this ought not to be done inconsiderately, yet there was just reason to fear, lest, by

avoiding the errors to which it was likely to give rise, we might cause mistakes still more extensive ; since we are persuaded, that that name for any substance will be the most certain and permanent, which has been given to it by the professors who take the lead in their art. We, therefore, have determined to follow in their footsteps, and suffer inconveniences, if there be any, or to learn to speak barbarously, rather than incur the risk of obscurity by using terms doubtful, and imperfectly defined. If we have ourselves invented one or two names, we have done so in accordance with the same principles. These are our prefatory observations. We cannot hope to afford satisfaction to all ; nor, indeed, have we done all we ourselves could wish. Some will think us too prolix in our work, some too brief. It has, in truth, been our earnest desire, if we could not please all, at least to benefit the many ; and we shall feel gratified if the student, or the compounder of medicines, and the learned, or the unlearned, derive some benefit from our labours. But we have especially aimed at augmenting the healing resources of medical practitioners, and at consulting for the welfare of the sick ; that the former may more certainly and safely combat with disease, and the latter may be sooner conducted out of the darkness of affliction to the long-hoped-for light of health.

regarding the matter to which it was likely to give rise, my right
 course would have been to have refused to be concerned, and
 that course for any substance will be the most certain and safe
 course, which has been given to me by the persons who have
 been in that part of the business, but the matter is now in
 their hands, and under consideration, if there be any, or to have
 to speak honestly, rather than to take the risk of being
 using terms dishonest, and dishonestly. If we have any
 selves, we have one or two names, we have them so in hand, as
 with the same principles. These are our principles, and
 we cannot hope to afford satisfaction to all; but indeed, have we
 done all we ourselves could wish. Some will think us too
 in our work, some too strict. It has, in reality, been our
 interest, we could not have all at least to leave the matter, and
 we shall feel gratified in the future, or the way of right-
 ness, and the lesson, on the subject, which we have learned from
 our labours. But we have especially aimed at encouraging the
 feeling response of moral principles, and in a manner for the
 welfare of the world; that the former may more certainly and
 easily combat with disease, and the latter may be more cer-
 tained out of the darkness of delusion to the happy and
 state of health.

THE LONDON PHARMACOPŒIA.

WEIGHTS, MEASURES, &c.

SINCE there are two kinds of Weights used in England, by one of which we weigh gold and silver, and by the other nearly every other description of merchandise, it is our custom to use the former, commonly called *Troy Weight*, and the following are our Divisions of the Pound:—

Table.

Gr. xx. Grains	} make	One Scruple, ℥
℥iij Scruples		One Drachm, ʒ
ʒviij Drachms		One Ounce, ʒ
℔xij Ounces		One Pound, ℔.

We have annexed the characters by which each weight is ordinarily denoted.

Our Measures of Liquids are derived from the last statute gallon; and our divisions of it are the following:—

Table.

℥lxx Minims	} make	One Fluidrachm, fʒ
fʒviij Fluidrachms		One Fluidounce, fʒ
fʒxx Fluidounces		One Pint, O
Oviij Pints		One Gallon, C

We have annexed the usual characters of each measure. Care must be taken that medicines be not contaminated with the material of the vessel in which they are either prepared or preserved.

All acid, alkaline, or metallic preparations, and salts of every kind, should be kept in stopped glass-bottles; and, for some of them, black or green glass is indispensable.

We wish the saturation of acids, or alkalies, to be determined by litmus and turmeric, in the usual mode. Filtering paper (unless otherwise ordered) should be employed both for straining liquors, and for drying crystals.

We measure degrees of heat by *Fahrenheit's* thermometer; and when we order a **BOILING HEAT** we mean a temperature of two hundred and twelve. But, by a **GENTLE HEAT** we mean a temperature between ninety and a hundred.

Whenever we mention **SPECIFIC GRAVITY**, we suppose the substance treated of to be of the heat of sixty-two degrees.

We wish the **Hessian** or **Cornish CRUCIBLES** to be employed, when these vessels are required.

When any substance contained in its proper vessel is exposed to boiling water, or to its steam, that it may be heated, we call this a **WATER BATH**.

A **SAND BATH** is made of sand gradually heated, into which any substance is placed, contained in its proper vessel.

MATERIA MEDICA.

IN the first column, the names are for the most part short, simple, and better suited for prescriptions; but in the other, the VEGETABLE SUBSTANCES are named after WILLDENOW'S edition of the "*Catalogus Specierum Plantarum*," of LINNÆUS, or DE CANDOLLE'S edition of the "*Prodromus Systematis Naturalis*;" the ANIMAL, according to CUVIER'S "*Règne Animal*," unless where otherwise stated; and the CHEMICAL, according to the modern nomenclature.

Abietis Resina.

Resin of the Spruce Fir.

Absinthium.

Wormwood.

Acacia.

Gum-Arabic.

Acetosella.

Wood-Sorrel, or Sour Trefoil.

Acetum.

Vinegar.

Acidum Arseniosum.

Arsenious Acid.

Acidum Sulphuricum.

Sulphuric Acid.

Aconiti folia.

Leaves of Aconite.

Pinus Abies.

The Resin.

Artemisia Absinthium.

[The herb is understood where the part is not specified].

Acacia vera.

The Gum.

Oxalis Acetosella.

Acetum.

Prepared by fermentation.

Acidum Arseniosum.

Prepared by sublimation.

Acidum Sulphuricum.

Specific Gravity, 1.845.

Aconitum paniculatum.

(DE CANDOLLE.)

The Leaves.

Aconiti Radix.

Root of Monk's Hood.

Acorus.

Sweet Flag.

Adeps.

Hog's Lard.

Ærugo.

Verdigris.

Allium.

Garlic.

Aloë.

Aloes.

Althææ Folia.

Leaves of Marshmallow.

Althææ Radix.

Root of Marshmallow.

Alumen.

Alum.

Ammoniacum.

Ammoniacum.

Ammoniaë Hydrochloras.

Hydrochlorate of Ammonia.

Ammoniaë Liquor fortior.

Stronger Liquor of Ammonia.

Amygdala amara.

Bitter Almond.

Amygdala dulcis.

Sweet Almond.

The Root.

Acorus Calamus.

The Rootstock.

Sus Scrofa.

The Prepared Lard.

Diacetas Cupri impura.

Impure Diacetate of Copper.

Allium sativum.

The Bulb.

Aloë spicata.

The inspissated Juice of the Leaves.

Althæa officinalis.

The Leaves.

The Root.

Sulphas Aluminæ et Potassæ.

Sulphate of Alumina and Potassa.

Dorema Ammoniacum.

(Don, in *Act. Soc. Linn.*)

The Gum-resin.

Ammoniaë Liquor fortior.

Specific Gravity, .882.

Amygdalus communis.

(DE CANDOLLE.)

Var. α .

The Kernels.

Var. β .

The Kernels.

Amygdalæ Oleum.

Oil of Almond.

Amylum.

Starch.

Anethum.

Dill.

Anisum.

Anise.

Anthemis.

Chamomile.

Antimonii Sesquisulphuretum.

Sesquisulphuret of Antimony.

Argentum.

Silver.

Armoracia.

Horseradish.

Asarum.

Asarabacca.

Aspidium.

Male Fern.

Assafoetida.

Assafoetida.

Avena.

Oat.

Aurantium.

Orange.

Aurantii Cortex.

The Rind of the Orange.

Aurantii Flores.

The Flowers of the Orange.

*The Oil expressed from the
Kernels of either variety.*

Triticum hybernum.

The Fæcula of the Seeds.

Anethum graveolens.

The Fruit.

Pimpinella Anisum.

The Fruit.

Anthemis nobilis.

The single Flowers.

Cochlearia Armoracia.

The fresh Root.

Asarum europæum.

The Leaves.

Aspidium Filix mas.

(SMITH, *Flor. Brit.*)

The Root.

Ferula Assafoetida.

The Gum-resin.

Avena sativa.

*The Seeds freed from their
husks.*

Citrus Aurantium.

(DE CANDOLLE.)

The Fruit.

Citrus vulgaris.

(DE CANDOLLE.)

The outer Rind of the Fruit.

Citrus Aurantium.

(DE CANDOLLE.)

The Flowers.

Aurantii Oleum.

Oil of Orange.

*The Oil distilled from the
Flowers.*

Balsamum Peruvianum.

Peruvian Balsam.

Myroxylon peruiferum.

The liquid Balsam.

Balsamum Tolutanum.

Balsam of Tolu.

The concrete Balsam.

Barytæ Carbonas.

Carbonate of Baryta.

Belladonna.

Deadly Nightshade.

Atropa Belladonna.

The Leaves.

Benzoinum.

Benzoin.

Styrax Benzoin.

The Balsam.

Bergamii Oleum.

Citrus Limetta Bergamium.

(DE CANDOLLE.)

Oil of Bergamote.

*The Oil distilled from the
Rind of the Fruit.*

Bismuthum.

Bismuth.

Borax.

Borax.

Sodæ Biboras.

Biborate of Soda.

Brominium.

Bromine.

Cajaputi.

Cajaput.

Melaleuca minor.

*The Oil distilled from the
Leaves.*

Calamina.

Calamine.

Carbonas Zinci impura.

Impure Carbonate of Zinc.

Calcis Hydras.

Hydrate of Lime.

*Fresh-burnt Lime slaked with
Water.*

Calx.

Lime.

Calx recens usta.

Lime recently burnt.

Calumba.

Calumba.

Cambogia.

Camboge.

Camphora.

Camphor.

Canella.

Canella.

Cantharis.

Cantharis, or Spanish Fly.

Capsicum.

Capsicum, or Cayenne.

Carbo Animalis.

Carbo Ligni.

Cardamine.

*Cuckoo Flower, or Lady's
Smock.*

Cardamomum.

Cardamom.

Carui.

Carraway.

Caryophyllus.

Clove.

Caryophilli Oleum.

Oil of Cloves.

Cascarilla.

Cascarilla.

Cassia.

Cassia.

Cocculus palmatus.

(DE CANDOLLE.)

The Root.

Stalagmitis Cambogioïdes.

The Gum-resin.

Laurus Camphora.

*A peculiar concrete, purified
by sublimation.*

Canella alba.

The Bark.

Cantharis vesicatoria.

Capsicum annuum.

The Berries.

Carbo.

Prepared by heat from flesh and bones.

Carbo.

Prepared by heat from wood.

Cardamine pratensis.

The Flowers.

Alpinia Cardamomum.

(ROXBURGH, *Plant. Corom.*)*The Seeds.*

Carum Carui.

The Fruit.

Caryophyllus aromaticus.

(DE CANDOLLE.)

*The Dried Buds.**The Oil distilled from the Flowers.*

Croton Cascarilla.

(DON, *Ed. Pharm. Journ.*)*The Bark.*

Cassia Fistula.

The Pulp of the Pods.

- | | |
|---------------------------------|---|
| Castoreum. | Castor fiber. |
| <i>Castor.</i> | <i>A Concrete found in the fol-
licles of the prepuce.</i> |
| Catechu. | Acacia Catechu. |
| <i>Catechu.</i> | <i>The Extract from the Wood.</i> |
| Centaurium. | Erythræa Centaurium. |
| | (PERSOON, <i>Syn. Plant.</i>) |
| Cera. | Apis mellifica. |
| <i>Wax.</i> | <i>A Concrete prepared by the
Bee.</i> |
| Cera alba. | |
| <i>White Wax.</i> | <i>The same bleached.</i> |
| Cerevisiæ Fermentum. | |
| <i>Yest.</i> | |
| Cetaceum. | Physeter macrocephalus. |
| <i>Spermaceti.</i> | <i>A Concrete discovered in pe-
culiar cells of the head.</i> |
| Cetraria. | Cetraria islandica. |
| | (ACHAR. <i>Lichenog. Univers.</i>) |
| <i>Liverwort.</i> | |
| Chimaphila. | Chimaphila corymbosa. |
| | (PURSH. <i>Flora Amer. Sept.</i>) |
| <i>Winter Green, or Pyrola.</i> | <i>The Leaves.</i> |
| Cinchona cordifolia. | Cinchona cordifolia. |
| | (LAMBERT, <i>Cinch.</i>) |
| <i>Heart-leaved Cinchona.</i> | <i>The Bark.</i> |
| <i>(or Yellow Bark.)</i> | |
| Cinchona lancifolia. | Cinchona lancifolia. |
| | (LAMBERT, <i>Cinch.</i>) |
| <i>Lance-leaved Cinchona.</i> | <i>The Bark.</i> |
| <i>(Pale or Quill Bark.)</i> | |
| Cinchona oblongifolia. | Cinchona oblongifolia. |
| | (LAMBERT, <i>Cinch.</i>) |
| <i>Oblong-leaved Cinchona.</i> | <i>The Bark.</i> |
| <i>(Red Bark.)</i> | |

Cinnamomi Oleum.	Laurus Cinnamomum.
<i>Oil of Cinnamom.</i>	<i>The Oil distilled from the Bark.</i>
Cinnamomum.	
<i>Cinnamom.</i>	<i>The Bark.</i>
Cocci.	Coccus Cacti.
<i>Cochineal.</i>	
Colchici Cormus.	Colchicum autumnale.
<i>Cormus [vulgò Root] of Meadow Saffron.</i>	<i>The Cormus.</i>
Colchici Semina.	
<i>Seeds of Meadow Saffron.</i>	<i>The Seeds.</i>
Colocynthis.	Cucumis Colocynthis.
<i>Colocynth.</i>	<i>The Dried Pulp of the Pepo- nes, or Gourds.</i>
Conii Folia.	Conium maculatum.
<i>Hemlock-Leaves.</i>	<i>The Leaves.</i>
Conii Fructus.	
<i>Fruit of Hemlock [vulgò Seeds].</i>	<i>The Fruit.</i>
Contrajerva.	Dorstenia Contrajerva.
<i>Contrayerva.</i>	<i>The Root.</i>
Copaiba.	Copaifera Langsdorfii.
	(DE CANDOLLE.)
<i>Copaiva.</i>	<i>The liquid Resin.</i>
Coriandrum.	Coriandrum sativum.
<i>Coriander.</i>	<i>The Fruit [vulgò Seeds].</i>
Cornu.	Cervus Elaphus.
<i>Horn.</i>	<i>The Horn.</i>
Creasoton.	Oxy-hydro-carburetum.
<i>Creasote.</i>	<i>An Oxy-hydro-carburet pre- pared from Pyroxylic Oil.</i>
Creta.	Calcis Carbonas (<i>friabilis</i>).
<i>Chalk.</i>	<i>Friable Carbonate of Lime.</i>
Crocus.	Crocus sativus.
<i>Saffron.</i>	<i>The dried Stigmata.</i>

Cupri Sulphas.

Sulphate of Copper.

Curcuma.

Turmeric.

Cusparia.

Angustura, or Sword Bark.

Cydonia.

Quince.

Cyminum.

Cummin [Seeds].

Dauci Fructus.

*Fruit of the Carrot [vulgò
Seeds].*

Dauci Radix.

Root of the Carrot.

Digitalis Folia.

Leaves of the Foxglove.

Digitalis Semina.

Seeds of Foxglove.

Diosma.

Buchu.

Dulcamara.

Woody Nightshade, or Bittersweet.

Elaterium.

Wild Cucumber.

Elemi.

Elemi.

Ergota.

Ergot of Rye.

Euphorbium.

Euphorbium.

Curcuma longa.

The Rootstock.

Galipea Cusparia.

(DE CANDOLLE.)

The Bark.

Cydonia vulgaris.

(DE CANDOLLE.)

The Seeds.

Cuminum Cyminum.

The Fruit.

Daucus Carota.

The Fruit.

The fresh Root of the same.

Digitalis purpurea.

The Leaves.

The Seeds of the same.

Diosma crenata.

The Leaves.

Solanum Dulcamara.

The Stalk.

Momordica Elaterium.

*The Fresh Gourds [Pepo-
nes].*

Amyris Elemifera.

The Resin.

Acinula Clavus.

(FRIES, *System. Mycol.*)

Euphorbia officinarum.

The Gum-resin.

Farina.

Flour.

Ferri Percyanidum.

Percyanide of Iron, or Prussian Blue.

Ferrum.

Iron.

Fici.

Figs.

Foeniculum.

Fennel.

Galbanum.

Galbanum.

Gallæ.

Galls.

Gentiana.

Gentian.

Glycyrrhiza.

Liquorice.

Granatum.

Pomegranate.

Guiaci Lignum.

Guaiacum Wood.

Guiaci Resina.

Resin of Guaiacum.

Hæmatoxylum.

Logwood.

Helleborus.

Hellebore (Black).

Hirudo.

The Leech.

Triticum hybernum.

The Flour of the Seeds.

Ferrum.

The Filings.

Ficus Carica.

The dry Fruit.

Foeniculum vulgare.

The Fruit Seeds.

Galbanum officinale.

*(Don, in Act. Soc. Linn.)**The Gum-resin.*

Quercus infectoria.

The diseased Buds.

Gentiana lutea.

The Root.

Glycyrrhiza glabra.

The fresh Root.

Punica Granatum.

*The Rind of the Fruit.**[Add also the Bark of the Root.]—*

EDITOR.

Guaiacum officinale.

*The Wood.**The Resin of the same.*

Hæmatoxylon Campechianum.

The Wood.

Helleborus officinalis.

*(SIBTHORPE, Flora Græca.)**The Root.*

Hirudo medicinalis.

Hordeum.

Barley.

Hydrargyrum.

Quicksilver (Mercury).

Hyoscyami Folia.

Leaves of Henbane.

Hyoscyami Semina.

Henbane Seeds.

Jalapa.

Jalap.

Inula.

Elecampane.

Iodinium.

Iodine.

Ipecacuanha.

Ipecacuanha.

Juniperi Cacumina.

Tops of the Juniper.

Juniperi Fructus.

Juniper-Fruit [vulgò Berries].

Kino.

Kino.

Krameria.

Rhatany.

Lacmus.

Litmus.

Lactucarium.

Lactucarium.

Hordeum distichon.

The Seeds deprived of their husks.

Hyoscyamus niger.

*The Leaves.**The Seeds of the same.*

Ipomæa Jalapa.

(DON, MS.)

The Root.

Inula Helenium.

The Root.

Cephaelis Ipecacuanha.

(DE CANDOLLE.)

The Root.

Juniperus communis.

*The Tops.**The Fruit.*

Pterocarpus erinaceus.

(DE CANDOLLE.)

The Extract.

Krameria triandra.

(DE CANDOLLE.)

The Root.

Roccella tinctoria.

(ACHAR. Lichenog. Univers.)

The prepared Thallus.

Lactuca sativa.

The inspissated Juice.

Lavandula.	Lavandula Spica.
<i>Lavender.</i>	<i>The Flowers.</i>
Lauri Baccæ.	Laurus nobilis.
<i>Bay Berries.</i>	<i>The Berries.</i>
Lauri Folia.	
<i>Bay Leaves.</i>	<i>The Leaves of the same.</i>
Limones.	Citrus Limonum.
	(DE CANDOLLE.)
<i>Lemons.</i>	<i>The Fruit.</i>
Limonum Cortex.	
<i>Lemon Peel.</i>	<i>The outer Rind of the Fruit.</i>
Limonum Oleum.	
<i>Oil of Lemons.</i>	<i>The Oil distilled from the outer Rind of the Fruit.</i>
Limonum Succus.	
<i>Lemon-Juice.</i>	<i>The Juice.</i>
Lini Oleum.	Linum usitatissimum.
<i>Linseed Oil.</i>	<i>The Oil expressed from the Seeds.</i>
Lini Semina.	
<i>Linseed.</i>	<i>The Seeds.</i>
Lobelia.	Lobelia inflata.
<i>Indian Tobacco.</i>	
Lupulus.	Humulus Lupulus.
<i>Hop.</i>	<i>The dried Strobiles.</i>
Magnesiæ Sulphas.	
<i>Sulphate of Magnesia.</i>	
Malva.	Malva sylvestris.
<i>Mallow.</i>	
Manganesii Binoxidum.	
<i>Binoxide of Manganese.</i>	
Manna.	Ornus europæa.
<i>Manna.</i>	<i>The concrete Juice.</i>
Maranta.	Maranta arundinacea.
<i>Arrowroot.</i>	<i>The Fæcula of the Rootstock.</i>

Marmor.

Marble.

Marrubium.

Common white Horehound.

Mastiche.

Mastich.

Mel.

Honey.

Mentha piperita.

Peppermint.

Mentha Pulegium.

Pennyroyal.

Mentha viridis.

Spearmint.

Menyanthes.

Buckbean, or Trefoil.

Mezereum.

Mezereon.

Mora.

Mulberries.

Moschus.

Musk.

Mucuna.

Cowhage.

Myristica.

Nutmeg.

Myristicæ Oleum.

Oil of Nutmegs.

Carbonas Calcis (*dura*).

Hard Carbonate of Lime.

Marrubium vulgare.

Pistacia Lentiscus.

The Resin.

Apis mellifica.

*A matter extracted from the
Flowers, and prepared by
the Bee.*

Mentha piperita.

(SMITH, in *Act. Soc. Linn.*)

Mentha Pulegium.

Mentha viridis.

Menyanthes trifoliata.

Daphne Mezereum.

The Bark of the Root.

Morus nigra.

The Fruit.

Moschus moschiferus.

*A matter secreted in the fol-
licle of the prepuce.*

Mucuna pruriens.

(DE CANDOLLE.)

The Pubes of the Pods.

Myristica moschata.

The Nuts.

*The Oil distilled from the
Nuts.*

Myrrha.

Myrrh.

Nux vomica.

Nux vomica, or Crow-fig.

Olibanum.

Olibanum.

Olivæ Oleum.

Olive Oil.

Opium.

Opium.

Opopanax.

Opopanax.

Origanum.

Marjoram.

Ovum.

Egg.

Papaver.

Poppy.

Pareira.

Pareira.

Petroleum.

Petroleum.

Phosphorus.

Phosphorus.

Pimenta.

Pimenta.

Piper Cubeba.

Cubebs.

Piper longum.

Long Pepper.

Balsamodendron Myrrha.

(EHRENBERG.)

The Gum-resin.

Strychnos Nux vomica.

The Seeds.

Boswellia serrata.

(COLEBR. in *Act. Soc. As.*)*The Gum-resin.*

Olea europæa.

*The Oil expressed from the
Fruit.*

Papaver somniferum.

*The concrete Juice of the un-
ripe Capsules.*

Opopanax Chironium.

(DE CANDOLLE.)

The Gum-resin.

Origanum vulgare.

Phasianus Gallus.

The Egg.

Papaver somniferum.

The ripe Capsules.

Cissampelos Pareira.

(DE CANDOLLE.)

*The Root.*Petroleum (*Barbadense*).

Myrtus Pimenta.

The unripe Berries, dried.

Piper Cubeba.

The Berries.

Piper longum.

The unripe Fruit, dried.

Piper nigrum.

Black Pepper.

Pix Abietina.

Burgundy Pitch.

Pix liquida.

Tar.

Pix nigra.

Black Pitch.

Plumbi Carbonas.

Carbonate of Lead.

Plumbi Oxydum.

Oxide of Lead.

Porrum.

The Leek.

Potassæ Bitartras.

Cream of Tartar, or Bitartrate of Potassa.

Potassæ Carbonas impura.

Impure Carbonate of Potassa.

Potassæ Chloras.

Chlorate of Potassa.

Potassæ Nitras.

Nitrate of Potassa.

Potassii Ferrocyanidum.

Ferrocyanide of Potassium.

Pruna.

Prunes.

Pterocarpus.

Red Saunders.

Pyrethrum.

Pellitory of Spain.

Quassia.

Quassia.

Quercus.

Oak.

Piper nigrum.

The Berries.

Pinus Abies.

The prepared Resin.

Pinus sylvestris.

The prepared liquid Resin.

The prepared solid Resin.

Plumbi Oxydum (*semivitreum*).

Semivitrified Oxide of Lead.

Allium Porrum.

The Bulb.

Prunus domestica.

The dried Fruit.

Pterocarpus santalinus.

The Wood.

Anthemis Pyrethrum.

The Root.

Quassia excelsa.

The Wood.

Quercus pedunculata.

The Bark.

Quina.	Cinchona cordifolia.
<i>Quina.</i>	<i>The Alkali prepared from the Bark.</i>
Resina.	Pinus sylvestris.
<i>Resin.</i>	<i>The residue of the liquid Resin, after the distillation of the Oil.</i>
Rhamnus.	Rhamnus catharticus.
<i>Buckthorn.</i>	<i>The Berries.</i>
Rheum.	Rheum palmatum.
<i>Rhubarb.</i>	<i>The Root.</i>
Rhœas.	Papaver Rhœas.
<i>Red Poppy.</i>	<i>The Petals.</i>
Ricini Oleum.	Ricinus communis.
<i>Castor Oil.</i>	<i>The Oil expressed from the Seeds.</i>
Rosa canina.	Rosa canina.
<i>Dog Rose.</i>	<i>The Pulp of the Fruit.</i>
Rosa centifolia.	Rosa centifolia.
<i>Damask Rose.</i>	<i>The Petals.</i>
Rosa gallica.	Rosa gallica.
<i>Red Rose.</i>	<i>The Petals.</i>
Rosmarinus.	Rosmarinus officinalis.
<i>Rosemary.</i>	<i>The Tops.</i>
Rumex.	Rumex Acetosa.
<i>Sorrel.</i>	<i>The Leaves.</i>
Ruta.	Ruta graveolens.
<i>Rue.</i>	<i>The Leaves.</i>
Sabadilla.	Helonias officinalis.
<i>Sabadilla, or Cevadilla.</i>	<i>The Seeds.</i>
Sabina.	Juniperus Sabina.
<i>Savine.</i>	<i>The Tops, both fresh and dried.</i>
Sacchari faex.	Saccharum officinale.
<i>Treacle.</i>	

(DON, Ed. Ph. Journ.)

Saccharum.	Saccharum officinale.
<i>Sugar.</i>	<i>The prepared Juice.</i>
Sagapenum.	An uncertain species of Ferula.
<i>Sagapenum.</i>	<i>The Gum-resin.</i>
Sago.	Sagus Rumphii.
<i>Sago.</i>	<i>The Fæcula of the Pith.</i>
Sambucus.	Sambucus nigra.
<i>Elder.</i>	<i>The Flowers.</i>
Sapo.	Sapo, ex Olivæ Oleo et Sodâ
	<i>confectus.</i>
<i>Soap.</i>	<i>Soap, made of Olive Oil and</i>
	<i>Soda.</i>
Sapo mollis.	Sapo, ex Olivæ Oleo et Potassâ
	<i>confectus.</i>
<i>Soft Soap.</i>	<i>Soap, made of Olive Oil and</i>
	<i>Potassa.</i>
Sarza.	Smilax officinalis.
	(HUMBOLDT et BONPLAND. <i>Nov. Gen.</i>
	<i>Spec. Plant.</i>)
<i>Sarsaparilla.</i>	<i>The Root.</i>
Sassafras.	Laurus Sassafras.
<i>Sassafras.</i>	<i>The Root.</i>
Scammonium.	Convolvulus Scammonea.
<i>Scammony.</i>	<i>The Gum-resin.</i>
Scilla.	Scilla maritima.
<i>Squill.</i>	<i>The fresh Bulb.</i>
Scoparius.	Cytisus Scoparius.
	(DE CANDOLLE.)
<i>Broom.</i>	<i>The fresh Tops.</i>
Senega.	Polygala Senega.
<i>Senega.</i>	<i>The Root.</i>
Senna.	Cassia lanceolata.
	(DE CANDOLLE.)
<i>East Indian Senna.</i>	<i>The Leaves.</i>

Alexandrian Senna.

Cassia obovata.

(DE CANDOLLE.)

The Leaves.

Serpentaria.

Aristolochia Serpentaria.

*Serpentary, or Virginian
Snake-root.*

The Root.

Sevum.

Ovis Aries.

Suet.

The Suet.

Simaruba.

Simaruba officinalis.

(DE CANDOLLE.)

Simaruba.

The Bark of the Root.

Sinapis.

Sinapis nigra.

Mustard.

The Seeds.

Sodæ Acetas.

Acetate of Soda.

Sodæ Carbonas impura.

Impure Carbonate of Soda.

Sodæ Phosphas.

Phosphate of Soda.

Sodii Chloridum.

Chloride of Sodium.

Spigelia.

Spigelia marilandica.

Indian Pink.

The Root.

Spiritus rectificatus.

Spiritus.

Rectified Spirit.

Specific Gravity, .838.

Spiritus tenuior.

Spiritus.

Proof Spirit.

Specific Gravity, .920.

Spiritus Vini gallici.

Spiritus.

*Spirit of French Wine (French
Brandy).*

Distilled from French Wine.

Stannum.

Tin.

Staphisagria.

Delphinium Staphisagria.

Stavesacre.

The Seeds.

Stramonii Folia.

Leaves of Stramonium.

Stramonii Semina.

Seeds of Stramonium.

Styrax.

Storax.

Succinum.

Amber.

Sulphur.

Sulphur.

Tabacum.

Tobacco.

Tamarindus.

Tamarind.

Taraxacum.

Dandelion.

Terebinthina Canadensis.

Canada Turpentine.

Terebinthina Chia.

Chio Turpentine.

Terebinthina vulgaris.

Common Turpentine.

Terebinthinæ Oleum.

Oil of Turpentine.

Testæ.

Shells.

Tiglii Oleum.

Croton Oil.

Tormentilla.

Tormentil.

Toxicodendron.

Sumach, or Poison Oak.

Datura Stramonium.

The Leaves.

The Seeds of the same.

Styrax officinale.

The Balsam.

Sulphur (*sublimatum*).

Sulphur (sublimed).

Nicotiana Tabacum.

The dried Leaves.

Tamarindus Indica.

The Pulp of the Pod.

Leontodon Taraxacum.

The Root.

Pinus Balsamea.

The liquid Resin.

Pisticia Terebinthus.

The liquid Resin.

Pinus sylvestris.

The liquid Resin.

The Oil distilled from the Resin.

Ostrea edulis.

The Shells.

Croton Tiglium.

The Oil expressed from the Seeds.

Potentilla Tormentilla.

(DE CANDOLLE.)

The Root.

Rhus Toxicodendron.

The Leaves.

Tragacantha.

Tragacanth.

Tussilago.

Coltsfoot.

Valeriana.

Valerian.

Veratrum.

White Hellebore.

Vinum Xericum.

Sherry Wine.

Ulmus.

Elm.

Uva (passa).

Raisins.

Uva Ursi.

Whortle-Berry.

Zincum.

Zinc.

Zingiber.

Ginger.

Astragalus verus.

(OLIVIER, *Voy. dans l'Emp. Ottom.*)

Tussilago Farfara.

Valeriana officinalis.

(*sylvestris.*)

The Root.

Veratrum album.

The Root.

Ulmus campestris.

The Bark.

Vitis vinifera.

*The dried Berries freed from
the Stones.*

Arctostaphylos Uva Ursi.

(SPRENGEL, *Syst. Veget.*)

The Leaves.

Zingiber officinalis.

(ROSCOE, in *Act. Soc. Linn.*)

The Rootstock.

NOTES.

WE have thought fit to subjoin short notes, relating chiefly to the chemical preparations, by which their purity may, as far as possible, be ascertained. This, as regards vegetable and animal substances, is less necessary, and would be attended with many difficulties. For, although the specific character of each plant and animal is laid down sufficiently clear in botanical and zoological books, yet the extracts from them, and the weaker preparations, are so frequently changed in taste, colour, and smell, that they cannot be distinguished by any certain sign, and admit only of meagre description.

[N.B. UNLESS YOUR TESTS ARE PURE, THE RESULTS ARE NOT TO BE RELIED UPON.—*Editor.*]

ACETUM.—*Vinegar*.—A yellowish liquor of a peculiar odour, one fluidounce of which is saturated by one drachm of the crystals of carbonate of soda. Solution of chloride of barium precipitates only 1·14 grain of sulphate of baryta. Its colour is not altered by hydrosulphuric acid.

Observations.—As specific gravity is no just criterion of the strength of the acid, it is therefore ascertained by its saturating power with respect to carbonate of soda, as above, or to carbonate of lime. By law, the manufacturer is allowed to employ 1-1000th of its weight of sulphuric acid in preparing it; and this, together with the sulphates of common water, will account for the precipitate of 1·14th grain of the sulphate of baryta. The hydrosulphuric acid is intended as a test of any metallic oxide, but more especially of lead, which, in reference to colica pictonum, particularly merits the notice of the medical practitioner. The best, or what used to be called proof vinegar, should contain 5 per cent. of real acid. To detect copper in it, precipitate by hydrosulphuric acid, dissolve in nitric acid on a watch-glass, and strike the blue colour with liquor of ammonia.—Vide *Turner's Chemistry*, 5th edition, page 619. Lege *Taylor on the Acetometer*. *Quart. Journ.* vi.

ACETUM DISTILLATUM.—*Distilled Vinegar*.—It is entirely evaporated by heat. It yields no precipitate on the addition of acetate of lead, or nitrate of silver, or iodide of potassium. Colour not changed by hydrosulphuric acid, nor by ammonia. A plate of silver being digested in it, hydrochloric acid causes no precipitation. Grs. 13 of the crystals of carbonate of soda are saturated by grs. 100 of distilled vinegar.

Observations.—This contains 4·6 per cent. real acetic acid, as the quantity of carbonate used indicates. Total evaporation shews the absence of solid impurities, as mucilage, extractive, colouring matter, &c. Acetate of lead to precipitate any sulphuric acid; nitrate of silver to detect hydrochloric [muriatic] acid; iodide of potassium to detect lead in the form of yellow iodide; hydrosulphuric acid and ammonia [liquor] are confirming tests of the presence of metallic oxide admixture. If nitric acid be present, silver leaf put into it will form a nitrate of silver, and that will be decomposed by adding hydrochloric acid.

ACIDUM ACETICUM.—*Acetic Acid.*—Its specific gravity is 1·048. Eighty-seven grains of the crystals of carbonate of soda are saturated by 100 grains of this acid. When it has been saturated with carbonate of soda and evaporated, it yields crystals of acetate of soda. The other tests correspond with the above.

Observations.—Contains 30·8 per cent. of real acid, and is about seven times as strong as the strongest vinegar usually met with in commerce. Should it be found to contain sulphuric acid, it may be easily purified by re-distilling it with a little peroxide of manganese.

ACIDUM ARSENIOSUM.—*Arsenious Acid.*—Entirely sublimed by heat. Mixed with charcoal, and exposed to heat, it gives off a garlic odour. It is soluble in boiling water, and the solution yields a yellow precipitate on the addition of hydrosulphuric acid, and a white matter when tested with lime-water. [S. G. 3·729.]

Observations.—The materials with which this substance is adulterated are not volatilised by heat, and are insoluble, or sparingly soluble, in boiling water. The other tests are rather of the presence, than of the purity of this acid. One of the readiest is the taste, when the powder requires examination. The tongue may be besmeared with it, if promptly rejected, without any danger. Thrown upon wet litmus paper, it turns it red. Vide *Liebig on Turner's Chemistry*, 6th edit. p. 519.

ACIDUM BENZOICUM.—*Benzoic Acid.*—When carefully heated, it emits its peculiar odour, and entirely escapes. Sparingly soluble in water; more largely so in rectified spirit; entirely soluble in liquor of potassa, or in lime-water, from which it is precipitated by hydrochloric acid.

Observations.—It is soluble in 24 parts of boiling water; and nearly the whole of it is deposited on cooling, in the form of minute acicular, silky crystals.

ACIDUM CITRICUM (crystalli).—*Citric Acid (crystals).*—It is soluble in water; and what is precipitated from this aqueous solution by acetate of lead, is dissolved in diluted nitric acid. No potassa-salt, except the tartrate, yields a precipitate, [*i. e.* with the solution of citric acid.] It entirely perishes in the fire.

Observations.—Acetate of lead to detect sulphuric acid. Precipitation with a potassa-salt to detect tartaric acid. It will not keep in solution. Its saturating power is weakened if the crystals become moist. 15, 18, 25 grs. are severally the more convenient and palatable proportions for ℥j of bicarbonate of potassa [the old carbonate], or ℥j of carbonate of potassa [the old subcarbonate], or ℥j of the sesquicarbonate of ammonia [the old subcarbonate]; that is to say, in the order in which they are here mentioned. Vide p. 51.

ACIDUM HYDROCHLORICUM.—*Hydrochloric (or Muriatic) Acid.*—It is colourless, and totally vaporizable by heat. When mixed with distilled water, it precipitates nothing from the chloride of barium, ammonia, or its sesquicarbonate. It does not act upon gold leaf, even when heat is employed. It does not bleach the solution of sulphate of indigo.—1·16 is its specific gravity. 132 grs. of the crystals of carbonate of soda are saturated by 100 grs. of this acid.

Observations.—Total evaporation by heat shews it is free from matter in solution. Chloride of barium to detect sulphuric acid. The two next to precipitate metallic or earthy matters. Gold, if dissolved, indicates the presence of chlorine, as likewise does sulphate of indigo, in reference to the bleaching power of chlorine. It is requisite to bear in mind that, unless your tests are themselves pure, the resulting phenomena are not to be relied on.

ACIDUM HYDROCYANICUM DILUTUM.—*Dilute Hydrocyanic Acid.*—Colourless; totally dissipated by heat, exhaling its remarkable odour. It turns litmus of a slight red colour, which is evanescent; it is not discoloured by the addition of hydrosulphuric acid. On adding a solution of nitrate of silver, 10 grs. of cyanide of silver are precipitated from 100 grs. of this acid, and the precipitate is readily dissolved in boiling nitric acid. If a red colour be struck with the iodo-cyanide of potassium and mercury, it is mixed with some other acid. 100 grs. of this diluted acid contain 2 grs. of real hydrocyanic acid; and in whatever mode it is distilled, we wish the medicine uniformly to be reduced to this standard.

Observations.—Hydrosulphuric acid [sulphuretted hydrogen] would discolour it, if it contained any metallic salt. Nitrate of silver precipitates hydrochloric acid with the cyanide of silver, and is discovered if present, by boiling the precipitate in nitric acid, being *insoluble* whilst the *cyanide completely dissolves*; and, lastly, any adventitious acid would, if mixed with the hydrocyanic, decompose the iodo-cyanide of potassium and mercury, and form red biniodide of that metal.

ACIDUM NITRICUM.—*Nitric Acid.*—Totally evaporated by heat. Mixed with distilled water, it produces no precipitate with nitrate of silver or chloride of barium. Specific gravity, 1.50. About 217 grs. of the crystals of carbonate of soda are saturated by 100 grs. of this acid.

Observations.—Precipitation with nitrate of silver would shew the presence of a chloride in some form. Chloride of barium to detect sulphuric acid. The tests should be used in solution by adding a few drops to separate portions of the acid diluted with three or four parts of water.

ACIDUM PHOSPHORICUM DILUTUM.—*Dilute Phosphoric Acid.*—Whatever precipitate is affected by the addition of chloride of barium or nitrate of silver, is readily dissolved in nitric acid. It does not at all affect strips of copper and silver, and is not coloured by passing into it hydrosulphuric acid. Specific gravity, 1.064. Without any precipitation, 42 grs. of carbonate of soda are saturated by 100 grs. of this acid.

Observations.—Chloride of barium to detect sulphuric acid; the absence of chlorine and its compounds proved by nitrate of silver yielding no precipitate which is insoluble in nitric acid. The medical practitioner must bear in mind, that where phosphoric acid is present in secretions, excretions, or food, the ammoniacal nitrate of silver throws down a yellow precipitate resembling that from arsenic in solution. It therefore cannot be relied upon in testing organic fluids. *Christison*, p. 253.

ACIDUM SULPHURICUM.—*Sulphuric Acid.*—Colourless. Specific gravity, 1.845. When the acid is distilled to dryness, the residue does not exceed 1-400th part of its entire weight. Diluted sulphuric acid is scarcely coloured by hydrosulphuric acid.

Observations.—The very dust of a room will colour it, if not closely stopped. The residue, after distillation, is sulphate of lead (for it is made in chambers lined with that metal). Dilute sulphuric acid should always be poured off after the subsidence consequent upon mixing the acid with the water: the hydrosulphuric acid is only a test of the extent of the lead or other metallic impurity.

ACIDUM TARTARICUM (*crystalli*).—*Tartaric Acid* (*crystals*).—Entirely soluble in water; and such solution from any neutral salt of potassa precipitates bitartrate of potassa. Furthermore, what is precipitated from the same solution by the acetate of lead is soluble in dilute nitric acid.

Observation.—These tests are intended to determine the presence of sulphuric acid or of a sulphate.

ACONITINA.—An alkali prepared from the leaves and root of aconite; largely soluble in sulphuric æther, less so in alcohol, and nearly insoluble in water. It is totally destroyed by heat, leaving no salt of lime. N.B. This substance is extremely active, and TO BE EMPLOYED WITH GREAT CAUTION.

Observations.—All the vegetable alkalies which have been hitherto analysed, consist of carbon, hydrogen, nitrogen, and oxygen; are entirely destroyed by heat, and yield ammonia under a destructive distillation.

ADEPS.—*Lard*.—It is not to be employed until carefully washed with water, [nor to be used at all, if it be rancid; since, in extreme hot weather, such a dressing is apt to disagree with irritable sores.]

ÆRUGO.—*Verdigris*.—It is partially soluble in water, and almost entirely so in ammonia, or in dilute sulphuric acid, with the assistance of heat.

Observations.—The green varieties are composed chiefly of the triacetate of copper; the blue, of the diacetate.—Berzelius.

ÆTHER SULPHURICUS.—*Sulphuric Ether*.—Specific gravity, .750; but that sold in the trade fluctuates between .733 and .765. It totally vaporises in the air. Slightly reddens litmus; sparingly combines with water; for example, in the proportion of a fluidounce with half a pint, and remains limpid.

Observations.—The lighter, the more æthereal it is. If it strongly affects litmus, it contains sulphuric acid, and is objectionable. If, however, æther be kept, as with some medical practitioners, for a long time on the shelves, the fault is with them, and not with the manufacturer; for it then generates acetic acid.—Vide *Gay Lussac, Annal. de Ch.*, vol. ii. pp. 98, 213.

ALCOHOL.—Its specific gravity, .815; colourless; by heat it evaporates; it combines with water and with æther; taste and smell, vinous.—[Vide *Spiritus rectificatus*.]

ALUMEN (*crystallinum*).—*Alum* (*crystalline*).—Totally soluble in water. Solution of ammonia or potassa throws down a colourless pure alumina, which is re-dissolved by excess of the latter alkali.

AMMONIÆ LIQUOR.—*Liquor of Ammonia*.—It entirely passes off in evanescent alkaline vapours by heat, as proved by turmeric. Lime-water produces no precipitate; neither, when saturated with nitric acid, does it yield a precipitate by means of sesquicarbonate of ammonia, or by nitrate of silver. Its specific gravity, .960.

Observations.—The ammonia first entirely passes off, leaving pure water. Lime-water is a test for the presence of carbonic acid. The last conjoint test will throw down any earthy matter,

or prove the presence of hydrochloric acid, or of any chloride. This solution should be kept in accurately stopped vessels on account of its volatility, and strong affinity for carbonic acid.

AMMONIÆ LIQUOR FORTIOR.—*Stronger Liquor of Ammonia.*—Specific gravity is .882. This may be reduced to the same strength as that of the *Liquor Ammoniaë*, by adding to each fluidounce two fluidounces of distilled water. The tests are the same as in the last.

Observations.—The dispenser in reference to these proportions for dilution will bear in mind that the greater part of the stronger liquor of ammonia, as manufactured in this country, has a specific gravity of 0.936, and that, until the manufacturers adopt an uniform method, these proportions will not be correct.

AMMONIÆ ACETATIS LIQUOR.—*Liquor of Acetate of Ammonia.*—It is not tinged by the addition of hydrosulphuric acid, allows of no precipitation with nitrate of silver, or with chloride of barium. Any residue after evaporation gives out ammonia, and perishes by fire.

Observations.—The first test (hydrosulphuric acid) applies to the vinegar, and, as that is presumed to have been pure, it is here unnecessary. The same remark applies to the second. [*Vide Acetum distillatum.*] Any residue after exposure to heat is an impurity. Its perfect saturation should be determined by litmus some days after making.

AMMONIÆ HYDROCHLORAS (crystallina).—*Hydrochlorate of Ammonia (crystalline).*—It is transparent; sublimed by heat; and wholly soluble in water. It tinges litmus of a faint red colour. It throws down nothing with chloride of barium. When potassa or lime is added, ammonia is evolved.

Observations.—This salt [sal-ammoniac] is now usually prepared from the hydrosulphate and hydrocyanate of ammonia obtained from coal gas, or by lixiviating the soot of coal which contains sulphate of ammonia, or by the destructive distillation of bones, &c. Chloride of barium is used to detect any sulphuric acid, a material largely used in the manufacture of it.

AMMONIÆ SESQUICARBONAS (crystallina).—*Sesquicarbonate of Ammonia (crystalline).*—It is translucent, but in the air it falls to powder; entirely dissipated by heat. Completely dissolved in water; changes the colour of turmeric. Nitric acid having been added to saturation, nothing is thrown down either by chloride of barium, or by nitrate of silver.

Observations.—When it has effloresced by exposure to the air, it is converted into a bicarbonate of ammonia, in which state it is more eligible as a medicine in certain dyspeptic conditions of the stomach. All residue after exposure to heat is impurity. Nitric acid to test the presence of hydrochloric; and the chloride of barium, that of sulphuric acid.

ANTIMONII OXYSULPHURETUM.—*Oxysulphuret of Antimony.*—It is entirely dissolved in nitrico-hydrochloric acid, evolving hydrosulphuric acid.

Observations.—Gay Lussac was the first to observe the separation of oxide of antimony from this compound, by digestion with cream of tartar. Dr. Turner observes, "it either is, or, at least, contains oxysulphuret of antimony." Five long theories of the chemical reactions have been invented in our time; and the newest is still but conjectural.

ANTIMONII POTASSIO-TARTRAS (crystalli).—*Potassio-Tartrate of Antimony (crystals).*—Entirely soluble in water, no bitartrate of potassa adhering to the vessel,

and, on the addition of hydrosulphuric acid, it precipitates a reddish-coloured matter. The same solution yields no precipitate by the addition, either of chloride of barium, or nitrate of silver. With nitric acid it throws down a precipitate which is re-dissolved by an excess of the same.

Observations.—Its entire solubility in water shews the absence of uncombined bitartrate of potassa. Hydrosulphuric acid throws down the orange sesquisulphuret of antimony. Nitric acid precipitates a compound of oxide of antimony and bitartrate of potassa, soluble in excess of the same acid. N.B. It should always be dissolved in distilled water, as it is partially decomposed by common water.

ANTIMONII SESQUISULPHURETUM (*striatum*).—*Sesquisulphuret of Antimony (striated)*.—It is entirely dissolved by heat in hydrochloric acid. From the acid with which it has been boiled, a white matter is precipitated by the addition of distilled water; from the strained solution a reddish-coloured precipitate is afterwards thrown down by hydrosulphuric acid.

Observations.—If any lead is present after the precipitation of the white matter, it is held in solution, and when filtered may be precipitated by hydrosulphuric acid. If in doubt, dry the precipitate, dissolve in nitric acid, and on adding iodide of potassium a yellow iodide of lead appears.

ARGENTUM.—*Silver*.—It is entirely dissolved in diluted nitric acid. This same solution, on adding chloride of sodium, yields a precipitate which is dissolved by an excess of ammonia, and it should be free from colour. The chloride of silver being removed, no colour is struck by hydrosulphuric acid, and nothing is precipitated. Specific gravity, 10.4.

Observations.—The nitric acid should be diluted with three parts water. If such solution be turbid, if it deposit a white powder, it shews the presence of muriatic acid mixed with the nitric; if the silver contain copper, it will give a permanent bluish hue to the liquor; or if gold, a black undissolved powder will remain. The hydrosulphuric acid is the best test for the lead after the removal of the chloride of silver.

ARGENTI NITRAS.—*Nitrate of Silver*.—At first it is white, but blackens by exposure to the light. Totally soluble in water; and such solution, on the introduction of copper, throws down a precipitate of silver. The other tests correspond with those of silver as above.

Observations.—*Vide* the preceding. It should be perfectly clear and colourless. Such solution is a valuable test of the presence of chlorine, muriatic acid, and the soluble chlorides. When applied to the surface of a wound, the animal elements decompose it by attracting its oxygen. Common salt is the readiest antidote for it.

ARGENTI CYANIDUM.—*Cyanide of Silver*.—It evolves cyanogen by the application of heat, and is reduced to silver.

Observation.—The residue should be pure silver.

BARYTÆ CARBONAS.—*Carbonate of Baryta*.—It is entirely dissolved in diluted hydrochloric acid. This solution throws down nothing by the addition either of ammonia, or of hydrosulphuric acid, and is colourless; when it has been super-

saturated with sulphuric acid, nothing is precipitated from the supernatant liquor by the action of carbonate of soda.

Observations.—It is poisonous; and a solution of Epsom salt with excess of sulphuric acid is the best antidote against its effects. Its entire solubility in hydrochloric acid proves the absence of sulphate of baryta. Ammonia and hydrosulphuric acid throw down a precipitate, if alumina, or metallic oxides, are present. The last test is intended to detect lime.

BISMUTHUM.—*Bismuth.*—It is soluble in diluted nitric acid. When from such solution a subnitrate has been thrown down by ammonia, the liquor is free from colour. Its specific gravity is 9·8.

Observation.—It commonly contains small quantities of sulphur, iron, and copper.

BISMUTHI TRISNITRAS.—*Trisnitrate of Bismuth.*—It is entirely dissolved in nitric acid without effervescence. Nothing is thrown down on adding diluted sulphuric acid.

Observations.—If no effervescence, all carbonates are absent. Non-precipitation with sulphuric acid proves the absence of oxide of lead. N.B. The chemical student may here notice that the Greek prefixes are used to express the equivalents of base; the Latin to express those of acid.—Vide *Turner's Chemistry*, page 193, edition 5th.

BORAX (Crystalli).—Entirely soluble in water. Sulphuric acid from such solution precipitates crystalline scales. A solution of these in alcohol, when set on fire, burns with a green flame.

Observations.—Boracic acid precipitated, sulphate of soda in solution. Its crystals are hexædral; taste, alkaline styptic; imported under the name of tincal. It is variously considered as a borate, and as a baborate by different chemists.

BROMINIUM.—*Bromine.*—It evaporates at a gentle heat with an acrid smell. Sparingly soluble in water, more soluble in rectified spirit, but most soluble in æther. Specific gravity, 3·0.

Observation.—Discovered in the uncrystallisable residue (bittern) of sea-water.

CALAMINA.—*Calamine.*—Almost entirely soluble in [diluted?] sulphuric acid, evolving a few bubbles of carbonic acid, unless it has been previously burnt. Such a solution, on the addition of ammonia or potassa, throws down a precipitate which is re-dissolved by excess of either alkali.

Observations.—Solubility in sulphuric acid proves that it contains little or no carbonate of lime. The solution will be bluish if copper be present; and if it contain iron, the precipitate induced by the alkalies will not be re-dissolved by excess of the same.

CALCII CHLORIDUM.—*Chloride of Calcium.*—Colourless, scarcely translucent; hard, friable, and entirely soluble in water. This same solution yields no precipitate either with ammonia or chloride of barium, nor, if largely diluted with water, with ferrocyanide of potassium.

CALCIS HYDRAS.—*Hydrate of Lime.*—It is dissolved in diluted hydrochloric acid without effervescence; and such solution yields no precipitate by the addition of ammonia.

Observations.—Thus proving the absence of carbonic acid, of silica; and, by the second test, the absence of alumina and oxide of iron.

CALX.—Lime.—When slaked with water it cracks and falls to powder. The other properties are as in the last.

Observations.—Any carbonate of lime not sufficiently burnt will not yield to the action of the water, in the process of slaking. When slaked with water it becomes suddenly hot.

CALX CHLORINATA.—Chlorinated Lime.—It is dissolved in diluted hydrochloric acid, evolving chlorine. 50 grains should nearly all dissolve in 2 ounces of water.

Observations.—In disinfecting extensive apartments, factories, &c., consider whether any machinery be present. It will surely be injured, if not spoiled.

CARBO ANIMALIS (purificatus).—Animal Charcoal (purified).—It gives off no bubbles and no odour when tested with hydrochloric acid; nor is any thing precipitated from this acid by the addition either of ammonia, or of sesquicarbonate of ammonia.

Observations.—This substance is purified by hydrochloric acid (*vide* the formula), and ought to contain no carbonate or phosphate of lime. The effervescence would shew the first; and precipitation by ammonia (liquor of), or its sesquicarbonate, would indicate the phosphate.

CORNU.—Horn.—After it has been thoroughly burnt, it is almost entirely dissolved in nitric acid, and from such solution lime is separated by oxalate of ammonia; but by nitrate of lead, phosphoric acid is detached.

Observations.—Thus proving that it consists chiefly of phosphate of lime. N.B. If other horns besides those of the Cervus Elaphas are used, the residue is not the same in the relative quantity.

CREASOTON.—Creasote.—Oily, colourless, of a peculiar odour, translucent, and boils at 397° ; it does not congeal at 50° . It is dissolved in acetic acid.

Observations.—Prepared from the heavier oil distilled from wood tar. Specific gravity, 1.037. *Vide* Supplement, page 144. A drop on filtering paper ought to disappear in 10 minutes at 212° .

CRETA.—Chalk.—In diluted hydrochloric acid it is entirely dissolved with effervescence. After this solution has been boiled, it yields no precipitate when ammonia is dropped in.

Observations.—*Vide Calcis Hydras.*

CUPRI SULPHAS (crystalli).—Sulphate of Copper (crystals).—Exposed to the air it becomes slightly pulverulent and of a greenish colour. Entirely soluble in water. The precipitate produced on this solution by the addition of ammonia, is re-dissolved by ammonia in excess.

Observations.—If the green colour be intense, it argues the presence of the sesquioxide of iron, which is precipitated by ammonia and not re-dissolved by excess of that alkali.

CUPRI AMMONIO-SULPHAS.—Ammonio-Sulphate of Copper.—By heat it evolves ammonia, and is converted into oxide of copper. Its aqueous solution changes the colour of turmeric, and assumes a [pea or grass] green by adding a solution of arsenious acid.

Observations.—Its action on turmeric argues excess of alkali. With arsenious acid it precipitates arsenite of copper, and is, therefore, reciprocally a test for that acid.

FERRI PERCYANIDUM.—Percyanide of Iron.—It is pure if, after being boiled with diluted hydrochloric acid, and strained, it yields no precipitate with ammonia.

Observations.—Such precipitate would argue the presence of uncombined sesquioxide of iron, or of alumina.

FERRI AMMONIO-CHLORIDUM.—*Ammonio-Chloride of Iron.*—It is totally soluble in proof spirit and in water. From this solution potassa throws down a sesquioxide of iron, and, if added to excess, it extricates ammonia.

Observations.—The potassa first precipitates sesquioxide of iron by decomposing the chloride, and afterwards extricates ammonia.

FERRI IODIDUM.—*Iodide of Iron.*—It evolves violet-coloured vapours by heat, leaving a sesquioxide of iron. When newly prepared, it is perfectly soluble in water; but from this same solution, if kept in a vessel not accurately stopped, sesquioxide of iron is very soon precipitated, so that it cannot be preserved clear, unless in a well-stopped bottle having an iron wire immersed in it.

Observations.—In its degree of affinity for metallic substances, iodine is inferior to chlorine and oxygen. Hence the tendency to decompose. The iron wire will not entirely prevent deposit. *Vide Supplement, page 80.*

FERRI POTASSIO-TARTRAS.—*Potassio-Tartrate of Iron.*—It is totally soluble in water. This solution does not affect the colour of litmus or of turmeric, nor is it rendered blue by the ferrocyanide of potassium, nor is any precipitation effected by any alkali or acid. The magnet does not act upon its powder.

Observations.—When pure it is soluble in water or alcohol; but if it contain metallic iron, this will, of course, subside. If any other ferruginous salt is present, it yields a blue colour with the ferrocyanide of potassium. It is not decomposed by the alkalies. It is decomposed by hydrosulphuric acid.

FERRI SESQUIOXYDUM.—*Sesquioxide of Iron.*—It is dissolved entirely in diluted hydrochloric acid with very slight effervescence, and it is precipitated by ammonia.

Observations.—One hundred parts of this medicine are said to contain eight of protocarbonate, and hence the effervescence under the action of hydrochloric acid.

FERRI SULPHAS (crystalli).—*Sulphate of Iron (crystals).*—Colour, bluish-green; soluble in water. Iron immersed in the solution does not precipitate copper.

Observations.—Exposed to air and moisture this protosulphate of iron gradually absorbs oxygen, and is partly converted into a persulphate, and the crystals are then coated with a brownish yellow crust. Although composed of one equivalent of acid and base, the salt reddens vegetable blues, as does every metallic salt.

HYDRARGYRUM (purificatum).—*Mercury (purified).*—Under a high temperature it entirely goes off in vapours. It is dissolved by diluted nitric acid; but it is insoluble in boiling hydrochloric acid. When this last has become cold, it yields no precipitate with hydrosulphuric acid, neither is it coloured by it. Specific gravity, 13.5.

Observations.—Any residue after the application of a heat considerably above 600° is impurity. Its solubility in diluted nitric acid shews the absence of tin. Hydrochloric acid does not act upon pure mercury, and, therefore, ought not to be coloured after being boiled with it, nor to yield a precipitate with hydrosulphuric acid.

HYDRARGYRUM CUM CRETA.—*Mercury with Chalk.*—By heat it partly passes off in vapour. What remains is colourless, and totally soluble in acetic acid with effervescence. This solution is not tinged by passing through it hydrosulphuric acid. It is scarcely possible to render the globules invisible by any trituration, however diligent.

Observations.—The mercury passes off in vapour. The residue, chalk, is soluble in acetic acid with effervescence. Any insoluble matter is impurity, and any metallic impurity which may chance to be dissolved, will be precipitated by the hydrosulphuric acid. The name (to be consistent) ought to have been, **HYDRARGYRI PROXYDUM CUM CRETA**. But while Brande says it contains the protoxide, metallic mercury, and chalk, Phillips, as confidently, asserts that it contains also the binoxide in a small proportion.

HYDRARGYRI OXYDUM (cinereum).—*Oxide of Mercury (gray).*—When digested a short time with hydrochloric acid, and strained, [from the calomel thus formed,] no precipitate is thrown down either by liquor of potassa, or by oxalate of ammonia. It is totally soluble in acetic acid. By heat it is entirely volatilized.

Observations.—If Mr. Brande's statement be correct, "that this process is by no means a pure protoxide of mercury, and so uncertain in its composition, as to be entirely unfit for use," is it fair that the reputation of the manufacturing chemist should thus be left at the mercy of any analytical novice?—Vide **BRANDE'S Chemistry**, page 785, 4th edition.

HYDRARGYRI BINOXYDUM (rubrum).—*Binoxide of Mercury (red).*—On the application of heat it gives off oxygen, and the mercury either forms itself in globules, or is totally dissipated. It is entirely dissolved in hydrochloric acid.

Observations.—It should be entirely volatilized when placed upon a red-hot iron, but it is sometimes adulterated with red lead. Some chemists consider its perfect insolubility in water as the best test of the absence of pernitrate of mercury; but Guibourt asserts, that it is very sparingly soluble in water, even when pure.

HYDRARGYRI NITRICO-OXYDUM.—*Nitric-Oxide of Mercury.*—It evolves no nitric vapours under the application of heat. Neither lime-water, nor hydrosulphuric acid throws down any thing from the water in which it has been boiled, or washed. The other tests as in the last.

Observations.—Either this medicine contains nitric acid, or it does not. If it does, the tests here appear absurd. If it does not, the name itself appears absurd.—"Heat it in a test tube with a spirit-lamp, and a yellow ring of subnitrate collects within the tube just above the part heated."—**Dr. CLARKE.**

HYDRARGYRI AMMONIO-CHLORIDUM.—*Ammonio-Chloride of Mercury.*—It is entirely evaporated by heat. When digested with acetic acid, it yields no yellow or blue precipitate on the addition of iodide of potassium. Its powder when triturated with lime-water does not become black. It is entirely dissolved in hydrochloric acid without effervescence. When heated with the liquor of potassa, it exhales ammonia, and assumes a yellow colour.

Observations.—What remains after evaporation by heat is impurity. The iodide of potassium precipitates yellow iodide of lead, if that metal be present, or strikes a blue colour, if starch be the impurity. If blackened by lime-water, it indicates calomel. If it effervesces with hydrochloric

acid, carbonate of lime may be suspected; and, finally, the appearance produced by the last test is its proper characteristic.

HYDRARGYRI [PROTO-] CHLORIDUM.—[*Proto-*] *Chloride of Mercury*.—A whitish powder which is blackened by adding potassa, and forms into globules by the application of heat. Heat totally dissipates it. The distilled water in which it has been washed or boiled yields no precipitate by the addition either of nitrate of silver, or of lime-water, or of hydrosulphuric acid.

Observations.—With potassa it forms black oxide of mercury, which by heat is first reduced, and then totally volatilized, leaving no residue. Water would dissolve out any bichloride of mercury: and from this solution nitrate of silver would throw down a chloride of silver; lime-water, a yellowish red binoxide of mercury; and hydrosulphuric acid, a sulphuret. Liquor of ammonia was the test directed to be used in the last Pharmacopœia, to indicate the presence of corrosive sublimate, after edulcorating the calomel with solution of sal ammoniac.

HYDRARGYRI BICHLORIDUM (crystallinum).—*Bichloride of Mercury (crystalline)*.—By heat it melts and sublimes. Totally dissolved in water, and in sulphuric æther. Whatever is thrown down from the aqueous solution [this is what is meant, but as the Latin stands “*ex hoc liquore*,” it would be from the æthereal solution. —EDITOR], by adding potassa or lime-water is reddish, but if a sufficiency be added, it is yellow. This precipitate by heat emits oxygen, and forms globules.

Observations.—If pure it entirely sublimes. Any calomel present would not be soluble in the water. The alkalis precipitate a peroxide of mercury. By a drop or two of a solution of corrosive sublimate, gold becomes coated with metallic quicksilver, if the point of a knife, a key, or any piece of polished steel be held in contact with it. Diluted nitric acid removes this amalgam.

HYDRARGYRI BICYANIDUM (crystalli).—*Bicyanide of Mercury (crystals)*.—It is translucent, and entirely soluble in water. Such solution by dropping in hydrochloric acid emits hydrocyanic acid, recognised by its peculiar smell; and a glass moistened with a solution of nitrate of silver, and placed over it, affords a deposit which is dissolved in boiling nitric acid. By heat it gives off cyanogen, and is reduced to globules.

Observations.—With hydrochloric acid it forms bichloride of mercury, and emits hydrocyanic acid. In giving this same theory, Professor Brande (page 797, *Chemistry*, and elsewhere) calls the corrosive sublimate a chloride, which shews the danger of the College giving that name to calomel.

HYDRARGYRI IODIDUM.—*Iodide of Mercury*.—When recently prepared it is somewhat yellow: by heat cautiously applied, it is sublimed in red scales which presently become yellow, and afterwards, by exposure to light, black. It is not soluble in chloride of sodium.

Observations.—If rapidly heated in a glass tube, it fuses and sublimes unaltered; but when gently heated, or when long exposed to light, it is resolved into mercury and periodide of that metal.

HYDRARGYRI BINIODIDUM.—*Biniodide of Mercury*.—By the cautious application of heat, it is sublimed in scales, which soon become yellow, and afterwards red when cold. A portion of it is soluble in boiling rectified spirit, and crystallizes as the

spirit cools. It is alternately dissolved and precipitated by iodide of potassium and bichloride of mercury. It is entirely soluble in chloride of sodium.

Observations.—It is soluble both in alcohol and acids by the aid of heat.—Soluble entirely in 40 parts of a concentrated solution of chloride of sodium at 212° , and again deposited in fine red crystals on cooling.—*Edinburgh Pharm.* To say it is entirely soluble in chloride of sodium is nonsense. They might as well say it is soluble in a lamp-post.

HYDRARGYRI BISULPHURETUM (rubrum).—*Bisulphuret of Mercury (red).*—Totally passes off in vapours by heat, and, by the addition of potassa, globules of mercury are formed. It is insoluble in nitric acid, insoluble in hydrochloric acid, but soluble in a mixture of the two. Rectified spirit in which it has been washed or boiled does not become tinged with it. When digested with acetic acid it yields no yellow precipitate by iodide of potassium.

Observations.—If adulterated with red lead, it is not entirely volatile. Nitro-hydrochloric acid decomposes it even in the cold. In the last test, iodide of potassium is intended to precipitate a yellow iodide of lead.

HYDRARGYRI SULPHURETUM CUM SULPHURE (nigrum).—*Sulphuret of Mercury with Sulphur (black).*—By heat it is totally evaporated, leaving neither charcoal nor phosphate of lime.

Observations.—It is conjectured to be a bisulphuret of mercury with sulphur by Professor Brande, to whose opinion Mr. R. Phillips seems to have come round. The latter gentleman, a few years ago, represented it as consisting of protosulphuret of mercury with excess of sulphur.

IODINIUM.—*Iodine.*—Under the application of heat it first fuses, then [entirely] sublimes in violet-coloured vapour. It is very sparingly dissolved in water; more soluble in alcohol. It strikes a blue colour with starch.

Observation.—It frequently contains iron.

LACMUS.—*Litmus.*—Soluble both in water and alcohol. Its blue colour is reddened by acids, and is restored by the addition of an alkali.

Observations.—In testing the human secretions with litmus, the young practitioner would do well first to familiarize himself with the shades of colour produced in health. It ought to be kept in every chemist's shop; but it is scarcely to be found with the majority. When reddened by a trace of acetic acid in water it is a more sensible test for alkalies than even turmeric.

MANGANESII BINOXYDUM.—*Binoxide of Manganese.*—It is dissolved in hydrochloric acid, giving off chlorine. The precipitate produced from this solution produced by potassa (the College have it potassium) is first white, and soon becomes brown. It rarely also happens that ferrocyanide of potassium does not render it green. When first dried and then burnt in a white heat, out of 100 parts it loses 12.

Observations.—Common impurities are carbonaceous matter, carbonate of lime, sulphate of baryta, oxide of iron. Liquor ammoniæ added in slight excess to the solution in hydrochloric acid, will first precipitate oxide of iron, if this be present.

MAGNESIA.—It dissolves in hydrochloric acid without effervescence. From such solution no precipitation occurs on adding bicarbonate of potassa, or chloride of barium. It turns turmeric slightly brown.

Observations.—Residue after the action of hydrochloric acid is impurity. If it effervesces

it contains a carbonate. Bicarbonate of potassa to precipitate lime; chloride of barium to decompose any sulphate of soda. It slightly greens the blue of violets, and turns turmeric to a faint brownish red.

MAGNESIÆ CARBONAS.—*Carbonate of Magnesia.*—The distilled water in which it has been boiled does not change the colour of turmeric. The addition of chloride of barium, or of nitrate of silver, effects no precipitation. Dissolved in diluted sulphuric acid, one hundred parts lose 36·6 parts in weight. When the effervescence has ceased, nothing is thrown down from this solution by the bicarbonate of potassa.

Observations.—When carbonate of soda has been used in excess, and has not been washed out, the turmeric is strongly affected. The other tests may be understood by reference to the preceding.

MAGNESIÆ SULPHAS (crystalli). *Sulphate of Magnesia (crystals).*—Readily dissolved in water. When sulphuric acid is dropped into this solution, no hydrochloric acid is evolved. A hundred grains dissolved in water, and thrown into a boiling solution of carbonate of soda, yield 34 grains of carbonate of magnesia when dried.

Observations.—Evolution of hydrochloric acid would argue the presence of a chloride. The quantity of carbonate of magnesia yielded would determine the absence of sulphate of soda. Occasionally we find in the market specimens of Epsom salts containing iron; this, when the salt is dissolved in warm water, presents a brownish muddy precipitate, and brings the retail chemist into much discredit.

MARMOR.—*Marble.*—White, soluble in diluted hydrochloric acid with effervescence. Ammonia precipitates nothing from this solution, nor is it decomposed by a solution of sulphate of lime in water.

Observations.—Some varieties contain about three per cent. of strontia, but in reference to the pharmacological use, this should seem to be of little importance.

MEL.—*Honey.*—It should not be employed unless clarified. It is dissolved in water. It does not strike a blue colour by the simultaneous addition of iodide of potassium and any acid.

Observations.—It is scarcely requisite to observe that iodine is an extremely delicate test for the presence of starch or flour, which are sometimes used to adulterate honey.

MORPHIA.—Very sparingly soluble in cold water; sparingly in boiling water; very readily in alcohol. This last solution, tested with turmeric, betrays alkaline properties; and when the spirit has been removed from it by distillation, it forms crystals which are totally destroyed by heat. On adding nitric acid, it first becomes red, and afterwards yellow. The tincture of sesquichloride of iron gives it a blue colour. Chlorine, after ammonia has been added, turns its salts of a brown colour, which colour disappears if you add excess of chlorine. Moreover, morphia is precipitated from its salts by solution of potassa, which, added in excess, re-dissolves it.

Observations.—The salts of morphia are decomposed by a diluted solution of ammonia. Hence the narcotic effects are probably prevented or diminished by the common practice of combining opiate preparations with ammonia, or its sesquicarbonates, or with spt. ammon. aromatic. For tests of Morphia, *vide* Supplement, page 171.

MORPHIÆ ACETAS (crystalli).—Acetate of Morphia (crystals).—Very readily dissolved in water. The other tests correspond with those of morphia just mentioned.

Observations.—*Vide Morphia.*

MORPHIÆ HYDROCHLORAS (crystalli).—Hydrochlorate of Morphia (crystals).—It is dissolved in water. The precipitate produced from this solution by nitrate of silver is neither entirely soluble in ammonia, unless added to excess, nor by the hydrochloric or nitric acid.

Observations.—*Vide Morphia.* *Lege Edin. Med. and Surg. Journal*, Nos. cvii. and cxi., article on a Process for obtaining the Hydrochlorate, by Drs. Gregory and Robertson.

OLEUM ÆTHEREUM.—Ethereal Oil.—Its odour is peculiar, and slightly acrid; totally soluble in sulphuric æther, and shows no acidity with litmus. Specific gravity, 1.05.

Observation.—The litmus will detect adhering sulphurous acid.

PHOSPHORUS.—Phosphorus.—Nearly colourless, transparent like wax, emitting light in the dark. Sparingly soluble in most distilled oils, and in sulphuric æther. It ought always to be kept in water, excluded from the light.

Observations.—In dispensing or selling phosphorus, it should be cut in a convenient vessel under water; for, when divided on a slab, particles are apt to fly off, and these, as the heat of a room increases, may spontaneously catch fire near paper or other combustible materials.

PLUMBI ACETAS (crystalli).—Acetate of Lead (crystals).—It is soluble in distilled water. A white precipitate falls on adding carbonate of soda; a yellow precipitate on adding iodide of potassium. It is, moreover, blackened by hydrosulphuric acid. Sulphuric acid evolves from it acetic vapours. Exposed to the fire, it first fuses, and is then reduced to metallic lead.

Observations.—The white precipitate is carbonate of lead; the yellow, an iodide of the same metal. Hydrosulphuric acid forms a sulphuret of lead. Sulphuric acid detaches acetic vapours by its superior affinity for oxide of lead.

PLUMBI DIACETATIS LIQUOR.—Liquor of Diacetate of Lead.—Specific gravity, 1.260. In its other properties, it corresponds with the preceding.

PLUMBI CARBONAS.—Carbonate of Lead.—It is soluble in diluted nitric acid with effervescence. The matter which is thrown down from this solution by the liquor of potassa is white, and is re-dissolved by excess of it; it is blackened by hydrosulphuric acid. By heat it becomes yellow; and if at the same time charcoal is used, it is reduced to metallic lead.

Observations.—What remains insoluble in the diluted nitric acid is impurity, whether sulphate of lead or sulphate of baryta. The oxide of lead is first precipitated, then re-dissolved by the potassa, and forms a sulphuret with hydrosulphuric acid. Heat expels its carbonic acid and the charcoal attracts its oxygen.

PLUMBI CHLORIDUM (crystallinum).—Chloride of Lead (crystalline).—It is entirely dissolved in boiling distilled water. The greater part of this solution (of chloride of

lead) crystallizes as it cools. On adding hydrosulphuric acid, it becomes black. By heat it becomes yellow.

PLUMBI IODIDUM.—*Iodide of Lead*.—Totally soluble in [a full proportion of] boiling water; and it falls from the water, as it cools, in bright yellow scales. It melts by heat; and the greater part is dissipated, first in yellow, and afterwards in violet vapours.

PLUMBI OXYDUM (*semivitreum*).—*Oxide of Lead (semivitreous)*.—Nearly all dissolved in diluted nitric acid. In its other properties, it corresponds with the preceding.

PLUMBI OXYDUM (*hydratum*).—*Oxide of Lead (hydrated)*.—That which is employed in preparing disulphate of quina should be perfectly soluble in diluted nitric acid. In its other properties it corresponds with the preceding.

POTASSÆ LIQUOR.—*Liquor of Potassa*.—Specific gravity, 1.063. It powerfully changes turmeric to a brown. It emits very few or no bubbles of carbonic acid on the addition of diluted nitric acid. From the saturated solution, scarcely any thing is precipitated either by carbonate of soda, or by chloride of barium, or by nitrate of silver. Chloride of platina throws down a yellowish precipitate from this liquor, as it does from any of the salts of potassa dissolved in water.

Observations.—The two first tests are self-evident. Carbonate of soda to indicate earthy or metallic impurity, chloride of barium to detect any sulphate, nitrate of silver to indicate any chloride; but it is the chloride of platina which, by producing a yellowish precipitate, enables us to distinguish the two alkalies, potassa and soda, and the salts of each.

POTASSÆ HYDRAS.—*Hydrate of Potassa*.—In an open vessel, it soon becomes deliquescent. Totally soluble in alcohol. In its other properties it agrees with the above.

Observations.—*Vide Potassæ Liquor*.

POTASSA CUM CALCE.—*Potassa with Lime*.—When slaked with water, if any acid be added, it emits no bubbles of carbonic acid. It is not entirely soluble in alcohol.

POTASSÆ ACETAS.—*Acetate of Potassa*.—It is entirely dissolved both by water and by alcohol, and such solution neither tinges litmus nor turmeric. Nothing is precipitated from it (*viz.* the aqueous solution) either by chloride of barium, or by nitrate of silver; unless the solution be strong, in which case the precipitate is readily dissolved in nitric acid. Under a red heat, it is entirely converted into carbonate of potassa. Sulphuric acid, when added, emits acetic vapours.

Observations.—The perfect saturation of the salt is tested by litmus and turmeric. This salt is soluble in its own weight of water at 60°. Boiling alcohol dissolves twice its weight. Chloride of barium will serve to detect sulphate of potassa; the nitrate is intended to precipitate any chloride of potassium. Sulphuric acid detaches acetic vapours by its superior affinity.

POTASSÆ CARBONAS.—*Carbonate of Potassa*.—It is almost entirely soluble in water. It spontaneously deliquesces in an open vessel. It changes turmeric brown.

When supersaturated with nitric acid, nothing is thrown down by carbonate of soda or by chloride of barium, and but little by the nitrate of silver. One hundred parts of it under a strong heat lose 16 of water; and the same quantity loses 28 parts of carbonic acid, on the addition of diluted sulphuric acid.

Observations.—Earthy impurity will remain insoluble, and will also be thrown down from the solution in nitric acid by carbonate of soda, or, if a sulphate, by chloride of barium. Nitrate of silver would precipitate any chloride.

POTASSÆ CARBONATIS LIQUOR.—*Liquor of Carbonate of Potassa.*—Its specific gravity is 1.473. In its other properties it is like the preceding.

POTASSÆ BICARBONAS (*crystalli*).—*Bicarbonate of Potassa (crystals).*—Entirely soluble in water, and such solution slightly changes the colour of turmeric. Sulphate of magnesia throws down no precipitate from this solution, unless when heat is employed. From 100 parts, 30.7 are expelled by a red heat. Nitric acid being previously added in excess, nothing is precipitated from it by chloride of barium, and scarcely any thing by nitrate of silver.

Observations.—Even the bicarbonate, when pure, will slightly change the colour of turmeric. If the change is more decided, or if Epsom salt throws down any thing, the bicarbonate is imperfect. The 30.7 parts expelled are carbonic acid and water. For the explanation of the last two precipitants, refer to the preceding (Potassæ Carbonas).

POTASSÆ CHLORAS (*crystalli*).—*Chlorate of Potassa (crystals).*—Entirely soluble in distilled water. Such solution yields no precipitate on the addition of nitrate of silver. By heat it liquefies; and, if the heat be more strongly urged, it evolves oxygen, and is converted into chloride of potassium. A few minims of sulphuric acid being dropped on the crystals, the salt first becomes yellow, and afterwards red, and gives out peroxide of chlorine.

Observations.—Nitrate of silver to precipitate chloride of silver. Chlorate of potassa (oxymuriate) is prepared by passing chlorine gas through a concentrated solution of pure potassa; chloride of potassium and chlorate of potassa are the resulting compounds, and the latter is separated by crystallization.

POTASSÆ NITRAS (*crystalli*).—*Nitrate of Potassa (crystals).*—Totally soluble in distilled water. From such solution, neither chloride of barium nor nitrate of silver causes precipitation. By heat it fuses, and under a strong fire it gives off oxygen. From the powdered salt sulphuric acid detaches nitric vapours.

Observations.—Chloride of barium to detect a sulphate; nitrate of silver to indicate any chloride. Under a strong heat it becomes hyponitrite, and thus gives off nitric vapours by the action of sulphuric acid. Soluble in seven parts of water at 60°, or in its own weight of boiling water.

POTASSÆ SULPHAS (*crystalli*).—*Sulphate of Potassa (crystals).*—It is altogether insoluble in alcohol, sparingly soluble in distilled water. Chloride of platina throws down a yellow precipitate from this solution, and chloride of barium a white one, insoluble in nitric acid.

Observations.—*Vide* Potassæ Liquor,—where these tests are fully explained.

POTASSÆ TARTRAS (*crystalli*).—*Tartrate of Potassa (crystals)*.—It is readily dissolved in water. With nearly every acid this solution yields crystals of bitartrate of potassa, which mostly adhere to the vessel. The precipitate thrown down from the same solution, either by chloride of barium or by acetate of lead, is soluble in diluted nitric acid.

Observations.—From its ready solubility it derived its old name of “soluble tartar.” If the precipitate thrown down by the chloride, or by the acetate, is insoluble in nitric acid, the presence of a sulphate may be inferred.

POTASSÆ BITARTRAS (*crystalli*).—*Bitartrate of Potassa (crystals)*.—Sparingly soluble in water. Stains litmus red. Is converted into carbonate of potassa by a red heat.

Observations.—Insoluble in alcohol, and hence deposited gradually during vinous fermentation. It requires 60 parts of cold, and 14 of boiling water, for its solution, and is deposited from the latter on cooling. Hence we may see how much too large is the proportion commonly used for making the imperial water. Heat decomposes the tartaric acid; its carbon and oxygen forming carbonic acid, which unites with the base.

POTASSII BROMIDUM (*crystalli*).—*Bromide of Potassium (crystals)*.—Entirely soluble in water. It does not change the colour of litmus, or turmeric. Chloride of barium does not precipitate any thing from the solution. When sulphuric acid and starch are both added together, it becomes yellow. It loses none of its weight when subjected to heat. Ten grains of this salt are capable of acting on 14·28 grains of nitrate of silver, producing a yellowish precipitate, which is bromide of silver, soluble in ammonia, though all but insoluble in nitric acid.

Observations.—It should not have an acid or alkaline re-action on the test-colours. Chloride of barium to precipitate a sulphate. Sulphuric acid sets free the bromine, as indicated by the starch. It loses no weight, for it contains no water. The action of bromine on a solution of potassa is similar to that of chlorine on the same alkali: thus a bromide of potassium and a bromate of potassa are generated. *Vide Potassæ Chloras. It should always be purchased in crystals.*

POTASSII FERROCYANIDUM (*crystalli*).—*Ferrocyanide of Potassium (crystals)*.—It is entirely dissolved in water. By a gentle heat it loses 12·6 parts out of 100. It slightly affects the colour of turmeric. The compounds of the sesquioxide of iron throw down a blue precipitate from it; and those of zinc a white, and copper a brown. What remains after it has been burnt is dissolved by hydrochloric acid, and afterwards precipitated by ammonia. One hundred parts yield 18·7 of sesquioxide of iron.

Observations.—The 12·6 parts loss are water. The blue precipitate thrown down by the sesquioxide is percyanide of iron, or Prussian blue; the white one is ferrocyanide of zinc. The 18·7 per cent. of sesquioxide result from the oxidisation of the metallic iron, which previously existed in the ferrocyanide.

POTASSII IODIDUM (*crystalli*).—*Iodide of Potassium (crystals)*.—It is entirely dissolved in water and alcohol. It scarcely, if at all, affects the colour of turmeric. It does not change the colour of litmus. Exposed to the fire, it loses no weight. It is rendered blue by the conjoint addition of sulphuric acid and starch. Ten grains of

this salt suffice for decomposing 10·24 grs. of nitrate of silver; and the precipitate thus obtained is partly dissolved by nitric acid, and partly changed in its appearance; which does not happen when ammonia is added.

Observations.—Entirely dissolved, therefore any residue must be impurity. If it intensely affects turmeric, it contains alkali; if litmus, an acid. It loses no weight by fire, if previously dry; for it contains no water of crystallization. Decomposed by sulphuric acid; and the presence of free iodine shewn by starch. As in testing the bromide of potassium also, if it decompose more than the stated quantity of nitrate of silver, we may suspect the presence of chloride of potassium. Iodide of silver is insoluble in ammonia, but the chloride is soluble.

POTASSII SULPHURETUM.—*Sulphuret of Potassium.*—When recently broken, it is of a brown-yellow colour: when dissolved in almost any acid, it gives off a smell of hydrosulphuric acid. Its aqueous solution is yellow. The precipitate produced therefrom by acetate of lead is first red, and then becomes black.

Observations.—It always contains sulphate of potassa, even when recently prepared; and is gradually converted into this salt by long keeping, in vessels inaccurately closed.

QUINA.—An alkali prepared from the bark of the cinchona cordifolia. It is not soluble in water unless an acid be present, but very readily so in alcohol. It changes the colour of turmeric. Its taste is bitter. It is totally destroyed by heat.

Observations.—It does not, under ordinary circumstances, assume a crystalline appearance: its solution in alcohol has a distinct alkaline re-action. It is also soluble in æther.

QUINÆ DISULPHAS (*crystalli*).—*Disulphate of Quina (crystals).*—It is entirely soluble in water, and more readily so when an acid is present. After precipitating the quina by ammonia, the residuary liquor after evaporation ought not to taste of sugar. Under a gentle heat, disulphate of quina, out of 100 parts, loses 8 or 10 parts of water. It is wholly consumed by fire. If chlorine be first added, and then ammonia, it becomes green.

Observations.—It crystallizes in delicate white needles. It is freely dissolved when an acid is present, but is *not* readily soluble in water. Its solution ought not to affect test-paper. Sugar is sometimes used in the adulteration; hence the saccharine taste, after precipitating the quina by liquor of ammonia.

SODÆ ACETAS (*crystalli*).—*Acetate of Soda (crystals).*—It is totally soluble in water, but not entirely in alcohol. It does not change the colour of litmus and turmeric; is not precipitated by chloride of barium, nor by nitrate of silver. By a strong fire, it is converted into carbonate of soda. Sulphuric acid detaches acetic odours from it. Nothing is thrown down from an aqueous solution of this, or of any other sodaic salt, by the action of chloride of platina.

Observations.—Chloride of platina would precipitate any salt of potassa, as before repeatedly noticed. For explanations of the other tests, *vide* Potassæ acetat.

SODÆ CARBONAS (*crystalli*).—*Carbonate of Soda (crystals).*—When recently prepared it is translucent, but in an open vessel it soon effloresces. It is totally soluble in water, but not at all in alcohol. Like the alkalis, it changes the colour of turmeric.

Observations.—"It is difficult," says Dr. Turner, "to procure this salt quite free from sulphuric

acid;" hence, chloride of barium will precipitate sulphate of baryta. The crystals are soluble in about two parts of cold, and in rather less than their own weight of boiling water.

SODÆ CARBONAS EXSICCATA.—*Dried Carbonate of Soda.*—In drying this salt in a strong heat, 100 parts by weight lose 62 parts of water [of crystallization], without further change.

SODÆ SESQUICARBONAS.—*Sesquicarbonate of Soda.*—Totally soluble in water. Nothing is thrown down from such solution, either by chloride of platina or by sulphate of magnesia, unless by applying heat. By a strong fire, it is converted into dried carbonate of soda.

Observations.—Chloride of platina would precipitate any potassa-salt, if present; and a precipitate from sulphate of magnesia would argue a deficiency of carbonic acid, unless under the application of heat. Strong heat expels one-third of its carbonic acid and its water of crystallization. Its solution in 40 parts of water does not precipitate orange by the bichloride of mercury.

SODÆ CARBONATIS LIQUOR EFFERVESCENS.—*Effervescing Liquor of Carbonate of Soda.*—It first reddens the blue of litmus, and afterwards, when the effervescence has ceased, the blue colour is restored.

Observation.—Shewing that the colour has been changed by carbonic acid only.

SODÆ CHLORINATÆ LIQUOR.—*Liquor (solution) of chlorinated Soda.*—The colour of turmeric is first turned brown in this solution, and afterwards entirely perishes. By the addition of diluted hydrochloric acid, it at once gives out carbonic acid and chlorine: the latter bleaches the solution of sulphate of indigo; the former precipitates lime from lime-water.

Observations.—First turned brown by the carbonate of soda, and then bleached by the chlorine. Hydrochloric acid forms a solution of chloride of sodium. Chlorine bleaches the solution of sulphate of indigo. Carbonic acid forms, with the lime, an insoluble carbonate.

SODÆ PHOSPHAS (crystalli).—*Phosphate of Soda (crystals).*—Slightly efflorescent by exposure to the atmosphere; entirely soluble in water, but not in alcohol. Chloride of barium throws down from this solution a matter, which is white; and nitrate of silver, a yellow precipitate, unless the phosphate of soda has been previously burnt. Both precipitates are soluble in nitric acid.

Observations.—Any matter insoluble in nitric acid, thrown down by the chloride of barium, is a sulphate. The yellow triphosphate of oxide of silver falls by the action of the nitrate of silver; if the phosphate of soda [tri-phosphate] has been heated, it yields a pyrophosphate of silver, which is white.

SODÆ SULPHAS (crystalli).—*Sulphate of Soda (crystals).*—Exposed to the air, it effloresces and falls to powder. It is totally dissolved in water, very sparingly so in alcohol. It does not affect litmus or turmeric. Nitrate of silver scarcely throws down any thing from a weak solution of it, but with nitrate of baryta it yields a copious precipitate, insoluble in nitric acid. 100 parts lose 55 of water (of crystallization) by a strong heat.

Observations.—It is neutral, and should not affect test-paper. Nitrate of silver might throw down some little chloride. With nitrate of baryta, it would copiously precipitate sulphate of baryta.

SODÆ POTASSIO-TARTRAS (*crystalli*).—*Potassio-Tartrate of Soda (crystals)*.—Totally soluble in water. Such solution yields no precipitate with nitrate of silver, or with chloride of barium. It does not affect turmeric or litmus. It is partly converted into bitartrate of potassa by the addition of sulphuric acid.

Observations.—Rochelle salt. Nitrate of silver to indicate a chloride; chloride of barium to indicate a sulphate; test-paper for the usual objects.

SODII CHLORIDUM (*crystalli*).—*Chloride of Sodium (crystals)*.—It is nearly in the same degree soluble in cold water as in hot. Does not change the colour of litmus or turmeric. With carbonate of soda, as also with nitrate of baryta, it yields scarcely any precipitate.

Observations.—Test-paper employed for the usual objects; carbonate of soda to determine the presence of earthy matter; nitrate of baryta to determine admixture with sulphate.

SPIRITUS ÆTHERIS NITRICI.—*Spirit of Nitric Æther*.—Specific gravity is .834. It slightly reddens litmus; gives off no bubbles of carbonic acid on the addition of carbonate of soda; and is recognised by its characteristic odour.

Observations.—If it strongly reddens litmus, it argues great excess of acid. A greater specific gravity indicates water, or excess of nitric acid; and the presence of the latter is proved by the effervescence.

SPIRITUS AMMONIÆ.—*Spirit of Ammonia*.—Specific gravity, .860.

SPIRITUS AMMONIÆ AROMATICUS.—*Aromatic Spirit of Ammonia*.—Its specific gravity is .914.

SPIRITUS AMMONIÆ FÆTIDUS.—*Fætid Spirit of Ammonia*.—Its specific gravity is .861.

SPIRITUS RECTIFICATUS.—*Rectified Spirit*.—Specific gravity, .838. Colourless, and not rendered turbid by the addition of water. Odour and taste vinous. It may be reduced to proof-standard, by adding to five pints of it three pints of distilled water at the temperature of 62°.

SPIRITUS TENUIOR.—*Proof Spirit*.—Specific gravity, .920, as defined by law. In its other properties it corresponds with the preceding.

Observations.—It would be better to assign the proper portions of spirit and water for each tincture than to use this proof spirit.

STANNUM.—*Tin*.—It is nearly altogether dissolved when boiled in hydrochloric acid. This solution is colourless; but, on the addition of chloride of gold, it becomes purple. What is precipitated from [the same solution] by potassa is white, but the same [alkali] being added to excess, it is re-dissolved. Specific gravity, 7.29.

Observations.—Tin might well have been excluded from the *Materia Medica*. If introduced because one of its preparations is employed as a test, on the same principle might other substances have a place here. As a medicine, it ought not to be employed.

STRYCHNIA (*crystalli*).—*Strychnia (crystals)*.—It is readily dissolved in boiling alcohol, but not in water. It fuses by heat; and if a stronger heat is employed, it is

entirely dissipated. As it possesses virulent properties, IT IS NEVER TO BE USED EXCEPT WITH CAUTION.

Observations.—It is soluble in common alcohol, but absolute alcohol and æther scarcely dissolve it when quite free from acid. The intensity of its bitterness is such, that *its cold aqueous solution*, which does not contain more than a six-thousandth of its weight of strychnia, may be diluted with 100 times its bulk of water, and yet remain sensibly bitter.—BRANDE'S *Chemistry*, p. 1033. The crystals ought *not* to be reddened by nitric acid, which is invariably the case with the powder due to the presence of brucia.

SULPHUR SUBLIMATUM.—*Sublimed Sulphur.*—With the heat of 600° it entirely passes off in vapour. When washed with water, it does not affect the colour of litmus.

VERATRIA.—Very sparingly soluble in water; more so in alcohol; but largely soluble in sulphuric æther. It has no smell, but its taste is bitter. NOT TO BE EMPLOYED WITHOUT GREAT CAUTION.

Observations.—It is not crystallizable: its taste is not bitter, but acrid.

ZINCI SULPHAS (*crystalli*).—*Sulphate of Zinc (crystals).*—Totally soluble in water. The precipitate produced from this solution by ammonia is white, and is re-dissolved by an excess of the same alkali. By the addition of chloride of barium, or acetate of lead, it is decomposed.

Observations.—Oxide of iron, if present, will be precipitated by ammonia, but not be re-dissolved by that alkali. If copper be present, the solution will be rendered blue by ammonia.

ZINCUM.—*Zinc.*—All but entirely dissolved in diluted sulphuric acid. Such solution is colourless. In its other properties, it resembles the preceding substance. Its specific gravity is 6.86.

OBSERVATIONS.

It is evident that these Notes have been framed for the use of students, as chemical exercises, rather than for the practical chemist; and, while desirous of expressing himself with the greatest diffidence, the Editor cannot but observe, that it is not fair that the reputation of the manufacturing chemist should thus be left to the mercy of analytical novices, in matters which require the greatest delicacy and the most extensive experience.

The College Translator is frequently at variance with his text, but more generally his inflexions are an improvement. Where ammonia and potassa are mentioned, the usual solutions of these, as employed in testing, are to be understood. The studied avoidance of the use of the term gas is calculated to create obscurity; as also is the change of the names from those employed in the last editions of elementary chemistry.

PRÆPARATA ET COMPOSITA.

Preparations and Compounds.

ACIDA.

Acids.

ACETUM DESTILLATUM.

Distilled Vinegar.

TAKE of Vinegar a gallon :

Let the Vinegar be distilled in a sand-bath, from a glass retort into a glass receiver. Keep for use the seven pints first distilled.

Chemical Observations.—*Vide* Supplement and Notes.

Medical Use.—1st. To relieve the stupor produced by narcotics or under inebriation, but of doubtful effect: the Editor has seen it produce dangerous symptoms of depression when it has been given as an antidote. 2d. To refrigerate in fevers, &c. 3d. To check internal hæmorrhage. 4th. To insure the solution of acetates of lead, thus preventing precipitation. 5th. As a discutient for swellings, contusions, &c.

Dose.—fʒij to fʒ ss.

College Preparations.—Acetum Colchici, Acetum Scillæ, Oxymel Scillæ, Liquor Ammoniae Acetatis, Ceratum Saponis.

Cautions.

Distilled Vinegar, when pure, is not discoloured by the addition of sulphuretted hydrogen [A], and yields no precipitate when tested with acetate of baryta [B], or acetate of lead. Test [A] for any metal; test [B] for sulphuric acid.

For the rest see *Notes*.

The article is left of indefinite strength, neither is the exact source indicated. A mixture of pure acetic acid and water coloured with burnt sugar is a common substitute.

Cautions.

ACIDUM ACETICUM.

Acetic Acid.

The College state in their Notes that the specific gravity is 1.048, but S. G. is no criterion of its strength, which is to be determined by its saturating power.

N.B. A solution of real acid in water.

Note.—The distilled vinegar was called “acidum acetikum dilutum,” in the last Pharmacopœia; but the present is about the strength of the “acidum aceticum fortius e ligno.” Incompatible with alkalies, carbonates, &c.

Take of Acetate of Soda, two pounds ;
Sulphuric Acid, nine ounces ;
Distilled Water, nine fluidounces :

Put the Acetate of Soda into a glass retort, and add the Sulphuric Acid previously mixed with the Water. Then let the Acid be distilled from a sand-bath. The heat must not be too much raised towards the last.

Chemical Observations.—This is a very old process; and, as thus obtained, was formerly called radical vinegar, as though distilled à radice. For comparison of the various processes, see Supplement. For tests, see Notes. Fifteen parts with eighty-five of water yield one hundred parts equal in strength to distilled vinegar.

College Preparations.—Acetum Cantharidis, Potassæ Acetas, Plumbi Acetas, Oxymel.

ACETUM CANTHARIDIS (EPISPASTICUM).

(Blistering) Vinegar of Cantharides.

The quantity of cantharides employed here with respect to the menstruum, compared with the proportion used for the tincture, is as 8 to 1.

Take of Cantharides powdered, two ounces ;
Acetic Acid, a pint :

Macerate the Cantharides with the Acid for eight days, occasionally shaking. Lastly, press and strain.

Remedial Use.—A prompt form for counter-irritation, long anticipated by provincial and domestic recipes, as well as by the common practice of fomenting with hot vinegar before the application of a blister. Cantharides may produce simply erythematic irritation, serous deposit below cuticle, gelatinous deposit, purulent discharge, pustular irritation, or deep sloughing, according to the mode of application and the condition of the patient. *Vide* Emplastrum Lyttæ.

ACETUM COLCHICI.

Vinegar of Colchicum, or Meadow Saffron.

Take of fresh Colchicum Root (sliced), an ounce ;
 Distilled Vinegar, sixteen fluidounces ;
 Proof Spirit, a fluidounce :

Macerate the Colchicum in the Vinegar in a covered glass vessel for three days ; then press and set by, that the dregs may subside ; lastly, add the Spirit to the filtered liquor.

Chemical.—Formerly said to contain veratria, now conjectured to contain a distinct alkali, termed colchicia.

Remedial Use.—Reported to act better as a diuretic than the other preparations of colchicum. For general remarks on the action of colchicum, *vide* Vin. Colchici. Dose of the vinegar fʒss. to fʒij.

It may be dug up any time between May and July. This and the extract are the two preparations of the meadow saffron from the fresh cormus.

Incompatible with alkalies, and alkaline carbonates, &c.

The term cormus is given to this species of underground stem in modern botany.

ACETUM SCILLÆ.

Vinegar of Squills.

Take of Squill-Root, recently dried, fifteen ounces ;
 Distilled Vinegar, six pints ;
 Proof Spirit, half a pint :

Macerate the Squills with the Vinegar in a gentle heat, in a covered glass vessel, for twenty-four hours ; then press, and set aside to clear ; lastly, to the clear liquid add the Spirit.

Remedial Action.—It is said to be the best form of squills as a diuretic. For the general operations of squill, *vide* Tinct. Scillæ. This preparation, when warmed, may be used as an external counter-irritant. If prepared with the acetic acid, it would be still more efficacious for this purpose. It was thus employed by the ancients to stop obstinate vomiting.

Dose.—℥xx. to fʒij. in admixture.

Incompatible with alkalies, alkaline carbonates, &c.

Active principle, scillitine.

Cautions.

ACIDUM BENZOICUM.

Benzoic Acid.

Incompatible with
alkalies, alkaline car-
bonates, &c.

Take of Benzoin, a pound :

Put the Benzoin into a glass vessel placed on sand, and sublime with a heat gradually raised until nothing more ascends ; compress the sublimate folded in blotting paper, and, having separated it from the oily part, repeat the sublimation.

Chemical.—*Vide* Notes, and Supplement, p. 4.

Remedial Action.—It is a proper stimulant to the respiratory organs, relieving the bronchial cells and tubes when these are overloaded with mucus. In this sense it is a lung-purge, just as certain cathartics purge the mucous membrane of the alimentary canal. It is the fashion to decry this and other less active remedies, without reflecting that moderate impressions frequently renewed, may be made to produce important changes.

Dose.—Gr. iij. to gr. v.

College Preparations.—Tinctura Camphoræ Composita, Tinct. Benzoini Composita.

ACIDUM CITRICUM.

Citric Acid.

The crystals must be kept dry, or the usual saturating proportions will not suffice.

One ounce and a half of the crystals dissolved in a pint of distilled water, will afford a substitute for lemon-juice of ordinary strength.

In making saline

Take of Lemon Juice, four pints ;

Prepared Chalk, four ounces and a half :

Diluted Sulphuric Acid, twenty-seven fluid-ounces and a half ;

Distilled Water, two pints :

Having heated the Lemon-juice, gradually add your Chalk, and mix. Set aside, and, after the precipitation, pour off the supernatant liquor. Wash the Citrate of Lime with tepid Water, repeatedly renewed. Then pour

thereon the diluted Sulphuric Acid and the distilled Water, and boil for a quarter of an hour. Strongly express the liquor through a linen strainer, and filter. Evaporate the filtered liquor with a gentle heat, and set it aside that it may crystallize.

Dissolve the crystals, that they may be pure, a second and a third time in water, and as repeatedly strain, boil down, and set aside.

Chemical.—*Vide* Notes, and Supplement, p. 5.

Remedial Action.—Exhibited in full doses, it is the grand remedy for checking the dissolute condition of the solids and fluids in sea and land scurvy. Combined with the alkalies, it forms the common saline draught for moderating febrile action, and for promoting diaphoresis. So, also, in the form of lemonade, it becomes an important adjuvant in our treatment of acute diseases.

Table of saturating and slightly supersaturating Proportions of this Acid with the common Alkalies.

A scruple of	Lemon Juice, or Solution of Citric Acid.	Crystals of Citric Acid.
(crystals) Bicarbonate of Potassa, the old Carbonate of Potassa.	fʒiijss to fʒiv	gr. 14 to 15
(dry) Carbonate of Potassa, the old Subcarbonate, or Kali.	fʒiv to fʒv	gr. 17 to 20
(without efflorescence) Sesquicarbonate of Ammonia, the old Subcarbonate of Ammonia.	fʒvj to fʒvij	gr. 24 to 26
(crystals) Carbonate of Soda, the old Subcarbonate of Soda.	fʒijss to fʒiij	gr. ix to xij
Sesquicarbonate of Soda.	fʒiij to fʒiv	gr. xij to xv

N.B. The larger proportions of acid are the more palatable. Haygarth, Brande, Paris, Phillips, have all given tables differing from each other, and the latter gentleman differs from himself in his new and old Pharmacopœia.

Cautions.

draughts, you cannot determine the point of saturation by litmus (for, when the alkali is in excess, the free carbonic acid will give the red colour), unless by exposing the red-dened paper to heat, as the colour produced by carbonic acid will evanesce.

N.B. The annexed Table is calculated on the crystals of citric acid, and not on the powder. The smaller quantity of juice or acid is directed to be used for exact saturation, and the larger for an agreeable excess. The sesquicarbonate of soda takes more acid than the carbonate, because the water of crystallization adds to the weight of this last crystal. If any of my readers wish to prove the correctness of these experiments, let him allow at least 24 hours for the escape of carbonic acid. Dr. A. J. Thompson estimates the acid for the sesquicarbonate at gr. x. I estimate it at gr. xij to xv., and recommend the last proportion.

Cautions.

Old Names :
 Muriatic Acid,
 Spirit of Sea Salt.
 The young dispenser
 should carefully dis-
 tinguish this name in
 prescriptions.

Nitro-muriatic acid
 bath.

Hydrochloric acid 2
 parts, nitric acid 1
 part, largely diluted,
 so as to taste as sour
 as vinegar.—SCOTT.

ACIDUM HYDROCHLORICUM.

Hydrochloric Acid.

Take of Chloride of Sodium dried, two pounds ;
 Sulphuric Acid, twenty ounces ;
 Distilled Water, twenty-four fluidounces :

Throw your Chloride of Sodium into a glass retort, and add your Acid previously mixed with twelve ounces of the Water. Pour the remainder of the Water into a receiver ; then, having adapted the retort, let the Acid pass over into this Water, distilled by means of a sand-bath, with a heat gradually raised.

Chemical.—A solution of real hydrochloric (muriatic acid) gas in water. 100 grs. saturate 132 grs. of crystals of carbonate of soda. Davy states, that water at 40° absorbs 480 times its volume of this gas. Hydrochloric acid (liquid) emits white fumes from its attracting the moisture of the atmosphere, and such fumes redden litmus previously moistened. *Vide* Notes, and Supplement, p. 6.

Remedial Use.—*Vide* the Diluted Acid.

ACIDUM HYDROCHLORICUM DILUTUM.

Dilute Hydrochloric Acid.

Diluted Muriatic
 Acid.

Incompatible with
 alkalies, with alkaline
 carbonates, earthy po-
 tassio-tartrates, nitrate
 of silver, &c., &c.

Recollect the case
 of inquest in Totten-
 ham Court Road, from
not making out each
syllable of terms some-
 what similar.

Take of Hydrochloric Acid, four fluidounces ;
 Distilled Water, twelve fluidounces :

Mix.

Remedial Use.—In irritable stomachs, combined with a bitter, it is frequently useful where other forms are rejected. It, also, when added to barley-water or other drinks, is useful in putrid fevers ; and is advantageously added to gargles for foul sores of the throat.

Dose.—℥xx to fʒj.

ACIDUM HYDROCYANICUM DILUTUM.

Diluted Hydrocyanic Acid.

Take of Ferrocyanide of Potassium, two ounces ;
Sulphuric Acid, an ounce and a half ;
Distilled Water, a pint and a half :

Mix the Acid with four fluidounces of the Water ; and, having poured the mixed fluid, after it has grown cold, into a glass retort, add the Ferrocyanide of Potassium previously dissolved in half a pint of the Water. Pour eight fluidounces of the Water into a cooled receiver ; then, having fitted on the retort, let six fluidounces of Acid pass into this Water, distilled by means of a sand-bath over a slow fire. Lastly, add six more fluidounces of the Distilled Water, or add the Water in such a proportion as that 12·7 grains of Nitrate of Silver dissolved in Distilled Water may be accurately saturated by 100 grains of this [diluted] Acid.

Diluted Hydrocyanic Acid may be otherwise prepared, when more immediately required, from forty-eight grains and a half of Cyanide of Silver, added to a fluidounce of Distilled Water, already mixed with thirty-nine grains and a half of Hydrochloric Acid. Shake all these in well-stopped vials, and, after a short time, pour off the clear liquor into another vessel. Preserve this for use, carefully excluding the light.

Chemical.—For theory of process and tests, *vide* Supplement, and Notes, p. 7. Hydrocyanic acid (liquid) is a solution of the real acid in water. It is impossible to keep it for any considerable time at a uniform strength. The above standard having been determined on, all others should be abolished for the sake of public safety, but more especially that made according to the formula of Gay Lussac ; since, if used instead of the preceding, and in the same dose, it would, in all probability, prove destructive.

Sp. G. no test of its strength.

Scheele's test for the presence of the poison in suspected liquids.

1. Add a solution of green vitriol. 2. Drop in liquor of potassa in excess. 3. Re-dissolve the precipitate in muriatic acid, and it will give the tint of Prussian blue.

N. B. Made after eight different formulæ hitherto, and these mostly varying in strength.

All mixtures containing it should be well shaken each time before use.

Test of Strength :

Three grains of pure fused Nitrate of Silver dissolved in three drachms of distilled water should be entirely precipitated by 25 grains of this acid, so that no cloud is caused by a further addition of the acid. The precipitate should entirely dissolve in boiling Nitric Acid.

Cautions.

It should be kept in a dark, cool place, the vial being well stopped, and inverted.

Remedial Use.—It is commonly used for suicide, and is fit for little else, with the exception of its use externally as a lotion in some cutaneous diseases, attended with intolerable pain and itching, and not extended over too large a surface. On good authority, however, it is recommended in pulmonary irritation, (tubercular?), painful affections of the stomach, in neuralgia, hooping-cough, &c.

Dose.—Internally, from five minims upwards, in any bland vehicle, as, for example, in an emulsion of poppy-seed, or of almonds, sweet or bitter; externally, as a lotion, a fluidrachm to half a pint of any bland liquid, gradually increasing the quantity of the acid.

ACIDUM NITRICUM.

Nitric Acid.

Incompatible with salifiable bases, carbonates, &c., sulphate of iron, alcohol, acetates of lead, muriatic, &c.

fʒss. of the undiluted acid to a pint of water, forms a good lotion to alter the action of leprous and other scaly sores. The Editor has cured lepra offourteen years' standing by this remedy, using at the same time internally the solution of corrosive sublimate.

Take of Dried Nitrate of Potassa,

Sulphuric Acid, of each two pounds :

Mix in a glass retort, then let the Acid distil from a sand-bath.

Chemical.—For theory of process, *vide* Supplement, p. 10; and for tests, *see* Notes.

Remedial Use.—It is a powerful tonic, and so far influences the condition of the circulatory system, that, if its use is persisted in too long, it is said to excite fever, cough, hæmoptysis, &c. It has no specific power over syphilis, but is often useful in the debility attendant on the secondary symptoms. Externally, it is used as a caustic.—*Vide* BRODIE on "Diseases of the Urinary Organs," p. 177.

Dose.—*Vide* the Diluted Acid.

ACIDUM NITRICUM DILUTUM.

Diluted Nitric Acid.

Take of Nitric Acid, a fluidounce ;

Distilled Water, nine fluidounces :

Mix.

Remedial Use.—In addition to the above, it may be stated that the most elegant form of this medicine in typhoid fever is the nitric lemonade, in the proportion of half a fluidrachm to a pint of water. It is also an important means of arresting the deposit of the triple-phosphate of ammonia and magnesia; but in these latter cases, it is exhibited largely, even to the extent of from thirty to forty minims of the undiluted acid three times a day in syrup and water.—*Vide* BRODIE on “Diseases of the Urinary Organs,” p. 177.

Dose.—℥xx. to fʒij.

A bath, acidulated with a mixture of nitric and muriatic acids, was recommended by Dr. Scott as a general substitute for mercurials in liver complaints, &c. *Vide* p. 52.

Cautions.

Ung. Acid. Nitric.
℞ Acid. Nitrici, fʒj.
Adipis,
Ung. Cetacei, āā
ʒiv.
Ol. Olivæ, fʒj.
Ft. Ung.
In Tænia, Impetigo, &c., but it should be put by for a fortnight before it is used.

ACIDUM PHOSPHORICUM DILUTUM.

Diluted Phosphoric Acid.

Take of Phosphorus, an ounce;
Nitric Acid, four fluidounces;
Distilled Water, ten fluidounces:

Incompatible with
alkalies, alkaline carbonates, &c.

Having poured your Nitric Acid mixed with the Water, into a glass retort, and placed it in a sand-bath, add the Phosphorus; then apply heat until eight fluidounces have passed over. Let this portion again be returned to the retort, that eight fluidounces may distil, which are to be rejected. Evaporate the remaining liquor in a platinum-capsule, until only two ounces and six drachms remain. Lastly, to the Acid, when cold, add enough Distilled Water to make it accurately measure twenty-eight fluidounces.

Chemical.—*Vide* Notes, and Supplement, p. 11.

Remedial Use.—It has been introduced as an acid tonic, and is said to control the pathological condition which leads to morbid depositions of phosphate of lime. Professor Brande, who has paid much attention to these matters, prefers the vegetable acids; Dr. Prout and Sir B. Brodie advocate the use of the nitric and muriatic in preference.

Dose.—℥xxv. to fʒj.

Cautions.

Set by for a day or two, and pour off the clear liquor from the white powder (sulphate of lead, &c.), which subsides.

Incompatible with all the carbonates, nitrates, hydrochlorates, acetates of lead, &c.

ACIDUM SULPHURICUM DILUTUM.

Diluted Sulphuric Acid.

Take of Sulphuric Acid, a fluidounce and a half ;
Distilled Water, fourteen fluidounces and a half :

Gradually add the Acid to the Water, and mix.

Chemical, &c.—*Vide* Notes, and Supplement, p. 12.

Remedial Use.—As a tonic, it is useful in combination with bitters, for irritable conditions of stomach ; and, as a refrigerant, in combination with Epsom Salts, to repress hæmorrhage, it is, perhaps, one of the most extensively used medicines we have.

Dose.—℥xx. to fʒj.

ACIDUM TARTARICUM.

Tartaric Acid.

The sodaic draughts with this acid cannot be adequately substituted for soda water, where the object is to neutralize free acid in the stomach.

Take of Bitartrate of Potassa, four pounds ;
Boiling Distilled Water, two gallons and a half ;
Prepared Chalk, twenty-five ounces and six drachms ;
Diluted Sulphuric Acid, seven pints and seventeen fluidounces ;
Hydrochloric Acid, twenty-six fluidounces and a half, or as much as may be sufficient :

Boil the Bitartrate of Potassa with two gallons of the Distilled Water, and gradually add half of the Prepared Chalk ; then, after the effervescence, add the remainder of the Chalk, previously dissolved in the Hydrochloric Acid, diluted with four pints of Distilled Water. Finally, set aside, that the Tartrate of Lime may subside ; pour off the liquor, and frequently wash the Tartrate of Lime with Distilled Water until taste-

less ; then pour thereon the diluted Sulphuric Acid, and boil for a quarter of an hour. Evaporate the strained liquor with a gentle heat, that it may crystallize.

Dissolve the crystals, that they may be pure, a second and a third time in water, and as repeatedly strain, boil down, and set aside.

Chemical.—For the theory of the process, and the tests, *vide* Notes, and Supplement, p. 13.

Remedial.—Like other acids, it is refrigerant, and most commonly used in the form usually denominated soda-effervescing powders, and in that of the Seidlitz powders. The former in the proportion of gr. xxxv. of acid, and ℥ij. of sesquicarbonate of soda. The latter are constituted of Rochelle salt, ℥ij., tartaric acid, gr. xxxv., sesquicarbonate of soda (the old carbonate), ℥ij., to which some chemists add the $\frac{1}{2}$ of a grain of tartar emetic to render them more active.

Cautions.

In making the fever-drink called “Imperial” your proportions should be, of cream of tartar ℥j., boiling water 3 pints, flavoured with lemon-peel, and sweetened to the palate. Lemon-juice also may be added. One part of cream of tartar is dissolved by 14 parts of boiling water, but it is largely deposited on cooling. It requires 60 parts of cold.

ÆTHEREA.

Æthers.

ÆTHER SULPHURICUS.

Sulphuric Æther.

Take of Rectified Spirit, three pounds ;
Sulphuric Acid, two pounds ;
Carbonate of Potass, previously calcined, an ounce :

Pour two pounds of the Spirit into a glass retort, and, having added to it the Acid, mix. Then, place it in sand, and raise the heat, so that the liquor may boil as soon as possible, and the Æther may pass over into a

It should not be ordered in large quantities, since, by keeping, it absorbs oxygen, and generates acetic acid.—*Vide* Notes.

Æther boils under a mean atmospheric pressure at 96°, hence it is rapidly diffused in the alimentary canal, where it meets

Cautions.

with a temperature
several degrees higher.

Synonyms.—Æther
Vitriolicus, Hydratic
Æther.

receiver kept cool by means of ice or water. Let the liquor distil until some of the heavier portion begins to pass over. Now, having lowered the heat, pour the remainder of the Spirit to the liquor which remains in the retort, that the Æther may distil as before. Having put the distilled liquors together, pour off the supernatant part, and add to it the Carbonate of Potassa, shaking occasionally for an hour. Finally, let the Æther be distilled from a large retort, and be kept in a closely stopped bottle.

Chemical, &c.—*Vide* Notes, and Supplement, p. 15.

Remedial Action.—Æther may either excite, or tranquillize, the nervous system, according to the dose employed, and according to the previous condition of the patient. It is, however, in a state of diminished energy, that the most beneficial effects are obtained from it, whether in the hysteric paroxysm, or the spasm, subsultus, or hiccough attendant on fevers. In cramp of the stomach, and in vomiting from debility of this organ, it is highly serviceable. It is also called a narcotic; but so far from being analogous to narcotics strictly so called, it possesses considerable power of obviating these effects, and of relieving the stupor produced by intoxicating liquors. Externally, it is a chemical refrigerant; and it is also used for burns.

Dose.—℥xx. to f3; but in gouty cramp, &c., it must be frequently repeated.

OLEUM ÆTHEREUM.

Æthereal Oil.

Insoluble in water.
Soluble in alcohol, and
in sulphuric æther.
Composition conjectured,
but not known.
Sulphate of Æther
of SERULLAS.
Sulphatic Æther of
DUMAS.

Take of Rectified Spirit, two pounds;
Sulphuric Acid, four pounds;
Liquor of Potassa,
Distilled Water, of each a fluidounce, or as much
as may suffice:

Cautiously admix your Acid with the Spirit. Let the Liquor distil, until a black froth forms; then immediately remove the retort from the fire. Separate

the lighter supernatant Liquor from the heavier portion, and expose it [the lighter] to the air for one day. To this add the Liquor of Potassa previously mixed with the water, and shake them together. Finally, when well washed, separate the Æthereal Oil which subsides.

Chemical.—*Vide* Notes, and Supplement, p. 16.

Remedial Use.—To form Hoffman's anodyne Liquor, or Spt. Ætheris Sulphurici Compos.

Cautions.
—

SPIRITUS ÆTHERIS NITRICI.

Spirit of Nitric Æther.

Take of Rectified Spirit, three pounds ;
Nitric Acid, four ounces :

Gradually add the Acid to the Spirit, and mix ; then let two-and-thirty fluidounces be distilled.

Chemical, &c.—The chemical constitution of this, and indeed of all the preparations of æther, is matter of conjecture.—*Vide* Notes, and Supplement, p. 16.

Remedial Use.—As a diuretic, it has long maintained its reputation ; and it is supposed to act as a refrigerant exhibited in small doses in any grateful drink. Nitre, a medicine both chemically and medically allied to this spirit, has the power of diminishing the temperature of the body so as to produce shivering and horripilation ; but it is difficult to estimate the effects of other refrigerants.

Dose.—℥xx. to fʒj.

Specific gravity should not exceed .834. It coagulates Tinct. Guaiac. Strikes an olive with sulphate of iron. Boils at 70°. Is partially decomposed by agitation with water, and nitrous acid is produced.

SPIRITUS ÆTHERIS SULPHURICI COMPOSITUS.

Compound Spirit of Sulphuric Æther.

Take of Sulphuric Æther, eight fluidounces ;
Rectified Spirit, sixteen fluidounces ;
Æthereal Oil, three fluidrachms :
Mix.

Remedial Use.—Said to be more anodyne than the other preparations.

Dose.—fʒss. to fʒij.

Synonyms.—Hoffman's anodyne Liquor, Liquor Anodynus Mineralis.—*Vide* Supplement, page 17.

Cautions.

For the selection of the species of Aconite, *vide* Supplement, page 172.

The young dispenser will notice the difference of termination in "Aconitinae" and "Aconiti," and reflect there is but that difference between the patient and eternity!

℞ Aconitinae (alkaloidae, P.N.), gr. iv.
Alcohol, *q. s.* ad solv.
Adipis, ppt. ʒiv.
M. Ft. unguent.
Gradually increased to gr. ij. to the drachm of lard.

Embrocation.

℞ Aconitinae (alkaloid. P.N.), gr. viij.
Sp. Rectif. fʒij.
Ft. embr.

ALKALINA.

Alkalies.

ACONITINA.

Aconitine.

Take of the Root of Aconite, dried and bruised, two pounds ;

Rectified Spirit, three gallons ;

Diluted Sulphuric Acid,

Liquor of Ammonia,

Purified animal Charcoal, of each a sufficiency :

Boil the Aconite with a gallon of the Spirit for an hour in a retort, with a receiver adapted to it. Pour off the liquor, and again boil the residue with another gallon of the Spirit, together with the Spirit recently distilled, and in like manner pour off the liquor. Let the same be done a third time ; then express the Aconite, and, all the liquors being mixed and strained, let the Spirit distil. Evaporate the residue to the usual consistence of an Extract. Dissolve this in water, and strain. Evaporate this liquor with a gentle heat, that it may thicken like syrup. To this add of the diluted Sulphuric Acid, mixed with distilled water, as much as may be sufficient to dissolve the Aconitina. Now, at length, drop in the Liquor of Ammonia, and dissolve the precipitated Aconitina in the diluted Sulphuric Acid and water, mixed as before. Then mix in the animal Charcoal, frequently shaking during a quarter of an hour. Lastly, strain ; and, having again dropped in the Liquor of Ammonia, to precipitate the Aconitina, wash and dry it.

Chemical, &c.—For tests and decompositions, *vide* Notes, and Supplement, p. 17.

Remedial Action.—The Aconites, after having been highly commended by Baron Stoerck and his contemporaries, for obstinate intermittents, cancer, paralysis, amaurosis, &c., were at last driven from practice, from the usual error of being overrated. Stoerck's opinion of their effect in gout and rheumatism, deserves to be noticed by the moderns who claim the credit of introducing the above alkali for the cure of those diseases. "Often, after a violent fit, long-continued debility accrues; the patient, not complaining of pain, but of inability to move, is left languid and emaciated. The pulse remains natural in the day-time, but, at night, febrile symptoms approach. In this case, the aconite effects a speedy cure." *Vide STOERCK'S Precepts*, vol. i. p. 405.

The remedy is again launched into the world by the College in so concentrated a form, that they decline (through their Translator) to name any dose for internal use. They recommend it externally, but give us no formula even for that purpose.

AMMONIÆ SESQUICARBONAS.

Sesquicarbonate of Ammonia.

Take of Hydrochlorate of Ammonia, a pound;
Chalk, a pound and a half:

Separately powder them; then mix, and sublime with a gradually increased heat.

Chemical, &c.—For tests and explanation of process, *vide* Notes, and Supplement.

Remedial Action.—It neutralizes acidity in the stomach, stimulates the nervous and vascular systems, and assists in controlling the lithic acid diathesis. It is a powerful remedy in *delirium tremens*, after you have well purged your patient with calomel and black draught, and after you have procured sleep by full doses of laudanum, but it must be alternated with two or three-grain doses of disulphate of quina every four hours. Locally, it is a stimulant. Hence its use as a smelling salt, and as an ingredient in liniments.

Dose.—gr. v. to gr. xv.

LIQUOR AMMONIÆ SESQUICARBONATIS.

Liquor of Sesquicarbonate of Ammonia.

Take of Sesquicarbonate of Ammonia, four ounces;
Distilled Water, a pint:

Cautions.

Stoerck's dose of the simple extract of Aconite was, gr. ss. to gr. j., from which one may infer how dangerous the concentrated active principle of such a remedy must be.

This process is superfluous; a dangerous concession to rapacity and empiricism. I beg to assure the College and the public that the extract of the root of Aconite is nearly equal in strength to Aconitina. The dose of Squire's extract of the root is from gr. $\frac{1}{12}$.

Old name, Ammonia Subcarbonas, Smelling Salts, Volatile Alkali.

Incompatible with acids, with the other alkalies or their carbonates, with the alkaline earths, with super-salts, with bichloride of mercury, &c. &c.

It diminishes the action of opium, and relieves the stupor produced by it.

Cautions.

Dissolve the Sesquicarbonate of Ammonia in the Water, and filter.

Remedial Action.—*Vide* Ammoniaë Sesquicarbonas.

Dose.—℥xx. to fʒj.

LIQUOR AMMONIÆ.

Liquor of Ammonia.

Take of Hydrochlorate of Ammonia, ten ounces ;
Lime, eight ounces ;
Water, two pints :

Incompatible with acids, acidulous and most earthy salts, &c.

Specific gravity, .960. They mention in their Notes a Liquor Ammoniaë Fortior without a formula, the specific gravity of which they name at .882 ; Turner's process, .936. As formerly recommended by Mr. R. Phillips, .954. The strongest, .875.—DAVY'S *Elements*.

Throw the lime, previously slaked by a portion of the Water, into a retort ; then add the Hydrochlorate of Ammonia bruised into small pieces, and the rest of the Water. Distil fifteen fluidounces of the Liquor of Ammonia.

Chemical, &c.—*Vide* Notes, and Supplement, p. 19.

Remedial Action.—Stimulant in hysteria, in the stupor produced by narcotics, and in certain species of paralysis. As an antacid in the lithic diathesis of weak gouty subjects ; and externally, as a rubefacient in sore throat, cold rheumatism verging on paralysis.

Dose.—℥x. to ℥xl.

LIQUOR AMMONIÆ ACETATIS.

Liquor of Acetate of Ammonia.

Take of Sesquicarbonate of Ammonia, four ounces and a half, or a sufficiency ;
Distilled Vinegar, four pints :

Spiritus Mindereri. Do not rely on these proportions, but on the taste, or test with litmus after giving time for the escape of the carbonic acid.

Add the Sesquicarbonate to the Vinegar, to perfect saturation.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 20.

Remedial Action.—It is determined to the skin, or to the kidneys,

according to the warmer or colder state of the surface of the body ; and thus increases the action of either of these organs. It is also refrigerant ; and is externally applied for the same purpose in evaporating lotions.

Dose.— $\text{f}\bar{\text{z}}\text{ss.}$ to $\text{f}\bar{\text{z}}\text{vj.}$

Morphia.

Take of Hydrochlorate of Morphia, an ounce ;
Liquor of Ammonia, five fluidrachms ;
Distilled Water, a pint :

To the Liquor of Ammonia mixed with one ounce of the Distilled Water, add the Hydrochlorate of Morphia, first dissolved in a pint of the Water, shaking them together. Wash your precipitate with Distilled Water, and dry it with a gentle heat.

Chemical, &c.—*Vide* Notes, and Supplement, p. 20.

Remedial Use.—To make the Acetate of Morphia.

MORPHIÆ ACETAS.

Acetate of Morphia.

Take of Morphia, six drachms ;
Acetic Acid, three fluidrachms ;
Distilled Water, four fluidounces :

Mix the Acid with the Water, and pour it upon the Morphia to saturation. Let the Liquor be evaporated with a gentle heat, that it may crystallize.

Chemical, &c.—*Vide* Notes, and Supplement, p. 21.

Remedial Use.—The superiority of acetate and muriate of morphia over the old preparations of opium has been explained by the supposition of its acting as an anodyne without producing the subsequent derangement of the brain attended with headach, vertigo, sickness, and febrile symptoms, of which patients so often complain, and these last effects (without much evidence) have been ascribed to the narcotine of the drug. For a fuller account of the effects of opium, *vide* Morphiæ Hydrochloras.

Dose.—Gr. $\frac{1}{16}$ to gr. j., and upwards.

Cautions.

Insoluble in cold water, sparingly soluble in hot, and, therefore, almost inactive in the stomach unless it meet with acetic or muriatic acid.

Incompatible with alkalies, and alkaline earths ; and, therefore, in severer chemistry, the well-known combination of opiates with acetate of lead would seem objectionable.

A bimeconate of morphia has lately been prepared. This salt is the basis of Squire's solution.

Cautions.

Incompatible with astringents containing tannin and Gallic acid, which give precipitates with all the salts of morphia.

Formula for Syrup.

℞ Morphiæ Hydrochloratis, gr. ij.
Syrupi, f̄ij.

M.

The dose,—a teaspoonful occasionally, when the cough is troublesome, or two teaspoonsful and upwards for an anodyne dose.

The sulphate of morphia was considered by the French physicians who used it as nearly equal in strength to that of the acetate, but the muriate is thought to be stronger.

N.B. Most of the patent preparations of opium are made with an excess of acid; and are therefore less liable to decomposition than the neutral acetate. This observation does not apply to Battley's solution (containing very little spirit) which has no more acid in it than the laudanum itself, as far as the Editor is able to judge from experiments frequently repeated; and he confidently adds, that if the dispenser be curious in selecting his opium, and giving it age before he use it, he will seldom want

MORPHIÆ HYDROCHLORAS.

Hydrochlorate of Morphia.

Take of Opium sliced, a pound;

Crystals of Chloride of Lead, two ounces, vel *q. s.*

Purified animal Charcoal, three ounces and a half;

Hydrochloric Acid,

Distilled Water,

Liquor of Ammonia, of each *q. s.* :

Macerate the Opium in four pints of Distilled Water for thirty hours, and bruise; then, having digested for twenty hours more, express. Macerate the residue, that it may be devoid of taste, a second and a third time in Water, and so often bruise and express. Evaporate the mixed liquors with the heat of 140° , down to the consistence of Syrup. Then, add three pints of Distilled Water, and when all the dregs have subsided, pour off the supernatant liquor. To this gradually add two ounces of Chloride of Lead, previously dissolved in four pints of boiling Distilled Water, or persist in adding it until the precipitation is ended. Pour off the liquor, and repeatedly wash the residue with Distilled Water. Then evaporate the mixed liquors with a gentle heat as before, and set aside, that crystals may form. Compress these in a linen cloth, then dissolve in a pint of Distilled Water, and having digested them with an ounce and a half of animal Charcoal, with a heat of 120° , afterwards strain. Finally, having washed away the charcoal, carefully evaporate the liquors to crystallization. To the mother liquor from which the first crop of crystals has been separated, after adding a pint of Water, drop in by degrees (shaking occasionally) a sufficient quantity

of Liquor of Ammonia to precipitate all the Morphia. Having washed it with Distilled Water, add Hydrochloric Acid to saturation; then digest it with two ounces of Animal Charcoal, and strain. Lastly, the Charcoal being washed, carefully evaporate the liquors, that pure crystals may be formed.

Chemical, &c.—For properties and theory of chemical process, *vide* Notes, and Supplement, p. 21.

Remedial Action.—Long before the discovery of morphia, it had been noticed that certain acidulated preparations of opium produce the anodyne effects of that drug without the subsequent disturbance of the brain and stomach. Hence the reputation of the Sunderland drop, the black drop of Braithwaite, and several preparations made with lemon-juice. Then came the discovery of the alkali; and we were told, that the stupifying power resides in the narcotine, and the sedative or anodyne power in the alkaline. Now, Bally asserts, that narcotine has little or no action on the human body. Orfila considers it stupifying and deleterious; while Majendie deems it a powerful excitant. Subsequent discoveries have shewed (whether as products or educts is a matter of doubt) that opium, besides meconic acid and morphia, contains five alkaloids, viz. codeia, narceia, meconia, thebaia, and narcotina. Their medicinal action, indeed, has not yet been determined, but the complexity of the constitution of the drug will perhaps account for the difference of opinion on the medicinal properties of the narcotine. The Editor has observed that with opium-eaters the salts of morphia are not adequate substitutes, at least as far as his observation has extended; and this renders it probable, that the stimulant properties reside either in the narcotine or in some other principle. As new wine will produce headach so will new opium; but age (if we may trust to the experience of the habitual consumers) equally improves the drug, and corrects that stupifying and pernicious quality, which so often embarrasses the head and stomach. If this view of the salts of morphia be correct, they must be inefficient for all stimulant indications; inefficient to support the powers of life in variola confluens, and in typhoid diseases; inefficient in the cold stages of ague to bring on the hot; and inefficient to support the vigour of the circulation in abscesses. On the other hand, they will be more applicable where anodyne effects are alone aimed at.

Dose.—Gr. $\frac{1}{6}$ to gr. ij., regulated by the preceding observations.

Cautions.

any chemical substitute for the common preparations.

Vide Tinct. Opii.

Liquor Morphii Citrat. (Dr. Porter).

℞ Opii crudi optimi, ℥iv.

Acidi Citrici (crystal.), ℥ij.

These are bruised in a mortar; and a pint of boiling distilled water being poured on, they are intimately mixed, and macerated for twenty-four hours, after which the solution is strained.

Braithwaite's Black Drop.

Take Opium, lbss.

Verjuice, Oij.

Nutmegs, ℥iss.

Saffron, ℥ss.

Boil to proper thickness; then add sugar, ℥iv. and of yest two tablepoonsful. Macerate near the fire for six weeks, then expose to the air until it becomes a syrup; lastly, decant, filter, and bottle it. About thrice as strong as laudanum.

Cautions.

These are the common crystals of commerce, (formerly called sulphate of quina), and now called disulphate. When this is triturated with diluted sulphuric acid, it forms a white magma, and, by the addition of more acid, it dissolves. On evaporating the solution, it yields crystals of the true neutral sulphate.

Incompatible with alkalies, alkaline carbonates, and with the usual precipitants of sulphuric acid, &c.

Crystals, — needle-like, pearly, flexible, silky, like asbestos, united in radiated flakes, and excessively bitter.

Be careful not to carry the desiccation too far, or the crystals will fall to powder.

QUINÆ DISULPHAS.

Disulphate of Quina.

Take of bruised heart-leaved Cinchona Bark, seven pounds ;

Sulphuric Acid, nine ounces ;

Purified Animal Charcoal, two ounces ;

Hydrated Oxide of Lead,

Liquor of Ammonia,

Distilled Water, of each *q. s.* :

Mix four ounces and two drachms of the Sulphuric Acid with six gallons of Distilled Water ; and to these add the Bark : boil for an hour, and strain. In like manner, boil the residue in the same proportion of Acid and Water for an hour, and again strain. Finally, boil down the Cinchona in eight gallons of Distilled Water for three hours, and strain. Wash the residue with boiling Distilled Water frequently renewed. To the mixed liquors add Oxide of Lead, while moist, to the point of saturation. Pour off the supernatant liquor, and wash the precipitate with Distilled Water. Boil down the liquors for a quarter of an hour, and strain ; then gradually add Liquor of Ammonia to precipitate the Quina. Wash this until no Alkali be perceptible. Let the residue be saturated with the remaining diluted Sulphuric Acid. Afterwards digest with two ounces of Animal Charcoal, and strain. Finally, all the Charcoal being washed, carefully evaporate the liquor, that crystals may be formed.

Chemical, &c.—Quina, 2 equiv. ; Sulph. Acid, 1 ; Water, 8. For tests and theory of process, *vide* Notes, and Supplement, p. 22.

Remedial Use.—In small doses this, like all the preparations of bark, acts directly as a stimulant on the tissue with which it comes in contact, as is evident from its effect in curing agues when used

externally over a considerable extent of abraded surface. In larger doses, it finds its way perceptibly over the whole system, permanently increasing the vigour and regular activity of the circulation. In over doses it will disorder the digestive organs somewhat like an excess of the common diffusible stimulants, inducing foul tongue, thirst, heat in the epigastric region, sickness, headach, and, in some cases, hæmorrhage, particularly in females. The intensity of the tonic action exerted by the species of Cinchona Bark varies with the quantity of Quina or of Cinchona contained in each; but their astringent property seems to depend on a red tannin, and very slightly, if at all, pervades the Alkali itself. Dumas tells us that 120,000 ounces of this salt are annually exported from Paris alone, from which fact we may judge how extensively it is employed. The chemical discovery of the alkali by affording its active principle in a very small volume detached from the lignin and other impurities, independent of the impetus which novelty always gives to the employment of remedies, has led to a greater consumption of the Bark in the process of manufacture, than was ever before known; but in those cases where disease depends on laxity of tissues, and surfaces require to be constricted by actual contact with the remedy, the Bark, or its vegetable preparations, are decidedly preferable to the salt. In limited doses it is a good stomachic, although not so generally employed as the more simple bitters in dyspeptic affections. In cases of obstinate and chronic diarrhœa the powdered red bark is to be preferred. In intermittent fevers the salt is most convenient, and most efficacious, and should be exhibited in full doses between the paroxysms, at intervals of two or three hours. There are cases, however, which require a maximum dose all at once, both on account of the shortness of the intermissions, and the difficulty of producing any impression by smaller doses.

Dose.—As a stomachic, gr. $\frac{1}{4}$ to gr. j.; as a powerful tonic, gr. ij. to ʒj.

STRYCHNIA.

Take of Nux-vomica, bruised, two pounds;

Rectified Spirit, three gallons;

Diluted Sulphuric Acid,

Magnesia,

[Liquor of Ammonia,] of each a sufficiency:

Boil the bruised Nux-vomica with a gallon of the Spirit for an hour, in a retort, with a receiver fitted to

*Cautions.**Quina Draughts.*

℞ Quinæ Disulphat.
gr. ss.
Acid. Sulph. dil.,
℥ij.
Aquæ destillat. fʒvj.
Syrup. Aurantii, fʒj.
M.

In dyspepsia as a stomachic.

℞ Quinæ Disulphatis,
Zinci Sulphatis,
ā ā gr. j.

Extract. Anthemi-
dis, q. s. ft. Pil.

Every two or three
hours in the in-
tervals of agues.

Dr. Sadillot's Febrifuge Pills.

℞ Quinæ Disulphatis,
gr. xij.

Opī pulv., gr. iij.

Confect. Op., gr. x.
vel. q. s. for twelve
pills: one every
hour or two, in
the intermission
of ague.

The liquor ammo-
niæ is omitted in the
Latin text.

Cautions.

A white powder, consisting of extremely minute crystals, prismatic, inodorous, excessively bitter, and unchanged by the air.

If it contain brucia, it will strike a deep red colour by the addition of nitric acid.—

MAJENDIE.

Twelve times as strong as brucia, and twelve times as strong as the nux-vomica.

Formula.

R. Strychniæ, gr. j.

Ext. Colocynth.

c. gr. xij.

Ft. Pil. xij.

One pill every eight hours, duly watching its effects.

it. Pour off the liquor, and again and a third time boil the residue with another gallon of Spirit, and the Spirit recently distilled, and [similarly] pour off the liquor. Press the Nux-vomica, and from the mixed and strained liquors let the Spirit distil. Evaporate what remains to the proper consistence of an extract. Dissolve this in cold water, and strain. Evaporate the strained liquor with a gentle heat to the consistence of a syrup. To this, while yet warm, gradually add the Magnesia, to saturation, shaking them together. Set aside for two days; then pour off the supernatant liquor. Press the residue, wrapped in cloth; boil it in Spirit; and, having strained, let the Spirit distil. To the residue add some small portion of diluted Sulphuric Acid, mixed with water, and macerate with a gentle heat. Set aside for twenty-four hours, that it may crystallize. Press and dissolve the crystals; then to these, dissolved in water, add Ammonia, occasionally shaking, that the Strychnia may be precipitated. Lastly, dissolve this in boiling Spirit, and set aside, that pure crystals may form.

Chemical, &c.—*Vide* Notes, and Supplement, p. 23.

It is said to be incompatible with acids and acidulous salts in the College (English) Pharmacopœia; but if so, it must be on the ground of their increasing its activity; for the sulphate of strychnia is declared by Majendie to be stronger than the alkali; and acidulated forms are used all over Europe.

Remedial Action.—Nux-vomica, and the two alkalies it contains, act powerfully on the living body. It has been asserted that it acts exclusively, like most of the acro-narcotics, on the nerves of motion; but its effects extend also to those of sensation. It induces spasm of the muscles, alternating at intervals with flaccidity. Limiting ourselves to the effects of the strychnia, it may be observed, that it more especially acts on the spinal marrow; for, as has been proved by experiments on animals, the division of this organ below the occipital bone, or even decapitation, does not prevent the effects from taking place, and continuing some time after. This discovery has been turned to some account in the treatment of paralysis without lesion of the brain. It has also been used in permanent contractions, and in certain species of amaurosis. It has been tried also in tic-doloureux; but, for the most part, with no satisfactory results.

Dose.— $\frac{1}{12}$ of a grain upwards.

Externally, small portions (gr. ss.) have been applied to a blistered surface in paralysis, tic-doloureux, &c.

Cautions.

VERATRIA.

Take of Sabadilla [Cevadilla] [seeds], bruised, two pounds ;
 Rectified Spirit, three gallons ;
 Diluted Sulphuric Acid,
 Liquor of Ammonia,
 Purified Animal Charcoal,
 Magnesia, of each as much as may be sufficient :

This alkali was discovered by Pelletier and Caventou in 1819. It resides also in the root of the veratrum album, and in the colchicum autumnale, although later chemists assign another alkali (colchicia) to this last plant.

Boil the Sabadilla with one gallon of the Spirit for an hour in a retort, to which a receiver is fitted. Pour off the liquor, and again boil the residue with a second gallon of the Spirit, together with the Spirit recently distilled, in like manner pouring off the liquor ; and let this be done a third time. Press the Sabadilla, and let the Spirit be distilled from the mixed and strained liquors. Evaporate the residue to the proper consistence of an extract. Boil this thrice or oftener in water, to which a little diluted Sulphuric Acid has been added, and evaporate the strained liquors with a gentle heat, to the consistence of a syrup. To this, when cold, throw in Magnesia [to saturation], occasionally shaking ; then express, and wash. Let the same be done a second and a third time ; then dry the residue, and digest it in Spirit with a gentle heat for two or three times, and as repeatedly strain. Afterwards let the Spirit distil. Boil what remains for a quarter of an hour, in water, to which a little Sulphuric Acid and Animal Charcoal have been added, and strain. Finally, the Charcoal being thoroughly washed, carefully evaporate the [mixed] liquors, until they acquire the consistence of a syrup, and drop in as much Ammonia as may suffice for throwing down the Veratria. Lastly, separate this and dry it.

N.B. In prescribing this or any of the other vegetable alkalies, the practitioner should add the word alkaloid, to prevent error, as thus :—

R. Veratriæ (*alkaloidæ*, *P. Novæ*.)

But the cases are rare in which the acrid vegetable alkalies can be used either with credit to the physician or with advantage to the patient.

Chemical, &c.—*Vide* Notes, and Supplement, p. 23.

*Cautions.**Formulae.*

℞ Veratriæ (alkaloid.), gr. ss.
Pulv. Acaciæ,
Syrup. āā q: s.
Ft. Pil. vj.
Externally in frictions.

℞ Veratriæ (alkaloid.), gr. iv.
Alcoholis, f ʒj.
M. for a Liniment.
N.B. The last formula would be preferable internally in paralysis of the muscles of deglutition, in the dose of ℥vj. upwards.

℞ Veratriæ (alkaloid.), ʒss.
Ol. Olivæ, f ʒj.
Adipis, ʒj.
Ft. Ung.

Rubbed into the affected part for five minutes, or from that time to three quarters of an hour, in tic-doloureux, neuralgia, &c.

Remedial Action.—Accustomed as the Editor has been, from the nature of his pursuits, to the perusal of the medical literature of the ancients, he can discover little that is new in the explanations the moderns have attempted of the *modus operandi* of veratria. The album veratrum and certain other drastic purges, were called by the Greeks nervous purges; were recommended and used by them for nervous disorders, for mania, and for nervous torpor; and Juvenal, alluding to a dolt, speaks of “a head no hellebore can cure.” In detail, the moderns have advanced; but in the principle, not one step: for electro-stimulation, and “searching out the pain,” are expressions quite as obscure as nervous purgation. The ancients purged with plants containing this alkali; cured nervous diseases therewith; were acquainted with its peculiar effects on the nerves, and on nervous diseases; used it in amaurosis, in gouty paralysis, rheumatic paralysis, and in a long train of nervous diseases. They used squills, externally, for the same purpose, and with success; and the Editor ventures to affirm that he who will introduce scillitina externally, (although he will only be a humble follower of Hippocrates), will effect as many cures as are ordinarily effected by the other new active principles.

Dose.—gr. $\frac{1}{12}$ upwards, with great caution.

ANIMALIA.

Animal Preparations.

CARBO ANIMALIS PURIFICATUS.

Purified Animal Charcoal.

Take of Animal Charcoal, a pound ;

Hydrochloric Acid,

Water, of each twelve fluidounces :

Mix the Hydrochloric Acid with the Water, and gradually pour it on the Charcoal ; then digest for two days in a gentle heat, occasionally shaking. Set aside, and pour off the supernatant liquor. In the next place wash the Charcoal with water frequently renewed, until no acidity be perceptible ; and lastly dry it.

Remedial Use.—For bleaching the vegetable alkalies. Its power of removing animal and vegetable colouring matter is well known in the arts.

It is commonly called ivory black, before it is purified by the acid, which dissolves out the carbonate and phosphate of lime.

Cataplasma Carbonis.

℞ Cataplasmatiss Lini, lbss.

Carbonis purificati, ℥ij. ʒ.

CORNU USTUM.

Burnt Horn.

Burn pieces of Horn in an open vessel, until they become thoroughly white ; then form a powder, and prepare in the manner directed for Chalk.

Residue, phosphate of lime, nearly pure.

Remedial Use.—*Vide* Pulvis Antimonialis, and Remarks on James's Powder.

TESTÆ PREPARATÆ.

Prepared Shells.

Wash the Shells, first cleansed from impurities, with boiling water ; then prepare a powder in the manner directed for Chalk.

Residue, carbonate of lime. Useless, because chalk has long been used as a substitute.

Cautions.

It should be transparent, colourless, devoid of taste and smell. It yields no precipitate with lime-water (no precipitate of carbonate of lime), none with chloride of barium (no precipitate of sulphate of baryta), nor with nitrate of silver (no precipitate of chloride of silver); nor will it blacken the gall-nut after being steeped in it. All which same tests will answer for detecting the various impurities of common water.

Boiled water no adequate substitute.

AQUÆ DESTILLATÆ.

Distilled Waters.

AQUA DESTILLATA.

Distilled Water.

Take of Water, ten gallons :

First, let two pints pass over, and this portion being thrown away, distil eight gallons. Keep your distilled water in a glass bottle.

Chemical.—It should always be distilled from rain-water.

AQUA ANETHI.

Water of Dillseed.

Take of Bruised Dillseed, a pound and a half ;
Proof Spirit, seven fluidounces ;
Water, two gallons :

Distil a gallon.

Remedial Use.—This is the favourite vehicle for infants from the birth.

AQUA CARUI,

Water of Carraway,

AQUA FÆNICULI,

Water of Fennel,

The oil is contained in the testa of the seed, [fruit].

are prepared in the same manner as Dillwater.

Remedial Use.—The more powerful of the diuretic waters, and a good diuretic vehicle for tincture and vinegar of squills.

AQUA FLORUM AURANTII.

Water of Orange Flowers.

Take of Orange Flowers, ten pounds ;
Proof Spirit, seven fluidounces ;
Water, two gallons :

Distil a gallon.

AQUA CINNAMOMI.

Water of Cinnamon.

Take of Cinnamon [Bark] bruised, a pound and a half ;
Or of Oil of Cinnamon, two drachms ;
Proof Spirit, seven fluidounces ;
Water, two gallons :

Distil a gallon.

AQUA MENTHÆ PIPERITÆ.

Water of Peppermint.

Take of Peppermint, dried, two pounds ;
Or of Oil of Peppermint, two drachms ;
Proof Spirit, seven fluidounces ;
Water, two gallons :

Distil a gallon.

AQUA MENTHÆ PULEGII.

Water of Pennyroyal.

AQUA MENTHÆ VIRIDIS.

Water of Spearmint.

These are prepared like Peppermint Water ; but

Cautions.

In this water the part of the plant to be used is indicated in the name ; but more usually this is purposely omitted by the College both in the name and the process.

If this or any other essential oil has been adulterated with fixed oil, it will leave a greasy stain when dropped on paper and heated. If it contains alcohol, it may be detected by letting a drop or two fall on the surface of water, upon which it will present a milky instead of the transparent film of the genuine oil. If, however, the adulteration has been effected by other volatile oils, it can only be detected by the odour, and the different shade of colour when dropped on paper.

Cautions.

when, in distilling either of the three, the fresh herb is employed, double the weight will be required.

AQUA PIMENTÆ.

Water of Pimento.

Take of Bruised Pimento, a pound ;

Or Oil of Pimento, two drachms ;

Proof Spirit, seven fluidounces ;

Water, two gallons :

Distil a gallon.

Dutch Acid Drops.
℞ Pimentæ contusæ,
℥j.
Alcoholis,
Aquæ destillat.
Acid. Sulph.
āā ℥vj.

Macerate for a few days and strain.

Dose. — ℥x. to ℥xx.

AQUA ROSÆ.

Water of Roses.

Take of Damask Roses, ten pounds ;

Proof Spirit, seven fluidounces ;

Water, two gallons :

Distil a gallon.

Now commonly prepared from the Otto of Roses.

AQUA SAMBUCL.

Water of Elder Flowers.

Take of Elder Flowers, ten pounds ;

Or of Oil of Elder, two drachms ;

Proof Spirit, seven fluidounces ;

Water, two gallons :

Distil a gallon.

Where is the oil to be obtained? They do not mean the green oil?

Vide Supplement, under the same article.

Most of these distilled waters may be readily prepared, when required for immediate use, by triturating one drachm of any distilled oil, first, with a drachm of

Carbonate of Magnesia, and then with four pints of distilled water. Finally, let the water be filtered.

Remedial Use.—Most of these waters are employed as corrigent vehicles to cover the taste of more disagreeable remedies. They diffuse a temporary warmth over the stomach and upper part of the alimentary canal; but the impression is transitory, and requires to be frequently renewed. That they obviate griping, and relieve flatulency, is known to all; and this is no small benefit. If they are not so active as many other drugs, at least their remedial effect is less equivocal and more congenial to the human body. Some, however, are simply vehicles, without excitant power. Distilled water itself is an important remedy, and much neglected.—*Vide* Dr. Lambe on “Constitutional Diseases.” 8vo. 1805.

Cautions.

No direction is given for the addition of a portion of spirit to these extemporaneous distilled waters prepared by trituration from the oils. They will not keep without it.

CATAPLASMATA.

Poultices.

CATAPLASMA CONII.

Hemlock Poultice.

Take of Extract of Hemlock, two ounces;
Water, a pint:

Mix, and add a sufficient quantity of bruised linseed to insure a proper consistence.

Remedial Use.—In painful mammæ, in cancer, glandular tumours, irritable sores, &c.

CATAPLASMA FERMENTI.

Yest Poultice.

Take of Flour, a pound;
Yest of Beer, half a pint:

Mix, and apply a gentle heat until they begin to swell.

How is a poor man to pay for such a poultice, requiring to be renewed twice a day? But he can get the leaves in the season, and make the following:

℞ Hemlock leaves,
℥iv.

Lard, ℔ss.

Boil the leaves in the lard over a gentle fire. Spread a portion of this over a common poultice when required.

Cautions.

CATAPLASMA LINI.

Linseed Poultice.

Take of Boiling Water, a pint ;

Linseed, coarsely powdered, a sufficient quantity to insure a proper consistence :

Mix.

CATAPLASMA SINAPIS.

Mustard Poultice.

Dr. A. T. Thomson says the epispastic effect of brown mustard is diminished by vinegar. There is an idiosyncrasy of skin, as of constitution.

Take of Linseed,

Mustard [Seed], of each, in powder, half a pound ;

Boiling Vinegar, a sufficient quantity to insure a proper consistence :

Mix.

CERATA.

Cerates.

CERATUM.

Cerate [simple].

Cold Cream or *Ceratum Galeni*.

Ol. Amygd., lbj.

Ceræ albæ, ℥iv.

Melt, pour into it warm water, and add gradually Aq. Rosæ Oj.

Take of Olive Oil, four fluidounces ;

Wax, four ounces :

Add the Oil to the melted Wax, and mix.

Cautions.
—

CERATUM CALAMINÆ.

Cerate of Calamine.

Take of Calamine,
Wax, of each half a pound ;
Olive Oil, sixteen fluidounces :

Vulgo, Turner's Cerate.
Yellow wax.

Mix the Oil with the melted Wax ; then remove them from the fire ; and, when they first begin to thicken, add the Calamine, and constantly stir until the Cerate is cool.

Remedial Use.—Digestive, and promotes cicatrization.

CERATUM CANTHARIDIS.

Cerate of Cantharides.

Take of Cantharides, finely powdered, an ounce ;
Spermaceti Cerate, six ounces :

Active Principle.
"Cantharidin."

Add the Cantharides to the Cerate, softened by heat, and mix.

Remedial Use.—To keep open ulcers already established by the Emp. Lyttæ, &c.

CERATUM CETACEI.

Cerate of Spermaceti.

Take of Spermaceti, two ounces ;
White Wax, eight ounces ;
Olive Oil, a pint :

Having melted together the Spermaceti and the Wax, add the Oil, and stir with a spatula until it cools.

Remedial Use.—Simple dressing.

Cautions.

CERATUM HYDRARGYRI COMPOSITUM.

Compound Cerate of Mercury.

ʒj. of Mercury in
 ʒvij. of this cerate.

Take of the stronger Mercurial Ointment,
 Soap Cerate, of each four ounces ;
 Camphor, an ounce :

Rub together until they are incorporated.

Remedial Use.—To promote absorption, or to excite action in indolent tumours.

CERATUM PLUMBI ACETATIS.

Cerate of Acetate of Lead.

Marshall's Cerate.
 ℞ Palm Oil, ʒv.
 Calomel, ʒj.
 Sugar of lead, ʒss.
 Nitrate of mercury,
 ʒij. ℥.

Take of Acetate of Lead, powdered, two drachms ;
 White Wax, two ounces ;
 Olive Oil, eight fluidounces :

Dissolve the Wax in seven fluidounces of the Oil ; then to these gradually add the Acetate of Lead, separately rubbed up with the rest of the Oil, and stir them with a spatula until union be complete.

CERATUM PLUMBI COMPOSITUM.

Compound Cerate of Lead.

Keep out two fluid-
 ounces of the oil to
 dissolve your cam-
 phor, observing that
 your half pint is now
 ten fluidounces.

Take of the Liquor of Diacetate of Lead, three fluid-
 ounces ;
 Wax, four ounces ;
 Olive Oil, half a pint ;
 Camphor, half a drachm :

Yellow wax.

Mix the melted Wax with eight fluidounces of the Oil. Then remove them from the fire ; and when they

first thicken, gradually add the Liquor of Diacetate of Lead, and constantly stir with a spatula until they cool; lastly, with these mix in the Camphor dissolved in the remaining Oil.

Remedial Action.—This and the last cerate are astringent and sedative. In excoriations, in affections of the tarsi, recent sores of mucous extremities, &c.

Cautions.

Kirkland's Cerate.

℞ $\bar{z}$ viiij. of Lead plaster.

f $\bar{z}$ iv. of Olive Oil.

Melt and stir in $\bar{z}$ iv. of Creta ppt., and, when cool, add f $\bar{z}$ iv. of diluted acetic acid, and $\bar{z}$ iiij. of sugar of lead.

CERATUM RESINÆ.

Cerate of Resin.

Take of Resin,

Wax, of each a pound;

Olive Oil, sixteen fluidounces:

Melt together the Resin and Wax with a slow fire; then add the Oil, and express the Cerate while hot through linen.

Remedial Action.—Stimulant dressing for indolent ulcers.

Yellow basilicon.

Yellow wax is meant where the white is not specified.

CERATUM SABINÆ.

Cerate of Savine.

Take of Bruised Savine, a pound;

Wax, half a pound;

Lard, two pounds:

The Lard and the Wax being melted together, mix in the Savine, then express through a linen cloth.

Remedial Action.—To promote discharge from issues and setons, and to keep open blisters.

In the old Pharmacopœia the fresh leaves were used. Now the fresh and dried tops are indicated.

It should not be boiled.

CERATUM SAPONIS.

Cerate of Soap.

Take of Soap, ten ounces;

Wax, twelve ounces and a half;

Often made from the dregs of Goulard's Extract, or "Liq. plumbi diacetatis dil."

Yellow wax.

Cautions.

Hard soap is meant, but selection from a variety is left to the dispenser.

Oxide of Lead, powdered, fifteen ounces ;
Olive Oil, a pint ;
Vinegar, a gallon :

Boil the Vinegar with the Oxide of Lead over a gentle fire, constantly stirring until they are incorporated: then add the Soap, and again similarly boil, until the moisture be entirely expelled. Finally, with these mix the Wax previously melted in the Oil.

Remedial Use.—Most commonly employed as a cooling dressing and as a resolvent.

CONFECTIONES.

Confections.

CONFECTIO AMYGDALÆ.

Confection of Almonds.

Some of the first houses in London use hot water; and if not allowed to remain in too long, so as to disturb the oil, it is better than cold.

Take of Sweet Almonds, eight ounces ;
Powdered Gum-Arabic, an ounce ;
Sugar, four ounces :

Having macerated your Almonds in cold water and blanched them, pound all the ingredients together until incorporated.

This Confection may be preserved a considerable time, if the Almonds, the Gum, and the Sugar, having been powdered separately, are at last mixed. Then, when required for use, let them be pounded together till incorporated.

Cautions.
—

CONFECTIO AROMATICA.

Aromatic Confection.

Take of Cinnamon,

Nutmegs, of each, two ounces ;

Cloves, an ounce ;

Cardamoms, half an ounce ;

Saffron, two ounces ;

Prepared Chalk, sixteen ounces ;

Sugar, two pounds :

Incompatible with acids, and liable to spontaneous fermentation when kept soft. Therefore, now judiciously ordered to be kept dry, and to be mixed when wanted.

Rub together the dry ingredients into a very fine powder, and keep them in a stopped vessel. When required for use as a Confection, gradually add water, and mix until thoroughly incorporated.

Remedial Action.—An elegant cordial adjunct to cretaceous mixtures ; and useful in flatulency, in tympanitis, flatulent colic, &c.

Dose.— $\mathfrak{zss}$. to $\mathfrak{zj}$.

CONFECTIO AURANTII.

Confection of Orange-Peel.

Take of fresh Orange-Peel, separated by a rasp, one pound ;

Sugar, three pounds :

Bruise the Peel in a stone mortar with a wooden pestle ; then, having added the Sugar, again pound, until they are completely incorporated.

Remedial Use.—Often employed as an intermediate aromatic for forming masses of pills.

CONFECTIO CASSIÆ.

Confection of Cassia.

Take of Cassia [Pulp], half a pound ;

Manna, two ounces ;

The dark Manna called Sicilian is more powerful as an aperient.

Cautions.

Tamarinds [Pulp of], an ounce ;
Syrup of Roses, eight fluidounces :

Bruise the Manna, and dissolve it in the Syrup ; then admix the Cassia and Tamarinds, and evaporate down to a proper consistence.

Remedial Use.—Laxative, but liable to gripe. Said to darken the colour of the urine.

Dose.—ʒij. to ʒj.

CONFECTIO OPII.

Confection of Opium.

If the dispenser can powder sixteen ounces of syrup, he must be much more clever than the Censors of the College. The formula ought to have been, "Powder the dry ingredients, &c."—*Vide* Latin text, smaller edition, p. 86.

Supposing the syrup to weigh twenty ounces, thirty-six grains of this confection will contain one grain of opium.

Take of hard Opium, powdered, six drachms ;
Long Pepper, an ounce ;
Ginger, two ounces ;
Carraways, three ounces ;
Powdered Tragacanth, two drachms ;
Syrup, sixteen fluidounces :

Finely powder them together, and preserve in a close vessel. When required for use, add sixteen fluidounces of Syrup made hot, and mix.

Remedial Use.—Aromatic, anodyne. In diarrhoeas, flatulent colic, &c.

Dose.—Gr. xv. to ʒij.

CONFECTIO PIPERIS NIGRI.

Confection of Black Pepper.

Imitation of Ward's paste for the piles.

Take of Black Pepper,
Elecampane [Root], of each, a pound ;
Fennel [Seeds], three pounds ;
Honey,
Sugar, of each, two pounds :

Rub together the dry ingredients into a very fine powder, and preserve them in a covered vessel. When

the Confection is required for use, add the Honey, and pound them until incorporated.

Remedial Action.—In a lax state of mucous membrane with distended state of hæmorrhoidal veins, in weak leucophlegmatic habits, but not in inflammatory temperaments.

Dose.—ʒj. to ʒiij.

Cautions.

CONFECTIO ROSÆ CANINÆ.

Confection of Dog-Rose.

Take of the [Pulp of the] Dog-Rose, a pound ;
Powdered Sugar, twenty ounces :

Expose the Rose-Pulp in an earthenware vessel to a gentle heat, then gradually add the Sugar, and rub together until incorporated.

Remedial Use.—Principally as an intermede to form pills.

Also called Confection of Hips. When you want to make a small pill this confection is preferable to that of the Confectio Rosæ Gallicæ.

CONFECTIO ROSÆ GALLICÆ.

Confection of the French Rose [Red].

Take of the French Rose [Petals], a pound ;
Sugar, three pounds :

Bruise the Rose-Petals in a stone mortar ; then, having added the Sugar, again bruise until incorporated.

Remedial Use.—As a repressing and cooling malagma in ophthalmia, and as an intermede for pills, &c. Also with a little dilute sulphuric acid, in the form of linctus, to cool and clean the tongue, and in hæmorrhages, &c.

CONFECTIO RUTÆ.

Confection of Rue.

Take of Dried Rue,
Carraways,
Laurel [Bay] Berries, of each, an ounce and a half ;

Cautions.

The motions after the exhibition of this confection are always extremely foetid.

Sagapenum, half an ounce ;
Black Pepper, two drachms ;
Honey, sixteen ounces :

Finely powder the dry ingredients together, and preserve them. Then, when the Confection is required for use, add the Honey, and mix.

Remedial Use.—Internally, a most useful remedy in flatulent and hysteric colic ; and for enemata in the same diseases.

Dose.—3j. to 3iij.

CONFECTIO SCAMMONII.

Confection of Scammony.

It contains about gr. j. of scammony in gr. iij. of the mass.

Take of Powdered Scammony, an ounce and a half ;
Bruised Cloves,
Powdered Ginger, of each, six drachms ;
Oil of Carraway, half a fluidrachm ;
Syrup of Roses, a sufficient quantity :

Finely powder the dry ingredients and preserve them ; then, whenever the Confection is required for use, gradually mix in the Syrup by trituration. Finally, having added the Oil of Carraway, mix them all.

Remedial Action.—Purgative, anthelmintic.

Dose.—Gr. x. to ʒj.

CONFECTIO SENNÆ.

Confection of Senna.

Take of Senna, eight ounces ;
Figs, a pound ;
Tamarind (Pulp),
Cassia (Pulp),
Prunes, of each, half a pound ;
Coriander Seeds, four ounces ;
Liquorice Root, three ounces ;

Vulgo, Lenitive Electuary. The dispenser will remark that, if he judge by the columns of the *Materia Medica* prefixed to the College Edition, he will have

Sugar, two pounds and a half;
Water, three pounds :

Rub the Senna with the Coriander Seeds ; and, with a sieve, separate ten ounces of the mixed powder. Then boil down the water with the Figs and Liquorice to one half ; express, and strain. Evaporate the strained liquor by a water-bath until twenty-four fluidounces remain from the whole. Then, having added the Sugar, let a syrup be formed. Finally, gradually rub the Pulps with the syrup ; and, having thrown in the sifted powder, mix them all.

Remedial Action.—Laxative, and an elegant medicine when well prepared.

Dose.— $\mathfrak{z}\text{ij}$. and upwards.

Cautions.

to use the pulp of tamarinds, the pulp of cassia, and the dried fruit of the prune. Their translator, however, says, that only the pulp of this last is to be weighed.

DECOCTA.

Decoctions.

THE effect of boiling differs greatly from that of infusion. In the heat of boiling water, the essential oils of vegetables, in which their virtue frequently resides, are dissipated ; and when we wish to retain these more volatile parts, infusion is decidedly preferable. Other substances sparingly dissolved by simple infusion, yield their virtues very readily to the process of coction. In compound decoctions, those ingredients should be boiled first which least readily impart their active principles ; and those which more readily impart them, may be added afterwards. They should always be strained hot, and the purest water should be employed. As they deposit in cooling, much of the principles they may have dissolved while hot, clear decoctions are not always the most eligible, although most pleasing to the eye.

DECOCTUM ALOES COMPOSITUM.

Compound Decoction of Aloes.

Take of Extract of Liquorice, seven drachms ;
Carbonate of Potassa, a drachm ;

Baume de Vie is a name often given to this decoction, but the French *Baume de Vie* is a tincture.

Mark ! do not put in the old carbonate of potassa by mistake, but the kali ppt.

Cautions.

Spiked aloes was specified in the last, but many dispensers prefer the Cape for this preparation. The College now restrict us to the extract of the aloes spicata; but both that called soccotrine and the common Cape are the products of the same species. *Vide* the columns of the *Materia Medica*.

Powdered Aloes,
Powdered Myrrh,
Saffron, of each, a drachm and a half;
Compound Tincture of Cardamoms, seven fluid-ounces;
Distilled Water, a pint and a half:

Boil down the Liquorice, the Carbonate of Potassa, the Aloes, the Myrrh, and the Saffron, from the Water to a pint, and strain; then add the Compound Tincture of Cardamoms.

Remedial Action.—A warm muscular purge, operating chiefly on the larger intestines; and, in smaller doses, a stomachic.

Dose.—f̄ss. to f̄ij.

DECOCTUM AMYLI.

Decoction of Starch.

This ought to have been located with the enemata, since it is rarely used as a demulcent in any other form.

Take of Starch, four drachms;
Water, a pint:

Rub the Starch with the Water, gradually poured in; then boil for a short time.

Remedial Use.—For clysters in dysentery, and as a demulcent.

DECOCTUM CETRARIE.

Decoction of Liverwort.

Vulgò, Iceland Moss. It contains a peculiar starch called Lichenin.

The Caragheen and Ceylon mosses have been successively introduced. The latter has been lately much extolled.

Take of Liverwort, five drachms;
Water, a pint and a half:

Boil down to a pint, and strain.

Remedial Use.—A demulcent tonic. When the demulcent operation is principally required, and the strong bitter is objectionable, it may be previously simmered with water, and the first liquor may be rejected. Its supposed specific effects in phthisis have been long exploded.

Dose.—f̄ij. upwards.

Cautions.

DECOCTUM CHIMAPHILÆ.

Decoction of Winter Green, or Pyrola.

Take of Chimaphila (Pyrola), an ounce ;
Distilled Water, a pint and a half :

Boil down to a pint, and strain.

Remedial Action.—Diuretic ; slightly astringent. Prescribed also in infusion. It blackens the urine like Uva Ursi, and it is used in the like diseases.

Dose.—f℥j. to f℥ij.

An American plant
— a panacea among
the Indians.

Dose.—℥ss. to ℥ij.
of the leaves.

Infusion.

℞ Fol. Pyrolæ, ℥j.
Aque Ferventis, Oj.
M.

DECOCTUM CINCHONÆ CORDIFOLIÆ.

Decoction of Yellow Bark.

Take of the Heart-leaved (yellow) Cinchona, bruised,
ten drachms ;
Distilled Water, a pint :

Boil for ten minutes in a vessel lightly covered, and
strain the liquor while yet hot.

Remedial Action.—Tonic, astringent, febrifuge. An antidote in
cases of poison by Emetic Tartar. *Vide* Quinæ Disulphas.

Dose.—f℥j. to f℥ij.

It contains quina.
Bark draughts of
either of these three
decoctions should,
after the first straining,
be exhibited without
being decanted from
the secondary precipi-
tate.

DECOCTUM CINCHONÆ LANCIFOLIÆ.

Decoction of Lance-leaved Cinchona.

This species con-
tains cinchonia.

Vide Supplement,
p. 22.

DECOCTUM CINCHONÆ OBLONGIFOLIÆ.

Decoction of the Oblong-leaved Cinchona.

These two last are prepared in the same manner as
that of the Yellow Bark.

This contains two
alkalies, quina and
cinchonia.

Cautions.

DECOCTUM CYDONIÆ.

Decoction of Quince-Seeds.

It ought not to be kept longer than 24 hours.

Take of Quince-Seeds, two drachms ;
Distilled Water, a pint :

Boil with a gentle fire for ten minutes, and strain.

Remedial Action.—Demulcent, and externally emollient in erysipelas.

DECOCTUM DULCAMARÆ.

Decoction of Woody Nightshade.

Take of the Woody Nightshade, sliced, ten drachms ;
Distilled Water, a pint and a half :

℥ss. of tincture of lavender will obviate the narcotic effect.

No direction is given for the proper period for collection of stalks.

Vide Vegetabilia, p. 231.

Boil down to a pint, and strain.

Remedial Action.—Diaphoretic and diuretic, but not much used, except in our hospitals. It is apt to exert vertiginous narcotic effects, and sudden fits. Sir A. Crichton says he cured many cases of leprosy by the use of this remedy. The stalks lose much of their activity by long keeping.

Dose.—f℥j. to f℥ij.

DECOCTUM GRANATI.

Decoction of Pomegranate.

℞ Bark of Pomegranate Root, ℥ij.
Water, a pint :

Boil down to half a pint ; and give the whole at two doses, at the interval of two hours.

Take of Pomegranate (Rind), two ounces ;
Distilled Water, a pint and half :

Boil down to a pint, and strain.

Remedial Use.—Astringent, vermifuge ; but, for the latter purpose, the bark of the root is preferable. A decoction of this last, as in the annexed formula, has repeatedly expelled tænia, as the Editor can testify. The decoction of the root purges, and in about 6 hours has brought away the worm. The expulsion of a tænia is, however, more frequently a tedious process, requiring a course of medicine for a month. Look for the head of the tænia ; for if that is not expelled, you have done nothing.

Cautions.
—

DECOCTUM HORDEI.

Decoction of Barley.

Take of Pearl Barley, two ounces and a half ;
Water, four pints and a half :

First wash away the impurities adhering to the Barley with [cold] water ; then, having poured thereon half a pint of the Water, boil the seeds for a little while. Reject this liquor, and pour on the residue of the Water first heated ; then boil down to two pints, and strain.

Remedial Action.—Demulcent. A valuable remedy. Such medicines are scarcely valued, till experience has shewn their utility. To have kept the mucous membranes moist and tranquil is no small advantage in febrile diseases.

Robinson's patent preparation is a more eligible material for making this decoction.

DECOCTUM HORDEI COMPOSITUM.

Compound Decoction of Barley.

Take of Decoction of Barley, two pints ;
Sliced Figs, two ounces and a half ;
Liquorice (Root) sliced and bruised, five drachms ;
Raisins, two ounces and a half ;
Water, a pint :

Boil down to two pints, and strain.

Remedial Action.—*Vide* Decoctum Hordei. Use Sherbet, by way of change, when patients get tired of this barley water.

The raisins are to be stoned before they are weighed. — *Vide* the columns of *Materia Medica*.

Sherbet.

Boil a handful of barley meal in 3 pints of water down to 2 pints, sweetening with sugar-candy, and perfuming it with rose, orange-flower, and citron water, to the palate.

DECOCTUM MALVÆ COMPOSITUM.

Compound Decoction of Mallows.

Take of the dried Mallow (Plant), an ounce ;
Dried Chamomile (Flowers), half an ounce ;
Water, a pint :

Boil for a quarter of an hour, and strain.

Remedial Action.—Emollient ; used for fomentation.

The Common Mallow, or *Malva sylvestris*.

Whether you are to use the herb of mallow, or the entire plant, is not indicated, and is, perhaps, unimportant.

Cautions.

DECOCTUM PAPAVERIS.

Decoction of Poppies.

You may retain the seeds, perhaps, with some advantage; but not if you are about to make a syrup from the decoction, for it will be more liable to ferment.

Take of Sliced Poppies [the Capsules], four ounces;
Water, four pints:

Boil for a quarter of an hour, and strain.

Remedial Use.—As an anodyne fomentation in erysipelas, &c. In making this decoction the capsules should first be moistened and bruised to obtain the mucilage, and anodyne principle.

DECOCTUM QUERCUS.

Decoction of Oak Bark.

Incompatible with acetate of lead, sulphate of zinc, salts of iron, alkalines, yellow bark, isinglass, &c.

Oak bark contains tannin, and tannic acid, as well as the gallic.

Take of Oak Bark, bruised, ten drachms;
Distilled Water, two pints:

Boil down to a pint, and strain.

Remedial Use.—Astringent in leucorrhœa, &c., as an injection.

DECOCTUM SARZÆ.

Decoction of Sarsaparilla.

Dr. Hancock objects to long boiling, and advocates the addition of an acid.

It contains a neutral principle called "Parillin."

Take of Sarsaparilla, sliced, five ounces;
Boiling Distilled Water, four pints:

Macerate for four hours near the fire in a vessel lightly covered; then take out the Sarsaparilla and bruise it. Return the bruised root to the liquor, and again macerate in like manner for two hours. Afterwards boil down to two pints, and strain.

Remedial Use.—As an alterative, diaphoretic. The result of experience has confirmed us in the belief of the restorative power of this

medicine in cases of syphilitic debility, although Dr. Pearson, one of the most accredited writers on syphilis, disputes its powers of curing this disease in any of its stages.

Dose.— $\text{f}\bar{\text{z}}\text{iv.}$ to Oss.

Cautions.
—

DECOCTUM SARZÆ COMPOSITUM.

Compound Decoction of Sarsaparilla.

Take of Decoction of Sarsaparilla, boiling, four pints ;
Sassafras Chips,
Guaiacum [Wood] Shavings,
Liquorice Root, bruised, of each, ten drachms ;
Mezereon, three drachms :

Boil down for a quarter of an hour, and strain.

Remedial Action.—Mezereon contains an active principle called Daphnin.—For its medicinal use, *vide* Decoct. Sarzæ.

Dose.— $\text{f}\bar{\text{z}}\text{iv.}$ to $\text{f}\bar{\text{z}}\text{vj.}$

When the old Pharmacopœia ordered the bark of the mezereon, the dispenser frequently substituted the root. They now are still more obscure, by way of increasing the difficulty. By reference to the columns, we see they indicate the bark of the root.

DECOCTUM SCOPARII COMPOSITUM.

Compound Decoction of Broom.

Take of Broom [tops],
Juniper Berries,
Dandelion [Root], of each, half an ounce ;
Distilled Water, a pint and a half :

Boil down to a pint, and strain.

Remedial Use.—Diuretic in dropsies. A good vehicle for cream of tartar in the same disease.

Dose.— $\text{f}\bar{\text{z}}\text{ij.}$ to $\text{f}\bar{\text{z}}\text{vj.}$

Use your broom fresh, and select the greener leaves.

The nearest habitat to London is Barnes Common, where it grows abundantly.

Cautions.

DECOCTUM SENEGÆ.

Decoction of Senega.

Patients sometimes complain of the burning sensation in the throat and stomach produced by this decoction. It possesses considerable acidity.

Take of Senega [Root], ten drachms ;
Distilled Water, two pints :

Boil down to a pint, and strain.

Remedial Action.—It contains an active principle called Polygalin or Senegin ; and is a diuretic, diaphoretic, expectorant, and mucous purge.

Dose.—f̄ss. to f̄ij. with mucilage.

DECOCTUM TORMENTILLÆ.

Decoction of Tormentil.

This root chiefly contains tannin. In the Orkney Isles it is used for tanning leather. Incompatible with ferruginous salts, &c.

Take of Tormentil [Root], bruised, two ounces ;
Distilled Water, a pint and a half :

Boil down to a pint, and strain.

Remedial Use.—Astringent in diarrhœa, chronic discharges of the urethra, mucous relaxation, &c.

Dose.—f̄ss. to f̄iiss.

DECOCTUM ULMI.

Decoction of Elm.

The liber bark usually employed.

Take of fresh Elm [Bark], bruised, two ounces and a half ;

Distilled Water, two pints :

Boil down to a pint, and strain.

Remedial Use.—It is conjectured to contain a peculiar principle called Ulmin ; also tannin, or tannic acid ; but its effects in cutaneous diseases are scarcely to be explained by reference to these principles.

Dose.—f̄iv. to Oss.

Cautions.

DECOCTUM UVÆ URSI.

Decoction of Whortleberry Leaves.

Take of Whortleberry [Leaves], bruised, an ounce ;
Distilled Water, a pint and a half :

Boil down to a pint, and strain.

Remedial Use.—Astringent ; it is also called diuretic, but this term has been introduced in reference to its power of allaying irritability of the urinary organs in calculus, and of diminishing purulent discharges of the urinary passages. Dr. Bourne recommended its use in phthisis, and in bronchial relaxation it certainly diminishes purulent secretion.

Dose.—fʒss. to fʒij.

When the leaves have assumed a yellow hue, they are unfit for use.

℞ Decoct. Uvæ Ursi,
fʒvss.
Tinct. Hyoscyami,
fʒüj. ℥

DECOCTUM VERATRI.

Decoction of White Hellebore.

Take of White Hellebore, coarsely powdered, ten
drachms ;
Distilled Water, two pints ;
Rectified Spirit, three fluidounces :

Active principle,
Veratria. *Vide* Ve-
ratria.
Vide Ung. Sulphuris
Compositum.

Boil down the White Hellebore in the Water to a pint, and when it has cooled add your Spirit ; then express, and strain.

Remedial Action.—Used externally for psora, and for some scaly disorders. It sometimes violently purges and vomits, even when used externally. It ought not to be used for tender infants. The powder is commonly adulterated to lower its strength and price, and in that state is supplied by the wholesale to the retail druggists.

Cautions.

Plasters ought not to be prepared over an open fire, but by means of a stove. How many houses have been set on fire by neglecting this precaution!

EMPLASTRA.

Plasters.

EMPLASTRUM AMMONIACI.

Plaster of Ammoniacum.

Take of Ammoniacum, five ounces ;

Distilled Vinegar, eight fluidounces :

Dissolve the Ammoniacum in the Vinegar ; then evaporate the liquor over a slow fire, constantly stirring meanwhile, until it comes to a proper consistence.

Remedial Action.—An external stimulant, promoting action in indolent tumours, especially those of glands.

EMPLASTRUM AMMONIACI CUM HYDRARGYRO.

Plaster of Ammoniacum with Mercury.

Take of Ammoniacum, a pound ;

Mercury, three ounces ;

Olive Oil, a fluidrachm ;

Sulphur, eight grains :

Having heated your Oil, gradually add the Sulphur, constantly stirring with a spatula until incorporated ; then with these rub the Mercury, until globules are no longer visible : finally, gradually add the melted Ammoniacum, and mix them all.

Medicinal Uses.—In glandular swellings, indolent buboes, and venereal nodes ; but the discovery of iodine has, in a great measure, superseded the use of such plasters.

Cautions.

EMPLASTRUM BELLADONNÆ.

Plaster of Belladonna, or Deadly Nightshade.

Take of Plaster of Resin, three ounces ;

Extract of Belladonna, an ounce and a half :

Gather your bella-
donna when in flower.

Having melted the Plaster in the heat of a water-bath, add the Extract, and mix.

Remedial Use.—In painful exostosis, pains in the cardiac region, neuralgia, &c. I have found this plaster with a drachm of camphor singularly efficacious in relieving violent fits of loud belching, occurring in hysteric females. After bleeding, and a few doses of Rufus's Pill, cover the epigastric region with a large plaster of this kind, spread upon leather.

EMPLASTRUM CANTHARIDIS.

Plaster of Cantharides.

Take of Cantharides, finely powdered, a pound ;

Plaster of Wax, a pound and a half ;

Lard, half a pound :

Be careful not to
employ a higher tem-
perature than is barely
requisite for melting
the lard.

Having melted together the Plaster and the Lard, remove from the fire ; and, just before they thicken, sprinkle in the Cantharides, and thoroughly mix.

Remedial Use.—*Vide* Ceratum Cantharidis.

EMPLASTRUM CERÆ.

Plaster of Wax.

Take of Wax,

Suet, of each, three pounds ;

Resin, a pound :

Yellow wax is un-
derstood where the
white is not specified.

Melt them together, and strain.

Cautions.

EMPLASTRUM GALBANI.

Plaster of Galbanum.

Plasters should never be left by the operator until the process is completed.

Take of Galbanum, eight ounces ;

Plaster of Lead, three pounds :

Common Turpentine, ten drachms ;

Resin of the Spruce Fir, powdered, three ounces :

Having melted together the Galbanum and the Turpentine, first add the Resin of the Spruce Fir, then the Lead-Plaster, previously melted over a slow fire, and mix them all.

Remedial Use.—Stimulant, discutient. Strongly recommended by the ancients for furunculus (common boil), and useful in other indolent tumours.

EMPLASTRUM HYDRARGYRI.

Plaster of Mercury.

Take of Mercury, three ounces ;

Plaster of Lead, a pound ;

Olive Oil, a fluidrachm ;

Sulphur, eight grains :

Having heated the Oil, gradually add the Sulphur, constantly stirring with a spatula until incorporated ; then, with these, rub the Mercury until the globules entirely disappear. Afterwards, gradually add the Lead-Plaster, melted over a slow fire, and mix them all.

Remedial Use.—The chemical condition of mercury thus combined in plasters has never been indicated. The plaster has been used as a discutient, but with little show of reasoning. It has the character of being alterative and discutient.

EMPLASTRUM OPII.

Plaster of Opium.

Take of Hard Opium, powdered, half an ounce ;
 Resin of the Spruce Fir, powdered, three ounces ;
 Lead-Plaster, a pound ;
 Water, eight fluidounces :

Having melted the Plaster, add the Resin of the Spruce Fir, the Opium, and the Water ; and, with a slow fire, boil down until they all unite into a proper consistence.

Remedial Use.—As an anodyne in local pains. Half a drachm of powdered opium, added at the time of spreading, to either of the common plasters, will be more efficacious than the above.

Cautions.

Vide the columns of the *Materia Medica*, in which Burgundy pitch is indicated as the *prepared* resin of the spruce fir.

EMPLASTRUM PICIS.

Plaster of Pitch.

Take of Burgundy Pitch, two pounds ;
 Resin of the Spruce Fir, a pound ;
 Resin,
 Wax, of each, four ounces ;
 Expressed Oil of Nutmegs, an ounce :
 Olive Oil,
 Water, of each, two fluidounces :

Having melted together the Pitch, the Resin, and the Wax, first add the Resin of the Spruce Fir, then the Oil of Nutmegs, the Olive Oil, and the Water. Lastly, mix all, and boil down to a proper consistence.

Remedial Use.—A counter-irritant, the action of which may be increased by the addition of gr. ij. or gr. iij. of emetic tartar. Two or three grains of emetic tartar will produce as much irritation as may be required ; and, even in that proportion, the effects must be watched. However, many use as much as a scruple for a plaster. N.B. The effects of irritating applications depend entirely on the susceptibility of the skin. A body may, by nature or by age, be insusceptible to the ordinary effect even of a blister, and in the latter case it is indicative of vitality nearly exhausted ; while in the weakness consequent on excessive action, as in scarlatina, and as in pneumonia typhodes, the skin may be completely destroyed, and a fatal slough be induced.

Here you have the rough resin, and the prepared resin, ordered in the same plaster.

Green Corn Plaster.

Burg. pitch, 4 parts.
 Wax, 3 parts.
 Common turpentine, 1 part.
 Verdigris, 1 part.

Cautions.

EMPLASTRUM PLUMBI.

Plaster of Lead.

Vulgò, White diachylon plaster.

℞ Opii puri,

Camphoræ, ā ā ʒss.

Emp. Plumbi, ʒij.

Melted, mixed, and spread on leather, for the chest, in spasmodic asthma.—BREE.

Take of Oxide of Lead, finely powdered, six pounds ;
Olive Oil, a gallon ;
Water, two pints :

Boil together with a gentle fire, constantly stirring until the Oil and the Oxide of Lead unite into the consistence of a plaster. It will be necessary to add a little boiling water, if nearly all that which was first employed shall have been consumed before the boiling is over.

Remedial Use.—In excoriations, tender feet, and to obviate bed-sores, &c.

EMPLASTRUM RESINÆ.

Plaster of Resin.

Vulgò, Baynton's bandage, when spread on linen ; but the makers use only 6 drachms of resin to the pound of lead plaster.

Take of Resin, half a pound ;
Plaster of Lead, three pounds :

Having melted the Lead-Plaster over a slow fire, add the powdered Resin, and mix.

Remedial Action.—Adhesive, defensive, and stimulant ; extensively employed in the cure of ulcers. *Vide* BAYNTON on Ulcers.

EMPLASTRUM SAPONIS.

Plaster of Soap.

Take of Soap, sliced, half a pound ;
Lead-Plaster, three pounds :

Having melted the Plaster, mix in the Soap, and boil down to a fit consistence.

Remedial Action.—The best plaster for ulcers of an irritable character, which the plaster of resin frequently irritates. It is commonly said to be discutient.

Cautions.

ENEMATA.

Clysters.

Ricord's Enema for chordée.

R. Camphoræ, gr. x.

Extr. Opii, gr. j.

Vitellum ovi unius.

Aquæ, ℥vj. Contere.

ENEMA ALOËS.

Clyster of Aloes.

Take of Aloes, two scruples ;

Carbonate of Potassa, fifteen grains :

Decoction of [Pearl] Barley, half a pint :

Mix by trituration.

Remedial Use.—In ascarides, atonic amenorrhœa, &c. The Editor believes that the ascaris exists in the blood. He has repeatedly seen it in infants at the breast ; and in such cases has uniformly found the mother to be infested with the same worm. He believes it, in that sense, to be hereditary.

Not to be employed in cases where irritation of the rectum, hæmorrhoids, irritable bladder, or irritable genitals, are known to be troublesome.

The old subcarbonate is here indicated.

ENEMA COLOCYNTHIDIS.

Clyster of Colocynth.

Take of Compound Extract of Colocynth, two scruples ;

Soft Soap, an ounce ;

Water, a pint :

Mix by trituration.

Remedial Action.—Powerfully purgative, but not to be used where constipation depends on spasm.

Cautions.

Empty the bowels thoroughly before you use this enema, and take care your starch is free from acrid impurities. A fluidrachm of the tinct. of opium is the usual proportion in dysentery.

Take of Decoction of Starch, four fluidounces ;
Tincture of Opium, thirty minims :

Mix.

Remedial Action.—Dr. Gooch, who frequently used enemata in dolor uteri, and other painful affections of females, was the first to recommend a diminished bulk of the fluid, and advised it to be limited to two ounces, that it might be retained for a sufficient time to allow the anodyne to produce its effects. In dysentery, and all inflammatory disorders, this enema ought not to be used for the first forty-eight hours.

ENEMA OPII.

Clyster of Opium.

ENEMA TABACI.

Clyster of Tobacco.

Liquor of ammonia, with brandy and water, is the best antidote if the enema produces dangerous depression. It contains nicotina and a volatile oil. The first acts chiefly on the brain, the second paralyzes the heart.

Take of Tobacco (Virginian ?) a drachm ;
Boiling Water, a pint :

Macerate for an hour, and strain.

Remedial Use.—Violently depressing and relaxing ; hence its use in strangulated hernia, obstruction, &c. Davy has shewn, that one part by weight of Virginian tobacco is equal to $2\frac{1}{3}$ parts of other specimens which he analysed. For its effects as a poison, *vide* Supplement, p. 172.

ENEMA TEREBINTHINÆ.

Clyster of Turpentine.

*Enema Terebinthinæ
Oleosum.*

℞ Olei Terebinth., fʒj.
Ol. Olivæ, Oss.
Ft. enema.
In Ascarides.

ʒij. Copaiba may be injected in like manner, rubbed up with ʒss. of Ol. Terebinth. and gr. j. of Ext. Opii, and intermixed by means of yolk of egg, when the former medicine cannot be taken by the mouth.

Take of Oil of Turpentine, a fluidounce ;
Yolk of Egg, a sufficiency ; rub together, and add
Decoction of [Pearl] Barley, nineteen fluid-ounces :

Mix.

Remedial Use.—In chorea, tetanus, puerperal fever, and in peritonitis. It may likewise be employed with advantage in flatulent colic, or in ascarides, for which, however, the enema in the margin has been found by the Editor to be more efficacious.

EXTRACTA.

Extracts.

EXTRACTS are preparations containing all, or the greater part of, the soluble principles of the substance out of which they are formed, and which have acquired, by evaporation, a consistence varying from that of honey to complete dryness, according as they may be intended for pills or for powders. They are obtained, 1stly, by evaporating the expressed juice of green plants, after having been clarified; 2dly, by dissolving in any menstruum, by maceration, digestion, or infusion, but never by decoction, the soluble parts of dry substances, and by submitting the product afterwards to evaporation, either in a warm bath, or by the assistance of steam. Water or alcohol is used as a vehicle; hence we have aqueous or alcoholic extracts. Those principles of vegetable bodies which are soluble in the former menstruum have received among chemists the name of extractive matter, but with little propriety, since they consist of numerous substances which, though analogous in being soluble in water, have few other corresponding properties, and, accordingly, among modern pharmacutists, the term is rapidly going into disuse. Indeed, the term extract itself will scarcely admit of correct definition.

IN the preparation of Extracts, unless where otherwise ordered, lose no time in expelling the moisture, by means of a dish and water-bath, stirring towards the conclusion with a spatula, until the consistence be fit for pills.

Upon all the softer Extracts, sprinkle in a little Rectified Spirit, to prevent mould.

EXTRACTUM ACONITI.

Extract of Aconite.

Take of the fresh leaves of Aconite, a pound :

Bruise in a stone mortar, sprinkling in a little water ;

For the selection of the species of aconite, *vide* Supplement, p. 172.

The Ext. of the root is twelve times as strong as that of the leaves.

*Cautions.**Tinct. Aconiti.*

℞ Fol. Aconiti, ʒij.

Alcoholis, fʒviij.

Macera per dies xiv.

exprime et cola.

Dose.—℥x. to ℥xx.

then express the juice, and, without straining, evaporate it to a proper consistence.

Remedial Action.—Acro-narcotic. *Vide Aconitina.*

EXTRACTUM BELLADONNÆ.

Extract of Deadly-Nightshade.

Active principle, atropia, alkaloid, colourless, inodorous, crystallizing in long needles.

Ung. Belladonnæ.

℞ Ext. Belladonnæ,

ʒss.

Adipis, ʒj.

M.

RICORD.

But for the neck of the uterus, p. æq.

This is prepared in the same manner as the Extract of Aconite.

Remedial Action.—Acro-narcotic. It has been highly recommended in the treatment of pertussis, and other convulsive coughs, in tic-doloureux, and the like neuralgic affections. It is said to have been used successfully, as an external application, in certain acute and chronic affections of the skin, in white swellings, and in rheumatic affections. The ointment annexed smeared over the finger, and thus applied to the neck of the uterus, is a powerful means of obtaining relaxation of this organ when it is affected with spastic rigidity. A portion of the size of a horse-bean will suffice for this purpose : so likewise in chordée. With the oculists it is the usual remedy for dilating the pupil, either rubbed over the eye-lid, or applied as a poultice in iritis ; or the liquid extract dropped into the eye after the operation for cataract. Supposed by certain German physicians to be a preservative against scarlatina.

Dose.—Gr. ss. to gr. ij.

EXTRACTUM COLCHICI CORMI.

Extract of the Cormus of Meadow-Saffron.

Introduced, it appears, on the authority of Dr. Hue, an experienced physician. But why should the Pharmacopœia be encumbered with the two extracts ?

This is prepared in the same manner as the Extract of Aconite.

Remedial Action.—*Vide Vinum Colchici.*

Dose.—Gr. j. to gr. iv. every four hours, until its effects are developed.

EXTRACTUM CONII.

Extract of Hemlock.

This Extract is prepared in the same manner as the Extract of Aconite.

Remedial Use.—The effects are by no means uniform. It sometimes proves a valuable sedative; at other times, it induces cephalalgia, vertigo, agitation, delirium, somnolency, with cerebral congestion. Giddiness, slight nausea and tremors, with a heavy sensation over the eyes, and impaired vision, were enumerated by Stoëreck as signs of its having been given to a proper extent for affording a fair trial to the remedy; and in addition to these effects it commonly relaxes the bowels. He employed it largely in glandular obstructions, in cancer, phthisis, &c. The old surgeons used it extensively in irritable buboes, both externally and internally. Dr. John Davy gave it in very large doses at the Chatham Military Hospital, and speaks of its efficacy when combined with emetic tartar in certain forms of pneumonia, in which venesection is contra-indicated by extreme debility, a combination closely allied to that of Laennec in the same forms of the disease.

Dose.—Gr. ij. to ʒss. or more, gradually increased. John Hunter gave ʒj. at a dose. The patient left off the remedy for a day or two, and reverted to the use. Although he recommenced with half the dose with which he had left off, it proved fatal. Dr. John Davy says, that in his cases of pneumonia, he commenced with the large dose of one drachm combined with one grain of emetic tartar, or, as the College have it now, “Potassio-tartrate of Antimony.”

EXTRACTUM DIGITALIS.

Extract of Fox-glove.

This Extract is prepared in the same manner as the Extract of Aconite.

Remedial Action.—Here is another instance in which the College introduce a new extract; and although they employ a Translator, they neither tell us on what grounds, nor in what cases, nor in what doses, it is more eligible than the other preparations of fox-glove. Nay, their Translator roundly condemns it as an uncertain preparation.—*Vide Infusum et Tinct. Digitalis.*

Dose.—Gr. ss. to gr. iij.

Cautions.

Extractum Cicutæ.
—*Pharm. Lond.* 1809
and 1824.

Active principle, an alkaloid called conia, formerly considered to be a resin.

Dr. Maton recommended that the plant should be collected when the seeds begin to form, and that these should be retained.

Stoëreck's Formula.

℞ Extracti Conii, ʒj.
Pulv. Conii, q. s.
for two-grain pills.

Dose.—One to four
twice a-day.

Hemlock Draught.

℞ Ext. Conii, gr. v.
Vin. Ant. Tart. fʒss.
Syrup. Rhæados,
fʒj.
Aquæ Destillat. fʒj.
M. Ft. haustus.

This extract is deteriorated by keeping, and, therefore, its dose is uncertain.

Active principle, digitalia; said to be alkaloid, but at present imperfectly known.

Cautions.

Active principle, hyoscyamia. Crystals silky; difficultly soluble in water; of an acrid and nauseous taste; highly poisonous; easily decomposed with the evolution of ammonia by the fixed alkalies; soluble in æther and alcohol.

A single dose of henbane will produce a furred tongue in the most healthy person.

EXTRACTUM HYOSCYAMI.

Extract of Henbane.

This Extract is prepared in the same manner as the Extract of Aconite.

Remedial Action.—While many are of opinion, that this plant is a powerful anodyne, some physicians assert that it does not induce sleep. The Editor is of opinion that its hypnotic effects cannot be relied on. It has been recommended in the treatment of neuralgia, epilepsy, hypochondriasis, nervous coughs, and a whole train of diseases. It is combined with camphor in mania; and with compound extract of colocynth, it has been supposed to increase the purgative operation of this last medicine, and at the same time to obviate griping. For the effects of henbane as a poison, *vide* Supplement, p. 171.

Dose.—Gr. v. to gr. xx.

EXTRACTUM LACTUCÆ.

Extract of Lettuce.

The virtues of the lettuce are said to reside in an active principle called by Dr. Duncan "Lactucarium;" and this principle is further said to contain morphia, but with no shew of evidence.

Collect your juice by breaking off the heads of the plant when in flower. Each plant yields about a scruple of lactucarium. The lactuca virosa yields 75 grains.

This extract is prepared in the same manner as the Extract of Aconite.

Remedial Use.—Ranked by Celsus, upwards of 1800 years ago, next to opium (Book ii. cap. 32). Introduced in our time as a new anodyne. The French obtain their juice from the *Lactuca virosa*, and this they call *Thrydacè*, from the Greek *θρυδάξ*. This anodyne (according to Dr. Francois) seems to act by diminishing the frequency of the pulse and the animal heat. It possesses the property of producing sleep without causing narcotism, or acting as a stimulant, as opium does. In preparing the above extract the leaves only are used, but it is the stalk which chiefly contains the milk.

The *dose* of the extract is from gr. v. to ℥j.; of the lactucarium, or inspissated juice, gr. ij. to gr. iv. and upwards.

Dinner Pills.

℞ Aloes opt. ʒvj.
Mastiches,
Rosarum rubrarum,
ā ā ʒij.
Syrup Absinthii, q. s.
fiat massa.

EXTRACTUM ALOËS PURIFICATUM.

Purified Extract of Aloes.

Take of Powdered Aloes, fifteen ounces;
Boiling Water, a gallon:

Macerate for three days with a gentle heat, then strain and set aside that the dregs may subside. Decant the clear liquor, and evaporate to a due consistence.

Remedial Use.—In this form the resinous portion is separated from the bitter extractive, and is said to be less irritating: stomachic, muscular-purgative, anthelmintic, and emmenagogue.

Dose.—Stomachic, gr. ss. to gr. j.; purgative, &c. gr. v. to gr. xv.

Cautions.

The extract of the spiked aloes. Both the commercial aloes denominated Soccotrine and Cape, are the products of the Aloes spicata.

EXTRACTUM CINCHONÆ CORDIFOLIÆ.

Extract of Yellow [heart-leaved] Cinchona.

Take of Yellow Cinchona Bark, bruised, fifteen ounces;
Distilled Water, four gallons:

Boil down from a gallon of Water to six pints, and strain the liquor while hot. In the same way boil down the Bark from the same quantity of Water four times, and strain. Lastly, evaporate all the mixed liquors to a fit consistence.

Remedial Action.—*Vide* Quinæ Disulphas. The extracts of the cinchonas are ineligible forms, because water is an imperfect menstruum of the principles of the bark.

Dose.—Gr. x. to ʒij. or more.

EXTRACTUM CINCHONÆ LANCIFOLIÆ,

Extract of Lance-leaved [pale] Cinchona,

EXTRACTUM CINCHONÆ OBLONGIFOLIÆ,

Extract of Oblong-leaved [red] Cinchona,

are prepared like the Extract of the heart-leaved (yellow) Cinchona.

Remedial Action.—*Vide* Ext. Cinchon. Cordifoliæ, above.

Cautions.

The College having at last substituted the improved term of *cor-mus* for *bulb*, they lose no opportunity of employing it. But with respect to other plants the part is rarely indicated.

It should yield 20 per cent. of extract.

EXTRACTUM COLCHICI ACETICUM.

Acetic Extract of Colchicum [Meadow-Saffron].

Take of fresh Colchicum [Corm], a pound ;

Acetic Acid, three fluidounces :

Bruise the Corms, gradually sprinkling in the Acetic Acid, then express the juice, and evaporate it in an earthenware vessel not glazed with lead, until the consistence be suitable.

Remedial Action.—Sedative, purgative, diuretic. In gout, acute rheumatism, or in chronic, where the heat of the affected parts is above the natural standard. Also in hydrothorax, *vide* Acetum Colchici.

Dose.—Gr. j. to gr. ij. every six hours.

EXTRACTUM COLOCYNTHIDIS.

Extract of Colocynth.

Colocyntin or Colocynthidin is said to be the active principle.

It is obtained by digesting the colocynth in spirit, and evaporating it. It is allied to resin.

Take of Sliced Colocynth [the dried Pulp], a pound ;

Distilled Water, two gallons :

Mix, and boil with a slow fire for six hours, occasionally adding Distilled Water, that it may uniformly fill the same measure. Strain the liquor while hot, and evaporate to a due consistence.

Remedial Use.—Powerfully purgative ; irritating the fibre of the bowels, and particularly the rectum, and increasing serous deposition.

Dose.—Gr. x. to gr. xxx.

Old Name.

Extractum catharticum.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

Compound Extract of Colocynth.

Take of Colocynth, sliced, six ounces ;

Purified Extract of Aloes, twelve ounces ;

Powdered Scammony, four ounces ;

Cardamoms, powdered, an ounce ;

Soap, three ounces ;

Proof Spirit, a gallon :

Macerate the Colocynth in the Spirit with a gentle heat, for four days. Strain the Spirit, and add to it the Aloes, the Scammony, and the Soap ; then evaporate to a fit consistence, mixing in the Cardamoms towards the last.

Remedial Action.—An equable purgative, gr. v. to ʒss.

EXTRACTUM ELATERII.

Extract of Elaterium (Wild Cucumber).

Slice the ripe fruit of the Elaterium ; and strain the juice, very lightly expressed, through a fine hair sieve : set aside for some hours until the thicker part has subsided. The thinner supernatant part being rejected, dry the thicker portion with a gentle heat.

Remedial Use.—Hydragogue, cathartic, in dropsies ; and as a counter-derivating purge in apoplexy. If used in dropsy with disease of the heart, beware of asphyxia from an over-dose. Cordial mixtures should be employed intermediately to guard against debility. Some combine three grains of calomel with a grain or more of elaterium. Dr. Lister's first dose was gr. ij. to gr. iv., and after an interval of two days, he gave at once gr. x. ! sometimes in bolus, sometimes in half a pint of sherry, or in an aromatic potion.—*Vide* Lister's Exercitations.

Dose.—Gr. $\frac{1}{8}$ to gr. ij.

EXTRACTUM GENTIANÆ.

Extract of Gentian.

Take of Sliced Gentian, two pounds and a half ;

Boiling Distilled Water, two gallons :

Macerate for twenty-four hours, then boil down to a gallon, and strain the liquor while hot ; finally, evaporate to a suitable consistence.

Cautions.

The College do not tell us which of the scammonies we are to employ, the Smyrna or the Aleppo. The last may be presumed. Usefully combined with calomel, although the latter remedy seems to be incompatible with soap.

Anciently used as a digestive in the form of plasters and ointments. Pliny's favourite medicine, N.H. lib. xx. c. 1.

Good elaterium should have but a very slight greenish hue, and should be light and pulverulent. Active principle, a green resin.

Formula.

℞ Elaterii, gr. j.

Extract. Glycyrrhizæ, ʒj.

Contere cum Aquæ destill. f ʒvj. M.

Dose.—Two table-spoonsful every two hours.

Active principle, gentianine. The addition of an acid deprives it of its fine yellow colour. It is a neutral principle, neither acid nor alka-

Cautions.

line. It is not incompatible with the salts of iron. The Chirayita is a species of gentian.

Remedial Action.—Tonic, stomachic; in dyspepsia, atonic gout, &c.

Equal parts of this extract, and that of gentian, together with two parts of ammonio-sesquichloride of iron, made into a mass with syrup, form an eligible tonic and purgative mass.

Dose.—Gr. x. to ʒj.

EXTRACTUM GLYCYRRHIZÆ.

Extract of Liquorice.

Seven extracts prepared like gentian.

This Extract is prepared in the same manner as the Extract of Gentian.

Demulcent principle, glycyrrhizin, a peculiar sugar.

Remedial Use.—A well-known demulcent.

EXTRACTUM HÆMATOXYLI.

Extract of Logwood.

It ought not to be given in pills unless these are recently prepared.

This is prepared in the same manner as the Extract of Gentian.

Peculiar principle, "hæmatine."

Remedial Action.—Its astringency is denied by some authors. Its sweet taste is scarcely alloyed with any acerbity. There are, however, several substances which arrest diarrhœa in some other mode not understood, and this without exerting any astringing action. On the other hand, astringents themselves sometimes relax a constipated state of bowels. Pomegranate and kino are instances of this contrariety of action.

Dose.—Gr. x. to ʒj.

EXTRACTUM LUPULI.

Extract of Hops.

Active principle, lupuline.

This is prepared in the same manner as the Extract of Gentian.

Peculiar bitter extractive principle, in small shining, yellow grains.

This extract is incompatible with the

Remedial Use.—Tonic, stomachic. The hop itself has been recommended as an anodyne; but as this property seems to reside in the aroma, it is scarcely to be expected in the extract, in which the fine odour is not perceived. Pillows of hops are employed to produce

sleep, and poultices or fomentations externally for lulling pain. Dr. Freake recommends an ointment of lupuline (*vide* formula annexed), for the relief of cancerous pains in the last stages.

Dose.—Gr. v. to ℥j. ; or of the lupuline, gr. ij. to gr. v.

Cautions.

mineral acids, ferruginous and mercurial salts.

℞ Lupulini, ℥ss.
Axungiae, ℥iiss.
Ft. ung.

EXTRACTUM PAREIRÆ.

Extract of Pareira.

This Extract is prepared in the same manner as the Extract of Gentian.

Remedial Action.—Powerfully diuretic, and employed in chronic catarrhs of the bladder. In phosphatic deposits (white sand) with the secretion of a pasty mucus, the common consequence of chronic inflammation of the bladder.

Dose.—Gr. x. to ℥ss.

In pills, combined with opium, henbane, or lettuce ; and always washed down with some demulcent.

EXTRACTUM SARSÆ.

Extract of Sarsaparilla.

This Extract is prepared in the same manner as the Extract of Gentian.

Remedial Use.—It was extensively employed by Mr. Pearson in secondary syphilis, pharyngeal and tonsillar ulcerations, in habits impaired by mercury, &c. ; but it is now believed to be the least efficient form of sarsaparilla. It is sometimes prescribed as in the annexed formula.

Dose.—Gr. x. to ℥ss.

℞ Hydrargyri Bichloridi (P.N.) gr. j.
Solve in Spiritus Vini, q. s. adde Extracti Sarzæ, ℥iij.
Decoc. Sarzæ, f℥viij.
M.

Dose.—One large tablespoonful three times a-day.

EXTRACTUM TARAXACI.

Extract of Dandelion.

This Extract is prepared in the same manner as the Extract of Gentian.

Remedial Action.—It is said to mulge the liver ; or, in other words, to relieve a distended and torpid state of its vessels by promoting the

The root has been analysed by several chemists without the slightest apparent analogy in the results.

Cautions.

secretion of bile. On authorities which may be traced to the astrological botanists, it is called a diuretic and an alterative. It is sensibly bitter, and so far it is a stomachic, and may be useful in cases of debility of the gastric organs. Like Succory or Chicory, the root is roasted as a substitute for coffee, and for improving its flavour.

Dose.—Gr. x. to ʒj. or more.

EXTRACTUM UVÆ URSI.

Extract of Whortleberry [leaves].

Formula.

℞ Extracti Uvæ Ursi,
Ext. Hyoscyami, ā ā
ʒss.
M.
Ft. pil. xij.
Two every six hours,
washed down with a
solution of gum arabic.

This Extract is prepared in the same manner as the Extract of Gentian.

Remedial Use.—*Vide* Decoctum Uvæ Ursi. In calculous deposit, with muco-purulent discharge of the bladder, particularly in the phosphatic pasty secretion, this form is useful; and the more so, because, in such cases, the daily and long-continued taking of remedies produces an utter abhorrence of all physic. The pills, in such cases, may be taken with less repugnance than the decoction. The Editor has repeatedly tried the uva ursi, pareira, and buchu, and has remarked that the patients themselves have always given evidence in favour of the two last.

Dose.—Gr. v. to ʒj. with an anodyne.

EXTRACTUM JALAPÆ.

Extract of Jalap.

The powder should yield 66 per cent. of extract.

N. B. The Root is often adulterated with bryony, which is of a looser fibre, and does not burn at the flame of a candle like the jalap-root. The worm-eaten roots are said to be the best.

Take of Powdered Jalap, two pounds and a half;
Rectified Spirit, a gallon;
Distilled Water, two gallons:

Macerate the Jalap Root in the Spirit for four days, and decant the Tincture. Boil the residue in the Water down to half a gallon. Next, separately strain the Tincture and Decoction. Evaporate the former, and distil the latter, until both begin to thicken. Lastly, mix the Extract with the Resin, and evaporate to a fit consistence. Let this Extract be kept *soft*, so that it

may be suitable for pills; and *hard*, that it may be powdered when required.

Remedial Action.—Jalap has been ranked with the drastic purges; but, in moderate doses, and when exhibited in fine powder, it is an equable cathartic, operating on the alvine canal, with little or no griping; and still more effectually when combined with calomel, or with the neutral salts, as, for example, with the bitartrate of potassa [cream of tartar], according as we may wish it to act more on the liver, or on the serous exhalants. It operates on the nerves primarily, and even if applied externally, it will induce purging. The watery extract is preferable for children. Aromatic essential oil, or a little camphor, will prevent griping.

Dose of the extract, gr. viij. to ʒj.

EXTRACTUM OPII PURIFICATUM.

Purified Extract of Opium.

Take of Sliced Opium, twenty ounces;
Distilled Water, a gallon:

Add a little of the Water to the Opium, and macerate for twelve hours, that it may soften; then the remaining Water having been gradually dropped in, rub until completely mixed, and set aside, that the dregs may subside; then strain the liquor, and evaporate to a fit consistence.

Remedial Action.—*Vide* Morphine Hydrochloras, and Tinctura Opii. While some are of opinion that this extract is stronger than crude opium, others prefer the latter as more certain.

Dose.—Gr. j. to gr. v.

EXTRACTUM PAPAVERIS.

Extract of Poppy.

Take of the Poppy [heads], bruised, and freed from seeds, fifteen ounces;
Boiling Distilled Water, a gallon:

Cautions.

The supposition of an active principle, "jalapine," has, we believe, turned out a fallacy.

We are indebted to Dr. J. R. Coxe for a correct description of the plant. He obtained it from Mexico, and cultivated it.

The aqueous solution of opium reddens litmus.

Antidote:—

An emetic (or the stomach pump), and afterwards exhibit cordials with ammonia, and, intermediately, strong coffee. The Editor was the first person who recommended the cowhage externally as an excitant. Nettles, externally, and the occasional dashing of cold water, will be useful. *Vide* Supplement, p. 170.

Cautions.

The seeds are directed to be removed here, but neither in the decoction nor in the syrup. They ought, however, to be removed in the syrup, or it will ferment in a few days.

Macerate for twenty-four hours ; then boil down to four pints, and strain the liquor while hot ; finally, evaporate to a due consistence.

Remedial Use.—As an anodyne.

Dose.—Gr. ij. to gr. x. Said to contain one grain of morphia in seven grains. In practice, however, five grains are not considered more than equal to one of opium.

EXTRACTUM RHEI.

Extract of Rhubarb.

The active principle volatilizes by long exposure to heat.

Rhubarb is incompatible with the strong acids, lime-water, sulphate of iron, and of zinc, nitrate of silver, emetic tartar, corrosive sublimate, &c.

Take of Rhubarb, in powder, fifteen ounces ;
Proof Spirit, a pint ;
Distilled Water, seven pints :

Macerate for four days in a gentle heat ; then strain, and set aside to clear. Pour off the liquor, and evaporate it, freed from all dregs, down to a fit consistence.

Medicinal Use.—Astringent, stomachic, in smaller doses. In larger doses, laxative. Rhubarb is more eligible where intestinal debility prevails, or where diarrhœa is dreaded, on account of its invigorating effect on intestinal fibre. This form, however, is objectionable.

Dose.—Gr. v. to ʒss.

EXTRACTUM STRAMONII.

Extract of Stramonium, or Thorn-Apple Seed.

Take of Stramonium-Seed, fifteen ounces ;
Boiling Distilled Water, a gallon :

Macerate for four hours near the fire in a vessel lightly closed ; then take out the Seeds, and, having bruised them in a stone mortar, return them to the

liquor. Boil down to four pints; and, having strained the hot liquor, finally, evaporate to the due consistence.

Remedial Action.—This extract was introduced by the late Dr. Marcet for the same affections (paralysis, &c.) for which the acrid vegetable alkalies are now so much employed. Stoërck used it in insanity, because he was led to believe that as it deranged the intellect of the sane, it might correct that of the insane! Homœopathia is not so new as some folks imagine. Its advocates should certainly try stramonium.

Dose.—Gr. $\frac{1}{4}$ to gr. ij.

Cautions.
—

INFUSA.

Infusions.

INFUSIONS are prepared by pouring a liquid, usually heated, but sometimes cold, on the substance from which we wish to extract the remedial principles. The temperature, and the duration of the process, vary according to the nature of the substances. The maceration ought sometimes to be employed at a mean temperature, previously to pouring on the boiling water. Most of the properties of vegetables, except the resinous, are partially soluble in water; but as they are susceptible of rapid decomposition, they cannot be preserved more than a short time, and ought to be made as occasion may require. Watery infusions, slightly charged with remedial principles, are called by our continental brethren, *Tisans*, and are of considerable utility as auxiliary drinks. When thus employed, as their use must be continued for a long time, they must be varied and rendered palatable, or as little disagreeable as possible. Solid substances should be coarsely powdered or sliced, as, if in fine particles, they cohere and prevent the action of the menstruum. Distilled, or at least the softest water, should always be employed. Dried vegetables are preferable in the majority of instances. For remarks on concentrated infusions, *vide* Supplement, p. 56.

INFUSUM ANTHEMIDIS.

Infusion of Chamomile.

Take of Chamomile, five drachms;

Boiling Distilled Water, a pint:

Macerate for ten minutes in a vessel lightly covered, and strain.

Incompatible with ferruginous salts, with the acetates of lead, &c.

Cautions.

Remedial Action.—Stomachic; tonic in dyspepsia. Dr. Heberden believed chamomile to possess emmenagogue virtues. Externally, as an anodyne in fomentations. The warm infusion is also employed to promote the operation of emetics.

Dose.—fʒj. upwards.

INFUSUM ARMORACIÆ COMPOSITUM.

Compound Infusion of Horse-Radish.

Incompatible with alkaline carbonates, salts of mercury, preparations of Peruvian bark, and galls.

Take of Horse-Radish, sliced,
Mustard-Seed, bruised, of each, an ounce;
Compound Spirit of Horse-Radish, a fluid-ounce;
Boiling Distilled Water, a pint:

Macerate the Root and the Seeds in the Water for two hours in a vessel lightly covered, and strain; then add the Compound Spirit of Horse-Radish.

Remedial Use.—Stimulant, diuretic. Externally, rubefacient. The French use it largely as an antiscorbutic. A few drops of Liquor Ammoniaë may be occasionally added to increase its effects.

Dose.—fʒss. to fʒij.

INFUSUM AURANTII COMPOSITUM.

Compound Infusion of Orange-Peel.

The outer rind of the Seville orange.

It is best purchased from the fruiterers in Covent Garden.

Take of dried Orange-Peel, half an ounce;
Fresh Lemon-Peel, two drachms;
Bruised Cloves, a drachm;
Boiling Distilled Water, a pint:

Macerate for a quarter of an hour in a lightly covered vessel, and strain.

Remedial Use.—A warm stomachic.

Dose.—fʒj. to fʒiv.

INFUSUM CALUMBÆ.

Infusion of Calomba.

Take of sliced Calomba, five drachms ;
Boiling Distilled Water, a pint :

Macerate for two hours in a vessel lightly covered,
and strain.

Remedial Use.—A simple tonic, in a moderate dose strengthening the gastric organs, without irritating the stomachic. Supposed to be efficacious in allaying the vomiting attendant on pregnancy.

Dose.—f℥ss. to f℥iss.

INFUSUM CARYOPHYLLI.

Infusion of Cloves.

Take of Cloves, bruised, three drachms ;
Boiling Distilled Water, a pint :

Macerate for two hours in a vessel lightly covered,
and strain.

Remedial Use.—Aromatic, a cordial adjunct to other medicines. Water, however, is an indifferent menstruum for cloves.

Dose.—f℥ss. to f℥iss.

INFUSUM CASCARILLÆ.

Infusion of Cascarilla.

Take of bruised Cascarilla, an ounce and a half ;
Boiling Distilled Water, a pint :

Macerate for two hours in a vessel lightly covered,
and strain.

Cautions.

This infusion will barely keep 24 hours. In two days it becomes ropy.

The bark of true calomba is yellow ; that of the false is a fallow gray. The true calomba is coloured blue by tincture of iodine. The false is not affected by it.

Compatible with ferruginous salts.

Incompatible with salts of lead, corrosive sublimate, &c.

Incompatible with sulphate of iron, sulphate of lead, emetic tartar, nitrate of silver, acetate of lead, and infusion of cinchona.

Formula.

℞ Cascarillæ Pulv.
subtil. ℥ss.
Vini Xerici calidi,
℥ij. M.

Exhibited every four hours, in low fevers.

Cautions.

Cascarilla is incompatible with lime-water, infusion of gall-nuts, sulphate of iron, and sulphate of zinc.

Remedial Action.—In small doses cascarilla acts as a warm stomachic, increasing the energy of the gastric organs. In larger doses it sensibly increases the energy of the circulating system, promoting diaphoresis. Hence, its use in low fever, in confluent small-pox, diarrhœa, and the sequel of dysentery, and in obstinate intermittents, with a languid, atonic state of the skin.

Dose.—fʒss. to fʒij.

INFUSUM CATECHU COMPOSITUM.

Compound Infusion of Catechu.

Incompatible with alkalies, metallic salts, especially the ferruginous, and with gelatin.

Vulgo, Japan earth.

Take of Extract of Catechu, coarsely powdered, six drachms ;

Bruised Cinnamon, a drachm ;

Boiling Distilled Water, a pint :

Macerate for an hour in a vessel lightly covered, and strain.

Remedial Use.—Astringent in diarrhœas, chronic dysentery, atonic hæmorrhage ; and locally to constrict mucous surfaces when morbidly relaxed.

Dose.—fʒss. to fʒiss.

INFUSUM CINCHONÆ (LANCIFOLIÆ).

Infusion of Cinchona (lance-leaved).

When bark produces vomiting, it fails in all its febrifuge properties.

An infusion of ʒj. of the bark with a pint of lime water is the formula of the United States.

Take of Lance-leaved Cinchona, bruised, an ounce ;
Boiling Distilled Water, a pint :

Macerate for six hours in a vessel lightly covered, and strain.

Remedial Use.—*Vide* Decoctum Cinchonæ, and Quinæ Disulphas.

Dose.—fʒss. to fʒiss.

INFUSUM CUSPARIÆ.

Infusion of Cusparia.

Take of Cusparia, bruised, five drachms ;
Boiling Distilled Water, a pint :

Macerate for two hours in a vessel lightly covered,
and strain.

Remedial Action.—This somewhat acrid bitter has also a small degree of astringency, although it contains neither tannin nor gallic acid. It is a stimulating tonic, exciting the digestive organs, increasing appetite, and facilitating digestion. Alibert denies its febrifuge properties.

Dose.—fʒss. to fʒiss.

INFUSUM DIGITALIS.

Infusion of Fox-glove.

Take of the leaves of Fox-glove, dried, a drachm ;
Spirit of Cinnamon, a fluidounce ;
Boiling Distilled Water, a pint :

Macerate the leaves in the Water for four hours in a vessel lightly covered, and strain ; then add the Spirit.

Remedial Action.—*Vide* Tinct. Digitalis.

Dose.—fʒij. to fʒj.

INFUSUM DIOSMÆ.

Infusion of Diosma (Buchu).

Take of Buchu Leaves, an ounce ;
Boiling Distilled Water, a pint :

Cautions.

Vulgò “ Angustura
Bark, Sword Bark.”

Incompatible with
the sulphates of iron
and copper, corrosive
sublimate, &c. Said
to contain a matter
resembling cinchonia.

Mark ! Whether by
error or design, the
College have ordered
a drachm to a pint
instead of a drachm
to half a pint, the old
standard. When the
practitioner orders the
infusion, what are you
to do ? unless he an-
nexes P. L. 1836 or
P. L. 1824.

It contains a vola-
tile oil and a resin,
the odour of which re-
sembles camphor and
rue.

Cautions.

The dried leaves are firm, of a yellowish or olive hue on the upper disk, pale and wrinkly on the lower: studded with glands.

Macerate for four hours in a vessel lightly covered, and strain.

Remedial Use.—In vesical catarrh, in phosphatic gravel. An excellent tonic and diuretic; exerting, at the same time, the power of diminishing vesical irritations. If the body is kept warm, it acts as a sudorific.

Dose.—fʒss. to fʒiss.

INFUSUM GENTIANÆ COMPOSITUM.

Compound Infusion of Gentian.

It is said by most pharmacutists to be incompatible with the salts of iron, but Dr. A. T. Thomson recommends such a combination. *Vide* his *Materia Medica*. Edit. 2d. 498.

Sulphate of iron strikes a brown colour, but without precipitation.

Take of Gentian, sliced, .

Orange-Peel, dried, of each, two drachms ;

Fresh Lemon-Peel, four drachms ;

Boiling Distilled Water, a pint :

Macerate for an hour in a vessel lightly covered, and strain.

Remedial Use.—The gentian itself is stomachic, tonic, and not altogether unmixed with aromatic property. *Vide* *Extractum Gentianæ*. The intense bitterness of the root is subdued by the aroma of the orange and lemon-peel.

Dose.—fʒss. to fʒiss.

INFUSUM KRAMERIÆ.

Infusion of Rhatany.

Rhatany Dentrifice.
℞ Rhatany, finely powdered, ʒj.
Cocoa-Nut Charcoal, ʒiij.
Mix.

Take of Rhatany, an ounce ;

Boiling Distilled Water, a pint :

Macerate for four hours in a vessel lightly covered, and strain.

Remedial Use.—Astringent. The Peruvians employ it in dysentery ; and form a tooth-brush of it to give firmness to the gums. The annexed powder is a good formula for a dentifrice.

Dose.—Of the infusion, fʒss. to fʒij.

INFUSUM LINI COMPOSITUM.

Compound Infusion of Linseed.

Take of Linseed, bruised, six drachms ;
Sliced Liquorice [Root], two drachms ;
Boiling Distilled Water, a pint :

Macerate for four hours near the fire, in a vessel lightly covered, and strain.

Remedial Use.—Demulcent ; emollient in phlegmasiæ of the urinary passages, chronic irritation of the bladder, vesical catarrh, &c.

Dose.—Ad libitum.

The linseed meal obtained from the mills is an improper substitute for either of the preparations of linseed.

Coarsely powdered linseed, and barley meal, *āā p. æ.*

Mixed up with decoction of mallows, form an excellent poultice.

INFUSUM LUPULI.

Infusion of Hops.

Take of Hops, six drachms ;
Boiling Distilled Water, a pint :

Macerate for four hours in a vessel lightly covered, and strain.

Remedial Use.—Anodyne, stomachic. *Vide Extractum Lupuli.*

Dose.—*fʒj.* to *fʒij.*

In the last Pharmacopœia, the term *Humulus* was employed. It is now changed without being noticed in the List of New and Old Names.

Incompatible with the mineral acids, ferruginous salts, salts of lead, silver, and mercury.

INFUSUM PAREIRÆ (BRAVÆ).

Infusion of Pareira.

Take of Pareira Root, six drachms ;
Boiling Distilled Water, a pint :

Macerate for two hours in a vessel lightly covered, and strain.

Remedial Use.—In vesical catarrh and obstructions of the urinary organs. *Vide Extractum Pareiræ.* It diminishes the irritability of the bladder. Sir B. Brodie prescribes it with small doses of henbane, and, in the phosphatic diathesis, with nitric acid.

Dose.—*fʒj.* to *fʒij.*

R. Ext. Pareiræ, *ʒij.*

Infusi ejusdem, *fʒvj.*

M.

Dose.—*fʒss.* to *fʒj*
three times a day.

Cautions.

Incompatible with nitrate of silver, and the acetate of lead.

Compatible with salts of iron, &c.

" Bitter principle, Quassin."

It will not induce vomiting, or phlogistic action, or hæmorrhage, like the cinchonas and the sulphate of quina.

Take of Quassia, sliced, two scruples ;
Boiling Distilled Water, a pint :

Macerate for two hours in a vessel lightly covered, and strain.

Remedial Use.—An energetic tonic, without acting as an excitant on the circulating system. Equal or superior to cinchona almost in every case, if we except intermittent fevers.

Dose.—f̄ss. to f̄ij.

INFUSUM QUASSIÆ.

Infusion of Quassia.

INFUSUM RHEI.

Infusion of Rhubarb.

Incompatible with the strong acids, salts of iron, emetic tartar, infusion of catechu, bark, and cascarilla, &c.

Sydenham's Lenitive.

℞ Rhei Rad. concisæ,
℥ij.

Tamarindici, ℥ij.

Sennæ fol. ℥ss.

Sem. Coriandri, ℥ij.

Aquæ ferventis, Oj.

Macera.

Take of Rhubarb, sliced, three drachms ;
Boiling Distilled Water, a pint :

Macerate for two hours in a vessel lightly covered, and strain.

Remedial Use.—Stomachic, astringent, or laxative, according to the dose employed. *Vide* Extractum Rhei.

Dose.—f̄ss. to f̄iv.

INFUSUM ROSÆ COMPOSITUM.

Compound Infusion of Roses.

Formula.

Infuse two or three drachms of the leaves in half a pint of boiling water; add half a pint of port wine, flavoured with cinnamon.

Dose, in diarrhœa, a wine-glassful.

Take of the French Rose [Petals], dried, three drachms ;
Diluted Sulphuric Acid, a fluidrachm and a half ;
Sugar, six drachms ;
Boiling Distilled Water, a pint :

Pour the Water on the Rose Petals in a glass

vessel, and mix in the Acid. Macerate for six hours, and having strained the Liquor, add the Sugar.

Remedial Use.—It is exhibited with advantage in passive hæmorrhages; but is commonly employed as a vehicle for sulphate of magnesia, and the disulphate of quina. The red rose itself is an astringent and tonic, and in the formula annexed, at p. 120, is useful in diarrhœa.

To macerate for six hours is surely longer than necessary.

Vide General Commentary on Infusions, in Supplement, p. 56.

Dose.—f̄ij. to ʒij.

INFUSUM SCOPARII.

Infusion of Broom.

Take of Broom [fresh tops], an ounce;
Boiling Distilled Water, a pint:

Macerate for four hours in a vessel lightly covered, and strain.

Remedial Use.—Diuretic. When it purges, it fails to act on the kidneys, and it arrests the urinary secretion. Dr. R. Pearson prefers the seeds in the form of a Tincture, ʒij. to ʒviij. of Proof Spirit, in the dose of f̄ij. to f̄ij. twice or thrice a day.

Dose.—f̄ij. to f̄iv.

INFUSUM SENNÆ COMPOSITUM.

Compound Infusion of Senna.

Take of Senna, fifteen drachms;
Ginger, sliced, four scruples;
Boiling Distilled Water, a pint:

Macerate for an hour in a vessel lightly covered, and strain.

Remedial Action.—Senna is a nauseating laxative purge, refrigerating the body, and lowering the circulation. Hence its fitness for febrile inflammatory diseases. This infusion should not be exposed to the air, for it will deposit a yellow matter and lose much of its purgative character. Saline purgatives are the best adjuncts to obviate griping. *Vide* General Commentary in Supplement, p. 57; and for the selection of senna, *vide* Syrup. Sennæ, p. 212.

Dose.—f̄iss. to f̄ij. in combination.

Cautions.

1000 grs. of red roses contain grs. 4 of oxide of iron.

Incompatible with sulphate of zinc and sulphate of iron.

℞ Inf. Rosæ Comp.

Quassia, āā ʒv.

M.

An elegant repressing tonic in fevers looking towards convalescence.

The fresh tops.

The tall garden-broom (*Spartium Junceum*) may be employed where the heath-broom cannot be procured.

The fresh tops are indicated in the columns of the *Materia Medica*.

Active principle, "Cathartine." It does not crystallize; it is neither acid nor alkaline; slightly deliquescent; of a reddish yellow colour; soluble in water and in alcohol.

Mixture for Black Draughts.

℞ Magn. Sulphat.,

Sodæ Sulphat., āā
℥ss.

Infusi Sennæ, f̄xvj.

Tinct. Sennæ Comp.

ʒiss.

Spt. Ammon. Arom.

ʒj.

Ext. Glycyrrh. ʒiss.

Aquæ Pimentæ, ʒiv.

M.

Cautions.

Virginian Snake-root.

The best mode of administering it is with warm wine, in equal parts.

INFUSUM SERPENTARIÆ.

Infusion of Serpentry.

Take of Serpentry, half an ounce ;
Boiling Distilled Water, a pint :

Macerate for four hours in a vessel lightly covered, and strain.

Remedial Action.—Cordial tonic, quickening the circulation ; and, if the body be kept warm, promoting diaphoresis. Hence its use in low fevers, to support action when languid.

Dose.—fʒss. to fʒij.

INFUSUM SIMAROUBÆ.

Infusion of Simarouba.

Incompatible with the alkaline carbonates and lime-water, which render it milky, corrosive sublimate, salts of lead, infusion of catechu, galls, yellow bark, &c.

Take of Simarouba, bruised, three drachms ;
Boiling Distilled Water, a pint :

Macerate for two hours in a vessel lightly covered, and strain.

Remedial Use.—Tonic, and slightly astringent in diarrhœa, chronic dysentery, dyspepsia, and in some few intermittents, when the cinchona bark, or its alkali, disagrees with the patient.

Dose.—fʒj. to fʒij.

INFUSUM VALERIANÆ.

Infusion of Valerian.

One ounce of valerian in eight ounces of rectified æther, forms a powerful æthereal tincture.

Take of Valerian, half an ounce ;
Boiling Distilled Water, a pint :

Macerate for half an hour in a vessel lightly covered, and strain.

Remedial Action.—Valerian is a powerful general excitant. Its

influence is principally felt in the brain. It causes dazzling, convulsive contractions, agitation, &c., when exhibited in full doses. In smaller doses, it is a tonic, antispasmodic, used advantageously in hysteric epilepsy, some kinds of headach, and other nervous diseases. So, also, in nervous fever, and in obstinate intermittents.

Dose.—Of the infusion, $\text{f}\bar{\text{z}}\text{j}$ to $\text{f}\bar{\text{z}}\text{ij}$.

Cautions.

It yields a volatile oil, the dose of which is Mij . to Mvj . which has been introduced into the Prussian Pharmacopœia.

LINIMENTA.

Liniments.

LINIMENTUM ÆRUGINIS.

Liniment of Verdigris.

Take of Verdigris, powdered, an ounce ;
Vinegar, seven fluidounces ;
Honey, fourteen ounces :

Dissolve the Verdigris in the Vinegar, and strain through linen ; then, having added the Honey, boil down to a proper consistence.

Remedial Use.—Used as a detergent for foul ulcers in the throat ; but it requires care, for if swallowed, it will induce vomiting and hypercatharsis. *Vide* Supplement, p. 57.

Be careful in the selection ; for the English verdigris consists of sulphate of copper mixed with acetate of lead.

In the Latin text you are directed to drop in or instil the honey, “ instillato melle.”

LINIMENTUM AMMONIÆ.

Liniment of Ammonia.

Take of Liquor of Ammonia, a fluidounce ;
Olive Oil, two fluidounces :

Shake them together until mixed.

Remedial Use.—Externally as a counter-irritant in angina. It may be used also in chronic rheumatism, hooping cough, bronchitis, pneumonia, &c. I was once called in to a gentleman who, for a cynanche, had swallowed $\bar{\text{z}}\text{ij}$. of this liniment, and was rubbing the outside of his throat with a black draught. The labels had been misplaced.

Mind your label !

$\mathcal{R}$ Antim. Tart. $\bar{\text{z}}\text{ss}$.
Liniment. Ammonia, $\bar{\text{z}}\text{iss}$.
Commisce.
Ft. Liniment.

For counter-irritation in pneumonia, bronchitis, &c.

Cautions.

LINIMENTUM AMMONIÆ SESQUICARBONATIS.

Liniment of Sesquicarbonate of Ammonia.

Mind your label!

The sesquicarbon-
ate, formerly called
subcarbonate of am-
monia.

Take of Liquor of Sesquicarbonate of Ammonia, a fluid-
ounce;

Olive Oil, three fluidounces:

Shake them together until mixed.

Remedial Use.—Same as the last, but the union is less complete.

LINIMENTUM CAMPHORÆ.

Liniment of Camphor.

*Ware's Liniment for
Amaurosis.*

℞ Linim. Camphoræ,
℥j.
Liq. Potas. Carbon.
℥j. M.

Take of Camphor, an ounce;

Olive Oil, four fluidounces:

Dissolve the Camphor in the Oil.

Remedial Use.—Slightly stimulating externally, and commonly employed in sprains, chronic rheumatism, gout, &c. It is, however, more efficacious in nervous affections, spasm of the bladder, hysteria, chorea (rubbed over the spine); and also rubbed over the abdomen in gripes, spasmodic colic, &c.

LINIMENTUM CAMPHORÆ COMPOSITUM.

Compound Liniment of Camphor.

Ward's Essence for
the Headach is very
similar to this Lini-
ment.

Take of Camphor, two ounces and a half;

Liquor of Ammonia, seven fluidounces and a
half;

Spirit of Lavender, a pint:

Mix the Liquor of Ammonia with the Spirit; then,
from a glass retort, distil a pint with a slow fire. Lastly,
in this dissolve the Camphor.

Remedial Use.—Powerfully stimulant. *Vide* Liniment. Camphoræ.

Cautions.

LINIMENTUM HYDRARGYRI COMPOSITUM.

Compound Liniment of Mercury.

Take of Stronger mercurial Ointment,
Lard, of each, four ounces ;
Camphor, an ounce ;
Rectified Spirit, a fluidrachm ;
Liquor of Ammonia, four fluidounces :

It contains one
drachm of mercury in
about six drachms.

First rub the Camphor with the Spirit, then with the Lard and mercurial Ointment : lastly, having gradually dropped in the Liquor of Ammonia, mix all.

Remedial Action.—Excitant, both locally and generally, according to the extent of the friction. About a drachm may be rubbed in twice a day, when its specific effects are aimed at.

LINIMENTUM OPII.

Liniment of Opium.

Take of Liniment of Soap, six fluidounces ;
Tincture of Opium, two fluidounces :

Mix.

Remedial Use.—Very useful, as an anodyne liniment, in local pains ; but when the superficial soft parts acutely sympathise, friction is inconvenient, and fomentations or light poultices are preferable.

When you have mixed this and other liniments, in dispensing, do not set down on the counter until you have affixed your label. A charge of manslaughter is a troublesome affair.

LINIMENTUM SAPONIS.

Liniment of Soap.

Take of Soap, three ounces ;
Camphor, an ounce ;
Spirit of Rosemary, sixteen fluidounces :

This ought to have been called Liniment. Saponis Compositum.

*Cautions.**Steer's Opodeldoc.*Castile Soap, $\bar{3}j$.Rect. Spirit. f $\bar{3}viij$.Camphor, $\bar{3}iijss$.Ol. Rorism. $\bar{3}ss$.Ol. Origani, $\bar{3}j$.Liq. Ammoniae, f $\bar{3}vj$.

M.

*Bates's Anodyne Balsam.*Steer's Opodel. $\bar{3}ij$.Laudanum, $\bar{3}j$. M.

Dissolve the Camphor in the Spirit; then add the Soap; and macerate with a gentle heat, until it is dissolved.

Remedial Action.—Few persons regard with attention the medicinal action of soap. It is a powerful stimulant. Taken internally, it stimulates the digestive organs, promotes the urine, and, if long continued, it induces paleness, emaciation, and debility; and also as a lithontriptic it is useful in acid gravel. Externally (our more immediate consideration), it moderately stimulates the glandular system, in tumours and obstructions.

LINIMENTUM TEREBINTHINÆ.

Liniment of Turpentine.

℞ Cerati Resinæ, lbss.

Ol. Terebinthinæ,

f $\bar{3}iv$.

Misce. Ft. Lin.

Take of Soft Soap, two ounces;

Camphor, an ounce;

Oil of Turpentine, sixteen fluidounces:

Shake them together until mixed.

Remedial Action.—A powerful stimulant in lumbago, and latterly much extolled as an embrocation in cholera. A liniment of turpentine prepared by the annexed formula is an excellent dressing for severe burns and atonic ulcers.

MELLITA.

Preparations of Honey.

MEL BORACIS.

Honey of Borax.

Incompatible with acids, and, therefore, incompatible with Inf. Rosæ C., with which, however, it is often prescribed.

Take of Borax, powdered, a drachm;

Honey, an ounce:

Mix.

Remedial Action.—Slightly astringent, detersive, and cooling.

Use.—Employed in aphthæ and excessive salivation. Honey may be purified by keeping it for some time in a water-bath at a temperature of 212°. Wax and other impurities are thus partly deposited, and partly rise as a scum. For tests of its purity, *vide* Notes.

Cautions.

℥j. of common honey in ℥xij. of gruel forms a mild enema for low fevers.

MEL ROSÆ.

Honey of Roses.

Take of the dried [Petals of] the French (Red) Rose, four ounces ;

Boiling Water, two pints and a half ;

Honey, five pounds :

Formula.

℞ Boracis Pulv. ℥ij.
Aque Rosæ, f℥viij.
Mel Rosæ, ℥j.
Ft. Gargarizatio.

Macerate the Rose Petals in the Water for six hours ; then add the Honey to the strained liquor, and boil down, in a water-bath, to a due consistence.

The College Translator orders distilled water, but it is not so in the Latin.

Remedial Use.—An elegant ingredient in astringent gargles.—*Vide* the formula annexed.

OXYMEL.

Take of Honey, ten pounds ;

Acetic Acid, a pint and a half :

Mix the Acid with the Honey previously made hot.

Remedial Use.—For a detergent, but very powerful.

OXYMEL SCILLÆ.

Oxymel of Squills.

Take of Honey, three pounds ;

Vinegar of Squills, a pint and a half :

Boil down in a glass vessel, with a slow fire, to a due consistence.

You ought not to use this in dispensing without a distinct understanding with the prescriber of it. The Editor has taken the trouble to prepare it, and finding that the College Translator prescribes the dose from a fluidrachm to a fluidounce, feels it his duty to remark, that it is not a fluid in such proportions, and that in such a dose it is so powerful, that it would induce spasmodic cough, gripes, &c.

Cautions.

℞ Oxymel Scillæ, ʒj.
 Syrup. Altheæ, ʒij.
 Mucil. Acaciæ, ʒj.
 M.

Remedial Action.—Stimulating expectorant in bronchitis, and in the sequel of pneumonia, &c. Oxymel of squills, like some other expectorants, produces more beneficial effects by being frequently smeared over the tongue and the back of the throat.

Dose.—fʒj. to fʒij.

METALLICA.

Metallic Compounds.

PRÆPARATA EX ALUMINIO.

Preparations of Aluminium.

ALUMEN EXSICCATUM.

Dried Alum.

The heat must be moderate, or a portion of sulphuric acid will be driven off.

Incompatible with alkalis, and their carbonates, lime, magnesia, mercurial salts, acetate of lead, infusion of cinchona, galls, &c.

℞ Aluminis exsiccāt.
 Pulv. ʒss.
 Opii Pulv. ʒj.
 Ung. Cetacei, ʒij.
 Ol. Olivæ, fʒj.
 Ft. Ung.

An excellent ointment in purulent ophthalmia, ophthalmia tarsi, &c.

Astringent Pills.

℞ Aluminis, gr. vj.
 Ext. Opii, gr. j.
 Catechu, ʒj.
 Syrup. q. s.
 Ft. Pil. vj.

One after each lax motion in serous diarrhœa.

Melt your Alum in an earthenware vessel over the fire; then let the fire be raised until ebullition has ceased.

Chemical, &c.—It consists of one equivalent of sulphate of potassa and three of sulphate of alumina, according to Dr. Thomson, but variously estimated by other chemists.—*Vide* Notes, and Supplement, p. 61.

Remedial Action.—Alum is an energetic astringent; it often produces a painful sensation in the stomach; and in large doses causes colic, for which disease however it has been recommended. It is chiefly employed for uterine hæmorrhage, relaxed mucous membrane, and in an ointment for ophthalmia, as in the annexed formula. For urethral injections, gr. xvij. dissolved in fʒvj. of rose water. Vaginal injection, ʒij. to a quart of water.

Dose.—Gr. v. to ʒj.

Cautions.

LIQUOR ALUMINIS COMPOSITUS.

Compound Liquor of Alum.

Take of Alum,
Sulphate of Zinc, of each, an ounce ;
Boiling Water, three pints :

Dissolve together the Alum and Sulphate of Zinc in the Water ; afterwards strain.

Remedial Use.—It is commonly used as a collyrium, as an ingredient in gargles for aphthæ, chronic ulcers of the fauces, and for chilblains ; in which latter case, however, the ointment annexed in p. 128 is preferable. Both the dried powder blown into the nostrils, and the solution of alum thrown up by means of a syringe, are useful in diminishing the size of soft polypi ; and the same effect is produced on spongy granulations, and other fungous excrescences. It is a powerful styptic.

Collyrium.

℞ Liq. Alum. C. ℥ss.
Aquæ Rosæ, ℥vss.
Tinct. Opii, f℥j. M.

Alum Whey.

℞ Lactis Vaccini,
℥xvj.
Pulv. Aluminis, ℥j.
Boil, and remove the curd.

PRÆPARATA EX ANTIMONIO.

Antimonials.

ANTIMONII OXYSULPHURETUM.

Oxysulphuret of Antimony.

Take of Sesquisulphuret of Antimony, powdered, seven ounces ;
Liquor of Potassa, four pints ;
Distilled Water, two gallons ;
Diluted Sulphuric Acid, a sufficiency :

Intermix the Sesquisulphuret of Antimony, the Liquor of Potassa, and the Water, and boil over a slow fire for two hours, occasionally stirring, and frequently

Former Names.

Antimonii Sulphure-
tum Precipitatum.
Sulphur Antimonii
Precipitatum. Gold-
en Sulphuret of An-
timony. Sulphuret-
ted Hydrosulphuret
of Antimony.
The Sesquisulphu-
ret of Antimony is the
Crude Antimony of
commerce.

Cautions.

adding more distilled Water, so that it may nearly fill the same measure. Strain the Liquor, and gradually drop into it as much [diluted] Sulphuric Acid as may suffice for throwing down the Oxysulphuret of Antimony; then wash away the Sulphate of Potassa with Water, and dry the residue with a gentle heat.

℞ Antimonii Oxy-
sulph., gr. j.
Hydrarg. (Proto)
Chloridi, gr. ss.
Ext. Conii, gr. iv.
ft. Pilula.
Bis quotidie sumenda.

Chemical, &c.—*Vide* Notes, and Supplement, p. 62.

Remedial Action.—It is commonly employed in old venereal affections, and in chronic diseases of the skin, as an alterative diaphoretic, and more especially in herpes.

College Preparation.—Pilulæ Hydrargyri [Proto] Chloridi compositæ; *vulgò*, Plummer's pills.

Dose.—Gr. j. to gr. v.

ANTIMONII POTASSIO-TARTRAS.

Potassio-Tartrate of Antimony.

Former Names.
Antimonium Tartari-
zatum.
Emetic Tartar.
In the Paris Phar-
macopœia, Supertar-
trate of Antimony and
Potassa.

Crystals, tetrahedral and octohedral; colourless; inodorous; taste styptic, somewhat like cream of tartar, and afterwards nauseous.

Incompatible with the concentrated acids, alkalis and their carbonates; also with most vegetable astringents, and even with water unless distilled.

Take of Sesquisulphuret of Antimony, powdered,
Nitrate of Potassa, powdered, of each, two pounds;
Bitartrate of Potassa, powdered, fourteen ounces;
Hydrochloric Acid, four fluidounces;
Distilled Water, a gallon:

Accurately mix the Sesquisulphuret of Antimony with the Nitrate of Potassa, adding the Hydrochloric Acid by little and little, and ignite the powder spread over an iron plate. Rub the residue, when cool, into a very fine powder, and wash it with boiling water frequently poured thereon, until tasteless. Mix the powder thus prepared, with the Bitartrate of Potassa, and boil for half an hour in a gallon of distilled Water. Strain the liquor while hot, and set aside that crystals may form. Having removed these crystals and dried them, again let the

liquor be evaporated, that a second crop of crystals may be formed.

Chemical, &c.—Its composition is variously stated by different chemists. According to the most recent notion (which will probably give way to some other before the year is out), it consists of one equivalent of Bitartrate of Potassa and one of Ditartrate of Antimony.—*Vide Notes, and Supplement, p. 63.*

Remedial Action.—It is essentially an irritant on any part with which it comes in contact, whether externally or internally; and this impression leads to all the other well-known effects of the salt. It will inflame the skin; and so, in like manner, it will inflame the intestinal canal. In doses of a grain it will vomit and purge with extreme depression both of muscular powers and mental energy. In minute doses it will, for the most part, induce sweating; but, even if these be frequently repeated, the patients soon experience nausea and languor the most distressing, and often declare the condition to be so intolerable, that they would even renounce the cure rather than persist in it. Its vomiting effect does not depend on its coming in contact with the stomach, for, if introduced into a vein, or applied externally upon any absorbing surface, it will produce the same operation. Later observers have discovered, that if a solution of from two to five grains be taken at a dose, it will vomit and purge severely for two or three times; but that, if the same quantity be repeated every two or three hours afterwards, neither the vomiting nor purging will be again induced. Furthermore, the dose may be augmented to half a drachm, and may be continued for a week or more, and yet no subsequent inconvenience, except thirst or, sometimes, a tormenting hunger, is experienced. Some patients, however, continue from the first to be much irritated by the remedy, and on them it produces hypercatharsis, or, if its use be persisted in, inflammation of the mucous lining of the alimentary canal. Laennec attributed to it a special property of rendering absorption more active. English practitioners have always used it to promote absorption; but this latter effect they have considered to be the result of the nausea, as with regard to other nauseating remedies and as in sea-sickness.

From the above it may be inferred, that this salt may be employed to fulfil very different indications. 1st. To relax the skin, the pulmonary exhalants, or the fibre of the body generally; to keep down vascular action, and to promote absorption. 2d. As a contra-stimulant; thus artificially producing a temporary disease in the alimentary tract, in order to suspend inflammation of parenchyma. To fulfil indications of the first class, it is employed in fevers and many inflammatory diseases, rheumatism, cynanche of various kinds, and in nearly all phlogistic diseases, if we except those which more immediately attack the stomach

Cautions.

Laennec's Contra-stimulant Draught.

℞ Ant. Potassio-tartratis, gr. ij.

Aquæ Aurantii, f ʒiss.

Syrup. Papav. albi, f ʒij.

M. Ft. Haustus.

Every two hours in pneumonia, &c.

Emetic Tartar Ointment.

℞ Antim. Pot. Tart. ʒiss.

Adipis, ʒj. M.

And in plaster, 10 grs. upwards, but two or three grains will often suffice.

Antimonial Purgative.

℞ Magnesiae Sulph., ʒiss.

Antimonii Potass. Tart., gr. j.

Aquæ destillat., ʒvj. M.

Cochl. tria larga 4tis horis, in active fevers, phrenitis, &c.

Cautions.

and bowels. To accomplish the second or counter-stimulating indication, it is employed in large doses chiefly in pneumonia. It is also added to cathartic compounds to increase their operation, and is applied externally as a counter-irritant.

Dose.—Diaphoretic, expectorant, gr. $\frac{1}{8}$ to gr. $\frac{1}{4}$; emetic, gr. j. to gr. iv. in solution; contra-stimulant, gr. ij. to ℥j.

VINUM ANTIMONII POTASSIO-TARTRATIS.

Wine of Potassio-Tartrate of Antimony.

Vulgò, Antimonial Wine.

It contains gr. j. in f℥ss.

Decoction of yellow bark, or finely powdered galls, diffused in water, will be the best antidote for emetic tartar.

Ward's Red Drop is a strong vinous solution of emetic tartar.

Take of Potassio-Tartrate of Antimony, two scruples;
Sherry Wine, a pint:

Dissolve the Potassio-Tartrate of Antimony in the Wine.

Remedial Use.—*Vide* Antimonii Potassio-Tartras.

Dose.—℥xx. to f℥j. or, as an emetic, f℥ss. to f℥jiss.

PULVIS ANTIMONII COMPOSITUS.

Compound Powder of Antimony.

Vulgò, Pulvis Antimonialis.

Take of Sesquisulphuret of Antimony, powdered, a pound;
(Hart's) Horn Shavings, two pounds:

A dull red heat is preferable.

Mix, and throw them into a crucible at a white heat, and stir constantly, until a vapour no longer ascends. Rub the residue to a powder, and put it into a proper crucible. Then apply fire, and gradually increase it, that it may be at a white heat for two hours. Finally, powder the residue.

Chemical, &c.—Said to consist of variable proportions of Antimonious Acid and Phosphate of Lime.—*Vide* Notes, and Supplement, p. 65. James's powders contain a greater proportion of the acid.

Remedial Action.—Said to be diaphoretic, and purgative. This medicine affords a useful lesson, not only to the medical profession, but to mankind in general, instructing the first to be careful in appreciating the effects of remedial agents, and the second not necessarily to pin their faith to medical creeds, however respectably supported. Pulvis antimonialis, during the last century and a part of the present, was extolled in language as extravagant as that employed in the "*Currus Triumphalis*." It was pronounced adequate to shape the crisis of fever; to control phlogosis; to insure the separation of morbid humours, by inducing sweat, lax bowels, and a more equable action of heart and the arteries: and thousands are the physicians who have imagined they have seen the conflict between the remedy and the disease, and have watched the issue, first with anxiety, and then with triumph. History records the death of statesmen and philosophers from the unscientific and rash use of this mysterious panacea. Even the annals of parliament are not silent upon its merits. Now, however, we are told, that a physician has exhibited one hundred grains without the slightest effect; and, therefore, that it is little more active than powder of post. Thus, then, it is retained only in deference to the few who have not departed from the faith, and to the many who do to-day, and will continue to do to-morrow, that which they did yesterday, merely because they did it yesterday. Interposing our own opinion, we are equally disposed to deny its great activity, as we are indisposed to assert its entire inertness. In scruple doses it will usually excite one or two plentiful motions; and if its diaphoretic effects be uncertain, the same may be said of nearly every medicine appertaining to that class. In the Editor's time, at least a dozen different accounts have been given of the chemical analysis of this and of the true James's powder. Professor Brande confidently asserts, that in the specimens he analysed, he found varying proportions of the protoxide and deutoxide of antimony, together with phosphate of lime; while Mr. Phillips states, that both the College powder and that of Dr. James contain only antimonious acid (the deutoxide) and phosphate of lime. "Experience," says Dr. Paris, "has established the fact that James's powder is less active than the College preparation." The profession rail against nostrums, and yet encourage the sale of them.

Dose.—Gr. iij. to ʒj.

Cautions.

It is scarcely possible for the operative chemist to arrive at the same result twice together. At all events, out of half a dozen specimens procured from as many of the first houses, according to Professor Brande's experiments, no two were alike. It is therefore obvious, that the remedial effects must also vary.

James's Analeptic Pills.

℞ Pulv. Antimonialis,
Pil. Aloës cum Myrrhâ.
Ammoniaci, ā ā
p. æq.
Tinct. Castorei,
q. s. ut fiat massa.

Cautions.

PRÆPARATA EX ARGENTO.

Preparations of Silver.

ARGENTI CYANIDUM.

Cyanide of Silver.

Insoluble in water,
but readily soluble in
liquor of ammonia.

Take of Nitrate of Silver, two ounces and two drachms ;
Diluted Hydrocyanic Acid,
Distilled Water, of each, a pint :

Dissolve the Nitrate of Silver in the Water ; and, having added the diluted Hydrocyanic Acid, mix. Wash the precipitate with Distilled Water, and dry it.

Chemical, &c.—For theory and tests, *see* Notes, and Supplement, p. 66.

Remedial Use.—For the more immediate preparation of Hydrocyanic Acid.

ARGENTI NITRAS.

Nitrate of Silver [Fused].

Lunar Caustic.

Take of Silver, an ounce and a half ;
Nitric Acid, a fluidounce ;
Distilled Water, two fluidounces :

It fuses at 426°, and yields a crystalline mass on cooling ; but if the temperature exceeds 600° or 700°, complete decomposition ensues, and the mass loses much of its transparency. Applied to a sore, the silver is reduced to the metallic state.

Mix the Nitric Acid with the Water, and in these dissolve the Silver in a sand-bath. Then gradually raise the heat, that the Nitrate of Silver may be dried. Melt this in a crucible over a slow fire until, the Water being driven off, ebullition shall have ceased ; then immediately pour off into proper moulds.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 67.

Remedial Action.—It is the best cleanser of sores, acting as an escharotic or stimulant, according to the extent of the application, and the condition of the sore. It acts slowly on the skin, and rapidly on granulations; but the irritation and pain, although severe, are of shorter duration than when produced by other caustics. The eschar is thin, dry, and silvery. It is employed to stop the growth of fungous flesh; to prevent or destroy strictures of the urethra; and, latterly, those of the nasal passages likewise; to induce cicatrization in ulcers of the cornea; also in old fistulous sores, obstinate ulcers; and to destroy indolent chancres. Its powder applied to hospital gangrene stops its progress; and in linear erysipelas, in which the disease commences and proceeds in lines somewhat resembling packthread loosely thrown down in a coil, if the head or more vivid rosy part of the line be included in a ring pencilled out by this caustic, the disease ceases. The disease of which the Editor speaks is endemic (chiefly to children) in damp, aguish districts. Internally, Nitrate of Silver is a powerful poison; but in small doses it acts as a stimulant tonic, occasionally removing epilepsy. For the last purpose, the pills, as annexed, have been used with advantage; but it should be recollected that the remedy, if long persisted in, may induce permanent discoloration of the skin. In functional angina pectoris, the same form may be used. For urethral injections, gr. ij. to ʒviii. of distilled water, gradually increased until it produces the necessary degree of irritation. For vaginal injections, gr. x. to fʒviii., as also for collyriums.

Dose.—Gr. $\frac{1}{16}$ to gr. ij.

LIQUOR ARGENTI NITRATIS.

Liquor of Nitrate of Silver.

Take of Nitrate of Silver, a drachm;

Distilled Water, a fluidounce:

Dissolve the Nitrate of Silver in the Water, and strain; then keep it in a well-closed vessel, excluded from light.

Remedial Use.—When further diluted with distilled water, it is an excellent collyrium for purulent ophthalmia; but as above prepared it is employed as a test.—*Vide* Notes.

Cautions.

℞ Argenti nitratis,
gr. iij.

Extract. Opii, ʒss.

Moschi, ʒj.

Camphoræ, ʒij.

Formed into 48 pills with any convenient intermede.

Dose.—One pill three times a day.

The Antidote for Nitrate of Silver.—

Common salt in solution, and afterwards solution of Gum Arabic.

The fused nitrate is unfit for solution as a test. The crystals ought to be employed. The Editor speaks of the lunar caustic as supplied by manufacturing chemists. The pure nitrate is an extremely delicate test of organic matter. It reddens vegetable matter even after fusion. In pharmacy it is employed to determine the presence of chlorides and hydrochloric acid.

Cautions.

PRÆPARATUM EX ARSENICO.

Preparation of Arsenic.

LIQUOR POTASSÆ ARSENITIS.

. Liquor of Arsenite of Potassa.

Vulgo, Fowler's solution.

Arsenious acid, commonly called sublimed white arsenic.

Lime-water, albumen, gelatine broths, and free dilution, are the measures for counteracting this poison.

Incompatible with lime-water, hydrosulphuric acid, and the hydrosulphates, salts earthy and metallic, and with decoction of barks generally.

In the use of Marsh's apparatus, recollect that your zinc may contain arsenic as an alloy. *Vide* Supplement, p. 165.

Take of Arsenious Acid, broken into small pieces,
Carbonate of Potassa, of each, eighty grains ;
Compound Tincture of Lavender, five fluidrachms :
Distilled Water, a pint :

Boil the Arsenious Acid and Carbonate of Potassa with half a pint of the Water in a glass vessel until they are dissolved. To the Liquor, when cool, add the Compound Tincture of Lavender. Lastly, add thereto as much of the distilled Water as will accurately fill up the measure of a pint.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 68, and p. 165.

Remedial Use.—Applied externally in the solid state, arsenious acid is a powerful caustic, used in the treatment of cancerous ulcers, and formerly much extolled under the name of the "Plunket remedy." It is also now much recommended in cancerous affections of the face and nose, *noli me tangere*, &c. ; but its application requires the greatest caution on account of the fatal consequences sometimes accruing even from its limited application. Internally, it is a powerful tonic, but not a safe one ; for it often produces loss of appetite, gastric pains, stinging and shooting in the epigastrium, irritation of the mucous extremities, cold sweats, and, when exhibited in a poisonous dose, excruciating colics, bloody stools, tremblings, and hæmorrhagic vomiting. It has, however, been much used for the cure of agues, cutaneous affections, intermittent headachs, &c.

Dose.—Of the liquor, $\mathfrak{m}\text{v}$. gradually increased to $\mathfrak{m}\text{xx}$.

Cautions.

PRÆPARATA È BARIO.

Preparations of Barium.

BARI CHLORIDUM.

Chloride of Barium.

Antidote.

Solution of Epsom salts.

Incompatible with sulphate of magnesia, alkaline and metallic sulphates, nitrates, phosphates, and carbonates.

Take of Carbonate of Baryta, broken into small pieces,
 ten ounces ;
 Hydrochloric Acid, half a pint ;
 Distilled Water, two pints :

The crystals consist of

1 Eq. Chlorine	36
1 Eq. Barium	68
2 Eq. Water	18

122

Mix the Acid with the Water, and to these gradually add the Carbonate of Baryta. Then, heat being applied, and the effervescence having subsided, strain the liquor, and boil down that crystals may form.

Chemical, &c.—For test and theory of process, *vide* Notes, and Supplement, pp. 69, 70.

Remedial Use.—It has been used by our continental neighbours (who try every thing) in scrofulous diseases, schirrous affections, and worms ; but it is here introduced chiefly in regard to its powers as a test.

LIQUOR BARI CHLORIDI.

Liquor of Chloride of Barium.

Take of Chloride of Barium, a drachm ;
 Distilled Water, a fluidounce :
 Dissolve the Chloride of Barium, and strain.

Remedial Use.—*Vide* Barii Chloridum.

Cautions.

PRÆPARATUM È BISMUTHO.

Preparation of Bismuth.

BISMUTHI TRISNITRAS.

Trisnitrate of Bismuth.

Formerly called Magistery of Bismuth, Pearl White, and Sub-nitrate of Bismuth.

According to Brande, it is a tetrakis-nitrate.

℞ Bismuthi Trisnitratis,

Pulv. Bac. Capsici,
āā ʒj.

Mucilaginis, q. s. ft.
massa in pil. xxx.
Two for a dose.

℞ Bismuth. Trisnitratis,
gr. viij.
Mucilag. Acaciæ,
fʒij.

Tere simul, et adde
Mist. Amygdalæ,
fʒj.
M. ft. Haustus.

Take of Bismuth, an ounce ;

Nitric Acid, a fluidounce and a half ;

Distilled Water, three pints :

Mix a fluidounce of the Distilled Water with the Nitric Acid, and in this dissolve the Bismuth ; then pour off the liquor. Add to it the remainder of the Water, and set by that the powder may subside. Afterwards, the supernatant liquor being poured off, wash the Trisnitrate of Bismuth with Distilled Water, and dry it with a gentle heat.

Chemical, &c.—For the tests and theory of process, *vide* Notes, and Supplement, p. 71.

Remedial Action.—This salt is tonic and antispasmodic, and has been used with advantage in dyspepsia with troublesome pyrosis. Also in lientery and partial paralysis. When taken in a full dose, it produces cordial effects, and some degree of hilarity bordering on intoxication. It is occasionally useful in chorea sancti viti. In extreme doses it is an acrid poison.

Dose.—Gr. v. to gr. x.

Cautions.

PRÆPARATA È CALCIO.

Preparations of Calcium.

CALX.

Lime.

Lime is constituted of	
Calcium	20
Oxygen	8
	—
	28
	—

Take of Chalk, a pound :

Bruise it into pieces, and burn it in a very strong fire for one hour.

Chemical, &c.—*Vide* Notes, and Supplement, p. 72.

Remedial Action.—Externally, it is used as a caustic to establish issues. For its internal use, *vide* Liquor Calcis.

College Preparations.—Liquor Ammoniae, Liquor Calcis, Liquor Potassae, Potassa cum Calce, Calcis Chloridum, Liquor Calcis Chloridi, Calx Chlorinata.

It greens vegetable blues, and changes vegetable yellows to brown.

Incompatible with acids, alkaline carbonates, metallic salts, and astringent vegetable liquids.

Chalk is composed of	
Carbonic Acid . .	22
Lime	28
	—
Equivalent . . .	50
	—

LIQUOR CALCIS. [HYDRATIS?]

Liquor of Lime. [Hydrate of?]

Take of Lime, half a pound ;

Distilled Water, twelve pints :

First slake the Lime with a small portion of the Water, then add the remainder, and shake them together. Immediately cover the vessel, and set aside for three hours ; then keep the Liquor with the remaining Lime in stopped glass vessels, and when required for use, take from the clear Liquor.

Lime Water should be kept in a cellar, and large bottles containing it should not be frequently uncorked.

Lime water contains about ten grains of lime in the pint ; varying, however, with the temperature of the fluid. Cold water is a better solvent than hot.

*Cautions.**Formulae.*

℞ Hydrarg. Proto-
Chloridi, ʒss.

Liquor. Calcis, fʒviij.
M.

Ft. Lotio nigra.

Most practitioners,
however, use a larger
proportion of the cal-
lomel.

Chemical, &c.—*Vide* Notes, and Supplement, p. 73.

Remedial Action.—Powerfully antacid and astringent. It is useful in diarrhœa, chronic leucorrhœa, some cases of dyspepsia, and in ascarides. So, also, as a lithontriptic in calculous affections of the acid constitution. Externally, it is used in lotions, in order to diminish unhealthy discharges. Also, in burns, with an equal portion of linseed oil, it forms one of the oldest and perhaps most useful liniments.

Dose.—fʒj. to fʒiv. or more, in milk.

℞ Ol. Lini,

Liq. Calcis, āā p. æ.
ft. Liniment.

In severe burns.

CALCII CHLORIDUM.

Chloride of Calcium.

Take of Chalk, five ounces ;
Hydrochloric Acid,
Distilled Water, of each, half a pint :

Vulgò, Muriate of
Lime.

Mix the Acid with the Water, and gradually add the Chalk to saturation. When the effervescence has ceased, strain, and evaporate the liquor until the salt is dried. Throw this into a crucible, and, when melted over the fire, pour it upon a flat clean stone. Lastly, when cool, bruise it into small pieces, and keep it in a vessel well closed.

Incompatible with
sulphuric acid, and
the sulphates, with
the alkalies and their
carbonates; pure li-
quor of ammonia ex-
cepted.

Chemical, &c.—The carbonic acid, the water prescribed, and the water newly formed by the union of the oxygen of the lime with the hydrogen of the hydrochloric acid, are expelled by evaporation and fusion, leaving a chloride of calcium. For tests and diagram, *vide* Notes, and Supplement, p. 73.

Remedial Use.—*Vide* Liquor Calcii Chloridi.

Cautions.

LIQUOR CALCII CHLORIDI.

Liquor of Chloride of Calcium.

Take of Chloride of Calcium, four ounces ;
Distilled Water, twelve fluidounces :

Dissolve the Chloride of Calcium, and strain.

Remedial Use.—It was much recommended some years ago for scrofulous tumours ; has lately been said to have cured bronchocele where iodine has failed ; and is supposed to be capable of removing certain obstructions of the glands, presumed to be the cause of such tumours. This itself, however, is mere conjecture, as the tumour seems to be in many instances the cause of the obstruction. It possesses some tonic power.

Dose.—℥x. to fʒij., but enormous doses have been given.

℞ Liq. Calcii Chlor.

℥xx.

Infusi Gentian., C.

fʒx.

ft. haustus. To be taken three times a day, and give opium, if it vomit.

Lisfranc used it in the form of ointment for chilblains.

CALX CHLORINATA.

Chlorinated Lime.

Take of Hydrate of Lime, a pound ;
Chlorine, as much as may suffice :

Pass the Chlorine Gas through the Lime, scattered in a proper vessel, until the base is saturated.

Chlorine is readily evolved by the action of Binoxide of Manganese on Hydrochloric Acid, under a gentle heat.

Chemical, &c.—*Vide* Supplement, p. 74.

Remedial Use.—The substance itself, and a solution of it, varying in strength, is now used as a disinfecting medium, from its property of attracting carbonic acid, and of thus evolving chlorine. The mode, however, in which the chlorine disinfects the atmosphere, is not understood ; although it is conjectured that it decomposes animal effluvia by attracting hydrogen.

Composition conjectured, but not known.

Vulgò, Bleaching powder, but hitherto more commonly called chloride of lime.

Cautions.

CRETA PRÆPARATA.

Prepared Chalk.

Incompatible with acids, and acidulous salts.

Take of Chalk, a pound ;
Water, a sufficiency :

℞ Cretæ ppt. ʒij.
P. Rhei, ʒss.
Tinct. Cardam., C.
ʒiss.
Træ. Zingib., fʒij.
Aquæ Pimentæ,
ʒvj. M.
Cochl. duo ampliora
2dis horis.

The above is an excellent antacid stimulant after surfeits, whether from solids or liquids.

Add a little of the Water to the Chalk, and rub to a fine powder. Throw this into a capacious vessel along with the remainder of the Water ; then shake it, and after a little while, pour off the supernatant water, still turbid, into another vessel, and set aside, that the powder may subside. Lastly, having poured off the Water, dry this powder, and let it be kept for use.

In the same manner Shells are prepared, after having been cleansed from their impurities, and washed with boiling water.

Chemical, &c.—For tests and impurities, *vide* Notes, and Supplement, p. 75.

Remedial Use.—Antacid, slightly astringent, and usefully employed, after emptying the bowels in diarrhœa. It is also employed to repress the fungous growth of ulcers, and as a divisor in the exhibition of calomel, &c.

College Preparations.—Acidum Citricum, Acidum Tartaricum, Ammonizæ Sesquicarbonas, Calcii Chloridum, Hydrargyrum cum Cretâ, Mistura Cretæ, Confectio Aromatica, &c.

Dose.—Gr. x. to ʒj.

Cautions.

PRÆPARATA È CUPRO.

Preparations of Copper.

CUPRI AMMONIO-SULPHAS.

Ammonio-Sulphate of Copper.

Former Name.

Cuprum Ammoniatum.

Supposed to be constituted of carbonate of copper, sulphate of ammonia, and excess of sesquicarbonate of ammonia.

Incompatible with acids, with the other alkalies, and with lime, &c.

The sulphate of copper, in the dose of gr. ss., with a grain or two of opium, is a most efficacious remedy in obstinate diarrhoea and dysentery.

White of egg is the best antidote for all salts of copper.

It is decomposed after a few days, and yields a precipitate of oxide of copper.

Old Name.

Liquor Cupri Ammoniatum.

Take of Sulphate of Copper, an ounce ;

Sesquicarbonate of Ammonia, an ounce and a half :

Rub together until carbonic acid ceases to escape ; then dry in the air the Ammonio-Sulphate of Copper, previously wrapped in bibulous paper.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 76.

Remedial Action.—A favourite tonic and antispasmodic with some practitioners ; but if it be powerful, it is likewise hazardous, and to be used only with caution. Exhibited in chorea, epilepsy, &c., made into pills with crumb of bread.

Dose.—Gr. $\frac{1}{4}$ to gr. ij.

LIQUOR CUPRI AMMONIO-SULPHATIS.

Liquor of Ammonio-Sulphate of Copper.

Take of Ammonio-Sulphate of Copper, a drachm ;

Distilled Water, a pint :

Dissolve the Ammonio-Sulphate of Copper in the Water, and strain.

Chemical, &c.—*Vide* Supplement, p. 77.

Remedial Use.—As a detergent and astringent to foul and atonic ulcers. Also employed by oculists as an ingredient in collyria.

Cautions.

PRÆPARATA È FERRO.

Preparations of Iron.

FERRI AMMONIO-CHLORIDUM.

Ammonio-Chloride of Iron.

Former Names.

Flores Martiales, Fer-
rum Ammoniatum.

According to the
newest style of fashion
among chemical con-
jecturers, it is said to
consist of Sesquichlo-
ride of Iron . . . 15
Hydrochlorate of
Ammonia . . . 85

100

Mechanically mixed.

Take of Sesquioxide of Iron, three ounces ;
Hydrochloric Acid, half a pint ;
Hydrochlorate of Ammonia, two pounds and a
half ;
Distilled Water, three pints :

Mix the Sesquioxide of Iron with the Hydrochloric
Acid, in a proper vessel, and digest in a sand-bath for
two hours ; then add the Hydrochlorate of Ammonia,
previously dissolved in the Distilled Water ; strain and
evaporate all the liquor. Lastly, powder the residue.

Chemical, &c.—For theory of process, tests, and impurities, *vide*
Notes, and Supplement, p. 77.

Remedial Action.—As the Editor believes that little attention has
been paid to the medicinal power of this mixed substance, he considers
it worth his while to investigate its operation. This task will be ren-
dered easier by a distinct consideration, first, of the remedial properties
of the sesquichloride of iron ; secondly, of the hydrochlorate of ammonia
(sal ammoniac) ; and, thirdly, of those of the two as combined in the
above formula.

The *Sesquichloride of Iron* is a stimulant tonic ; it is always the
product of art ; and seems to exert stronger stimulating powers than
most of the martial preparations. Like the other chalybeates, its effects
are more decided when exerted on relaxed and lymphatic temperaments,
characterised by a slow circulation, pale face, and languid vital actions.
For the general effects of the salts of iron, *vide* Ferri Sulphas.

Hydrochlorate of Ammonia (sal ammoniac) is now little known in this country as an internal remedy; and it is on this account that the Editor is more anxious to direct the attention of his readers to its action and remedial effects: since those who have been in the habit of employing the ammoniated iron, now called ammonio-chloride of iron, must have continually used it without being aware that much of the effect of this last remedy is to be ascribed to the presence of the ammoniacal chlorate. Applied on the outer surface of the body in large quantities, and over a considerable surface, it produces at first a more or less lively irritation; it is then absorbed, and its action is felt by the stomach, which it irritates powerfully, and the impression is extended over the entire nervous system. Taken internally, its action is the same: it produces nausea, vomiting, and nervous symptoms, such as delirium, convulsive motions, &c. Administered in small doses, it acts as a stimulant upon the whole economy, and more especially upon the skin, of which it increases the secretions. The French writers tell us, that it may be advantageously employed in rheumatism; and there is a nostrum for gout in this country, consisting of this salt, oil of turpentine, and sal-volatile, so mixed, that the patient may take ten grains of the first with twenty-five minims of each of the last two. The Editor has had the opportunity of witnessing its effects, and considers its mode of action to be very similar to that of colchicum,—namely, by a powerful impression made on the mucous tract of the alimentary canal; and that, like this last remedy, when it vomits and purges, it suddenly suspends the gouty paroxysm, an extent of operation not unattended with danger. Its external use, as a refrigerant and discutient, is well known.

The *Ammonio-Chloride of Iron*, being little more than a mixture of about six parts of sal ammoniac (hydrochlorate) and one of the sesquichloride of iron, must, therefore, be a stimulant tonic, and a powerful excitant on the alimentary canal; and may be used, in full doses, in hysteria with mucous collections and intestinal torpor, in epilepsy, and, perhaps, in atonic rheumatism, gout, and passive dropsies.

Dose.—Gr. v. to gr. xx.

TINCTURA FERRI AMMONIO-CHLORIDI.

Tincture of Ammonio-Chloride of Iron.

Take of Ammonio-Chloride of Iron, four ounces;
Proof Spirit, a pint:

L

Cautions.

Incompatible with alkalies and their carbonates, astringent vegetable infusions, mucilage of gum arabic, &c.

Solution of Sal Ammoniac.

℞ Ammoniae Hydrochl. ʒij.

Aq. Distil. ʒviij.

Solve.

As a resolvent lotion for indolent buboes.—

RICORD.

Former Name.

Tinct. Ferri Ammoniaci.

Incompatible with the above-named.—

Vide the salt.

Cautions.

Dissolve the Ammonio-Chloride of Iron in the Spirit, and strain.

Chemical, &c.—For tests, *vide* Notes ; and for remarks, *vide* Supplement, p. 78.

Remedial Action.—*Vide* the Ammonio-Chloride of Iron.

Dose.—℥xx. to fʒj.

TINCTURA FERRI SESQUICHLORIDI.

Tincture of Sesquichloride of Iron.

Former Name.

Tinct. Ferri Muriatis.
Incompatible with
alkalies and their car-
bonates, astringent ve-
getable infusions, gum
arabic, &c.

Take of Sesquioxide of Iron, six ounces ;
Hydrochloric Acid, a pint ;
Rectified Spirit, three pints :

Pour the Acid upon the Sesquioxide of Iron, in a glass vessel, and digest for three days, occasionally shaking. Then add the Spirit, and strain.

In spasmodic dys-
uria, it should be ex-
hibited in the dose of
℥xv. every ten mi-
nutes, until it excites
nausea.

Chemical, &c.—*Vide* Notes, and Supplement, p. 79.

Remedial Action.—This, like the other preparations of iron, is endowed with stimulating properties, and is not liable to rapid decomposition. It has been long recommended for dysuria, spasmodic stricture, hæmorrhage from the urinary passage, local hæmorrhage ; and is externally used for venereal and other warts.

Dose.—℥x. to fʒj.

FERRI IODIDUM.

Iodide of Iron.

Iodine 126
Iron 28
Water 45
Equiv. 199

Take of Iodine, six ounces ;
Iron filings, two ounces ;
Distilled Water, four pints and a half :

Mix the Iodine with four pints of the Water, and to these add the Iron. Heat the mixture in a sand-bath, and when it has assumed a greenish colour, pour off the liquor. Wash the residue with half a pint of boiling Water. Let the mixed and strained liquors evaporate at a temperature not exceeding 212° , in an iron vessel, that the salt may be dried. Keep it in a well-stopped vessel, excluded from light.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 79.

Remedial Action.—Iodide, otherwise called ioduret of iron, possesses tonic and emmenagogue properties, and is said to be highly stimulating. As an excitant tonic, it may be used in chlorosis, atonic amenorrhœa, and in some scrofulous affections, accompanied with decided atony; but, on the contrary, it will aggravate the disease in all cases attended with plethora, or in acute inflammatory affections. It has been lately recommended to the Editor as a substitute for the sulphate of iron, in the preparation of Griffith's mixture (*Mistura Ferri Composita*), for hysteria in the serous diathesis; but he has not yet had sufficient experience of its effects, although disposed, as far as his observation has extended, to give it his approval. It requires more than the ordinary proportion of myrrh to suspend it.

Dose.—Gr. j. to gr. iij.

Cautions.

This salt is of a green colour, very soluble both in water and alcohol, and soon becoming moist by exposure to the air. Its solution deposits sesquioxide of iron, unless an iron wire is kept constantly immersed in it, in which state the constant formation of rust of iron does not influence the quality of the solution itself.

FERRI POTASSIO-TARTRAS.

Potassio-Tartrate of Iron.

Take of Sesquioxide of Iron, three ounces;
Hydrochloric Acid, half a pint;
Liquor of Potassa, four pints and a half, or as much as may be sufficient;
Bitartrate of Potassa, eleven ounces and a half;
Liquor of Sesquicarbonate of Ammonia, a pint, or as much as may be sufficient;
Distilled Water, three gallons:

Former Name.

Ferrum Tartarizatum.

The most palatable of the preparations of iron. It should be kept excluded from the air, or it will become moist.

It consists of one equiv. of Tartrate of

Cautions.

Potassa, and one of
Tartrate of Iron.
Equiv. 220.

Incompatible with
the strong acids, lime-
water, hydrosulphuric
acid, astringent vege-
table liquors, &c.

Tonic Pills.

R. Ferri Potassio-tar-
tratis,

Ext. Gentianæ, āā

ʒj.

Ol. Cinnam. ℥ij.

Syrup, q. s.

Ft. Massa, in Pil. xxx.

Dose.—Four to six,
three or four times a
day.

Electuary.

R. Ferri Potassio-tar-
tratis, ʒss.

Confect. Ros. Gal-
licæ, ʒj.

Syrup. Ros. Gal-
licæ, q. s.

Ft. Elect.

Dose.—A teaspoon-
ful.

Mix the Sesquioxide of Iron with the Acid, and digest for two hours in a sand-bath. Add to these, two gallons of the Water, and set by for an hour; then pour off the supernatant liquor. Wash the precipitate, after having added the Liquor of Potassa, with water frequently poured thereon, and, while it is yet moist, boil it down with the Bitartrate of Potassa, previously mixed with a gallon of the Water. If the liquor, when tried with Litmus, prove to be acid, drop into it Liquor of Sesquicarbonate of Ammonia to saturation. Finally strain; and let the liquor be evaporated by a gentle heat, that the salt may be dried.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 80.

Remedial Action.—The Potassio-tartrate has been long ago recommended as the least nauseous of the iron-salts; but if it be more palatable, it is certainly less inviting in its appearance, and for the most part with difficulty exhibited to children, for whom otherwise it would seem more eligible on account of its possessing milder tonic properties. Louthembourg, the celebrated painter, acquired some surgical fame for his treatment of sprains, contusions, &c. by a similar salt of iron formed into balls, the *Boules de Nancy* of the Paris Pharmacopœia. They consist of iron filings and red tartar made up into balls with alcohol, and dissolved in water when required.

Dose.—Of the Potassio-tartrate of Iron, gr. x. to ʒj. or more, either in solution, or combined with Ext. of Gentian, as in the margin.

FERRI SESQUIOXYDUM.

Sesquioxide of Iron.

Former Names.

Rust of Iron.
Carbonate of Iron.
Subcarb. of Iron.

Take of Sulphate of Iron, four pounds ;

Carbonate of Soda, four pounds and two ounces ;

Boiling Water, six gallons :

Separately dissolve the Sulphate of Iron and the Carbonate of Soda in three gallons of the Water; then mix the liquors and set by, that a powder may subside. Afterwards, the supernatant liquor being poured off, wash the precipitate in water, and dry it.

Chemical, &c.—The constitution of this preparation, as it occurs in the market, has always been found to vary; and usually contains some portion of carbonate, as evidenced by its effervescing with acids.—*Vide* Notes, and Supplement, p. 81.

Remedial Action.—Among all the preparations of iron, none has been used more extensively, nor in larger doses, than the present. It is much relied upon to stop the periodical attacks of tic-doloreux, and several other intermittent neuralgiæ, in which latter case one should begin at once with drachm doses. The annexed formula is much used in France for gleets.

Dose.—Gr. x. to ʒiij.

Cautions.

℞ Ferri Sesquioxidi,
ʒj.
Mellis, ʒij.
Syrup. Zingiberis,
ʒss.
Commisce.
Ft. Elect.

The size of a walnut thrice a day.

In gleet.

℞ Syrup. Tolut. ℥j.
Ferri Sesquioxidi,
Extract. Rhatani, āā
ʒss. M.

Dose.—A table-spoonful three times a day.

FERRI SULPHAS.

Sulphate of Iron.

Take of Iron Filings, eight ounces;
Sulphuric Acid, fourteen ounces;
Water, four pints:

Mix the Sulphuric Acid with the Water, and to this add the Iron; then apply heat; and, when bubbles have ceased to escape, strain the liquor, and set it aside, that it may crystallize. Having poured off the water, again evaporate for a second crop of crystals, and dry them.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 82.

Remedial Action.—The slow but uniform action of iron and its preparations on the animal economy are well worthy of our attentive consideration. “Shew me the man,” said Dr. Heberden, “who will presume to explain the mode in which any remedy produces its

Formerly called

Ferrum Vitriolatum.
Sal Martis.
Green Copperas.
Green Vitriol.

N.B. There are three vitriols commonly so called; viz. green vitriol, blue vitriol (cupri sulphas), and white vitriol (sulphas zinci); and do not confound them.

Chemical Composition.

Sulphuric Acid 40
Protoxide of Iron 36
with 7 equivalents of water.

Cautions.

The crystals must not be exposed to the air, or they will become coated with a yellowish, pulverulent crust, by attracting more oxygen.

Incompatible with the alkalies and their carbonates; with all salts, the bases of which form insoluble compounds with sulphuric acid. Also decomposes by vegetable astringents.

*Saline Aperient**Chalybeate.*

R. Ferri Sulphatis, ℥j.

Magnesiae Sulphatis, ʒj.

Aquæ Pulegii, Oj.
M.

Dose. — A wine-glassful twice a day in atonic amenorrhœa.

Chalybeate Vermifuge.

R. Ferri Sulphatis, ℥j.

Infusi Quassiae,
ʒviiij.

M.

Dose.—Two table-spoonsful every morning, fasting.

effects—his boldness will more than equal his knowledge." Still, however, there are observations which may be made with certainty on such subjects. No metal, as a remedy, seems to be more congenial to the human frame than iron. Wherever it produces its impression, internally or externally, it slowly but surely corroborates the tissues. First, it exerts its effects on the intestinal canal, increasing almost insensibly the powers of digestion, exciting appetite, and powerfully assisting in elaborating the alimentary substances. We see also its chemical effect of blackening the fæcal excretion. Part of the iron is absorbed with the chyle and passes into the blood, manifesting its influence, as modern physiology has proved, upon the circulation and constitution of the blood itself. Who has not watched with interest the increase of red particles, indicated by the improving complexion of serous atonic patients when under a course of this remedy? The pulse increases in size and energy; and the muscular,—indeed all the functions are performed with more vigour and regularity. Dr. Heberden has remarked in his commentaries, that waters slightly charged with chalybeates are of great utility in an impaired state of the digestive viscera, provided we have no inflammatory or ulcerative condition. He evidently in this remark approaches *nearly* to the consideration of paralysis of vital organs, which is the next and last stage of nervous debility of the sympathetic chain. As in the use of other stimuli, so with chalybeates, we find a limit beyond which we cannot pass with safety. This is indicated by colic pains, headach, congestion, bleeding at the nose; or, in females, by menorrhagia, &c.

The sulphate of iron is more astringent than the other preparations, and requires very great caution. It is commonly exhibited in the form of Griffith's Mixture; but it must be recollected, that in that admixture it is decomposed, and that the protocarbonate, not the sulphate, is the resulting compound. Dissolved in a large proportion of distilled water, it is a very old remedy for atonic amenorrhœa; and a chalybeate saline, as in the formula annexed in the margin, is a well known domestic recipe. A solution of the salt in infusion of quassia is an efficacious remedy for worms. Externally, it is employed by surgeons for arresting hæmorrhage, and for inveterate and bleeding ulcers; and, in the form of ointment and wash, for tinea capitis, &c.

Dose.—Gr. ij. to gr. v.

Cautions.

PRÆPARATA EX HYDRARGYRO.

Preparations of Mercury.

HYDRARGYRUM CUM CRETA.

Mercury with Chalk.

Take of Mercury, three ounces ;
Prepared Chalk, five ounces :

Rub together until globules are no longer visible.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 83. In the Dublin Pharmacopœia the oxidation is promoted by the addition of manna.

Remedial Action.—One of the least active of the mercurials. Commonly exhibited as an alterative to children, for whose diseases it is given with but little discrimination. It may be received as a rule, that when, under its use, the motions acquire the appearance of chopped grass, this medicine ought to be suspended, and a dose or two of rhubarb with a few drops of sal volatile and aniseed-water should be employed. If it has been made from commercial quicksilver not purified, the Lord help the poor infants to whom it is exhibited.

Dose.—Gr. v. to gr. xv. for adults.

HYDRARGYRI OXYDUM.

Oxide of Mercury.

Take of Chloride of Mercury, an ounce ;
Lime-Water, a gallon :

Mix, and frequently shake them. Set aside, and when the Oxide has subsided, pour off the liquor. Lastly, wash in distilled Water until alkalescence be no longer perceptible ; and dry it, wrapped in bibulous paper, in the air.

The mercury of commerce is unfit for use until purified from the tin, lead, zinc, bismuth, &c. with which the dealers adulterate it.

Incompatible with acids.

A mixture of protoxide of mercury, metallic mercury minutely divided, and chalk.—BRANDE.

It contains also binoxide of mercury.—PHILLIPS.

Add a fluidrachm of water to accelerate the process.

It contains gr. j. of mercury in about gr. iv. of the powder.

Look to your notes, and test it before use ; or if you make your own, first digest the quicksilver in dilute sulphuric acid.

Former Name.

Hydrarg. Oxydum
Cinereum.

Cautions.

℞ Hydrarg. (Proto-)
Chloridi, gr. xv.
Liquor. Calcis, ℥ij.
Ft. lotio nigra.

This quantity of calomel is commonly used, but it is considerably above the combining proportion.

Incompatible with acids, acidulous salts, hydrosulphuric acid, the hydrosulphates, &c.

Former Names.

Calcined Mercury.
Hydrargyri Oxydum
Rubrum.

Chemical, &c.—Professor Brande is of opinion, that the resulting compound is not uniformly a protoxide of mercury. For theory and tests, *vide* Notes, and Supplement, p. 73.

Remedial Action.—It acts like the other preparations of mercury, as a general stimulant, powerfully promoting glandular secretion, and irritating the salivary organs. Used as an alterative.

Dose.—Gr. iij. to gr. x.

HYDRARGYRI BINOXYDUM.

Binoxide of Mercury.

Take of Bichloride of Mercury, four ounces ;
Liquor of Potassa, twenty-eight fluidounces ;
Distilled Water, six pints :

Dissolve the Bichloride of Mercury in the Water ; strain, and add the Liquor of Potassa. Wash what is precipitated (after pouring away the liquor) in distilled Water, until alkalescence is no longer perceptible, and dry with a gentle heat.

Chemical, &c.—For theory of process and tests, *vide* Notes, and Supplement, p. 84.

Remedial, &c.—Formerly used internally to induce salivation. Now rarely employed, except to fumigate ulcers of the throat, or chancres.

Dose.—Gr. ss. to gr. ij. with opium.

HYDRARGYRI NITRICO-OXYDUM.

Nitric-Oxide of Mercury.

Old Names.
Hydrargyrus Nitratus
Ruber, Red Preci-
pitate.

Take of Mercury, three pounds ;
Nitric Acid, a pound and a half ;
Distilled Water, two pints :

Mix in a suitable vessel, and apply a gentle heat, until the Mercury is dissolved. Boil down the Liquor, and powder the residue. Throw this into another vessel, as shallow as possible; then apply a gentle heat, and raise it gradually until a red vapour has ceased to issue forth.

Chemical, &c.—*Vide* Notes, and Supplement, p. 85.

Remedial Action.—This was formerly exhibited internally in venereal disease; but it is now almost exclusively employed as an escharotic and stimulant, to reduce fungous excrescence, to excite a new action in syphilitic and other ulcers, and in ulceration of the tarsi, &c.

Cautions.

This is a binocide of mercury, with a small portion of adherent nitrate.

Dupuytren's Ointment

For ophthalmia tarsi in the chronic stage.

℞ Hydrarg. nitricooxydi, gr. x.

Zinci Sulphatis, gr.

xx.

Axungia, ʒij.

Ft. Ung.

HYDRARGYRI AMMONIO-CHLORIDUM.

Ammonio-Chloride of Mercury.

Take of Bichloride of Mercury, six ounces;
Distilled Water, six pints;
Liquor of Ammonia, eight fluidounces:

Heat being applied, dissolve the Bichloride of Mercury in the Water. To this, when cool, add the Liquor of Ammonia, occasionally shaking. Wash the precipitated powder until free from taste; and, lastly, dry it.

Chemical Action, &c.—*Vide* Supplement, p. 86, and Notes.

Remedial Use.—To suspend chronic morbid action in the skin, as in tænia, impetigo, &c.; but where these diseases are attended with much inflammation, it usually aggravates the malady.

Mark! this is "WHITE PRECIPITATE," a deadly poison, and never to be used internally.

Older Name.

Hydrargyrum Precipitatum Album.

Its extensive use, even externally, is dangerous.

HYDRARGYRI CHLORIDUM.

Chloride of Mercury.

Take of Mercury, four pounds;
Sulphuric Acid, three pounds;
Chloride of Sodium, a pound and a half;
[Boiling] Distilled Water, a sufficiency:

Mark! this is the Protochloride (Calomel), and ought thus to be prescribed:—

Cautions.

℞ Hydrargyri (Proto-) Chloridi,
P. L. 1836, &c.

Mr. R. Phillips says the prefix should always be used when "a pointed distinction is necessary." Is it not always necessary where life is in one scale, and death in the other? We may presume the omission was not his. The Editor will be agreeably surprised if this omission do not make work for the coroners. One man's life is worth a dozen chemical conjectures, and should not be risked for a capricious change of names.

N. B. When calomel is given in sago, or other nutriment containing lime, it turns black, which often alarms the friends of the patient.

Boil two pounds of the Mercury with the Sulphuric Acid in a suitable vessel, until a dry Bipersulphate of Mercury remains; rub this, when cool, with [the other] two pounds of Mercury in an earthenware mortar, that they may be thoroughly mixed. Then add the Chloride of Sodium, and rub together until globules are no longer visible, and sublime. Rub the Sublimate into a very fine powder, carefully wash it with the boiling Distilled Water, and dry it.

Chemical.—*Vide* Supplement, p. 88, and Notes.

Remedial Action.—It is an active purgative, quickening the secretions, but more especially those of the liver and pancreas, and effectually searching and clearing the whole alimentary canal. It promotes the secretion of the kidneys; stimulates the lymphatics, causing absorption of serous fluid, or of coagulated lymph newly deposited; suspends syphilitic and certain inflammatory actions, when given long enough to produce a moderate degree of mercurial irritation; in maximum doses, it acts as a powerful sedative, and causes great depression; and, finally, it is capable of removing various chronic diseases, depending chiefly on sluggish secretion.

Dose.—As a purgative, from gr. iij. to gr. x. To promote absorption, half a grain twice or thrice a day. To suspend inflammatory action, gr. ij. or more, every four or six hours. In secondary syphilis, with deep sores, gr. j. combined with opium, twice a-day. Alterative dose, in other cases, gr. ss. to gr. j. with chalk.

Officinal Preparations.—Hydrargyri Oxydum, Pilulæ Hydrargyri Chloridi Compositæ.

HYDRARGYRI BICHLORIDUM.

Bichloride of Mercury.

Formerly called
Hydrargyri Oxymurias.—P. L. 1809 and 1824; also Hydrargyrus Muriat.—P. L. 1788.
Vulgò, Corrosive sublimate.

Take of Mercury, two pounds;
Sulphuric Acid, three pounds;
Chloride of Sodium, a pound and a half:

Boil down the Mercury with the Sulphuric Acid, in

a proper vessel, until a dry Bipersulphate of Mercury remains; rub this, when cool, with the Chloride of Sodium, in an earthen mortar; then sublime with a heat gradually raised.

Chemical, &c.—Also in chemical works, called deutochloride of mercury, and sometimes (N.B.) chloride of mercury. For theory and tests, *vide* Notes, and Supplement, p. 89.

Remedial Action.—This salt, which in the dose of a few grains is a virulent poison, when administered in remedial doses, induces the usual effects of the other mercurials. It is extensively employed in the treatment of secondary syphilis, where the symptoms have been of long standing and are of an obstinate character. It has long been recommended as an alterative in scrofula, combined with tincture of cinchona; a combination, unchemical indeed, but nevertheless highly efficacious. As a diuretic, in combination with digitalis, it has been found efficacious in some forms of dropsy.

Dose.—Gr. $\frac{1}{8}$ to gr. $\frac{1}{2}$.

LIQUOR HYDRARGYRI BICHLORIDI.

Liquor of Bichloride of Mercury.

Take of Bichloride of Mercury,

Hydrochlorate of Ammonia, of each, ten grains;

Distilled Water, a pint:

Dissolve together the Bichloride of Mercury and the Hydrochlorate of Ammonia in the Water.

Remedial Action.—*Vide* the Bichloride above. The same proportions are adopted in the Paris Codex, but with $\mathfrak{z}$ iss. of alcohol in the pint. The hydrochlorate of ammonia is indicated in the *Edin. Pharmacopœia*, from whence it is taken.

Dose.— $\mathfrak{f}\mathfrak{z}$ ij. to $\mathfrak{f}\mathfrak{z}$ ss.

HYDRARGYRI BICYANIDUM.

Bicyanide of Mercury.

Take of Percyanide of Iron, eight ounces;

Binoxide of Mercury, ten ounces;

Distilled Water, four pints:

Cautions.

Chem. Comp.

Chlorine 2 equivs.

$36 \times 2 \dots 72$

Mercury 1 equiv. 202

Equiv. $\dots\dots 274$

Antidote.

White of egg in solution, which instantly decomposes it. *Vide* Suppl. p. 165.

Pills of Bichloride of Mercury.

$\mathcal{R}$ Hydrarg. Bichloridi, gr. v.

Ammoniae Hydrochloratis, gr. v.

Aquae ferventis, $\mathfrak{f}\mathfrak{z}$ ij.

Micæ panis, *q. s.*

Ft. Pil. xl.

One pill twice a day, to excite and stimulate the absorbent system.

Yellow Wash.

$\mathcal{R}$ Hydrarg. Bichloridi, gr. viij.

Liq. Calcis, $\mathfrak{f}\mathfrak{z}$ viiij.

Ft. Lotio.

Incompatible with alkalies and their carbonates, tartar emetic, sulphuret of potassa, soap, iron, copper, and tanning vegetable substances.

Vulgo, Van Swieten's drops: it contains gr. j. in $\mathfrak{f}\mathfrak{z}$ ij. or $\frac{1}{18}$ in $\mathfrak{f}\mathfrak{z}$ j.

Cautions.

Colourless; inodorous; taste, metallic and disagreeable; highly poisonous. It dissolves freely in hot water, and readily crystallizes as it cools. Sparingly dissolved in alcohol; decomposed by heat.

It is composed of
Cyanogen 2 equivs.
26 × 2 52
Mercury 1 equiv. 202
Equiv. 254

Boil together for half an hour, and strain. Evaporate the liquor, that crystals may form. Frequently wash what remains with boiling Distilled Water, and again evaporate the mixed liquors, that crystals may be formed.

Bicyanide of Mercury may be prepared in another way, by adding Binoxide of Mercury in a sufficient quantity, to accurately saturate Hydrocyanic Acid, distilled from Ferrocyanide of Potassium, with diluted Sulphuric Acid.

Chemical, &c.—For theory of process and tests, *vide* Notes, and Supplement, p. 90.

Remedial Use.—For the preparation of Hydrocyanic Acid. At the Hôpital des Vénériens, M. Ricord uses the cyanuret of mercury extensively. He dissolves four grains in a pound of the Sirop de Cuisinier, of which the dose is four tablepoonsful in the day.

HYDRARGYRI IODIDUM.

Iodide of Mercury.

It is decomposed by light.

Composed of
Iodine 1 equiv. 126
Mercury 202
Equiv. 328

Insoluble in alcohol and water; soluble in æther; colour, greenish yellow; taste, slightly metallic.

℞ Hydrargyri (Proto-) Iodidi, gr. j.
Ext. Glycyrrhiz. ʒj.
Ft. Massa, in Pil. viij.

Dose.—ij. to iv. twice or thrice a day.

Take of Mercury, an ounce;
Iodine, five drachms;
Alcohol, as much as may be sufficient:

Rub together the Mercury and the Iodine, adding the Alcohol gradually, until globules are no longer apparent. Immediately dry the powder in a gentle heat, the access of light being excluded, and keep it in a well-stopped vessel.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 91.

Remedial Action.—First recommended by Coindet of Geneva, as an alterative in scrofulous tumours, and old syphilitic ulcers of scrofulous constitutions.

Dose.—Gr. $\frac{1}{8}$ to gr. $\frac{1}{2}$ in pills.

HYDRARGYRI BINIODIDUM.

Biniodide of Mercury.

Take of Mercury, an ounce ;
 Iodine, ten drachms ;
 Alcohol, as much as may be sufficient :

Rub together the Mercury and the Iodine, adding the Alcohol gradually, until globules are no longer visible. Dry the powder in a gentle heat, and preserve it in a well-stopped vessel.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 91.

Remedial Action.—It is employed externally and internally in the same affections as the Iodide of Mercury, but it is more active.

Dose.—Gr $\frac{1}{10}$ to gr. $\frac{1}{4}$ in pills.

Cautions.

Also called Deutiodide of Mercury.

Composed of

Iodine 1 equiv.	252
Mercury	202
Equiv.	454

A red powder, which turns yellow by the application of heat.

Decomposed by light.

Used in pills in one half the proportion used in the pills above; and in ointment, for ulcers, as follows.

℞ Hydrarg. Biniodidi,
 gr. xv.
 Axungiae, ℥ij.
 Ol. Bergamii, ℥x.
 Ft. Unguentum.

HYDRARGYRI BISULPHURETUM.

Bisulphuret of Mercury.

Take of Mercury two pounds ;
 Sulphur, five ounces :

Mix the Mercury with the Sulphur previously melted over the fire ; and directly the mass swells, withdraw the vessel from the fire, and cover it strongly lest it should flame ; then powder it, and sublime.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 92.

Former Names.

Red Sulphuret of Mercury,
 Vermilion, and
 Factitious Cinnabar.

Sulphur 2 equiv.	32
Mercury	202
Equiv.	234

Ointment of Bisulphuret of Mercury.

℞ Hydrarg. Bisulph.
 ℥iss.
 Ammoniae Hydrochloratis, ℥ss.
 Aquae Rosae, ℥j.
 Axungiae, ℥ss.
 Ft. Ung.

Cautions.

Remedial Action.—It was formerly employed internally; but is now employed in fumigation for obstinate ulcers, diseases of the skin, prurigo pedicularis, syphilitic exostosis.

ʒij. to ʒiv. in the usual apparatus for fumigation.

HYDRARGYRI SULPHURETUM CUM SULPHURE.

Former Names.

Hydrarg. Sulph. Nigrum.
Æthiop's Mineral.

Sulphuret of Mercury with Sulphur.

Vermifuge Powder.

℞ Pulv. Jalapæ,
Pulv. Scammonii,
āā ʒj.
Potassæ Bitartratis,
ʒij.
Hydrarg. Sulph.
cum Sulph. ʒiij.
Ft. Pulvis.

Dose.—Gr. x. to
ʒj. for children.

Take of Mercury,

Sulphur, of each, a pound :

Rub together until globules are no longer visible.

Chemical, &c.—*Vide* Notes, and Supplement, p. 92. Conjectured to be a Bisulphuret of Mercury, with Sulphur; also a Protosulphuret of Mercury with Sulphur; and, by the French chemists, Bisulphuret of Mercury with metallic Mercury.

Remedial Action.—It is employed with advantage internally and externally in purulent psora; and internally as a vermifuge, in the formula annexed in the margin. I have found a course of this remedy very useful in chronic pulmonary affections.

Dose.—Gr. v. to gr. xv.

Cautions.

PRÆPARATA EX MAGNESIO.

Preparations of Magnesium.

MAGNESIA.

Take of Carbonate of Magnesia, four ounces :

Burn it in a strong fire for two hours.

Chemical, &c.—*Vide* Supplement, p. 93, and Notes.

Remedial Action.—Antacid, and, if it meets with acidity in the stomach, laxative. It is supposed to soothe the sentient extremities of the nerves of the stomach, particularly in the irritation of teething. When used largely as a lithontriptic, a brisk purge should be occasionally interposed.

Dose.—Gr. xv. to ʒij. for adults.

Composed of	
Oxygen	8
Magnesium	12
Equiv.	20

Old Names.

Magnesia usta.
Calcined Magnesia.

Exposed to the air, it attracts carbonic acid, and again becomes a carbonate.

It requires 30,000 times its weight of boiling water for its solution, therefore all but insoluble.

MAGNESIÆ CARBONAS.

Carbonate of Magnesia.

Take of Sulphate of Magnesia, four pounds ;

Carbonate of Soda, four pounds and eight ounces ;

Distilled Water, four gallons :

Separately dissolve the Carbonate of Soda and the Sulphate of Magnesia, in two gallons of the Water, and strain ; then mix the liquors and boil, while constantly stirring with a spatula, for a quarter of an hour. Lastly, the liquor being poured off, wash the precipitate powder with boiling Distilled Water, and dry it.

Former Name.

Magnesiæ Subcarbonas.

We have now returned to the name it bore nearly a century back.

Composed of	
Carbonic Acid	
1 equiv.	22
Magnesia	
1 equiv.	20

Equiv. 42
but it varies as it occurs in the market.

It is more soluble in cold than in hot water, but very sparingly in either.

*Cautions.**Dalby's Carminative.*

Formula.

Magnesiae, ℥ij.
 Ol. Menth. p. ℥j.
 Ol. Myristic. ℥ij.
 Ol. Anisi, ℥iij.
 Tinct. Castor. ℥xxx.
 Tinct. Assafoetid.
 ℥xv.
 Tinct. Opii, ℥v.
 Sp. Pulegii, ℥xv.
 Tinct. Card. C.
 ℥xxx.
 Aquæ Menthæ pip.
 fʒij. M.

Dose.—A small tea-spoonful in flatulency, gripes, and irritation from teething, &c.

Incompatible with acids, acidulous and metallic salts, &c.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 94.

Remedial Action.—The same as above; but its habitual ingestion into the stomach of weakly patients whose bowels are torpid, has been known to produce dangerous obstruction.

Dose.—℥j. to ʒj. or more.

PRÆPARATA È PLUMBO.

Preparations of Lead.

PLUMBI ACETAS.

Acetate of Lead (Neutral).

Also called super-acetate, saccharum saturni, cerussa acetata.

Incompatible with alkalies and their carbonates, with all the strong acids, neutral salts, hydrosulphates, astringent vegetable liquors, &c.

Its effects as a poison are over-rated. It is only in persons constitutionally susceptible to its effects, that it produces the worst symptoms even in the most minute portions.

Antidote.—Solution of Sulphate of Magnesia.

Take of Oxide of Lead, in powder, four pounds and two ounces;

Acetic Acid,

Distilled Water, of each, four pints:

Having mixed the Acid with the Water, and to this having added the Oxide of Lead, dissolve under a gentle heat, and then strain. Finally, evaporate the liquor, that crystals may form.

Chemical, &c.—A neutral acetate containing one equivalent of Acid and Base, and three equivalents of water of crystallization. *Vide* Notes, and Supplement, p. 95.

Remedial Action.—Powerfully astringent. It promotes the healing process in excoriations of the skin and intestines; and is internally employed, in combination with acetate of morphia, in uterine and intestinal hæmorrhage, colliquative diarrhœa, and the profuse perspirations of phthisical patients. It is now said to be incompatible with opium. ʒj. to fʒviij. of water is the proper proportion for a lotion; and for injections ℥ij. to fʒviij. of rose-water.

Dose.—Gr. ss. to gr. ij.

LIQUOR PLUMBI DIACETATIS.

Liquor of Diacetate of Lead.

Take of Acetate of Lead, two pounds and three ounces ;
 Oxide of Lead powdered, one pound and four
 ounces ;
 Water, six pints :

Boil for half an hour, occasionally stirring ; and
 when the liquor is cool, add as much Distilled Water as
 is sufficient to complete the six pints. Lastly, strain it.

Chemical, &c.—Composed of one equivalent of Acetic Acid and two
 of Oxide of Lead.—*Vide* Notes, and Supplement, p. 96.

Remedial Use.—Externally, diluted in the form of lotion.—*Vide* the
 Diluted Liquor, &c. Dr. Vetch has recommended the undiluted liquor
 in purulent conjunctival ophthalmia, and he adds, that in opaque cornea
 it is the only substance which he has found beneficial from its astrin-
 gency upon the palpebral surface, without operating prejudicially as a
 stimulus. Dr. Vetch does not seem to be aware that it acts as a caustic
 astringent on the mucous surface, blending with the pus to form a sort
 of ointment. Emp. Lyttæ introduced into the eye has been found useful
 in the same disease. So has lunar caustic.

LIQUOR PLUMBI DIACETATIS DILUTUS.

Diluted Liquor of Diacetate of Lead.

Take of Liquor of Diacetate of Lead, a fluidrachm and a
 half ;
 Distilled Water, a pint ;
 Proof Spirit, two fluidrachms :

Mix.

Remedial Action.—This lotion is very commonly and indiscriminately
 employed in erysipelatous inflammations, burns, contusions, sprains, and
 excoriations. Employed in the latter cases for the abraded surfaces of
 infants, sore ears, &c., it often produces mischievous consequences ;
 for the sudden suppression of discharge is followed by hydrocephalus,
 convulsions, pneumonia, &c. The colica pictonum is only a partial
 paralysis of the bowels induced by lead, and a similar condition may
 accrue without lead, just as palsy occurs in other organs.

*Cautions.**Old Names.*

Liquor Plumbi Sub-
 acetatis ;
 Goulard's Extract.
 Extractum Saturni.
 Sp. gravity 1.260.

If you supply the
 extract instead of the
 lotion (which I have
 repeatedly known to
 be done) you may be
 the cause of much
 mischief.

Vulgo, Goulard's
 Lotion.

The public being
 familiar with the milky
 opacity of this lotion,
 as prepared with com-
 mon water, often re-
 turn the purer lotion
 on the hands of the
 retail chemist.

Goulard's Poultice.

Crumb of bread
 sufficiently moistened
 and formed into a
 poultice with goulard.

*Cautions.**Plumbum Corneum.*

It consists of

Chlorine 1 equiv. 36

Lead 1 equiv. . . 104

140

Mark! you are to dissolve the acetate in three pints of the distilled water, and the chloride in one pint of the distilled water, and yet you have but three pints ordered in all!!!

PLUMBI CHLORIDUM.

Chloride of Lead.

Take of Acetate of Lead, nineteen ounces ;

Boiling Distilled Water, three pints ;

Chloride of Sodium, six ounces :

Separately dissolve the Acetate of Lead and the Chloride of Sodium, the former in three pints, and the latter in one pint of the Distilled Water. Then mix the liquors together, and wash the precipitate, when cold, with Distilled Water, and dry it.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 97.

PLUMBI IODIDUM.

Iodide of Lead.

Take of Acetate of Lead, nine ounces ;

Iodide of Potassium, seven ounces ;

Distilled Water, a gallon :

Dissolve the Acetate of Lead in six pints of the Water, and strain ; to this add the Iodide of Potassium previously dissolved in two pints of the Water. Wash the precipitate, and dry it.

Iodine 1 equiv. . 126

Lead 1 equiv. . . 104

Equiv. 230

Colour, rich yellow ; soluble in boiling water, the solution depositing crystals as it cools, in brilliant yellow, minute scales. By heat it is decomposed, and passes off in vapours.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 97.

Remedial Use.—Iodide of lead has been repeatedly tried in scrofulous affections and scirrhus tumours, with a view of insuring the well-known resolvent effects of the metal with the excitant power of the iodine, and it appears to have answered in many cases which have been recorded. According to the testimony of M. Velpeau, it has effectually removed indolent tumours of a scrofulous character when iodine itself, and its other compounds, had completely failed. We think it should never be exhibited to persons to whom lead is known to be offensive.—*Vide* Unguentum Plumbi Iodidi. This is the law with regard to lead in its various forms : in the many not susceptible to its effects it scarcely acts as a poison, even in large doses ; in the few, the absorption of very inconsiderable portions will produce colic, palsy, epilepsy, death.

Dose.—Gr. $\frac{1}{4}$ to gr. ij. or more.

Cautions.

PLUMBI OXYDUM HYDRATUM.

Hydrated Oxide of Lead.

Take of the Liquor of Diacetate of Lead, six pints ;
 Distilled Water, three gallons ;
 Liquor of Potassa, six pints ; or as much as is
 required for precipitating the Oxide :

Mix. Wash the precipitate with Water until no trace
 of Alkali remains.

Chemical, &c.—For tests and theory of process, *vide* Notes, and
 Supplement, p. 98.

Remedial Use.—In preparing the disulphate of quina, *vide* Quinæ
 Disulphas.

A white powder,
 soluble in excess of
 potassa and in nitric
 acid ; it is blackened
 by hydro-sulphuric
 acid (sulphuretted hy-
 drogen), which is the
 oldest and best test
 of all the compounds
 of lead.

It consists of oxide
 of lead and water :
 proportions not known.

PRÆPARATA È POTASSIO.

Preparations of Potassium.

LIQUOR POTASSÆ.

Liquor of Potassa.

Take of Carbonate of Potassa, fifteen ounces ;
 Lime, eight ounces ;
 Boiling Distilled Water, a gallon :

Dissolve the Carbonate of Potassa in half a gallon of
 the Water. Sprinkle a small portion of the Water over
 the Lime in an earthen vessel ; and when the Lime is
 slaked, add the rest of the Water. These liquors being
 immediately mixed together in a covered vessel, shake
 them from time to time until they are cold. Then set

Old Name.

Aqua Kali Puri.

Potassa is composed
 of

Potassium

1 equivalent . 40

Oxygen 1 equiv. 8

Equivalent 48

Sp. gravity 1.063

If the stopper is left
 out, it attracts carbonic
 acid. It may be kept
 pure by throwing a
 small lump of lime
 into the bottle.

Cautions.

Incompatible with acids and acidulous salts, the medicinal salts of ammonia, metallic and earthy compounds, when dissolved in excess of acid, and with both the chlorides of mercury.

It is commonly exhibited in beer, the acid of which will form a neutral salt; and, therefore, if given in such a vehicle the dose should be much increased.

It acts upon flint glass; and, therefore, green bottles are suggested.

Remark! This is the old liquor potassæ sub-carbonatis, or solution of salt of wormwood, or kali.

Poisonous in large doses.

Antidote, Lemon juice.

Haustus Salinus.

R Potassæ Carbon.

(P. L. 1836) ℥j.

Vin. Antim. Potassio-tartratis,

℥xx.

Syrup. Aurantii,

fʒj.

Tinct. Aurantii,

fʒss.

Aquæ Destillatæ,

fʒiiss.

M. Ft. Haustus cum Succo Limonum Cochleari magno capiendus.

aside that the Carbonate of Lime may subside. Finally, preserve the supernatant liquor, when poured off, in a green glass bottle well stopped.

Chemical, &c.—Potassa deprived of its carbonic acid by the superior affinity of lime.—*Vide* Notes, and Supplement, p. 99.

College Preparations.—Potassæ hydras, Potassa cum calce, Antimonii oxysulphuretum.

Remedial Action.—When further diluted it is administered as an antacid, diuretic, and lithontriptic; and it powerfully irritates the mucous lining of the alimentary canal; thus, sometimes relieving irritation of the urinary mucous tracts and of the skin, by acting as a counter-stimulant. Hence its use in some of the cutaneous diseases—such as leprosy: hence, too, its power of relieving irritation of the bladder in calculus, gonorrhœa, &c. Its utility, exhibited in barley-water, in nephritic colic and gravel, may be ascribed to its antacid and counter-stimulant operation. If too long administered it induces anorexy.

Dose.—℥x. to fʒss. in any bland liquid; as an alterative, in Decoct. Sarzæ, or in bitter infusions; as a diuretic, in broom tea, &c.

LIQUOR POTASSÆ CARBONATIS.

Liquor of Carbonate of Potassa.

Take of Carbonate of Potassa, twenty ounces;
Distilled Water, a pint:

Dissolve the Carbonate of Potassa in the Water, and strain.

Remedial Action.—It stimulates the mucous membranes, and not unfrequently produces a purgative effect as well as an increased secretion of urine, without accelerating the circulation or increasing the heat of the body. Vegetables abounding in this salt exert a similar action. In this country it is chiefly employed for the lithic acid diathesis, in disorders of the digestive system where acidity is a prevailing symptom, and in skin disorders connected with the same acid secretions. The salt itself is most commonly used for the well-known saline effervescing draughts in fevers, inflammations, and to allay vomiting. It is also used in whooping-cough; and some practitioners rely upon its specific effects in controlling fevers.—*Vide* Potassæ Carbonas.

Dose.—Of the liquor ℥x. to fʒj.

POTASSA CUM CALCE.

Potassa with Lime.

Take of Hydrate of Potassa,

Lime, of each, an ounce :

Rub them together, and keep them in a vessel well stopped.

Chemical, &c.—*Vide* Supplement, p. 100.

Remedial Use.—The lime renders the hydrated potassa less deliquescent, and therefore more convenient as a caustic. It decomposes the flesh with which it comes in contact, leaving on the skin a soft eschar which is slowly detached. Used to establish issues, to open indolent abscesses, to cauterise poisoned wounds, &c.

Cautions.

Old Name.

Calx cum Kali.

POTASSÆ HYDRAS.

Hydrate of Potassa.

Take of Liquor of Potassa, a gallon :

Evaporate the Water in a clean iron vessel over the fire until the ebullition having ceased, the Hydrate of Potassa liquefies. Pour this into proper moulds.

Chemical, &c.—*Vide* Supplement, p. 101.

Remedial Use.—Externally as a caustic.—*Vide* Potassa cum Calce. In solution it has been used as a detergent and as a preventive of venereal infection. Also for cleansing the head from scurf, for which, however, Liq. Potassæ, fʒij., Aq. Rosæ, fʒvss., with fʒss. of Spirit of Rosemary, will be preferable.

Former Names.

Potassa Fusa ;

Kali Purum ;

Lapis Infernalis.

Composed of

1 equiv. of Potassa 48

1 equiv. of Water 9

Equiv. 57

POTASSÆ ACETAS.

Acetate of Potassa.

Take of Carbonate of Potassa, a pound ;

Acetic Acid, twenty-six fluidounces ;

Distilled Water, twelve fluidounces :

Having first mixed the Acid with the Water, add the Carbonate of Potassa to saturation, and then strain.

Former Names.

Kali Acetatum ;

Sal-diureticus.

It consists of

Acetic Acid

1 equiv. 51

Potassa 1 equiv. 48

Equiv. 99

Cautions.

This salt is commonly found in the sap of almost all vegetables.

It is extremely deliquescent; its odour, peculiar; taste, sharp; very soluble in water and in alcohol.

As thus prepared it is foliated; but it occurs also in small, white, brilliant scales.

Incompatible with nearly all the acids, and with great number of salts.

Mark! formerly, and now by many physicians, called Subcarbonate of Potassa. Formerly, also, called Kali, Sal Absinthii, Salt of Wormwood.

This salt consists of Carbonic Acid

1 equiv. 22

Potassa 1 equiv. 48

—
Equiv. . . . 70

It contains about 16 per cent. of water.

In the impure state it is the pearl ash of the markets.

Incompatible with acids and acidulous salts, hydrochlorate of ammonia, and nearly all salts, earthy or metallic.

You must keep it dry, or your proportions for a saline draught will be quite uncertain.

Vide Acidum Citricum.

Evaporate the liquor in a sand-bath, with a heat cautiously applied, until the salt is dried.

Chemical, &c.—Single elective affinity.—*Vide* Notes, and Supplement, p. 101. Soluble in about its own weight of water.

Remedial Action.—In small doses, it exerts its effects on the kidneys, and is useful in dropsies; in larger quantities it is a laxative. A solution of it, in the compound infusion of broom, will form a good diuretic drink for the chamber of hydropics. Said to be rendered more active by being super-acetified with the addition of a little vinegar.

Dose.—ʒj. to ʒj.; or, as a laxative, ʒiij. to ʒj.

POTASSÆ CARBONAS.

Carbonate of Potassa.

Take of Impure Carbonate of Potassa, two pounds;
Distilled Water, a pint and a half:

Dissolve the impure Carbonate of Potassa in the Water, and strain; then pour off into a suitable vessel, and evaporate the Water, that the liquor may thicken; then stir it constantly with a spatula, until the salt concretes.

A purer Carbonate of Potassa may be prepared from the crystals of Bicarbonate of Potassa heated to redness.

Chemical, &c.—*Vide* Supplement, p. 102, and Notes.

Remedial Use.—Antacid, diuretic, purgative.—*Vide* Liquor of the same.

College Preparations.—It is used in the preparation of various salts of potassa; also in forming the three spirits of ammonia, the simple, aromatic, and fœtid; in the Decoctum Aloës Compositum; and in the Mistura Ferri Composita.

Dose.—Gr. x. to ʒss.

POTASSÆ BICARBONAS.

Bicarbonate of Potassa.

Take of Carbonate of Potassa, six pounds ;
Distilled Water, a gallon :

Dissolve the Carbonate of Potassa in the Water, and transmit Carbonic Acid Gas through the solution to complete saturation. Apply a gentle heat, so that such crystals as may have been formed may be redissolved. Then set aside, that the liquor may again crystallize. Having poured off the liquor, dry the crystals. Carbonic Acid is very easily obtained from Chalk powdered, and mixed with Water to the consistence of a syrup, by pouring upon it Sulphuric Acid, diluted with an equal weight of Water.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 102.

Remedial Use.—As it possesses the same virtues as the carbonate, without its causticity, it should generally be employed as a substitute for this last. Where, however, as in whooping-cough, and in certain fevers, our object is to contra-stimulate the mucous membranes, the carbonate is preferable. Of all the carbonated alkalies this forms the most elegant saline effervescing draught, with lemon juice, in febrile complaints. Useful also in dropsies and glandular obstructions.

Dose.—Gr. x. to ʒss. *Vide* Citric Acid.

LIQUOR POTASSÆ EFFERVESCENS.

Effervescing Liquor of Potassa.

Take of Bicarbonate of Potassa, a drachm ;
Distilled Water, a pint :

Dissolve the Bicarbonate of Potassa in the Water, and pass through it an excess of Carbonic Acid by the force of pressure. Keep the liquor in a vessel well stopped.

Cautions.

Mostly, even now, called Carbonate of Potassa. Thus it will be totally impossible for the dispenser to avoid errors, unless the caution of the prescriber lead him to affix the date of the P. L. from which he prescribes.

It consists of
Carbonic Acid
2 equiv. . . . 44
Potassa 1 equiv. 48
Water 1 equiv. 9

Equiv. . . 101
For incompat. *vide*
Potassæ Carbonas.

Both the carbonate and bicarbonate are very active remedies in large doses, and may even produce poisonous effects.

N.B. The carbonic acid should be washed before it is used in this process.

There is no such thing as effervescing liquor of potassa. It is a solution of bicarbonate, surcharged with carbonic acid by the force of pressure.

Cautions.

The apparatus employed by soda-water manufacturers is most convenient for this preparation.

Remedial Use.—As a more agreeable form of the bicarbonate; but that the plentiful exhibition of carbonic acid, both free and combined, is consistent with an antacid indication, may be fairly doubted. May carbonic acid be absorbed so as to affect the urine? The Editor would say it may.

POTASSÆ SULPHAS.

Sulphate of Potassa.

Old Names.
Kali Vitriolatum,
and Sal Polychrest.
Composed of
Sulphuric Acid
1 equiv. . . . 40
Potassa 1 equiv. 48
—
Equiv. . . . 88
Without any water
of crystallization.

It is saline and bitter; crystallizes in six-sided prisms. It is not affected by exposure to the air. It requires 16 times its weight of cold water for solution, and five of boiling.

Incompatible with the salts of baryta, of lead; also with tartaric acid, lime water, &c.

Take of the Salt which remains after the distillation of
Nitric Acid, two pounds;
Boiling Water, two gallons:

Burn the Salt in a crucible until the surplus of Sulphuric Acid be thoroughly expelled, then boil it in the two gallons of Water until a pellicle floats; and, having strained the liquor, set by, that crystals may form. Dry these, after pouring away the liquor.

Chemical, &c.—The excess of acid expelled by heat, instead of being neutralized by the addition of potassa as heretofore.—*Vide* Notes, and Supplement, p. 103.

Remedial Action.—It was formerly employed in purgative draughts, from which, however, it is copiously precipitated by the addition of a tincture. It is now sometimes exhibited with rhubarb in visceral obstructions, and, as a refrigerant laxative, in fevers; but its comparative insolubility is an obstacle to its general use. It is said to act as an alterative in chronic enlargement of the liver. It is ordered in the composition of Dover's Powder, for the purpose, as modern pharmacists say, of insuring the minute division of the ipecacuanha and opium: but this does not coincide with the views of the physicians who originally planned or employed this combination, on a belief of its diaphoretic powers.

Dose.—Gr. x. to ʒj.; or, as a purgative, ʒj. to ʒiij.

POTASSÆ BISULPHAS.

Bisulphate of Potassa.

Take of the Salt which remains after the distillation of
Nitric Acid, two pounds;

Old Name.
Potassæ Supersulphas.

Sulphuric Acid, one pound ;

Boiling Water, six pints :

Dissolve the Salt in the Water ; and, having added to it the Acid, mix them. Then boil down, and set aside, that crystals may be formed.

Chemical, &c.—*Vide* Notes, and Supplement, p. 104.

Remedial Use.—It must be considered (remedially) as a mixture of sulphuric acid and bisulphate of potassa, more soluble than this last salt, and possessing the refrigerating power of the acid. The use of the supersulphates combined with bitters, as alterative aperients, has of late years been much extended, probably on the authority and example of Dr. Jephson.

Dose.—Gr. x. to ʒij.

POTASSÆ TARTRAS.

Tartrate of Potassa [Neutral].

Take of Bitartrate of Potassa, powdered, three pounds ;

Carbonate of Potassa, sixteen ounces, or *q. s.* ;

Boiling Water, six pints :

Dissolve the Carbonate of Potassa in the boiling Water ; then add the Bitartrate of Potassa, and boil. Strain the liquor ; then boil it down until a pellicle floats, and set aside, that crystals may be formed. Having poured off the liquor, dry these [crystals], and again evaporate the liquor for a second crystallization.

Chemical, &c.—*Vide* Notes, and Supplement, p. 104.

Remedial Action.—It is a mild purgative, and is sometimes ordered in senna aperient draughts, or associated with the resinous purges. Of itself, it is scarcely active enough for persons of rigid fibre. Klein's lenitive is a good formula of it.—*Vide* p. 197.

Dose.—ʒij. to ʒjss.

POTASSII BROMIDUM.

Bromide of Potassium.

Take of Bromine, two ounces ;

Carbonate of Potassa, two ounces and one drachm ;

Cautions.

N. B. The College Translator orders four pints of water, but six are ordered in the Latin text.

Composed of

Sulphuric Acid

2 equiv. . . . 80

Potassa 1 equiv. 48

Water 2 equiv. . 18

—————
Equiv. . . 146

Incompatible with alkalis, earths, and the carbonates of both these, and with most metallic oxides, &c.

Older Names.

Kali Tartarizatum ;

Soluble Tartar.

It consists of

Tartaric Acid

1 equiv. . . . 66

Potassa 1 equiv. 48

—————
114

Soluble in little more than its weight of water. It should be quite neutral, exerting no power on test-paper. Its crystals are slightly deliquescent.

Incompatible with all the acids, and completely decomposed by lime-water, the hydrochlorate of baryta, the salts of lead, &c.

Bromine (a term derived from the Greek *βρωμος*, or *fætor*) is obtained from the uncrystallizable residue, or bittern, of seawater ; one hundred

Cautions.

pounds of the water
yielding only three
grains of it.

Bromide of potas-
sium consists of

Bromine

1 equiv. . . . 78

Potassium

1 equiv. . . . 40

Equiv. . . 118

Incompatible with
acids, salts acidulous
and metallic, &c.

Iron Filings, an ounce ;

Distilled Water, three pints :

To a pint and a half of the Distilled Water add, first, the Iron, and afterwards the Bromine. Set aside for half an hour, occasionally stirring with a spatula. Apply a gentle heat ; and, when it has acquired a greenish colour, pour in the Carbonate of Potassa, dissolved in the remainder of the Water. Strain ; and having washed the residue in two pints of boiling Distilled Water, again strain. Let the mixed liquors be evaporated, that crystals may be formed.

Chemical, &c.—*Vide* Notes, and Supplement, p. 105.

Remedial Use.—It has been employed by Majendie in France, and by Dr. Williams in this country, in enlargement of the spleen. Its effect can readily be watched and ascertained ; for, by percussion, the extent of the organ may be determined, and, being indicated by an ink line, its daily diminution may be observed with interest.

Dose.—Gr. iij. to gr. x. in any aromatic water.

POTASSII IODIDUM.

Iodide of Potassium.

Generally called
Hydriodate of Potassa.
Crystals cubic, deli-
quescent.

Composed of
Potassium

1 equiv. . . . 40

Iodine 1 equiv. 125

Equiv. . . 165

100 parts of water,
at 65°, dissolve 143 of
this iodide ; and the
aqueous solution dis-
solves a considerable
portion of iodine,
forming a solution of
ioduretted iodide of
potassium. Iodide of
potassium is likewise

Take of Iodine, six ounces ;

Carbonate of Potassa, four ounces ;

Iron Filings, two ounces ;

Distilled Water, six pints :

Mix the Iodine with four pints of the Water, and add the Iron, now and then stirring with a spatula for half an hour. Apply a gentle heat ; and, when it has acquired a greenish colour, add your Carbonate of Potassa previously dissolved in two pints of the Water, and strain. Wash the residue in two pints of boiling Distilled Water, and again strain. Let the mixed Liquors be evaporated, that crystals may be formed.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 106.

Remedial Action.—The first and most obvious effect of iodine and its preparations, exhibited internally, is its stimulating influence on the mucous surfaces; for when exhibited in over-doses it produces inflammation of the stomach and bowels. But, besides this action, it is a powerful excitant, or special stimulant, on the lymphatic and capillary systems. The fact of its being absorbed can be reduced to a certainty, for it may be detected in the blood, in the urine, and in the perspiration. By its first stimulating impression on the stomach and alimentary canal, it excites these surfaces to absorption, and thus increases appetite; and its subsequent action on the minute absorbents should seem to be merely an extension or spreading of that same impression. Again, there is something special in its action on secreting glands. It does not, like mercury, excite the salivary apparatus; but it eminently stimulates the kidneys, the thyroid and the genital glands. Iodine was first introduced by Dr. Coindet, of Geneva, in the treatment of goitre and tumours of the lymphatic ganglia, indolent buboes, &c. Since then its use has been greatly extended; and not only has it been confidently recommended for scirrhus tumours of the ovaries, &c., but also tubercles have been said to have been successfully treated with this remedy. In amenorrhœa, in enlargements of the liver (Parabysm), depending on a gorged state of its vessels, in secondary syphilis, and even in ovarian dropsy itself, its success has been recorded. Sudden emaciation, cough, pyrexial excitement, nausea, giddiness, or dysenteric pains, are signs requiring the immediate discontinuance of the medicine. The iodide of potassium, if less active, is certainly safer than the iodine itself, and has been exhibited in doses which the Editor will not take the responsibility of recording. We think it our duty to add, in reference to its use in mesenteric dropsy, that it has, in our hands, induced honey-comb ulceration of the integuments; and that its use, externally, over a distended abdomen is highly dangerous. An author, whose name stands deservedly high in this country, and who, perhaps, has worked harder for his medical brethren than any individual whom we can name, has, in a recent work, strongly recommended iodine in very large doses, increased to sixty minims of the tincture, for ovarian dropsy, immediately after tapping. That gentleman's faith in remedies generally far surpasses our own; and he will pardon our observing, that, while in page 259 of his Work, he records three cases treated successfully out of five, yet, in page 849, after instancing one case, he adds, it has never proved equally beneficial in his hands. When previously rubbed up with starch, its irritating effects on the mucous membranes are obviated, without diminishing its curative powers. Dr. Buchanan prefers the iodide of starch.

Dose.—Of iodide of potassium, gr. iij. to ʒj. or more, three times a day.

Cautions.

soluble in alcohol of the S. G. of .815.

Incompatible with acids, and metallic salts.

If your patient's mucous membranes be irritable, beware of iodine.

In syphilitic ulcers of the throat, of long standing, I have observed its beneficial use to be followed by a papular eruption on the forehead, at the appearance of which the ulcers rapidly heal, and the general health is restored. In these cases I give 10 grains three times a day in the compound infusion of Gentian, or as below. So again in phagedenic ulcers it exerts a marked control over the process of ulceration.

℞ Potassii Iodidi, gr. x.
Infus. Aurant. C. fʒx.
ft. Haustus, ter die sumendus.

Cautions.

LIQUOR POTASSII IODIDI COMPOSITUS.

Compound Liquor of Iodide of Potassium.

Solution of ioduretted iodide of potassium.

Take of Iodide of Potassium, ten grains ;
Iodine, five grains ;
Distilled Water, a pint :

Mix, that they may be dissolved.

Chemical, &c.—*Vide* Supplement, p. 106.

Remedial Use.—This was supposed to be the best form for the exhibition of iodine, containing what is called an ioduretted iodide of potassium.—*Vide* Potassii Iodidum. Some physicians have recorded that they have given half an ounce of the iodide of potassium without any manifest effects, and it may be presumed that this has led to combining it with iodine. I, for my part, have found the iodide *alone* a very efficacious remedy.

Dose.—fʒj. to fʒss. or more.

Former Names.

Potassæ Sulphuretum ;
Kali Sulphuratum ;
Hepar Sulphuris, or
Liver of Sulphur.

Composed of three equiv. of sulphuret of potassium, and one of sulphate of potassa.

Colour, liver-brown ;
odour, when moistened, like that of rotten eggs ; taste, acrid and bitter ; readily soluble in water ; decomposed by exposure to the air, and converted into sulphate of potassa.

Incompatible with acids, and with solutions of most of the metallic compounds.

POTASSII SULPHURETUM.

Sulphuret of Potassium.

Take of Sulphur, an ounce ;
Carbonate of Potassa, four ounces :

Rub them together, and place them in a close crucible over the fire, until they have united.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 107.

Remedial Action.—This compound is a powerful stimulant, and poisonous in large doses. In smaller doses, it stimulates the alimentary tract and the secretory organs, but chiefly acts on the skin and lungs. It has been employed internally in pertussis, and formerly in scrofula, impetigo, and other obstinate eruptions ; but it is now chiefly used externally in psora, and herpetic eruptions, and generally in baths.

Dose.—Internally, gr. v. to ʒj. in a linctus with honey, or formed into pills with soap ; externally, as a salve for scald-head in the proportion of ʒiij. with ʒiij. of lard, or in the form of lotion, Potassii Sulphuret. ʒiij., Saponis duri, ʒij., solve in Aq. Rosæ, fʒij., Sp. rectificat. fʒj. ft. Lotio.

PRÆPARATA È SODIO.

Preparations of Sodium.

SODÆ CARBONAS.

Carbonate of Soda.

Take of Impure Carbonate of Soda, two pounds ;
Distilled Water, four pints :

Boil the impure Carbonate of Soda in the Water, and strain while hot. Lastly, set it aside, that it may crystallize.

Chemical, &c.—For an account of the various kinds of market soda, barilla, kelp, soda from sulphate of soda, muriate of soda, &c., *vide* Supplement, p. 108 ; and for tests, *vide* Notes.

Remedial Action.—Carbonate of Soda is an antacid. This effect it exerts chemically ; and, meeting with acidity in the stomach, it commonly relaxes the bowels. Combined with tartaric acid, and taken into the stomach with free carbonic acid, it acts as a refrigerant and aperient. Given in solution, it has been much used in acid calculous affections. In moderate doses it relieves heartburn, and very much facilitates digestion when this process has been arrested by the formation of an excessive quantity of acid, but it is not so agreeable as the sesquicarbonate, the so-called carbonate and bicarbonate of the shops.

Dose.—Gr. x. to ʒss.

SODÆ CARBONAS EXSICCATA.

Dried Carbonate of Soda.

Take of Carbonate of Soda, a pound :

Apply heat to the Carbonate of Soda, in a suitable vessel, until it is dried ; and afterwards burn it to redness. Finally, powder it.

Chemical, &c.—*Vide* Notes, and Supplement, p. 109.

Remedial Action.—The original object of this process of exsiccation was to obtain the carbonate in a more concentrated form, that it might be made into pills with sodaic soap. There is an opinion, originally

*Cautions.**Former Names.*

Sodæ Subcarbonas ;
Natron præparatum.

Composed of

Carb. Acid	
1 equiv. . . .	22
Sodæ 1 equiv. .	32
Water 10 equiv.	90

144

Soluble in two parts of cold, and in less of boiling water. It greens the syrup of violets, undergoes the aqueous and igneous fusion without decomposition, and effervesces with acids, but not energetically like the sesquicarbonate.

Incompatibles same as in potassæ carbonas, which see.

Should any one go on the English 'Change, and ask for impure carbonate of soda, no one would know what he meant ; neither, definitely, could he tell what he meant himself.

This is the salt above mentioned, deprived of the whole of its water of crystallization.

Cautions.

expressed by Fourcroy, and quoted by more modern authors, "that soda is more eligible for medicinal purposes than potassa, on account of its analogy with animal substances, which always contain it; while, on the contrary, no portion of potassa is found in them:" but it is inaccurate, for the saliva alone contains six salts of potassa.

Dose.—Gr. x. to ʒj.

Former Name.

Sodæ Carbonas;
and, in most elementary systems of chemistry, hitherto called Bicarbonate of Soda.

Composed, according to most chemists, of

Carbonic Acid	
2 equiv.	44
Soda 1 equiv. . .	32
Water 2 equiv. .	18
	—
	94

But Mr. Phillips states it to contain only one and a half of carbonic acid.

Incompatible, &c., *vide* the Carbonate.

The proportions used for the soda powders are by no means uniform. Some employ gr. xxv. of tartaric acid and ʒss. of this sesquicarbonate to the half-pint of water.

Old Name.

Natron vitriolatum;
Glauber's Salt.

Composed of

Sulph. Acid . .	40
Soda	32
	—
	72
10 eq. of Water	90
	—
	162

SODÆ SESQUICARBONAS.

Sesquicarbonate of Soda.

Take of Carbonate of Soda, seven pounds;
Distilled Water, a gallon:

Dissolve the Carbonate of Soda in the Water, and strain; then pass Carbonic Acid through the liquor to perfect saturation, that the Salt may subside. Dry this, folded and pressed in linen cloth, with a gentle heat.

Chemical &c.—It is well that we substitute the term equivalent for atom, for to talk of the half of an "ultimum indivisum and indivisible" is painful both to the teacher and to the pupils.—*Vide* Notes, and Supplement, p. 109.

Remedial Use.—It may be employed in the same diseases, and to fulfil the same objects, as have been mentioned under the head of Bicarbonate of Potassa. The personal experience of almost every dyspeptic patient is testimony of its power of promoting digestion, or of relieving heartburn; but it is chiefly employed in the effervescing soda powders. It seldom occurs pure; that of the shops is a mixture of carbonate, sesquicarbonate, and bicarbonate.

At page 51 will be found a Table of saturating proportions of lemon-juice and crystals of citric acid for the alkaline carbonates. A citrated alkali for the extemporary formation of saline draughts is now very generally supplied by the wholesale druggists. It contains equal parts of the dry powder of citric acid, and of the dry sesquicarbonate of soda, with a portion of white sugar. The acid is, therefore, considerably in excess.

Dose.—Gr. x. to ʒss.

SODÆ SULPHAS.

Sulphate of Soda.

Take of the Salt which remains after the distillation of
Hydrochloric Acid, two pounds;
Boiling Water, two pints;
Carbonate of Soda, as much as is required:

Dissolve the [first-mentioned] Salt in the Water; then gradually add a sufficient quantity of Carbonate of Soda to saturate the [surplus] Acid. Boil down until a pellicle appears; and, the liquor being strained, set aside, that crystals may form. Pour off the liquor, and dry them.

Chemical, &c.—For theory and tests, *vide* Notes, and Supplement, p. 110.

Remedial Action.—A gentle serous laxative, refrigerating the system, and therefore formerly used in febrile affections. Neglected more as the effect of fashion than from any reasonable objection to its use. Factitious Cheltenham Salts: Sulphate of Soda, grs. 120; Epsom Salts, grs. 66; Common Table Salt, grs. 10; Sulphate of Iron, gr. $\frac{1}{2}$; —powerfully purgative.

Dose.— $\bar{z}$ ss. to $\bar{z}$ iss.

SODÆ POTASSIO-TARTRAS.

Potassio-Tartrate of Soda.

Take of Bitartrate of Potassa, powdered, sixteen ounces;
Carbonate of Soda, twelve ounces;
Boiling Water, four pints:

Dissolve the Carbonate of Soda in the boiling Water, and gradually add the Bitartrate of Potassa. Strain the liquor; then apply a gentle heat until a pellicle floats, and set aside, that crystals may form. Dry these, having first poured away the liquor. Again evaporate this liquor, that it may crystallize.

Chemical, &c.—*Vide* Notes, and Supplement, p. 110.

Remedial Use.—There is little or no difference between the action of this salt and that of the tartrate of potassa. The annexed is a good purgative formula. The $\frac{1}{12}$ or $\frac{1}{16}$ of a grain of emetic tartar is often added to the Seidlitz powder, consisting of two drachms of this salt with $\bar{z}$ ij. of the sesquicarbonate in the blue paper, and gr. xxxv. of acid in the white. Like other neutral saline compounds of the vegetable acids, it occasionally exerts an alkaline reaction on the urine. A small tumbler full ($\bar{z}$ iv.) of the antimonial tartrate solution annexed, with a tablespoonful of lemon juice (more or less according to the palate) is my common formula for females abounding in fluids; *i. e.* in juicy, humid temperaments.

Cautions.

And in transparent prismatic crystals which effloresce, combined with 10 atoms of water.

Incompatible with the salts of baryta, lead, carbonate of potassa, &c.

$\bar{z}$ ijss. soluble in $\bar{z}$ j. of water.

Former Names.

Soda Tartarizata;
Natron Tartarizatum;
Rochelle Salt.

Composed of

Tartrate of Potassa
1 equiv. . . . 114
Tartrate of Soda
1 equiv. . . . 98
Water 8 equiv. 72

284

Incompatible with all the acids and acidulous salts, and completely decomposed by lime-water, hydrochlorate of baryta, the salts of lead, &c. Even the weakest acids convert the tartrate into cream of tartar.

R. Sodæ Pot. Tart. $\bar{z}$ vj.
Antim. Pot. Tart.
gr. j.
Syrup. Simp. $\bar{z}$ j.
Aquæ Aurantii, $\bar{f}$ ij.
Aquæ Destill. $\bar{f}$ ij.
Misce.

Dose. — A tablespoonful, or two, every two or three hours, in fevers, &c.

Dr. Collier's Saline Antimonial Aperient.

R. Sodæ Potas. Tart.
 $\bar{z}$ ij.
Sodæ Sesquicarb.
 $\bar{z}$ ij.
Flavdinis recentis
Aurantii, $\bar{z}$ ij.
Antimon. Potass.
Tart. gr. j.
Aquæ ferventis, Oiss.
Macera per sextam
horæ partem, tum cola,
et in vase obturato
serva.

Cautions.

Here we have a striking instance of the difficulty of controlling nomenclature. Mr. Phillips calls this salt, in his translation of the formula, a carbonate of soda; and in the "Notæ," the College call it an effervescing solution of carbonate of soda. Nay, in this very formula, the College, after ordering the sesquicarbonate, direct you to dissolve the carbonate.

Commonly called Labarraque's Disinfecting Soda Liquid. Chemical constitution unknown.

Dr. Turner, in his Elements of Chemistry, conjectures that it is a solution of chloride of soda, combined with the carbonate.

Colour, straw-yellow; taste, sharp, brackish, rough; first reddens, then bleaches turmeric.

N. B. Beware of using it in an irritable state of the respiratory organs, or near bright machinery.

LIQUOR SODÆ EFFERVESCENS.

Effervescing Liquor of Soda [Soda Water].

Take of Sesquicarbonate of Soda, a drachm;
Distilled Water, a pint:

Dissolve the [Sesqui] Carbonate of Soda in the Water, and, by the force of pressure, pass it into an excess of Carbonic Acid. Keep the liquor in a well-stopped vessel.

Remedial Action.—At once an excellent antacid and grateful stimulant. If it meets with acidity in the stomach, in persons who are not of rigid fibre, it usually induces a mild evacuation. It were well for the public if all soda water were made like this.

LIQUOR SODÆ CHLORINATÆ.

Liquor of Chlorinated Soda.

Take of Carbonate of Soda, a pound;
Distilled Water, forty-eight fluidounces;
Chloride of Sodium, four ounces;
Binoxide of Manganese, three ounces;
Sulphuric Acid, four ounces:

Dissolve the Carbonate of Soda in two pints of the Water; then put the Chloride of Sodium, and the Binoxide of Manganese previously powdered, into a retort, and add to them the Sulphuric Acid, previously mixed with three fluidounces of the Water, and cooled. Heat this mixture, and pass the Chlorine (thus evolved), first through five ounces of the Water, and then through the Liquor of Carbonate of Soda above prepared.

Chemical, &c.—*Vide* Supplement, p. 111, and Notes.

Remedial Use.—Internally it has been employed in typhus, typhoid fevers, and in cynanche maligna to arrest septicity, and consequently to improve the secretions. Under the continued employment of it glandular enlargements and chronic mucous discharges are said to have disappeared. Locally it has been used in the form of gargle in ulcerated sore-throats, and as a lotion to ill-conditioned ulcers, and lastly, it is employed largely as a disinfectant; but, until the chemical composition of infecting effluvia is known, the mode of its action must remain, as it is, a matter of conjecture.

Dose.—Internally, ℥x. to fʒj. in barley-water or sherbet.

Cautions.

PRÆPARATA È ZINCO.

Preparations of Zinc.

CALAMINA PRÆPARATA.

Prepared Calamine.

Burn the Calamine ; then powder it. Afterwards let a very fine powder be formed in the same manner in which we have ordered Chalk to be prepared.

Chemical, &c.—For tests and chemical history, *vide* Notes, and Supplement, p. 112.

Remedial Use.—As a desiccative in ulcerations and excoriations, and as the basis of Turner's Cerate ; for which last formula, now banished from the P. L., *vide* p. 244.

The variety found in Derbyshire is objectionable from its containing copper ; but the calamines of Somersetshire and Flintshire, containing ferruginous impurities, are perfectly innocent.

ZINCI OXYDUM.

Oxide of Zinc.

Take of Sulphate of Zinc, a pound ;

Sesquicarbonate of Ammonia, six ounces and a half ;

Distilled Water, three gallons :

Separately dissolve the Sulphate of Zinc and the Sesquicarbonate of Ammonia in twelve pints of the Distilled Water, and strain ; then mix. Wash the precipitate, by frequently pouring water on it ; and, lastly, burn it for two hours in a strong fire.

Chemical, &c.—For tests and theory of process, *vide* Notes, and Supplement, p. 112.

Old Names.

Zincum Calcinatum ;
Flowers of Zinc.

Also the whiter part is called Pompholyx, and the gray, Tutty.

Composed of

Zinc	32
Oxygen	8
	—
	40

Insoluble in water and alcohol ; completely soluble in caustic alkalies, and in acids.

Cautions.

R. Oxydi Zinci, ʒss.
 Myrrha pulv. ʒij.
 Camphoræ, ʒj.
 Confect. Rosæ C.
q. s.
 Ft. massa in pil. xl.
 divid. Cap. ij. ter de die.

Remedial Action.—In over-doses it induces colic, vomiting, and giddiness; and the same sense of inebriation which the Editor has noticed as one of the effects of the trisnitate of bismuth, to which, in medicinal character, it is nearly allied. It has been used with benefit, as an astringent tonic, in partial paralysis, epilepsy, chorea, and other nervous disorders. Also in gastric or spasmodic or whooping-cough, and in certain atonic conditions of mucous membranes. Externally, it is a favourite remedy with our oculists in chronic ophthalmia; and it is also commonly employed as a desiccative in the form of an ointment.

Dose.—Gr. iv. to ʒj.

ZINCI SULPHAS.

Sulphate of Zinc.

Old Names.

Zincum Vitriolatum;
 White Vitriol;
 White Copperas.
 To distinguish the
 crystals.

N. B. That they are silky or oily when rubbed between the fingers; by which, and by the taste, you may distinguish them from Epsom salts.

Take of Zinc, in small pieces [granular], five ounces;
 Diluted Sulphuric Acid, two pints:

Gradually pour the diluted Sulphuric Acid on the pieces of Zinc; and, after the effervescence has ceased, strain the liquor, then boil down until a pellicle begins to appear. Finally, set aside, that crystals may be formed.

Chemical, &c.—*Vide* Notes, and Supplement, p. 112.

Incompatible with alkalis, hydro-sulphates, and vegetable astringent liquors.

Gr. ij. to grs. iv. in the ounce of rose-water, form the common zinc lotion.

R. Zinci Sulphat. gr. v.
 Quinæ Disulphat.
 gr. x.

Inf. Rosæ C. f ʒij.

M.

Cochl. minimum ter de die ex aquæ frigida paululo.

Remedial Action.—In its internal use in small doses, and in its employment externally, it corresponds with the preceding. In large doses it for the most part promptly acts as an emetic; but it cannot always be relied upon for this purpose; although advantageously selected in certain cases of poisoning, because it produces less nausea than the common emetics. I have employed it in solution, in the proportion of two drachms to a pint, as a counter-irritating lotion in deep-seated pains of the joints, periosteum, old sprains, &c. I have also found this salt, combined as set forth in the margin, very efficacious in the cure of barking (gastric?) coughs manifestly of a spasmodic character.

We have Dr. W. Philip's authority for using it with caution in indigestion, in which it may succeed where other tonics have failed; and, combined with myrrh and camphor, it has been extolled for the cure of epilepsy.

Dose.—Gr. j. to gr. iv.

MISTURÆ.

Mixtures.

THE dispenser will find, by reference to old prescriptions, that mixtures containing suspended oil, gum, resin, &c., were called emulsions: if also containing syrup, they were usually called juleps; and the term mixture was restricted to the mingling of two or more liquids. This division still prevails throughout the greater part of the Continent. The term mixture is now used generally, and will not admit of any definition.

MISTURA ACACIÆ.

Mixture of Acacia.

Take of Acacia (Gum Arabic), powdered, ten ounces;
Boiling Water, a pint:

Rub the Acacia with the Water poured on gradually, and dissolve it.

Remedial Action.—Demulcent. Simple as this medicine is (and the same may be said of tragacanth), there is none in the *Materia Medica* the effect of which in allaying irritation of the urinary passages is more certain. It has been contended that, as a nutrient material, it must be decomposed in the process of digestion, and that thus its remedial powers must be lost; but experience tells us otherwise. In gastro-enteritis, leeches to the abdomen, and gum-water drink, are all that is required, in most instances, for the cure. I have annexed the Syrop de Gomme from the Parisian Codex.

Dose.—fʒj. to fʒiv. or more.

MISTURA AMMONIACI.

Mixture of Ammoniacum.

Take of Ammoniacum, five drachms;
Water, a pint:

Rub the Ammoniacum with the Water gradually dropped in, until they are thoroughly mixed.

*Cautions.**Syrop de Gomme Arabique.*

Pale Gum Arabic picked and cleaned, one part;

Water, one part;

Syrup, four parts:

Dissolve the gum in the water by the aid of heat; add the syrup; simmer for two or three minutes, take off the scum, and set by to cool.

Gum Arabic itself has a Sp. Gr. of 1.35. It is nearly tasteless, readily soluble in water, but not in pure alcohol or æther. A weak aqueous solution becomes acetous if long kept, but a stronger mucilage will keep for a considerable time.

Mucilage Mixture.

℞ Mist. Acaciæ, ʒj.

Ol. Amygdal.

Syrup. Tolut. āā

fʒss.

Aquæ destillat. fʒvj.

M.

Slightly curdled by vinegar, oxymel, oxymel scillæ, æther, and bichloride of mercury.

It is not entirely soluble in water.

The mixture is more equable with yolk of egg, but more

Cautions.

liable to decompose in that form.

The ammoniacum in drops is the purest.

Expectorant Draught.

R Mist. Ammoniaci,
Mist. Amygdalæ, āā
f̄vj.

Tinct. Scillæ, ʒj x.

Ft. Haustus.

Both species of almonds are indicated in the columns; but the bitter does not enter into any formula.

The advocates for the use of Prussic acid might prefer the latter in phthisical cough.

Gowland's Lotion.

Corrosive Sublimate,
ʒj.

Sp. of Rosemary, f̄vj.

Mixture of bitter
Almonds, Oij.

M.

This mixture is much too offensive for general use.

R Mist. Assafoetidæ,
Mist. Camphoræ,
āā f̄ʒiiss.

Tinct. Valerianæ, f̄ʒj.

M.

Cochl. unum am-
plum 3tiis horis.

Remedial Action.—It is commonly ranked as a stimulant, expectorant, and antispasmodic. It is, in fact, a raking stimulant on torpid mucous membranes loaded with viscid mucus, without the power of throwing it off. Thus it proves useful in humoral asthma, viscid catarrh, and mucous collections with torpor of the bowels, in chlorotic and phlegmatic temperaments; but in the latter cases ammoniacum should be combined with a purgative, and not with bland emulsion or mucilage, which, by obtunding its acidity, impair its action.

Dose.—f̄ʒj. to f̄ʒij.

MISTURA AMYGDALÆ.

Mixture of Almonds.

Take of Confection of Almonds, two ounces and a half;
Distilled Water, a pint:

Gradually add the Water to the Confection of Almonds, triturating all the time until they are mixed; then strain through linen.

Remedial Action.—A palatable demulcent, and used very extensively as a vehicle, not only for the exhibition of alkalies and alkaline carbonates, nitre, and soluble tartar, but also for expectorants, such as squills, ipecacuanha, &c. When it begins to ferment it should be rejected. ʒiij. of the oil of almonds, ʒss. of gum arabic, f̄ʒiij. of syrup, with f̄ʒj. of aq. rosæ, are frequently used as substitutes to form, with distilled water, six ounces of emulsion.

Dose.—*Ad libitum.*

MISTURA ASSAFOETIDÆ.

Mixture of Assafoetida.

Take of Assafoetida, five drachms;
Water, a pint:

Rub the Assafoetida with the Water gradually poured on, until they are intimately mixed.

Remedial Use.—Stimulant, expectorant, antispasmodic. The first two operations may be explained by what we have said of the mixture of ammoniacum; the last depends upon the remarkable power certain foetids possess of controlling nervous susceptibility. The more you detract from the foetor of the remedy by combination, the more you impair the antihysterical or antispasmodic power.

Dose.—f̄ʒss. to f̄ʒiiss.

MISTURA CAMPHORÆ.

Mixture of Camphor.

Take of Camphor, half a drachm ;
Rectified Spirit, ten minims ;
Water, a pint :

First rub the Camphor with the Spirit, then with the Water gradually dropped in, and strain through linen.

Remedial Action.—It exerts its chief influence on the nervous system ; and, while it acts as a cordial on persons of a highly susceptible habit, yet, exhibited in full doses, it exerts a sedative effect. It is used in hysteria, chorea, subsultus tendinum, and strangury ; and in large doses it has been recommended as a sedative combined with hyoscyamus in mania. Externally it is employed in liniments, and in the well-known tepid lotion for gout, &c. A stronger julep may be made by suspending gr. xxv. of camphor by means of half a dozen blanched almonds with a little sugar, or by means of ʒss. of gum arabic powder, in 8 ounces of simple or spearmint water.

Dose.—fʒj. to fʒiij.

MISTURA CASCARILLÆ COMPOSITA.

Compound Mixture of Cascarilla.

Take of Infusion of Cascarilla, seventeen fluidounces ;
Vinegar of Squills, a fluidounce ;
Compound Tincture of Camphor, two fluid-
ounces :

Mix.

Remedial Action.—*Vide* Infusum Cascarillæ, and Acetum Scillæ. A tonic expectorant in chronic catarrh, humoral asthma, and the catarrh of elderly people.

Dose.—fʒj. to fʒiij., three times a day.

MISTURA CRETÆ.

Mixture of Chalk.

Take of prepared Chalk, half an ounce ;
Sugar, three drachms ;

Cautions.

Alcohol dissolves three-fourths of its weight of camphor ; it is also soluble in æther, in fixed and volatile oils ; but water dissolves only a very small quantity.

Treated with nitric acid by frequent distillation, it yields camphoric acid.

SCUDAMORE'S
Gout Lotion.

℞ Mist. Camphoræ,
fʒix.

Alcoholis, fʒiij.

Ft. lotio ; applied by means of linen rags, first made agreeably warm by the addition of a very small quantity of boiling water. Or it may be mixed with light poultices.

Incompatible with acids and acidulous salts ; and fit only for immediate use, as it ferments by keeping.

Cautions.

℞ Mist. Cretæ, f̄jv.
Tinct. Catechu,
Tinct. Cinnamomi,
āā f̄jss.
M.

Mixture of Acacia, a fluidounce and a half ;
Cinnamon Water, eighteen fluidounces :

Mix.

Remedial Action.—Antacid, demulcent. *Vide* Creta Præparata. If you add syrup of poppies, see that this last remedy is not already in a state of fermentation.

Vulgò, Griffith's
mixture.

The elegance of the mixture mainly depends on the quality of the myrrh.

Some dispensers use a tincture of myrrh, and thus obtain a mixture more pleasing to the eye; but the increased proportion of spirit is objectionable.

Others first triturate a lump of myrrh of the proper weight with rose-water, to form an emulsion, and afterwards add the spirit of nutmeg, alkaline carbonate, and the sugar, throwing in the sulphate of iron at the last.

Incompatible with acids and acidulous salts, and with the vegetable astringent liquids.

Where the patient has a dislike to the flavour of the nutmeg, spirit of lavender may be substituted, or the spirit of pennyroyal, which has itself been deemed a good emmenagogue.

MISTURA FERRI COMPOSITA.

Compound Mixture of Iron.

Take of Myrrh, powdered, two drachms ;
Carbonate of Potassa, a drachm ;
Rose-water, eighteen fluidounces ;
Sulphate of Iron, powdered, two scruples and a half ;
Spirit of Nutmeg, a fluidounce ;
Sugar, two drachms :

Rub together the Myrrh with the Spirit of Nutmeg and the Carbonate of Potassa ; and to these, during trituration, first add the Rose-water with the Sugar, then the Sulphate of Iron. Immediately put your mixture into a proper glass vessel, and stop it.

Chemical, &c.—The resulting compounds are protocarbonate of iron and sulphate of potassa, but the protoxide readily passes into the state of sesquioxide, and thus alters the colour from green to a yellowish red.—*Vide* Notes, and Supplement, p. 116.

Remedial Action.—It was first introduced by Dr. Griffith as a powerful anti-hectic, and has long maintained its reputation as a tonic and emmenagogue in chlorosis and amenorrhœa. It is much relied upon by some practitioners in incipient phthisis, and is just so far useful in preventing this malady, as it is effective in removing the chlorotic suppression which often leads to that complaint. The protiodide of iron has recently been suggested as a substitute for the sulphate of iron. It is also efficacious in the painful swellings which infest the breasts of young women, and equally so in lientery.

Dose.—f̄jss. to f̄jiss.

MISTURA GENTIANÆ COMPOSITA.

Compound Mixture of Gentian.

Take of Compound Infusion of Gentian, twelve fluid-ounces ;

Compound Infusion of Senna, six fluidounces ;

Compound Tincture of Cardamoms, two fluid-ounces :

Mix.

Remedial Use.—Constipation frequently depends upon atony of the muscular fibre of the bowels and abdominal muscles ; hence the utility of this combination in dyspeptic habits. A solution of the sulphate of soda or of magnesia with sulphate of quina, or with any of the simple vegetable bitters, will be useful in similar cases. It may be rendered more palatable by syrup of orange-peel.

Dose.—f̄j. to f̄ijj.

MISTURA GUAIACI.

Mixture of Guaiacum.

Take of Guaiacum-resin, three drachms ;

Sugar, half an ounce ;

Mixture of Acacia, half a fluidounce ;

Cinnamon-water, nineteen fluidounces :

Rub the Guaiacum with the Sugar, then with the Mixture of Acacia ; and to these, during trituration, gradually add the Cinnamon-water.

Remedial Action.—Guaiacum is a stimulant, acting chiefly on the skin, the secretion of which it much increases. In full doses the mixture will generally act as a purgative. It was formerly thought to be an effectual substitute for mercury in the cure of syphilis, but now ranks next to sarsaparilla as an auxiliary in the repair of constitutions disturbed or debilitated by that remedy. This mixture is also useful in atonic gout, and chronic rheumatism with a cold, languid state of skin. In many protracted cases of acute rheumatism where colchicum had failed, and the patient was still suffering under the most painful exacerbations, exhausted, emaciated, and as irritable as a puling infant, I have drawn a few ounces of blood, and immediately afterwards, by exhibiting this mixture, I have arrested the malady entirely.

Dose.—f̄jss. to f̄ijj., three or four times a day.

Cautions.

It will keep for a few days only.

Old Name.

Lac Guaiaci.

It was some years past said to contain a principle called Guaiacine.

To make this mixture to the satisfaction of customers, it ought not to be bottled till, by exposure to the air, it has acquired its usual greenish-blue colour, which bad guaiacum will not yield.

Cautions.

N.B. An artificial musk is prepared by digesting f $\bar{3}$ ss. of nitric acid for 10 days upon $\bar{3}$ j. of foetid animal oil obtained by distillation; and by then adding Spt. Rectif. Oj., digesting the whole for a month.

MISTURA MOSCHI.

Mixture of Musk.

Take of Musk,

Acacia [Gum Arabic], powdered,
Sugar, of each, three drachms ;
Rose-water, a pint :

Triturate the Musk first with the Sugar, then with the Gum, gradually pouring in the Rose-water.

Remedial Action.—This costly medicine exerts considerable power in allaying spasm. It is more diffusible than most of the foetid antispasmodics; and is effective in diminishing subsultus tendinum, whooping-cough, and in relieving hysteria. It seldom has a fair trial, as it is usually given in too small doses, and is not often met with in the pure state. The artificial musk in the margin is an unworthy substitution, unless it could be proved to possess the remedial qualities of the natural musk.

Dose.—f $\bar{3}$ j. to f $\bar{3}$ iv.

MISTURA SPIRITUS VINI GALLICI.

Mixture of Spirit of French Wine [Brandy].

Take of French Brandy,

Cinnamon-water, of each, four fluidounces ;
The yolks of two Eggs ;
Purified Sugar [lump], half an ounce ;
Oil of Cinnamon, two minims :

Mix.

The College Translator orders two drops, but our readers well know that a drop is not necessarily a minim.

Remedial Use.—This is an imitation of the egg-flip used in low fever in the hospitals; and although our readers may smile to find it has a place here, it has ere now restored many upon whom the action of more mystic compounds had been tried in vain. For all the varieties of egg-flip, the reader is referred to the "Oxford Nightcap."

Dose.—f $\bar{3}$ j. to f $\bar{3}$ ij.

Cautions.

OLEA DESTILLATA.

Distilled Oils.

THESE oils, otherwise called volatile or essential, are uniformly characterized by well-known properties. They are but slightly soluble in water, but readily so in spirit of wine. Their odour and taste, although differing in various oils, are always more or less penetrating. When pure, they pass into vapour at a temperature somewhat above 212° ; but when distilled from their proper herbs with water, they pass over with it at the boiling point. Most of them pass into the state of resin by age, and acquire a thick consistence. They are all instantly decomposed, and some of them, as the oil of turpentine, are inflamed, when mixed with nitric acid. Most of them are fluid; but some of them, and particularly the oil of anise, become solid by a slight reduction of temperature. This seems to have been forgotten in the planning of the *tinctura camphoræ comp.*, which becomes, now transparent, now opaque, half a dozen times a day. Some, as the oil of lavender, &c., are lighter than water; others, as the oil of cloves, cinnamon, &c., are specifically heavier than that fluid. Dissolved in alcohol, they are called in commercial language "Essences."—*Vide* Supplement, p. 117.

OLEUM ANISI.

Oil of Anise.

The essential oil of anise is contained in the testa or shell. The cotyledonous portion contains fixed oil.

OLEUM ANTHEMIDIS.

Oil of Chamomile.

100 lbs. of the flowers yield only 2 lbs. 12 oz. of oil. It therefore cannot be sold pure at the common price.

OLEUM CARUI.

Oil of Carraway.

English carraways yield about 3 per cent. of this oil.

A few minims are often added to masses of cathartic pills or powders as a corrigent, and to impart odour and flavour.

Cautions.

This oil should be obtained just when the berries are ripening, and not when they are quite ripe. 100 lbs. of the German berries yield from 9 to 10 oz. Same quantity of the Italian, only 7 oz.

There is no restriction to the use of English lavender, although the inferiority of the foreign is well known.

It contains a considerable per-centage of camphor.

The essential oils of the mints all contain a considerable portion of camphor, and, if used largely, exert emmenagogue powers.

A solution of camphor, oil of cloves, oil of lavender, and rosemary in acetic acid, constitutes Henry's Aromatic Vinegar. Some druggists form a sort of acetous aromatic by adding a few drops of either of these oils to ʒj. of acetate of potassa, dropping in twenty minims of sulphuric acid.

One hundred weight of the herb Marjoram yields half a pound of this oil, oftener sold under the name of Oil of Thyme. It is not the garden or sweet Marjoram.

OLEUM JUNIPERI.

Oil of Juniper.

OLEUM LAVANDULÆ.

Oil of Lavender.

OLEUM MENTHÆ PIPERITÆ.

Oil of Peppermint.

OLEUM MENTHÆ PULEGII.

Oil of Pennyroyal.

OLEUM MENTHÆ VIRIDIS.

Oil of Spearmint.

OLEUM ORIGANI.

Oil of Marjoram.

OLEUM PIMENTÆ.

Oil of Pimenta.

The quantity of oil varies from one to five per cent. according to the quality of the berries, which are gathered green and dried in the sun.

OLEUM ROSMARINI.

Oil of Rosemary.

OLEUM SAMBUCI.

Oil of Elder-flowers.

The Fruit of Anise, Carraway, and Juniper, the Flowers of Chamomile, Lavender, and Elder, the Berries of Pimenta, the Tops of Rosemary, and the entire and fresh Herbs of the rest, ought to be employed.

Put any one of these into an alembic, and add water enough to cover it; then let the oil distil into a large refrigerator. [By reference to the columns of the *Materia Medica* it will be seen that other distilled oils are admitted.]

OLEUM SUCCINI.

Oil of Amber.

Put Amber into an alembic, so that an acid liquor, an oil, and a salt, contaminated with the Oil, may distil in a sand-bath with a heat gradually increased. Then again, and a third time, let the Oil be distilled.

Chemical, &c.—It is allied in its nature to resins; is supposed to be antediluvian; and is found in tertiary soils, and on the shores of the Baltic sea.

Remedial Action.—It has long been retained in the *Pharmacopœia* on account of its antispasmodic and stimulant virtues. Hufeland, a great authority, has in our time relied on its curative powers in sphacelus. Externally it is used in frictions, and as an ingredient in stimulating liniments.

Dose.— $\mathfrak{m}\text{iv}$. to $\mathfrak{m}\text{vj}$.

Cautions.

Both the husks and the kernels contain the oil of pimenta.

This is the leading ingredient of "the four thieves' vinegar." It contains camphor, and its slight astringency is due to the tannin which exists in it.

This is described as "a buttery oil."

The leaves of the rosemary also contain the oil.

Old Name.

Oleum Succini Rectificatum.

The first portion of acid which passes over is acetic. 16 oz. of pure amber yield half an ounce of succinic acid, three of oil, and ten of torrefied resin.

Roche's Embrocation.

$\mathfrak{R}$ Ol. Olivæ, $\mathfrak{f}\mathfrak{z}\mathfrak{j}$.

— Succini,

— Caryophylli, $\mathfrak{a}\mathfrak{a}$
 $\mathfrak{f}\mathfrak{z}\mathfrak{ss}$. M.

$\mathfrak{R}$ Spt. Camphoræ,

Tinct. Opii,

Ol. Succini, $\mathfrak{a}\mathfrak{a}$ $\mathfrak{f}\mathfrak{z}\mathfrak{ss}$.

Ft. Embrocatio.

Cautions.

℞ Ole. Terebinth. fʒj.

Mel. Rosæ, ʒiv. M.

Dose.—A teaspoonful three times a day in gleet, leucorrhœa, &c.

The pure oil unmixed is most efficacious in tænia.

Dutch Drops.

℞ Ol. Terebinth.

Tinct. Guaiaci,

Spt. Æth. Nit.

p. æq., flavoured with oil of amber and cloves.

Those imported are the residue of the redistillation of Ol. Terebinth.

Embrocation of Turpentine (Guestonian).

℞ Ol. Terebinth.

Ol. Olivæ, āā ʒiss.

Acid. Sulph. dil. fʒiij. M.

OLEUM TEREBINTHINÆ PURIFICATUM.

Purified Oil of Turpentine.

Take of Oil of Turpentine, a pint ;

Water, four pints :

Let the Oil be carefully distilled.

Remedial Action.—In larger doses this oil operates as a purgative ; but, exhibited in smaller quantities, it is absorbed, and diffuses itself over the whole system : its odour may be detected in the urine, the saliva, and the matter of perspiration. When largely absorbed it produces a sort of intoxication, with high fever, very like to that of phrenitis, with great heat and redness of the skin, and much irritation in the mucous membranes, though chiefly in that of the urinary passages. Dr. Latham has long regarded it as a valuable remedy in epilepsy. It also appears to have been beneficial in some cases of tetanus. Drs. Cheyne and Maton speak highly of its effects in relieving sciatica, which the latter ascribed in many instances to an obstructed ureter. *Vide* Enema Terebinthinæ.

Dose.—As a stimulant, ℞x. to ℞xx. ; purgative, fʒiij. to ʒiss.

PILULÆ.

Pills.

PILLS are, or ought to be, small round masses, usually not exceeding six grains, and of a fit consistence for preserving their globular form. In former and ruder times they were also made of larger size, and were thus denominated boluses, closely allied to the catapotia of the ancients. There are even yet a few Nestors in the profession who inflict this form of remedy upon their unwilling patients ; and we remember to have seen these substantial masses sent out in separate boxes, and of a size which would offend the modern delicacy of the Homœopathic Veterinarians. It cannot be that in the progress of civilisation the powers of deglutition diminish ; but the aptitude for swallowing gross masses is certainly less. The form of pill is useful for disguising unpleasant qualities, and for insuring a more gradual action ; but it is not applicable to substances which act only in large doses, or to those which become moist in the atmosphere (an inconvenience appertaining to Pil. Hydrargyri), or to substances of very slow solubility. It is no small defect in this compilation that we have no purgative mass but what contains aloes ; yet we know that hæmorrhoidal persons cannot bear aloes, except it be in the form of Cockle's Pills, which chiefly consist of aloes, scammony, and colocynth, which I

think are formed into a sort of compound extract, the acridity of which is obviated, I suspect, by an alkaline process, and by a fourth ingredient (unknown to me) of an aromatic tonic nature. I think no better and no worse of it for its being a patent medicine. I look at it as an article of commerce and domestic convenience, and do not hesitate to say it is the best made pill in the kingdom; a muscular purge, a mucous purge, and a hydrogogue purge combined, and their effects properly controlled by a dirigent and corrigent. That it does not commonly produce hæmorrhoids, like most aloetic pills, I attribute to its being thoroughly soluble, so that no undissolved particles adhere to the mucous membrane of the rectum. The outcry against patents is absurd, while a Leslie or a Wollaston, and so many members of our Royal Society after them, have all profited by their patent inventions. I have endeavoured in the margin to supply one or two formulæ.

PILULÆ ALOËS COMPOSITÆ.

Compound Pills of Aloes.

Take of Aloes, powdered, an ounce;
Extract of Gentian, half an ounce;
Oil of Carraway, forty minims;
Syrup, a sufficiency:

Bruise them together until they are incorporated.

Remedial Action.—Stomachic and muscular purgative. In atonic costiveness, amenorrhœa, &c. Large doses may relieve, but will never cure, habitual costiveness. Morrison's Pills, No. 1, are made of equal parts of aloes and cream of tartar, mixed into a mass with mucilage.

Dose.—Gr. v. to gr. xv.

PILULÆ ALOËS CUM MYRRHÆ.

Pills of Aloes with Myrrh.

Take of Aloes, two ounces;
Saffron,
Myrrh, of each, an ounce;
Syrup, a sufficiency:

Separately powder the Aloes and the Myrrh, then beat the whole together into a uniform mass.

Remedial Action.—When the Myrrh is good, there is no finer stomachic, purgative, and emmenagogue, than this mass. But it is mischievous in febrile habits. I have found the pills in the margin mild, efficacious, and certain in their effects. Equal parts of black

Cautions.

℞ Ext. Colocynth. ʒj.
Ext. Jalapæ,
Pulv. Scammoni, āā
℥ij.
Ol. Juniperi, ℥x.
Syrup. q. s.
Ft. massa.

In Constipation.

℞ Pulv. Rhei, ʒj.
Saponis Castil. ℥j.
Ol. Tiglii, ℥iv.
Syrup. q. s.
Ft. massa in pil.
xxiv. Cap. ij. vel
iij. pro re nata
alvo astricta.

Vulgè, Pil. Rufi.

[Non-aloeic Purge.]
℞ Hydrarg. (Proto-)
Chloridi, ℥ss.
Pulv. Jalapæ,
Cretæ rubræ, āā
℥iv.
[Rose Pink].
Ol. Carui, ℥x.
Syrup. Rhamni, q. s.
Ft. massa.
Dosis.—Gr. v. ad
gr. xv. G. F. C.

Dixon's Pills.

Aloes, Scammony,
Rhubarb, and Emetic
Tartar.

*Cautions.**Barclay's Pills.*

Extr. Colocynth. ʒij.

Resinæ Jalapæ, ʒj.

Saponis Amygdal.
ʒiss.

Guaiaci. ʒij.

Antim. Potassio-

Tart. gr. viij.

Ol. Juniperis Carui,
et Rosmarini, āā

gr. iv.

Syrup. Rhamni, q. s.

N. B. This pill ought never to be prescribed in long numbers, unless the patient is near his medical attendant. In an irritable state of mucous membrane it may induce mucous enteritis and ulcerations. *Vide* Morrison's various trials for manslaughter.

Hellebore Extract and Myrrh, with a fourth of Chamomile or of Chirayita powdered, would also form a convenient pill where Aloes is inadmissible. Syrup of Buckthorn might be used as the intermede. But each and all of these would require discrimination. Matthews' Pills or Starkey's Pills are something like this, but, according to Paris, with soap, opium, and oil of turpentine.

Dose.—Gr. x. to ʒj.

PILULÆ CAMBOGIÆ COMPOSITÆ.

Compound Pills of Camboge.

Take of Camboge, powdered, a drachm ;

Aloes, powdered, a drachm and a half ;

Ginger, powdered, half a drachm ;

Soap, two drachms :

Mix the powders together ; then, having added the Soap, beat them all together until they are incorporated.

Remedial Use.—Powerfully cathartic ; while the aloes stimulates the muscular fibre of the stomach and lower bowels, the camboge acts on the mucous glands and exhalants. Morrison's Pills, No. 2, are of this nature, with the addition of colocynth and cream of tartar instead of ginger and soap ; varying, however, in drasticity.

Dose.—Gr. x. to ʒj.

PILULÆ CONII COMPOSITÆ.

Compound Pills of Hemlock.

Take of Extract of Hemlock, five drachms ;

Ipecacuanha, powdered, a drachm ;

Mixture of Acacia, a sufficiency :

Bruise together until incorporated.

Remedial Action.—*Vide* Extractum Conii. The ipecacuanha is well calculated to keep down action and phthisical irritation, and also to promote absorption and to relax the pulmonary exhalants.

Dose.—Gr. iij. to gr. vj. and upwards.

PILULÆ FERRI COMPOSITÆ.

Compound Pills of Iron.

Take of Myrrh, powdered, two drachms ;

Carbonate of Soda,

Not the carbonate of soda commonly so called, but the old sub-carbonate is here to be employed.

Sulphate of Iron,
Treacle, of each, a drachm :

Rub the Myrrh with the Carbonate of Soda ; then, having added the Sulphate of Iron, again triturate them ; then pound them [with the Treacle] in a vessel previously warmed, until they are incorporated.

Remedial Action.—*Vide* Mistura Ferri Composita. The ingredients form a sort of cement. Obstruction of the bowels has been induced by a course of these pills ; and the autopsy has brought into view a vast number accumulated in a rude mass. Tonic, emmenagogue. Their solution and operation will be promoted by washing them down with the draught annexed in the margin.

Dose.—Gr. x. to ʒj., two or three times a day.

PILULÆ GALBANI COMPOSITÆ.

Compound Pills of Galbanum.

Take of Galbanum, an ounce ;
Myrrh,
Sagapenum, of each, an ounce and a half ;
Assafoetida, half an ounce ;
Syrup, a sufficiency :

Beat them together into a mass.

Remedial Action.—In this formula we have an antispasmodic base, and three auxiliary remedies of the same character. The pill is commonly used in amenorrhœa with a high state of nervous susceptibility. When employed in flatulent colic, with hysteria, it should be washed down with warm brandy-and-water.

Dose.—Gr. x. to ʒj.

PILULÆ HYDRARGYRI.

Pills of Mercury.

Take of Mercury, two drachms ;
Confection of the French Rose, three drachms ;
Powdered Liquorice, a drachm :

Rub the Mercury with the Confection until globules can no longer be detected ; then, having added the

Cautions.

℞ Ol. Anthemidis,
℥ij.
Spt. Myristicæ, fʒss.
Aquæ Pulegii, fʒx.
M.
Ft. Haustus.

Hooper's Female Pills.

℞ Ferri Sulphatis,
gr. xij.
Alöes Barb. ʒiv.
Pulv. Canellæ, gr.
viij.
Pulv. Myrrhæ,
Gum. Opopanacis,
āā gr. v.
Ft. massa in pil.
xxiv.

The salt of iron is dissolved in *q. s.* of water, and the mass beat up with the solution.

Genuine Galbanum as imported from the Levant usually occurs in mottled masses of a pale brown colour, composed of a collection of concreted drops. Its odour is slightly fetid, and its taste hot and somewhat bitter.

Gr. j. of mercury in
gr. iij. of the mass.
℞ Pil. Hydrarg. ʒj.
Pulv. Opil, gr. iij.
Ft. massa in pil. xij.
Two at night and
one in the morning to
produce its specific ef-
fects in syphilis.

Cautions.

There are persons of a peculiar temperament who are soon irritated and distressed by mercury. In such cases it ought to be immediately withdrawn.

℞ Hydrargyri,
Ferri Sesquioxidi,
āā ʒj.
Confect. Rosæ Galli-
cæ, ʒiij.
Fiat massa s. a.

Liquorice, pound them all together into a uniform mass.

Chemical, &c.—*Vide* Notes, and Supplement, p. 122. It is only partially oxidized.

Remedial Action.—Specific alterative. The most approved form for the exhibition of mercury. *Vide* Hydrargyri Oxydum. The addition of a little ext. rhei or of opium diminishes the irritation of the bowels often induced by the use of this pill. *I am using the form annexed only experimentally. The Abernethy medicines originally consisted of three grains of blue pill, and an aromatised black draught. The proprietor finding salivation to be injurious to their sale, diminished the quantity of blue pill, and added extract of colocynth.

Dose.—Gr. v. to gr. x.

PILULÆ HYDRARGYRI CHLORIDI COMPOSITÆ.

Compound Pills of Chloride of Mercury.

Vulgò, Plummer's Pills, Red Pills.

Chloride, *aliàs* protochloride, or calomel.

Gr. j. in about gr. iv.

Keyser's Pills.

℞ Hydrargyri Acetatis,
gr. xij.

Mannæ, ʒiv.

Amyli, gr. vj.

Mucilag. Traga-
canth. q. s.

Ft. massa in pil. xx.

Take of Chloride of Mercury (Calomel),

Oxysulphuret of Antimony, of each, two drachms;

Guaiaicum-Resin, powdered, half an ounce;

Treacle, two drachms:

Rub the Chloride of Mercury with the Oxysulphuret of Antimony, then with the Guaiaicum and the Treacle, that a uniform mass may be made.

Remedial Use.—In secondary syphilis, and as an alterative in cutaneous diseases. Acids ought to be avoided during the course of these pills. Keyser's Pills are commonly used in the same cases in Germany.

Dose.—Gr. v. to gr. x.

PILULÆ HYDRARGYRI IODIDI.

Pills of Iodide of Mercury.

N.B. It is the protiodide which is here meant.

It contains gr. j. in gr. v. of the mass.

Take of Iodide of Mercury, a drachm;

Confection of the Dog-Rose, three drachms;

Ginger in powder, a drachm:

Pound together until incorporated.

Remedial Action.—*Vide* Hydrargyri Iodidum.

Dose.—Gr. v. to gr. xv.

PILULÆ IPECACUANHÆ COMPOSITÆ.

Cautions.

Compound Pills of Ipecacuanha.

Take of the Compound Powder of Ipecacuanha, three drachms ;

Squills, recently dried,

Ammoniacum, of each, a drachm ;

Mixture of Acacia, *q. s.* :

Bruise them together until incorporated.

Remedial Action.—Experience has proved the utility of this mass ; but it is not to be defended on any of the theories of the *modus operandi* of the first three remedies herein named. The annexed powder may be interposed if the bowels are costive.

Dose.—Gr. v. to gr. xv.

Four grains of this pill contain gr. $\frac{1}{4}$ of opium.

℞ Hydrarg. (Proto-)

Chlor. gr. j.

Pulv. Jalapæ, gr. x.

Pulv. Ipecac. gr. ij.

Ft. pulvis purgativus.

PILULÆ RHEI COMPOSITÆ.

Compound Pills of Rhubarb.

Take of Rhubarb, in powder, an ounce ;

Aloes, in powder, six drachms ;

Myrrh, in powder, half an ounce ;

Soap, a drachm ;

Oil of Carraway, half a fluidrachm ;

Syrup, *q. s.* :

Mix together the powders ; then pound them together, and form your mass.

Remedial Use.—As a warm and easy purgative. It is introduced as a substitute for the Edinburgh Pill, which contains oil of peppermint. Rhubarb may be detected in the urine within ten minutes after it has been taken into the stomach. In atonic paralysis of the large intestines this pill may be exhibited as a secondary stimulus after the employment of a course of more powerful purgatives ; and it may be safely continued for a considerable period until the tone of the nerves be restored.

Dose.—Gr. x. to ʒj. or more.

Sometimes called the Edinburgh Pill, but carraway oil is here substituted for oil of peppermint, which enters into the former preparation.

℞ Rhei pulv. ʒij.

Pulv. Ipecacuanhæ, gr. xxiv.

Saponis Castil. ʒss.

Syrup. Rhamni, *q. s.*

Ft. pil. xxxvj. —

Dosis iij. vel iv.

*Cautions.**Fuller's Pills.*

℞ Aloës, ʒss.
 Pulv. Sennæ, ʒj.
 Assafoetidæ,
 Galbani, āā g. x.
 Myrrhæ, ʒj.
 Croci,
 Macis, āā gr. v.
 Ferri Sulphatis, ʒij.
 Syrup. q. s.
 Ft. massa.
Dosis.—gr. v. ad ʒj.

PILULÆ SAGAPENI COMPOSITÆ.

Compound Pills of Sagapenum.

Take of Sagapenum, an ounce ;
 Aloes, half a drachm ;
 Syrup of Ginger, q. s. :

Bruise together until incorporated.

Remedial Action.—A warm antispasmodic aperient. Useful in colic, tympanitis, and for the relief of habitual costiveness in hysteric and chlorotic females.

Dose.—Gr. x. to ʒss.

Former Name.

Pil. Saponis cum Opio.

PILULÆ SAPONIS COMPOSITÆ.

Compound Pills of Soap.

Take of Hard Opium, in powder, half an ounce ;
 Soap, two ounces :

Pound them together until incorporated.

G. j. of opium in
 gr. v. of the mass.

Remedial Use.—The soap prevents hardness, renders the mass more soluble, and obviates in some degree the constipating effects of the opium. It is also a good mask for the exhibition of opium where the physician wishes to avoid that word in a prescription.

Dose.—Gr. v. to gr. x.

PILULÆ SCILLÆ COMPOSITÆ.

Compound Pills of Squills.

The ammoniacum, as the auxiliary expectorant, ought to have place before the ginger.

Take of Squills, recently dried and powdered, a drachm ;
 Ginger, powdered,
 Ammoniacum, powdered, of each, two drachms ;
 Soap, three drachms ;
 Syrup, q. s. :

Mix together the powders ; then beat them with the Soap, and add the Syrup, that the mass may be of a fit consistence.

Remedial Action.—A stimulating expectorant and diuretic. In chronic catarrh, humoral asthma, and catarrhus senilis.

Cautions.
—

Dose.—Gr. x. to gr. xx.

PILULÆ STYRACIS COMPOSITÆ.

Compound Pills of Styrax.

Take of Styrax, strained, three drachms ;
Hard Opium, powdered,
Saffron, of each, a drachm :

It contains gr. j. of
opium in gr. v. of the
mass.

Pound them until incorporated.

Remedial Use.—This pill is borrowed from the Pharmacopœia of Dublin without alteration. It is a good form for the administration of opium in certain coughs ; and may exert some expectorant operation in old viscid catarrh.—*Vide* YOUNG on Opium, a work every medical student should read, and which any bookseller would do well to reprint.

Dose.—Gr. iij. to gr. vj. or more.

PULVERES.

Powders.

PULVIS ALOËS COMPOSITUS.

Compound Powder of Aloes.

Take of Aloes, an ounce and a half ;
Guaiaacum-Resin, an ounce ;
Compound Powder of Cinnamon, half an ounce :

Chelsea Pensioner.
Powdered Guaiaac.
5j.
Powdered Rhubarb,
5ij.
Cream of Tartar, 3j.
Sulphur, 3ij.
One Nutmeg, powdered :
All made into an
electuary with a pound
of clarified honey.

*Cautions.**Hiera Picra.*

℞ Pulv. Aloës, ℥iv.

(Hepatic).

Pulv. Canellæ, ℥j.

Contere.

Dosis.—gr. x. ad ℥j.

Separately powder the Aloes and Guaiacum-Resin ; then mix them with the Compound Powder of Cinnamon.

Remedial Action.—This compound is a muscular purge rendered more stimulating by the guaiacum ; and may subsequently act as a diaphoretic, if the secondary operation be encouraged by warmth and the usual adjuvant drinks. In atonic paralysis of the large intestines conjoined with hemiplegia or paraplegia from external violence, the old *hiera picra* is preferable.

Dose.—Gr. viij. to ℥j.

PULVIS CINNAMOMI COMPOSITUS.

Compound Powder of Cinnamon.

℞ Pulv. Granati,
Pulv. Cinnam. C.
āā gr. x.
Ft. pulvis. In diarrhœa
post singulas sedes
liquidas.

Take of Cinnamon, two ounces ;
Cardamoms, an ounce and a half ;
Ginger, an ounce ;
Long Pepper, half an ounce :

Rub them together, that a very fine Powder may be formed.

Remedial Use.—Warmly aromatic. Usefully employed in flatulence, and as a corrigent with other medicines.

Dose.—Gr. vj. to ℥j.

PULVIS CRETÆ COMPOSITUS.

Compound Powder of Chalk.

Tormentil contains a considerable portion of tannin, on which its astringency depends. This and the next powder are incompatible with acids and super-acidulated salts.

Take of Prepared Chalk, half a pound ;
Cinnamon, four ounces ;
Tormentil,
Acacia, of each, three ounces ;
Long Pepper, half an ounce :

Separately powder them, and mix.

Remedial Use.—As an astringent and antacid, principally in atonic diarrhœa. Sometimes preferable to the chalk mixture; the addition of aromatics is clearly indicated by a languid circulation, flatulency, &c.

Dose.—Gr. x. to ʒss.

Cautions.

℞ Pulv. Cretæ C. ʒij.
Mist. Acaciæ, fʒj.
Aquæ Cinnam. fʒv.
M.

For children, a tea-spoonful, and for adults, two or three table-spoonfuls for a dose.

PULVIS CRETÆ COMPOSITUS CUM OPIO.

Compound Powder of Chalk with Opium.

Take of Compound Powder of Chalk, six ounces and a half;

Hard Opium, in powder, four scruples:

Mix.

Remedial Use.—In colliquative diarrhœa.

Dose.—Gr. x. to ʒij.

Gr. j. of opium in ʒij. of the compound powder.

PULVIS JALAPÆ COMPOSITUS.

Compound Powder of Jalap.

Take of Jalap, three ounces;

Bitartrate of Potassa, six ounces;

Ginger, two drachms:

Powder separately, and mix them.

Remedial Use.—A very old and favourite formula for insuring the more hydragogue effects of Jalap in dropsies, or other cases in which we are desirous of diminishing the quantity of the serous portion of the blood. As a mild aperient, Klein's lenitive is preferable. In the incipient stages of hydrocephalus acutus, or rather in the morbid serous condition of the system of infants which precedes that malady, this compound powder may be given alternately with calomel and the compound powder of scammony. This disease is, as it appears to me, a sort of water-stroke or water-apoplexy, depending upon a gradually decreasing energy of the system. Taking into account the greater irritability of the child, I recognize the diathesis of febris lenta nervosa passing into serous apoplexy, and certainly not phrenitis.

Dose.—ʒj. to ʒij. or more.

From the Edinburgh Pharmacopœia.

Klein's Pulvis Lenitivus Hypochondriacus.

℞ Potassæ Tartrat.

Rhei Pulv.

Flavedinis Cort.

Aurantii, āā ʒss.

Ol. Cajaput. gtt. iij.

M.

Ft. pulvis pro una dosi.

Cautions.

Dover's Powder.
Gr. j. of opium in
gr. x. of the compound
powder.

The quantity of
ipécacuanha may be
increased sometimes
with advantage.

Some prefer the in-
troduction of the ni-
trate of potassa instead
of the sulphate.

Emetic Draught.
℞ Antim. Potassio-
Tart. gr. j.
Pulv. Ipecacuanhæ,
ʒj.
Syrupi, fʒij.
Aquæ Destil. ʒiiss.
M.

PULVIS IPECACUANHÆ COMPOSITUS.

Compound Powder of Ipecacuanha.

Take of Ipecacuanha, powdered,
Hard Opium, in powder, of each, a drachm ;
Sulphate of Potassa, powdered, an ounce :

Mix.

Remedial Action.—The former lecturers on Materia Medica used to say this was an instance of the threefold mode in which medicines produce sweating. Opium by increasing the vis à tergo,—ipécacuanha by relaxing the skin that it may more readily yield to this last,—and sulphate of potassa by being absorbed and by stimulating the cutaneous exhalants as it passes through them. The chief use of the sulphate of potassa is now said to be the more minute division it insures ; but we do not believe its power to be merely mechanical. It was first recommended for rheumatism, catarrh, &c. ; but it may be usefully employed in any case where the twofold indication of allaying irritation, and of determining to the surface, are required to be fulfilled. In the French Codex 4 parts of sulphate of potassa are ordered to be melted with 4 parts of nitre, and to these when nearly cold, powdered ipecac., p. opium, and p. liquorice, of each one part, are admixed by trituration. Ipecacuanha is commonly employed as an emetic in the early stage of many febrile diseases, combined as in the margin.

Dose.—Gr. v. to gr. xv.

PULVIS KINO COMPOSITUS.

Compound Powder of Kino.

It contains gr. j. of
opium in gr. xx. of the
compound powder.

Water at 60° dis-
solves about one half
of kino, and alcohol
two-thirds.

Take of Kino, fifteen drachms ;
Cinnamon, half an ounce ;
Hard Opium, a drachm :

Separately rub them into a very fine Powder, and
then mix.

Remedial Action.—Astringent, and anodyne, in chronic dysentery, diarrhœa, intestinal hæmorrhage, &c. Dr. Pemberton has thus recorded his opinion in favour of kino as an astringent in diarrhœa mucosa. "In this drug you have a medicine which exerts its powers to restrain the discharge of the glands when they are secreting too much, without

exerting any such powers over the glands when they are acting naturally." Others go beyond him in asserting that it binds the bowels when relaxed, and relaxes them when bound. I think it ought never to be given in the form of pills, on account of their hardness and insolubility.

Dose.—Gr. x. to ʒj. or more.

Cautions.

PULVIS SCAMMONII COMPOSITUS.

Compound Powder of Scammony.

Take of Scammony,

Hard Extract of Jalap, of each, two ounces ;

Ginger, half an ounce :

Separately rub them to a very fine Powder, and then mix.

Remedial Use.—A good mucous purge, and, therefore, useful in viscid obstructions of the bowels, and in worms.

Dose.—Gr. x. to ʒj.

The efficacy of this powder depends on the quality of the scammony. The practitioner ought to buy this in mass, and have it powdered in his own shop.

Acids diminish, alkalies increase, the effects of scammony. —GAUBIUS.

PULVIS TRAGACANTHÆ COMPOSITUS.

Compound Powder of Tragacanth.

Take of Tragacanth, powdered,

Acacia, powdered,

Starch, of each, an ounce and a half ;

Sugar, three ounces :

Powder the Starch and Sugar together ; then, having added the Tragacanth and Acacia, mix them all.

Remedial Use.—As a demulcent in irritation of the mucous membranes. Demulcents have been arranged hitherto in the class of mechanical remedies, but by what mechanical power they relieve a strangury, or ardor urinæ, or the torture of vesicle irritation, has never been explained to us.

Dose.—ʒj. to ʒij.

Composition of Tragacanth.

Bassorin (Cerasin) 43
Common Gum . . 57

100

—BUCHOLZ.

See that your starch is free from acrid impurities.

℞ Potassæ Nitrat. gr. vj.

Pulv. Tragac. ʒss.

Ft. pulvis, 4tis vel 6tis horis capiend.

In inflammatory gonorrhœa.

Cautions.

S. G. of the purest absolute alcohol, 791
 Alcohol, of P. L. 815
 Rectified Spirit 838
Vide Notes.

It is supposed to consist of

Hydrogen	3
Carbon	12
Oxygen	8
	23

Or of one atom of olefiant gas, and one of water.

—
 Absolute alcohol is a rapid and violent poison.

SPIRITS, for the most part, are nearly allied to distilled waters, except that proof spirit is used, instead of water, as a solvent of the aromatic or volatile particles which we are desirous of obtaining. Concentrated pure spirit is called *absolute alcohol*; when diluted with a small portion of water, it is technically called *rectified spirit*; and when further diluted to a given standard, it is known by the name of *proof spirit*.

ALCOHOL.

Take of Rectified Spirit, a gallon;

Chloride of Calcium, a pound:

Throw the Chloride of Calcium into the Spirit, and, after it has been dissolved, let seven pints and five fluid-ounces be distilled.

Chemical, &c.—*Vide Notes*, and Supplement, p. 126.

Remedial Use.—Alcohol, properly diluted, is a universal excitant; and, independent of its stimulating effects, it is of great service as a solvent of other remedial principles. It is used externally as an ingredient for evaporating lotions, but, for the most part, it is far too largely diluted. Small quantities of alcoholic lotion of considerable strength are more effective, and quite as economical.

SPIRITUS AMMONIÆ.

Spirit of Ammonia.

Old Name.
 Spiritus Salis Ammoniaci Dulcis.

Take of Hydrochlorate of Ammonia, ten ounces;
 Carbonate of Potassa, sixteen ounces;

Rectified Spirit,
Water, of each, three pints :

Mix, and distil over three pints.

Chemical, &c.—*Vide* Notes, and Supplement, p. 127.

Remedial Use.—A powerful stimulant, *vide* Liquor Ammoniaë.

Cautions.

It is a solution of carbonate of ammonia in spirit.

One fluidrachm of oil of lavender, added to four ounces of this spirit, will form the ammoniacal alcoholate of lavender of Paris.

SPIRITUS AMMONIÆ AROMATICUS.

Aromatic Spirit of Ammonia.

Take of Hydrochlorate of Ammonia, five ounces ;
Carbonate of Potassa, eight ounces ;
Cinnamon, bruised,
Cloves, bruised, of each, two drachms ;
Lemon-Peel, four ounces ;
Rectified Spirit,
Water, of each, four pints :

Mix, and distil over six pints.

Chemical, &c.—*Vide* Notes, and Supplement, p. 127.

Remedial Action.—Cordial, diaphoretic. Usefully combined with senna-saline draughts to prevent griping ; and commonly employed as a cordial adjunct in the low stages of fevers, in hysteria, and in the languors produced by the necessary purgations for dropsies, &c.

Dose.—fʒss. in composition, or diluted with water.

Old Name.

Spt. Ammon. Compos.
Vulgè, Sal-volatile.

Incompatible with acids, and with salts acidulous, earthy, and metallic, &c.

A neutral carbonate in solution.

SPIRITUS AMMONIÆ FÆTIDUS.

Fœtid Spirit of Ammonia.

Take of Hydrochlorate of Ammonia, ten ounces ;
Carbonate of Potassa, sixteen ounces ;
Rectified Spirit,

A neutral carbonate in solution.

Incompatible, as in the last.

Cautions.

℞ Spt. Ammon. fœtid.
 Tinct. Valerianæ, āā
 fʒiij.
 Mist. Camphoræ,
 fʒviss.
 Syrup. Croci, fʒiij.
 M.
 Cochl. tria ampla
 pro dosi.

Water, of each, three pints ;
 Assafoetida, five ounces :

Mix ; then, with a slow fire, distil three pints.

Chemical, &c.—*Vide* Notes, and Supplement, p. 127.

Remedial Action.—It chiefly corresponds with the last compound ; but the Assafoetida it contains renders it more powerful in relieving the hysteric paroxysms, nervous tremblings, &c., arising from a morbid susceptibility of the nervous system.—*Vide* formula in the margin.

Dose.—℥xx. to fʒj. diluted.

SPIRITUS ANISI.

Spirit of Aniseed.

The star aniseed, as we believe, is often used as a substitute.

The pimpinella anisum is a native of the Levant.

Take of Aniseed, bruised, ten ounces ;
 Proof Spirit, a gallon ;
 Water, two pints :

Mix ; then, with a slow fire, distil a gallon.

Remedial Use.—It is ranked with the aromatics or carminatives ; but the experience of ages is good testimony of its possessing slight diuretic and anodyne power in allaying irritation, particularly in young children.

Dose.—(For adults), fʒij. to fʒiij. in some cordial drink.

SPIRITUS ARMORACIÆ COMPOSITUS.

Compound Spirit of Horse-Radish.

Diluted with four times its quantity of water, and mixed with two ounces of honey, it forms a good gargle for scurvy of the fauces and pharynx, vulgarly called "the inward scurvy."

Take of Horse-Radish, sliced,
 Orange-Peel, dried, of each, twenty ounces ;
 Nutmegs, bruised, five drachms ;
 Proof Spirit, a gallon ;
 Water, two pints :

Mix ; then, with a slow fire, let a gallon be distilled.

Remedial Use.—This may be employed as a stimulant to promote the secretion of gastric juice, in certain kinds of dyspepsia, and as an auxiliary diuretic in dropsies. Horse-Radish is in high repute on the Continent as an antiscorbutic. It is also applied externally as a rubefacient.

Dose.—fʒij. to fʒss. externally, as a rubefacient.

Cautions.
—

SPIRITUS CARUI.

Spirit of Carraway.

Take of Bruised Carraways, twenty-two ounces ;

Proof Spirit, a gallon ;

Water, two pints :

Mix ; then, with a slow fire, let a gallon be distilled.

Remedial Use.—A simple aromatic. It is a good adjunct to antacid mixtures of magnesia, and to solutions of the saline aperients.

Dose.—fʒij. to fʒss.

For Infants.

R. Magnesiae Carbo.

ʒss.

Aquæ Destillat. ʒiss.

Spt. Carui, ʒj.

Tinct. Assafoetidæ,

℥xx.

M.

Cochl. minimum
subinde.

SPIRITUS CINNAMOMI.

Spirit of Cinnamon.

Take of Oil of Cinnamon, two drachms ;

Proof Spirit, a gallon ;

Water, a pint :

Mix ; then, with a slow fire, let a gallon be distilled.

Remedial Use.—Aromatic, stimulant. It has not the astringent quality of the bark which resides in the tannin.

Dose.—fʒij. to fʒiv.

In all specimens of old English literature, this word is written "Cinnamom," and rightly ; for, like cardamom, it is a compound of the Latin word "Amomum." We do not say cardamon : but we are the slaves of custom, and must conform.

SPIRITUS JUNIPERI COMPOSITUS.

Compound Spirit of Juniper.

Take of Juniper Fruit, bruised, fifteen ounces ;

Carraways, bruised,

Fennel [Seed], bruised, of each, two ounces ;

Proof Spirit, a gallon ;

Water, two pints :

Mix ; then, with a slow fire, let a gallon distil.

They mention the fruit of juniper, but carraway simply, and fennel simply.

Cautions.

Remedial Action.—It is a good auxiliary diuretic, and is used in dropsies, in combination with fox-glove; but we are to bear in mind, that some great authorities tell us that the exhibition of the cordials, during the use of this last remedy, is fatal to its diuretic action.

SPIRITUS LAVANDULÆ.

Spirit of Lavender.

Although native of the south of France, it is cultivated with much greater success in this country. The French oil is distilled chiefly from the *lavandula vera*, or narrow-leaved lavender.

Take of fresh Lavender, two pounds and a half;
Rectified Spirit, a gallon;
Water, two pints:

Mix; then, with a slow fire, distil a gallon.

Remedial Use.—Cordial, internally; also, as an ingredient in the *Tinctura Lavandulæ Composita*, and externally in the *Linimentum Camphoræ Compos.*

SPIRITUS MENTHÆ PIPERITÆ.

Spirit of Peppermint.

The common essence of peppermint is made by a simple admixture of the oil with the spirit.

Take of Oil of Peppermint, three drachms;
Proof Spirit, a gallon;
Water, a pint:

Mix; then, with a slow fire, distil a gallon.

Remedial Use.—A warm aromatic in flatulence, and as an adjunct to tonic, aperient, and other mixtures.

Dose.—fʒij. to fʒss.

Spearmint should be collected directly the flowers appear, and of course before they are in full bloom. The average produce of oil only $\frac{1}{800}$ th of the weight of the herb.

SPIRITUS MENTHÆ VIRIDIS.

Spirit of Spearmint.

Remedial Use.—*Vide* Ol. Menthæ Piperitæ.

Dose.—fʒij. to fʒss.

SPIRITUS MENTHÆ PULEGII.

Spirit of Pennyroyal.

These two last are prepared like the Spirit of Peppermint.

Remedial Use.—*Vide* Ol. Menthæ Viridis, and Ol. Menthæ Pulegii. A proper adjunct to a course of chalybeates or other emmenagogues, as in the margin.

Dose.—fʒij. to fʒss.

Cautions.

℞ Quinæ Disulphat.
Ferri Sulph. āā ʒss.
Aloës, ʒij.
Ol. Anthem. ℥iv.
Sacchari fæcis, q. s.
Ft. massa in pil. xxx
divid. Cap. j. bis vel
ter de die cum haust.
sequenti.
℞ Spt. Menth. Pulegii,
fʒij.
Aquæ destillat. fʒj.
Ft. Haustus.
G. F. C.

SPIRITUS MYRISTICÆ.

Spirit of Nutmeg.

Take of Nutmegs, bruised, two ounces and a half;
Proof Spirit, a gallon;
Water, a pint:

Mix; then, with a slow fire, distil a gallon.

Remedial Use.—Chiefly as a corrigent. *Vide* Ol. Myristicæ, and Confectio Aromatica. It also enters into the Mistura Ferri Composita.

Dose.—fʒj. to fʒij.

A fixed concrete oil is yielded by expression, the odour of which depends upon the small portion of essential oil contained in it; and it is sold in the shops under the name of oil of mace. It is of a yellowish-red colour.

SPIRITUS PIMENTÆ.

Spirit of Pimenta.

This is prepared in the same manner as the Spirit of Nutmeg.

Remedial Use.—*Vide* Ol. Pimentæ. As a warm corrigent, as in the margin.

Dose.—fʒij. to fʒss.

℞ Decoct. Cinchon.
Cordifol. fʒj.
Tinct. Opii, ℥v.
Spt. Pimentæ, fʒij.
Ft. Haustus.
In putrid fevers,
gangrene, &c.

*Cautions.**Hungary Water.*

Fresh Rosemary in
blossom, four lbs.

Fresh Sage, ℥viii.

Ginger root, ℥ij.

Cut, bruise, and in-
fuse them in Oxij. of
Rect. Spirit, and Oij.
of water. Distil eleven
pints.

SPIRITUS ROSMARINI.

Spirit of Rosemary.

Take of Oil of Rosemary, two drachms ;

Rectified Spirit, a gallon ;

Water, a pint :

Mix ; then, with a slow fire, distil a gallon.

Remedial Use. — *Vide* Ol. Rosmarini. It enters into the Tinct. Lavandulæ Composita, Linimentum Saponis Compositum. It is a pleasant adjunct to spirit lotions for cooling the head. Of all herb teas, I have found that of rosemary to be best adapted to hysteric and hypochondriac patients. Eau de Cologne is distilled from Alcohol. Oj., Ol. Bergamii, Ol. Corticis Aurantii, Ol. Rosmarini. Anglici, Seminum Cardamomi contus. āā ℥j., Aq. florum Aurantii Oj., in a water-bath.

SYRUPS.

Syrups.

LET Syrups be kept in a place where the temperature never rises above 55°.

Syrup is a term given to viscid solutions of sugar, or matter of a saccharine nature, in water, charged with some remedial principle of plants or other substances. The quantity of sugar most conveniently applied is about two parts by weight to one of water. Some are best made with boiling water ; others, with a gentle heat ; and some, without any increase of temperature ; but of these last, we have no specimens in our Pharmacopœia. They are prone to generate acetic acid if kept in a temperature beyond 55°. Dr. Macculloch says that the fermentation of syrups may be prevented by the addition of a very small quantity of sulphite of potassa, or of chlorate of potassa. The remedial use of syrups is to correct or cover disagreeable flavour ; to give form as to an electuary, linctus, bolus, &c. ; to impart an agreeable colour ; and, as regards some of them, to produce medicinal actions. It is presumed that white sugar is meant, although that is not very clear from the columns of the *Materia Medica*, where the term expressed is the prepared juice.

SYRUPUS.

Syrup.

Old Name.
Syrupus Simplex.

Take of Sugar, ten pounds ;

Water, three pints :

Dissolve the Sugar in the Water with a gentle heat.

Cautions.
—

SYRUPUS ALTHÆÆ.

Syrup of Marshmallow.

Take of Marshmallow-root, bruised, eight ounces ;
Sugar, two pounds and a half ;
Water, four pints :

Althæa Officinalis.

Boil the Water with the Root down to one half, and express the liquor when cold. Set by for four-and-twenty hours, that the dregs may subside ; then pour off the liquor, and, having added the Sugar, boil down to a fit consistence.

Remedial Use.—Demulcent in coughs. Chiefly employed to improve the flavour of other medicines. An elegant demulcent syrup for phthisical affections might be prepared from the Carrageen or Ceylon moss.

SYRUPUS AURANTII.

Syrup of Orange [Peel].

Take of fresh Orange-Peel, two ounces and a half ;
Boiling Water, a pint ;
Sugar, three pounds :

The outer rind is indicated in the columnus.

Macerate the Peel in the Water for twelve hours in a vessel lightly covered ; then pour off the liquor, and add to it the Sugar.

Remedial Action.—Slightly aromatic and stomachic ; an elegant adjunct to the saline draught.

Dose.—fʒss. to fʒij.

SYRUPUS CROCI.

Syrup of Saffron.

Take of Saffron, ten drachms ;
Boiling Water, a pint ;
Sugar, three pounds :

In the French Codex the saffron is first macerated in Malaga wine, and the syrup formed from the vinous tincture is boiled down with water and sugar.

Cautions.

Macerate the Saffron in the Water for twelve hours in a vessel lightly covered ; then strain the liquor, and add the Sugar.

Remedial Use.—A colouring matter, and slightly cordial. This and all the more inactive syrups should be prescribed in small quantities, lest they should become acescent. It was formerly relied upon for promoting the developement of the varioloid eruption, and is even now a popular remedy in small-pox.

SYRUPUS LIMONUM.

Syrup of Lemons.

One ounce and a half of the crystals of citric acid, dissolved in a pint of distilled water, will form a fluid equal in strength to a pint of the best lemon-juice. Dr. Paris says one ounce is sufficient. *Vide Pharmacologia*, under Citric Acid.

Take of Lemon-juice, strained, a pint ;

Sugar, two pounds and a half :

Dissolve the Sugar in the Lemon-juice with a gentle heat, and set aside for twenty-four hours ; then remove the scum, and decant the clear liquor from the dregs, if there be any. [If intended for Lemonade, rub the Sugar in large lumps against the Peel, so that the Syrup may have due odour, colour, and taste.]

Remedial Use.—A corrigent of flavour ; but its acidity should be taken into consideration. In febrile diseases it may be used for making an extemporaneous lemonade, by adding a tablespoonful or rather more to a tumbler full of water. Colour with saffron, and flavour with a little dry lemon-peel. Physicians sometimes prescribe this syrup (on the supposition that it is prepared from the outer rind) with mixtures containing alkalies ; an error which ought to be avoided.

SYRUPUS MORI.

Syrup of Mulberries.

Take of Juice of Mulberries, strained, a pint ;

Sugar, two pounds and a half :

Dissolve the Sugar in the Juice with a gentle heat, and complete its preparation in the manner directed for Syrup of Lemons.

Remedial Use.—The mulberry itself is an excellent fruit for patients suffering under the phosphatic diathesis. The syrup, however, is a mere colouring matter. We must now be content to use this instead of the Syrup of Violets. I suppose the College see no use in continuing to order it, as they know the article to be generally made from red cabbage.

SYRUPUS PAPAVERIS (ALBI).

Syrup of (White) Poppies.

Take of Poppy-Capsules, three pounds ;
 Sugar, five pounds ;
 Boiling Water, five gallons :

Boil the Capsules with the Water down to two gallons, and strongly express. Again boil the strained liquor down to four pints, and strain it while hot. Set aside for twelve hours, that the dregs may settle ; then boil the clear liquor down to two pints, add the Sugar, and dissolve it.

Remedial Use.—A soothing anodyne, for the most part producing less subsequent cerebral disturbance than opium ; and, therefore, preferable for children. There is a bad practice in the retail trade (which is well worthy of the serious consideration of the profession, and one which ought not to have been disregarded by the College) of selling various substitutes for this syrup. One is prepared with laudanum and treacle ; another, with extract of poppies in syrup ; and both made of inferior narcotic strength to the preceding. Now, let the dispensing chemist mark the consequence. Numerous fatal cases have occurred in which mothers, who had been in the habit of being supplied with the spurious syrup, have casually applied to houses where the syrup is prepared by the College formula ; and, having administered a teaspoonful of this last to their fretful children, or, perhaps, a second, just as they were wont to do with the weaker remedy, it has induced narcosis, and death has ensued in a few hours. The Editor has himself attended inquests of this nature, and he appeals to the Coroners of London, whether a year elapses without similar occurrences. The intention of the dispensing chemist in making a weaker article is praiseworthy ; for, knowing that mothers habitually exhibit it to their children, he is afraid to sell them the stronger syrup. Thus the parent is deceived in her estimation of dose, and the deception is fatal. These errors, too, are likely to occur among practitioners themselves ; for, if they consult the popular works on pharmacy, they will meet with evidence the most discrepant. By one author an ounce of the syrup is stated to be equivalent to a grain of opium ; by another, half an ounce ; by another, three drachms ; by another, two drachms. Is this a sub-

Cautions.

The seeds ought to be removed, or the syrup will rapidly ferment. Chereau recommends 3 or 4 grains of sugar of milk to prevent fermentation.

By bruising ʒij. of poppy-seeds, and adding half a pint of water during trituration, you form at once, without any auxiliary ingredient, an emulsion, bland, elegant, and highly palatable. It is a good vehicle for laudanum, or the syrupus papaveris, or for any anodyne ; but it will not keep forty-eight hours in warm weather.

In all the foreign systems of medical jurisprudence the indiscriminate use of these syrups (Godfrey's and others) is considered to be a subject of national opprobrium. *Vide* Orfila, Fodéré, and others.

Godfrey's Cordial.

Infuse ʒix. of sassafras, and of the seeds of carraway, coriander, and anise, of each, ʒj. in six pints of water ; simmer the mixture down to 4 pints ; add lbvj. of treacle, and boil for a few minutes ; when cool, add fʒij. of laudanum.

Cautions.

ject unworthy of the Censors' attention? In the Parisian Codex directions are given to remove the seeds, to wash the capsules in cold water, to cut or tear them into small shreds, and to bruise them. They are then digested in water at 60° Reaumur (167° Fahrenheit) in a water-bath to the reduction of one-half, and the liquor is set aside to settle. Lastly, the finest white sugar being added, the liquor is boiled to the consistence of a syrup. The process, as described above in the London formula, is any thing but explicit.

Dose.—fʒij. to fʒj.; and for infants under three months, the third, or the half of a teaspoonful, is a full dose.

SYRUPUS RHAMNI.

Syrup of Buckthorn.

These berries are pea-shaped; when perfectly ripe they are black, shining with a bright central point, and they contain a greenish pulp, of a bitter disagreeable taste; the colouring matter of which, mixed with lime, forms the pigment commonly called sap-green.

Take of fresh Juice of Buckthorn, four pints;

Ginger, sliced,

Pimento, powdered, of each, six drachms;

Sugar, four pounds:

Set by the Buckthorn Juice for three days, that the dregs may subside, and strain. Add the Ginger and Pimento to a pint of the clear juice; then macerate with a gentle heat for four hours, and strain. Boil the remainder of the juice down to a pint and a half; and, having mixed the two liquors, add the Sugar, and dissolve it.

Remedial Use.—Buckthorn is a drastic purgative. A fluidrachm of the syrup is usefully added to our black draught (Senna-saline) when a more powerful operation is aimed at; but it cannot be employed in delicate temperaments. Sydenham used the syrup for dropsies. Some druggists are said to use the berries of the *Cornus sanguinea*, or those of the *Rhamnus frangula*, or alder buckthorn, as a substitute. I do not believe any respectable house would sanction such a succedaneum, except through error.

Dose.—fʒij. to fʒvj.

SYRUPUS RHŒADOS.

Syrup of Red Poppies.

The red poppy of our corn-fields.

Take of Red Poppy-Petals, a pound;

Boiling Water, a pint;

Sugar, two pounds and a half:

Gradually add the Petals to the Water, heated in a sand-bath, from time to time stirring them; then, the vessel being set aside, macerate for twelve hours: afterwards express the liquor; and, after the dregs have subsided, add the Sugar, and dissolve.

Remedial Use.—Chiefly as a colouring matter; but this syrup exerts anodyne properties also, and is quite strong enough for children under the age of three months.

Dose, for that age.—fʒss. to fʒj.

Cautions.

For Infants under 3 months.

℞ Syrup. Rhœados, fʒss.

Aquæ Anisi, ʒiss.

M.

Cochl. minimum subinde.

SYRUPUS ROSÆ.

Syrup of Roses.

Take of the Damask-Rose Petals, dried, seven ounces;
Sugar, six pounds;
Boiling Water, three pints:

Macerate the Rose-Petals in the Water for twelve hours, and strain. Evaporate the strained liquor in a water-bath to two pints, then add the Sugar, and dissolve it.

Remedial Use.—This also is an infantile remedy, and employed as a gentle cooling laxative for puny babes.

Dose, for infants.—fʒj. to fʒiij.

Rosa Centifolia.

If you substitute the red-rose you make an astringent syrup instead of a laxative one, which is a grave error.

SYRUPUS SARZÆ.

Syrup of Sarsaparilla.

Take of Sarsaparilla, sliced, fifteen ounces;
Boiling Water, a gallon;
Sugar, fifteen ounces:

Macerate the Sarsaparilla in the Water for twenty-four hours; then boil down to four pints, and strain

Mr. Battley has stated, that all the remedial principles of the root are extracted by water at 180°; and that the long-continued boiling heretofore employed is unnecessary. So, also, Dr. Hancock.

Cautions.

Ricord's Sirop Sudorifique.

℞ Sarzæ Concisæ,
Guaiaci Ras. āā ʒvi.

Aquæ, lbiv.

Macerate for 24 hours, reduce to one half over a gentle fire, strain, and add a pound and a half of white sugar.

the liquor while yet hot: afterwards add the Sugar, and evaporate to a suitable consistence.

Remedial Use.—*Vide* Extractum Sarzæ, and Decoctum Sarzæ. Tonic, alterative, or restorative. Diaphoretic action uncertain. An infusion in cold water is used in the hospitals of Paris.

Dose.—fʒj. to fʒss.

SYRUPUS SENNÆ.

Syrup of Senna.

In the true senna leaf the nerves are oblique, and the junction of the petiole with the expansion is unequal; and thus it may be distinguished from the argol, or arguel, cynanchum oleafolium, and from other spurious leaves.

Take of Senna, two ounces and a half;

Fennel [Seeds] bruised, ten drachms;

Manna, three ounces;

Sugar, fifteen ounces;

Boiling Water, a pint:

Macerate the Senna and the Fennel [Seeds] in the Water for an hour with a gentle heat. Mix the Manna and the Sugar with the strained liquor, and boil down to a proper consistence.

Remedial Use.—A palatable purgative for children, but it is prone to ferment.

Dose, for children.—Two teaspoonsful, or more.

SYRUPUS TOLUTANUS.

Syrup of Tolu.

It is now known to be the produce of the same tree which yields the Balsam of Peru.

℞ Copaiba,
Alcohol,
Syrup of Tolu,
Peppermint Water,
Orange-flower Water, āā ʒij.
Spirit of Nitre, ʒij.

M.

Take of Balsam of Tolu, ten drachms;

Boiling Water, a pint;

Sugar, two pounds and a half:

Boil the Balsam in the Water for half an hour in a vessel lightly covered, now and then stirring it, and strain the liquor when cold. Then add the Sugar, and dissolve it.

Remedial Use.—Tolu is an energetic and agreeable stimulant, acting chiefly on the lungs. The syrup, however, is seldom used in doses sufficient to insure the remedial action of the balsam, being chiefly added to give flavour and odour. Chopart recommends it for disguising the offensive taste of copaiba, as in the margin.

Dose.—f̄ij. to f̄j.

Cautions.
—

SYRUPUS ZINGIBERIS.

Syrup of Ginger.

Take of Ginger, sliced, two ounces and a half;
Boiling Water, a pint;
Sugar, two pounds and a half:

Macerate the Ginger in the Water for four hours, and strain; then add the Sugar, and dissolve it.

Remedial Use.—A warm corrigent and stomachic.

Dose.—f̄j. to f̄jss.

Ginger Beer Powders.

Sacch. Albi, ℥v.

Zingiberis, gr. v.
ad x.

Sesquicarb. Sodæ,
gr. xxvj.

In the blue paper.

Acidi Tartarici,
gr. xxx.

In the white paper.

TINCTURÆ.

Tinctures.

THE solutions of various remedial principles in alcohol or æther are denominated Tinctures, and divided into alcoholic and æthereal. In the London Pharmacopœia, however, none of the latter occur, although some of them are very generally employed. Again, they are divided into simple or compound, according as they contain one or more ingredients besides the menstruum. The substances contained in tinctures are generally vegetable; but mineral, and even animal, are occasionally employed. They are always prepared by digestion in close vessels; and rectified or proof spirit is employed according as the substance to be dissolved approximates more or less to the character of resin. Perhaps it were better that alcohol and distilled water should be separately ordered for each tincture in such proportions as are best adapted to the substances to be dissolved. In the Parisian Pharmacopœia a spirit of three different standards is employed, viz. 36 (Sp. G. .837), 32 (.856), 22 (.915), of Beaume's hydrometer. The first for resins, the second for material equally abounding in resin, extract, and gummy principles, and the third for acting on substances in which the latter predominates.

Cautions.

All tinctures ought to be prepared in close glass vessels, and to be shaken frequently during the process of maceration.

TINCTURA ALOËS.

Tincture of Aloes.

℞ Tinct. Aloës, fʒij.
 Cap. cochl. minima ij. ter quotidie
 ex Aquæ Pulegii vel
 Rosismarini, fʒij.

Take of Aloes, powdered, an ounce ;
 Extract of Liquorice, three ounces ;
 Distilled Water, a pint and a half ;
 Rectified Spirit, half a pint :

Macerate for fourteen days, and strain.

Remedial Use.—Stomachic and purgative in hypochondriacal habits and atonic conditions of the large intestines. I usually order a wine quart of pennyroyal water to be supplied with the drops, as in the margin.

Dose.—fʒij. to fʒj.

TINCTURA ALOËS COMPOSITA.

Compound Tincture of Aloes.

Emmenagogue Drops.
 ℞ Tinct. Aloës Comp.,
 Tinct. Valerianæ,
 āā fʒj.

Tinct. Ferri Sesquichloridi, fʒss.

M.

Dosis.—fʒj. bis
 quotidie ex Aquâ Pulegii.

Take of Aloes, powdered, four ounces ;
 Saffron, two ounces ;
 Tincture of Myrrh, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—The compound tincture is rendered more stimulating by the addition of the myrrh.

Dose.—In composition, fʒj. to fʒij.

TINCTURA AMMONIÆ COMPOSITA.

Compound Tincture of Ammonia.

Vulgò, Eau de Luce.

Take of Mastich, two [drachms] ;
 Rectified Spirit, nine fluidrachms ;

Oil of Lavender, fourteen minims ;
 Oil of Amber, four minims ;
 Stronger Liquor of Ammonia, a pint :

Macerate your Mastich in the Spirit, that it may be dissolved, and pour off the clear Tincture ; then add the other ingredients, and shake all together.

Remedial Action.—Diffusible, stimulant, and antispasmodic. It is in much esteem in India, used both externally and internally as an antidote to the bite of venomous animals.

Dose.—℥v. to ℥xv. properly diluted.

Cautions.

The College have two ounces of mastich in their text.

Incompatible with acids ; acidulous, metallic, and earthy salts.

The maximum dose contains about $\frac{1}{16}$ part of a drop of oil of amber.

TINCTURA ASSAFŒTIDÆ.

Tincture of Assafoetida.

Take of Assafoetida, five ounces ;
 Rectified Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Antispasmodic, diffusible, stimulant. For further account, *vide* Mistura Assafoetidæ. In Germany it is in high repute, combined with Petroleum, for the cure of tape-worm.

Dose.—fʒss. to fʒiss.

Instantly decomposed if added to any aqueous vehicle.

Schwartz's Drops.

R. Petrolei, fʒss.

Tinct. Assafoetid.
 fʒvj.

M.

Dosis.—gtt. xl. ter die in tænia.

TINCTURA AURANTII.

Tincture of Orange [Peel].

Take of Orange-Peel, dried, three ounces and a half ;
 Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Tonic, stomachic. A corrective ingredient for bitter infusions, decoctions, saline mixtures, disulphate of quina, &c.—*Vide* Margin.

Dose.—fʒj. to fʒss.

R. Quinæ disulphatis,
 gr. ij.

Tinct. Aurantii, fʒj.

Acidi Sulph. dil.

℥v.

Tinct. Opii, ℥x.

Inf. Cascarillæ, fʒiss.

M. Ft. Haustus.

In pyrosis, an hour before dinner.

Cautions.

TINCTURA BALSAMI TOLUTANI.

Tincture of Balsam of Tolu.

This balsam is obtained from the same tree (*Myroxolon Peruvianum*) as the balsam of Peru.

Take of Balsam of Tolu, two ounces ;

Rectified Spirit, two pints :

Macerate until the Balsam is dissolved, and strain.

Remedial Use.—Stimulant, expectorant. For further account, *vide* Syrupus Tolutanus.

Dose.—fʒss. to fʒij.

TINCTURA BENZOINI COMPOSITA.

Compound Tincture of Benzoin.

Vulgò, Friar's Balsam, and by a corruption of the word Benzoin, Tincture of Benjamin.

Essence of Coltsfoot.

℞ Balsam. Tolut.

Tinct. Benzoin C.

āā fʒss.

Spirit. Rectificat.

fʒij. M.

Take of Benzoin, three ounces and a half ;

Styrax (strained), two ounces and a half ;

Balsam of Tolu, ten drachms ;

Aloes, five drachms ;

Rectified Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Stimulant, and formerly used in emulsions as an expectorant. Also a common but very inappropriate remedy for green wounds. Dr. Paris calls the medicine in the margin a “vile stimulant nostrum.” No doubt it is injurious in inflammatory cough, but when a powerful stimulant and expectorant is required, I can see no objection to the form ; and in the sequel of a work called the “Pharmacologia” I find nearly the same form. Let us oppose nostrums with sound reasoning, but not with hard words merely. I, for one, never wish to see society destitute of a clever empiric or two. Heretics in physic have been useful, as well as heretics in religion.

Dose.—fʒss. to fʒij.

TINCTURA CALUMBÆ.

Tincture of Calumba.

For the character of good calumba, see Infusum Calumbæ.

Formula.

℞ Elixir. Vitriol. fʒij.

Tinct. Calumbæ,

fʒvj. M.

A teaspoonful three times a day in cold water.

Take of Calumba, sliced, three ounces ;

Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—Tonic and stomachic ; and for further account, *vide* Infusum Calumbæ. This is the most eligible and efficacious form for the exhibition of Calumba.

TINCTURA CAMPHORÆ.

Tincture of Camphor.

Take of Camphor, five ounces ;

Rectified Spirit, two pints :

Mix, that the Camphor may be dissolved.

Remedial Use.—As an external stimulant in embrocations, chilblains, &c. In the annexed formula Camphor enters into a composition for the tooth-ach.

*Cautions.**Former Name.*

Spiritus Camphoræ.

Odontalgic Tincture.]

R Pyreth. Rad. con-
tusæ, ʒss.

Camphoræ, ʒiij.

Opii, ʒj.

Ol. Caryoph. ʒij.

Spt. Vini R. fʒvi.

M.

TINCTURA CAMPHORÆ COMPOSITA.

Compound Tincture of Camphor.

Take of Camphor, two scruples and a half ;

Hard Opium, powdered,

Benzoic Acid, of each, seventy-two grains ;

Oil of Aniseed, a fluidrachm ;

Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Anodyne, diaphoretic, and expectorant.

Dose.—fʒj. to fʒij.

Vulgo, Paregoric.

In 1809, the College rejected the anise oil as being unimportant, and because it rendered the tincture opaque in cold weather; and they now introduce it in just double the quantity.

N.B. About gr. ij. of opium in the fluid-ounce.

TINCTURA CANTHARIDIS.

Tincture of Cantharides (Spanish Fly).

Take of Cantharides, bruised, four drachms ;

Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—A specific stimulant on the urinary and genital organs; and, therefore, useful in incontinence of urine, vesical paralysis, and, occasionally, in dropsies. Also externally as an adjunct to liniments. For example: R Tinct. Cantharidis, Liniment. Saponis, āā fʒj. M. The above affections for which this remedy is indicated are all, in my view, atonic paralysis of vital organs. By the word atonic I do not mean to have it inferred that any paralysis can be sthenic or tonic, but paralysis may arise from a previous sthenic condition, and from effusion, &c.

Dose.—℥x. to fʒj.

The College order acetic acid for forming their epispastic liquid. *Vide* Acetum Cantharidis. When, however, we wish to use the active principle (Cantharidin) over a large surface, as in cholera, the oil of turpentine will be found to be a convenient solvent. This last form may likewise be used as an injection in torpid fistulous sores.

Cautions.

TINCTURA CAPSICI.

Tincture of Capsicums.

℞ Tinct. Capsici, fʒij.
 Infusi Rosæ, fʒvj.
 M.

Dosis.—Cochl. am-
 pla ij. ante prandium.

Take of Capsicums, bruised, ten drachms ;
 Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—As a stimulant internally in atonic dyspepsia or paralysis of the nerves of the stomach, to excite the secretion of gastric juice ; or, in a similar atonic condition of the intestines. Also in lienteria, and as an ingredient in stimulating gargles.

Dose.—℥xx. to fʒss.

TINCTURA CARDAMOMI.

Tincture of Cardamoms.

℞ Tinct. Carda-
 momi, ʒj.
 Liquoris Magnesiae
 Bicarbonatis hy-
 dratae, ʒix.
 Ft. Haustus.

Take of Cardamoms, bruised, three ounces and a half ;
 Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Aromatic. Said to produce its antifatulent effects without exciting the circulation so much as other carminatives, so called. It is a common addition as a corrigent to aperient and stomachic draughts and mixtures, and it is a good adjunct to the fluid Magnesia at the time of use.

Dose.—fʒss. to fʒij.

TINCTURA CARDAMOMI COMPOSITA.

Compound Tincture of Cardamoms.

Solomon's notorious
 Balm of Gilead is
 said to have been a
 tincture of this kind,
 with a minute portion
 of cantharides.

Take of Cardamoms,
 Carraways, of each, coarsely powdered, two
 drachms and a half ;
 Cochineal, powdered, a drachm ;
 Cinnamon, bruised, five drachms ;

Raisins, five ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—As in the preceding.

Dose.—fʒj. to fʒiij.

Cautions.
—

TINCTURA CASCARILLÆ.

Tincture of Cascarilla.

Take of Cascarilla, coarsely powdered, five ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—Aromatic tonic, diffusible stimulant, and diaphoretic.

Dose.—fʒj. to fʒij.

℞ Infusi Cascar. fʒiss.
Tinct. ejusdem, fʒij.
Syrup. Zingiberis,
fʒj.
M.

The Editor has translated the word *contriti*, 'coarsely powdered,' which he believes is the most favourable condition for the action of spirits.

TINCTURA CASTOREI.

Tincture of Castor.

Take of Castor, powdered, two ounces and a half ;
Rectified Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Antispasmodic, diffusible stimulant, exerting the power of allaying that species of irregular muscular action which depends chiefly on debility. In hysteria, subsultus tendinum, delirium tremens, &c.

Dose.—fʒss. to fʒij.

℞ Tinct. Castorei, fʒj.
Ætheris Sulph. ℥x.
Tinct. Opii, ℥x.
Aquæ Pimentæ, fʒiss.
M.

TINCTURA CATECHU.

Tincture of Catechu.

Take of Catechu, three ounces and a half ;
Cinnamon, bruised, two ounces and a half ;
Proof Spirit, two pints :

℞ Mist. Cretæ, fʒiss.
Tinct. Opii, ℥x.
Tinct. Catechu, fʒj.
Ft. Haustus.

Cautions.

Macerate for fourteen days, and strain.

Remedial Use.—Astringent. *Vide* Infusum Catechu.

Dose.—fʒj. to fʒiij.

TINCTURA CINCHONÆ.

Tincture of (Yellow) Cinchona.

N.B. Tincture of Yellow Bark is an effectual antidote to Emetic Tartar.

Take of heart-leaved Cinchona, coarsely powdered, eight ounces ;

Proof Spirit, two pints :

R Decoct. Cinchonæ, fʒvss.

Macerate for fourteen days, and strain.

Tinct. ejusdem, fʒiij.

Remedial Use.—Specific, tonic, stomachic. *Vide* Quinæ Disulphas. Much of the salt of quina is highly adulterated.

Confect. Aromatic. ʒj.

Dose.—fʒj. to fʒiij.

Spt. Ammon. Aromatic. fʒj.

M.

TINCTURA CINCHONÆ COMPOSITA.

Compound Tincture of (Pale) Cinchona.

Vulgo, HUXHAM'S Tincture of Bark.

Half the strength of the preceding tincture.

Take of lance-leaved Cinchona, coarsely powdered, four ounces ;

Orange-Peel, dried, three ounces ;

Serpentary, bruised, six drachms ;

Saffron, two drachms ;

Cochineal, powdered, a drachm ;

Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Serpentary is used here as a diaphoretic adjuvant ; it assists the operation of the bark in cases characterized by a weak languidly-secreting condition of skin. Persons living in or visiting aguish places at aguish seasons should take a dose of this every morning, if they have once had that disease. In Holland it is a universal practice. Dr. Heberden also recommends it as a conservative.

Dose.—fʒij. to fʒss.

Cautions.

TINCTURA CINNAMOMI.

Tincture of Cinnamon.

Take of Cinnamon, bruised, three ounces and a half;
Proof Spirit, two pints:

Macerate for fourteen days, and strain.

Remedial Use.—Cordial astringent.

Dose.—fʒj. to fʒij.

R. Mist. Cretæ, fʒvss.
Tinct. Cinnamomi,
fʒss.

M.

Cochl. unum largum
post singulas sedes
liquidas.

TINCTURA CINNAMOMI COMPOSITA.

Compound Tincture of Cinnamon.

Take of Cinnamon, bruised, an ounce;
Cardamoms, bruised, half an ounce;
Long Pepper, coarsely powdered,
Ginger, sliced, of each, two drachms and a half;
Proof Spirit, two pints:

Macerate for fourteen days, and strain.

Remedial Use.—Stomachic and weakly astringent.

Dose.—fʒj. to fʒij.

Good cinnamon
should be nearly as
thin as paper; it
should break with a
spicular fracture, and
readily yield its sweet
aromatic pungency
when chewed. Cassia
is no adequate substi-
tute as an astringent.
It is thicker and
breaks short with a
transverse fracture.

TINCTURA COLCHICI.

Tincture of Colchicum (Meadow Saffron).

Take of Colchicum Seeds, bruised, five ounces;
Proof Spirit, two pints:

Macerate for fourteen days, and strain.

Remedial Action.—The seeds of colchicum are more active than the corm. Like this last, they are purgative; and when combined with the aromatic spirit of ammonia, they act as a diaphoretic, and sedative; but given as in the annexed formula, after three or four doses, they

Formula.

R. Pulv. Semin. Col-
chici, gr. ij.
Pulv. Rhei, gr. vj.
Magnesiæ, gr. x.
Ft. pulvis.

Every six hours in
acute rheumatism, in-
flammatory gout, &c.,
washed down with a
glass of Seltzer water,
during high febrile ac-
tion only.

Cautions.

produce several slimy stools, and remarkably increase the secretion of urine. The benefit derived from them in early attacks of gout is principally owing to their drastic effect on the mucous membrane of the intestinal canal. *Vide Vinum Colchici.*

Dose.—℥xx. to fʒj.

TINCTURA COLCHICI COMPOSITA.

Compound Tincture of Colchicum.

℞ Pulv. Semin. Colchici, gr. iij.
Ammoniae Hydrochloratis Pulv.
gr. v.

Ft. pulvis.—G. F. C.
The most powerful remedy for checking a paroxysm of gout, but it requires great caution.

Take of Colchicum Seeds, bruised, five ounces ;
Aromatic Spirit of Ammonia, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—As in the preceding. When, however, the object of the practitioner is to induce the soothing effects without the drastic action on the mucous membranes, as in protracted gout, long-continued paroxysms of acute rheumatism, &c., this formula is preferable. After all that has been said of the specific effects of colchicum in gout, and admitting that it rarely fails to allay pain and to check a paroxysm, I would record my opinion, that he who would wish to arrive at a good old age should eschew it as an ordinary remedy, and consider that he is drawing upon his constitution for a temporary relief, with a certainty of becoming prematurely a bankrupt in his vital energies.

TINCTURA CONII.

Tincture of Hemlock.

If it be worth while here (foliorum), why not in other instances, uniformly to designate the part to be used ?

Take of Hemlock-leaves, dried, five ounces ;
Cardamoms, bruised, an ounce ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—Narcotic ; and, according to some high authorities, exerting a deobstruent effect on the lymphatic and glandular system. *Vide Ext. Conii.*

Dose.—℥xx. to fʒj.

Cautions.

TINCTURA CUBEBAE.

Tincture of Cubebs.

Take of Cubebs, coarsely powdered, five ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—Counter-stimulant; the berry itself commonly acts as a purgative. The proportion here seems far too small in reference to the dose of the powder. In the stage of gleet (without stricture) powder of cubebs macerated in oil of turpentine is very efficacious in the dose of ℥xx. thrice a day on a lump of sugar.

Dose.—fʒij. to fʒj.

The proportion (even if we presume it to take up the whole of the active principle) is only one drachm of cubebs to each fluid-ounce of the spirit.

TINCTURA DIGITALIS.

Tincture of Fox-glove.

Take of the leaves of Fox-glove, dried, four ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—Sedative, diuretic. *Vide* Infusum Digitalis. On calculating, you will find a grain to ten minims; but, recollect, a grain to ten minims is not necessarily a grain in ten minims. I have repeatedly succeeded in withdrawing the water from the brain in hydrocephalus by means of fox-glove and the solution of corrosive sublimate, as indicated by returning consciousness and volition, but it has invariably formed again.

Dose.—℥x. to fʒj.

Exclude it from the light. Observe that it is not so strong as the old tincture, for you have now forty ounces of menstruum.

TINCTURA GALLAE.

Tincture of Galls.

Take of Galls, coarsely powdered, five ounces ;
Proof Spirit, two pints :

* Macerate for fourteen days, and strain.

Remedial Use.—Astringent, but chiefly used as a test.

Dose.—℥xx. to fʒij.

In Relaxed Uvula.
℞ Tinct. Gallæ, fʒij.
Mellis, ʒss.
Aquæ Destillat.
fʒvj.
℞ Ft. gargarizatio.

Cautions.

TINCTURA GENTIANÆ COMPOSITA.

Compound Tincture of Gentian.

Portland Powder.
 Gentian Root,
 Birthwort,
 Germander tops,
 Ground Pine,
 Lesser Centaury,
p. æq.
 Dried, powdered,
 and finely sifted.

Take of Gentian-Root, sliced, two ounces and a half ;
 Orange-Peel, dried, ten drachms ;
 Cardamoms, bruised, five drachms ;
 Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Aromatic, tonic, and stomachic. *Vide* Infusum Gentianæ Compositum. The first three ingredients, or the Portland Powder, macerated in two pints of fluid Magnesia, form a useful remedy in atonic gout, in the dose of a wine-glass full.

Dose.—fʒj. to fʒiij.

TINCTURA GUAIACI.

Tincture of Guaiacum.

This medicine is seldom given in doses sufficiently large.

Instantly decomposed in any aqueous mixture, and the resin separated, unless the tincture be first triturated with a little mucilage.

Take of Guaiacum-resin, coarsely powdered, seven ounces ;

Rectified Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Powerfully stimulant, diaphoretic, and diuretic ; and, in full doses, exciting purgative effects also. In chronic rheumatism, atonic gout, &c. *Vide* Mistura Guaiaci. Its action should be promoted by some warm beverage.

Dose.—fʒij. to fʒj.

TINCTURA GUAIACI COMPOSITA.

Compound Tincture of Guaiacum.

℞ Tinct. Guaiaci C.
 Mellis, āā ʒj.
 Tere simul et adde
 Aq. Pimentæ, fʒx.
 M.
 Ft. Haustus.

Take of Guaiacum-resin, coarsely powdered, seven ounces ;

Aromatic Spirit of Ammonia, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—The action of guaiacum is powerfully stimulant on the whole system. No idea of the power of this substance can be

formed from tasting the resin, since it is almost insoluble in the saliva, but the alcoholic solution is highly pungent. In moderate doses, frequently repeated, it promotes the secretion both of the skin and the kidneys, and suspends pains of the joints and periosteum. It is also restorative after the debility which ensues on the use of mercury. Its action should be promoted by warm drinks.

Dose.—fʒj. to fʒss.

Cautions.

Patients should be apprised that all the preparations of Guaiacum are liable to change colour by exposure to the air.

TINCTURA HELLEBORI [NIGRI].

Tincture of [Black] Hellebore.

Take of Hellebore-root [black], bruised, five ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Black hellebore was used by the ancients for the same diseases for which we now use aloes, and as a counter-derivant or brain-purge in certain species of mania. In amenorrhœa, complicated with mania, in plethoric, torpid females, it is highly useful. I have known the menstrua to be completely suspended by an injury on the lumbar vertebræ, which had induced temporary paraplegia, and to be restored *pari passu* along with the returning motion of the limbs.

Dose.—fʒss. to fʒiss.

The College do not mention which hellebore, except in the columns of the M. M. I indicate the black, to avoid error.

In Atonic Palsy of the Womb.

R Pulv. Hellebori Nig.

Pulv. Inulæ,

Pulv. Guaiaci,

Pulv. fol. Sabinæ,

āā ʒj.

Ol. Anthem. ℥v.

Ol. Pulegii, ℥x.

Syrupi vel Fæcis

Sacchari, q. s.

Ft. Pil. xxiv.

Dosis.—j. vel ij. vel iij.

Omni nocte h. s. s.

TINCTURA HYOSCYAMI.

Tincture of Henbane.

Take of Henbane-leaves, dried, five ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Action.—A doubtful anodyne and laxative.—*Vide* Ext. Hyoscyami. Although many esteemed authors give their testimony in favour of henbane, all admit the tincture to be uncertain in its effects, and some propose to substitute the seeds, as employed by the ancients. For red sand in the kidneys the annexed pill has been recommended.

Dose.—fʒss. to fʒij.

Every body uses henbane, and few can say what good it does.

R Sodæ Carb. exsiccatæ,

Ext. Hyoscyami, āā gr. v.

Ol. Juniperi, ℥ij.

Ft. Pil. iij. h. s. s.

Cautions.

TINCTURA JALAPÆ.

Tincture of Jalap.

℞ Tinct. Jalapæ, fʒij.
 Aceti Scillæ, fʒj.
 Aq. Menthæ V. fʒx.
 M.
 Ft. Haustus.

Take of Jalap, coarsely powdered, ten ounces ;
 Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Cathartic. A useful adjuvant to cathartic draughts.
 —*Vide Ext. Jalapæ.* In Chorea Sancti Viti it was found to be remarkably efficacious in the hands of Dr. Hamilton.—*Vide* Hamilton on Purgatives. It has also been recommended as a diuretic combined with squills.

Dose.—fʒj. to fʒiij.

TINCTURA IODINII COMPOSITA.

Compound Tincture of Iodine.

It contains of iodine,
 gr. i., iodide of po-
 tassium, gr. ii. in ℥xl.

Take of Iodine, an ounce ;
 Iodide of Potassium, two ounces ;
 Rectified Spirit, two pints :

Macerate until the ingredients are dissolved, and strain.

Remedial Action.—In small doses, a powerful tonic ; in larger, an excitant, specifically stimulating the kidneys and genital glands, including the mamillary and thyroid.—*Vide* Potassii Iodidum.

Dose.—℥x. to fʒj.

TINCTURA KINO.

Tincture of Kino.

Incompatible with
 gelatine, sulphate of
 iron, nitrate of silver,
 and the acetates of
 lead.

Take of Kino, coarsely powdered, three ounces and a
 half ;

Rectified Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Astringent. The best form of administering kino is in warm port wine, flavoured with cinnamon; in diarrhœa, low fevers, with continued relaxation, &c.

Dose.—fʒss. to fʒij.

TINCTURA LAVANDULÆ COMPOSITA.

Compound Tincture of Lavender.

Take of Spirit of Lavender, a pint and a half;
Spirit of Rosemary, half a pint;
Cinnamon, bruised,
Nutmegs, bruised, of each, two drachms and a half;
Red Saunders, sliced, five drachms:

Macerate for fourteen days, and strain.

Remedial Use.—Cordial, diffusible stimulant in languors, and approaching syncope.

Dose.—fʒss. to fʒij.

[]

TINCTURA LUPULI.

Tincture of Hop.

Take of Hops, six ounces;
Proof Spirit, two pints:
Macerate for fourteen days, and strain.

Remedial Use.—Stomachic, anodyne.—*Vide* Extract. Humuli. The best vehicle is water.

Dose.—fʒss. to fʒij.

TINCTURA MYRRHÆ.

Tincture of Myrrh.

Take of Myrrh, coarsely powdered, three ounces;
Rectified Spirit, two pints:

Cautions.

As this was formerly called Red Spirits of Lavender, or Red Lavender, do not confound it with the present Spt. Lavandulæ.

[*Tinctura Lobeliæ.*]
(Indian Tobacco.)

This tincture ought to have been here introduced in the P. L. 1836, or why place the Lobelia in the columns of the Mat. Med.?

℞ Lobeliæ, ʒj.
Spt. Vini tenuior. fʒviij.
Macera per dies xiv. et cola.

Old Name.

Tinct. Humuli.

℞ Tinct. Lupuli, ʒj.
Aque destillat. ʒix.
M.
Ft. Haustus.

Hudson's Tincture for the Teeth.

℞ Tinct. Myrrhæ,
Tinct. Cinchonæ,
Aq. Cinnamomi, āā
p. æq.

With a little Arquebusade and Gum-Arabie.

Ruspini's Tincture.

Orris Root, coarsely powdered, ʒviij.

Cloves, ʒj.

Rect. Spirit. Oij.

Ambergris, ʒj.

Macerate for 14 days, and strain.

Cautions.

R. Tinct. Myrrhæ, ℥ij.
 Aluminis Pulv. ʒij.
 Mellis, ℥ss.
 Inf. Rosæ C. f℥vss.
 Ft. Gargarizatio.

Macerate for fourteen days, and strain.

Remedial Action.—Stomachic, and emmenagogue. Chiefly used as an antiseptic lotion for foul gums: but our first dentists object to it on account of its resin being precipitated between the teeth by admixture with water.

Dose.—f℥ss. to f℥ij.

TINCTURA OPII.

Tincture of Opium.

Gr. j. of opium in 19 minims of the tincture. Said to be incompatible with alkalies, metallic salts, and infusion of galls.

Take of Hard Opium, coarsely powdered, three ounces;
 [Proof] Spirit, two pints:

Macerate for fourteen days, and strain.

Chemical, &c.—This tincture reddens litmus paper; is of a deep brown colour, approaching to a black; and has the peculiar odour and taste of opium.—*Vide Supp.* p. 141.

Remedial Use.—As an anodyne or antispasmodic, it is preferable to opium, where its effects are required to be exerted speedily, and to be diffused over the alimentary canal.—*Vide Morphine Hydrochloras.* In gastric irritation, the solid opium will sometimes be preferable.

Dose.—℥v. to f℥j.

TINCTURA RHEI COMPOSITA.

Compound Tincture of Rhubarb.

In the list of new and old names, this is incorrectly styled Tinct. Rhei.

Warner's Cordial.

Bruised Rhubarb, ℥j.

Senna Leaves, ℥ss.

Powdered Liquorice, ℥iv.

Raisins pounded, lbj.

Brandy, Oij.

Macerate for 14 days, and strain.

Take of Rhubarb, sliced, two ounces and a half;
 Fresh Liquorice-Root, bruised, six drachms;
 Ginger, sliced,
 Saffron, of each, three drachms;
 Proof Spirit, two pints:

Macerate for fourteen days, and strain.

Remedial Use.—A warm purgative and stomachic. By a warm purgative, we mean one which will relax the bowels without refrigerating the stomach.

Dose.—f℥ij. to f℥iss.

TINCTURA SCILLÆ.

Tincture of Squills.

Take of Squill-Root, newly dried, five ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Stimulating expectorant, and diuretic, acting also as a general excitant. The common saline potassa draught is a good vehicle, and is itself a powerful diuretic. When used as an expectorant, the Mist. Amygdalæ or Decoct. Senegæ is preferable.

Dose.—℥x. to ℥xl.

In over doses, it excites bloody urine, and diminishes the renal secretion.

TINCTURA SENNÆ COMPOSITA.

Compound Tincture of Senna.

Take of Senna, three ounces and a half ;
Carraways, bruised, three drachms and a half ;
Cardamoms, bruised, one drachm ;
Raisins, five ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Stomachic, purgative.

Dose.—fʒj. to fʒss.

Vulgè, Daffy's Elixir.

The Daffy nostrum, however, contains saccharine matter, aniseed, and elecampane.

Your raisins must be stoned.

TINCTURA SERPENTARIÆ.

Tincture of Serpentry.

Take of Serpentry, bruised, three ounces and a half ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Tonic, diaphoretic.—*Vide* Infusum Serpentariæ.

Dose.—fʒj. to fʒiij.

℞ Infus. Serpentariæ,
fʒiss.
Tinct. Serpentariæ,
fʒj.
Ft. Haustus.

Cautions.

Valerian yields an extremely volatile oil, of a greenish colour, and a camphor-like smell. It is used on the Continent in the dose of from five to ten drops. One part of the root, to eight parts of rectified æther, forms a powerful antispasmodic tincture.

Take of Valerian Root, bruised, five ounces ;
Proof Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Antispasmodic, tonic.—*Vide* Infusum Valerianæ. It may be prescribed with an equal portion of Spt. Ætheris Sulphuric. Comp.

Dose.—fʒj. to ʒiij.

TINCTURA VALERIANÆ COMPOSITA.

Compound Tincture of Valerian.

Infusion of Lobelia.
℞ Lobeliæ, ʒj.
Aquæ ferventis, Oss.
Macera per horam
dimidiam et cola.

Dose.—fʒss. every half hour till it nauseate.

For Tinct. Lobeliæ, *vide* p. 227.

Take of Valerian Root, bruised, five ounces ;
Aromatic Spirit of Ammonia, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—More diffusible than the former.—*Vide* Infusum Valerianæ. Equal parts of this tincture and that of the tincture of lobelia will sometimes check a paroxysm of spasmodic asthma in the dose of a fʒj. Where our object is to nauseate, the infusion of lobelia is preferable.

Dose.—℥xx. to fʒj.

TINCTURA ZINGIBERIS.

Tincture of Ginger.

Ginger yields a volatile oil of a greenish blue colour.

Take of Ginger, sliced, two ounces and a half ;
Rectified Spirit, two pints :

Macerate for fourteen days, and strain.

Remedial Use.—Aromatic, stomachic. In spasmus ventriculi, flatulency, gripes, &c., and as a corrigent to other medicines.

Dose.—fʒj. to fʒss.

VEGETABILIA.

Vegetables.

VEGETABLES should be gathered at a dry season, when neither wet with rain nor dew; they are to be collected annually, and those which have been kept longer [than a year], are to be rejected.

Most Roots are to be dug up before their stems or leaves shoot forth.

BARKS ought to be collected at that season at which they can most easily be separated from the wood.

LEAVES are to be plucked after the flowers have expanded, and before the seeds ripen.

FLOWERS are to be gathered when just unfolded.

SEEDS are to be collected when just ripe, and to be preserved in their own seed vessels.

[Stalks are to be cut away in autumn, at which period they are most active.] [Woods in winter.]

VEGETABILIIUM PRÆPARATIO.

Preparation of Vegetables.

Dry Vegetables as quickly as possible a short time after they have been gathered, except those which are to be kept in the fresh state, lightly spread, by a heat so gentle, that the colour may not be changed; then

This precaution of rejecting medicines deteriorated by age, admits of extension to many vegetable preparations.

Either just before the approach of spring or early in the winter will answer for most.

i. e. Late in the spring or in the early part of summer.

For most herbs the better rule is when the flowers have formed, not waiting for full bloom.

N. B. Before they begin to cast their pollen.

In a temperature between 100° and 212°. The heat of steam is less injurious; a draught of dry air with sunshine is often still better.

Cautions.

Moist sand is better.
Keep your squill in
a dry place, or you will
never have it fit for
powdering.

This is the best plan
for pulpy fruits of all
kinds.

preserve them in proper places or vessels, the access of light and moisture being excluded.

Bury those Roots which we have directed to be preserved fresh, in dry sand. Cut the Colchicum Corm and Squill Bulb, before drying them, transversely into thin slices, the dry coats having been previously removed.

Set aside Pulpy Fruits, if they be unripe, or ripe and dry, in a damp place, that they may become soft; then press out the pulp through a hair sieve; afterwards boil with a gentle heat, frequently stirring. Lastly, evaporate the water in a water-bath, until the pulp attains a proper consistence.

Pour boiling water on the bruised Cassia Pods, that the pulp may be washed out, which first press through a sieve with large holes; then through a hair sieve. Then evaporate the water in a water-bath, until the pulp acquires a convenient consistence.

Express the pulp or juice of the ripe and recent fruits through a sieve, without boiling.

GUMMI-RESINÆ.

Gum-Resins.

Opium should be
dried in a heat of 212°,
until it ceases to lose
weight.

Separate Opium very carefully from all extraneous matter, particularly that which is on its outside. Opium should be kept soft, which may be fit for forming pills, and hard, which shall have been so dried in a water-bath, that it may be rubbed into powder.

Those Gum-Resins are to be esteemed as the best which occur so free from admixture as to require no purification. But, if they appear less pure, boil them in water until they soften, and express them through a canvass cloth: then set them aside, that the resinous

part may subside. Evaporate the effused supernatant liquor in a water-bath, adding towards the end the resinous part, and mixing them into one with the gummy part.

In order that those Gum-resins which easily melt may be purified, let them be enclosed in an ox's bladder, and let them be held in boiling water, until they become so soft, that they may be separated from their impurities through a canvass cloth by means of a press.

Dissolve the Balsam of Styrax in rectified Spirit, and strain; then, with a gentle heat, distil the Spirit, until the Balsam attains a proper consistence.

Cautions.

This would materially impair their virtues.

I have never met with pure styrax.

V I N A.

Wines.

MEDICATED Wines ought to be prepared in stopped glass vessels, and to be frequently shaken during maceration.

The action of wine upon remedial substances is analogous to that of a mixture of spirit and water. Vegetable matter ought to undergo the process of drying before it is submitted to the action of the menstruum. The neglect of this process in the old Vinum Colchici was one of the memorable errors of the last Pharmacopœia. Sherry wine is uniformly ordered by the College; but, in the preparing of wines medicated by admixture with tonic or astringent matter, sound old port is preferable. A Vinum Cinchonæ, according to the formula of "Talbor's wonderful secret," or that of the Paris Codex, would be no bad addition.

Radcliffe's Elixir.

R. Aloës Soccot. ʒvj.
Cort. Cinnamomi,
Radici Zedoar. āā
ʒss.
Radici Rhei, ʒj.
Coccinellæ, ʒss.
Syr. Rhamni, fʒij.
Spt. Tenuior. Oj.
Aquæ Puræ, fʒv.
Macera s. a.

V I N U M A L O Æ S.

Wine of Aloes.

Take of Aloes, rubbed to powder, two ounces;
Canella, coarsely powdered, four drachms;
Sherry Wine, two pints:

Old Names.

Tinctura Sacra;
Tinctura Hieræ.

Cautions.

Wine of Aloes, in Chlorotic Dyspepsia.

℞ Sodæ Carbonatis,
℥iij.

Ammon. Sesquicarb.
℥ivss.

Myrrhæ contritæ,
Aloës contritæ, āā
℥vj.

Vini Xerici, ℥xxiv.
Macera per dies vij.
A. T. T.

Mark!

In the wine commonly kept in the shops, and prepared after Dr. Thomson's formula, the proportion of the dried colchicum is ℥j. to each fluidounce; but in this, the new wine, the proportion is one drachm of the corm to five fluidrachms of the wine, nearly twice the strength; or gr. xij. to the fluidrachm.

Eau Medicinale de Husson.

℞ Radicis Colchici
concisæ, ℥ij.
Vini Xerici, ℥iv.
Macera.

Wilson's Gout Tincture.

This also is an infusion of colchicum.

Macerate for fourteen days, repeatedly shaking, and strain.

Remedial Use.—Warmly stomachic and purgative.

Dose.—℥℥j. to ℥℥ij.; or, as a purge, ℥℥ss. to ℥℥j.

VINUM COLCHICI.

Wine of Colchicum (Meadow Saffron).

Take of dried Meadow Saffron (Cormus) sliced, eight ounces;

Sherry Wine, two pints:

Macerate for fourteen days, and strain.

Remedial Action.—In the autopsy of animals poisoned by colchicum, we have observed extensive inflammation of the stomach and bowels; and this leads us to infer, that its primary operation on the mucous membrane is that of an acrid stimulant. Every practitioner is aware, that certain gouty patients of a robust habit use this and other similar remedies in maximum doses so as to vomit and purge themselves, and thus suspend a painful paroxysm. The same effect is also produced by other violent remedies; by hydrochlorate of ammonia, by hedge hyssop, by veratria, &c. In the more scientific and cautious treatment of the disease, it is administered so as to produce mucous stools and a copious secretion of urine. That in smaller doses it soothes pain, occasions diaphoresis, and lowers vascular action, is equally evident, and, in this respect, it does not differ from some other acrid substances. As in the exhibition of fox-glove, persons under the influence of colchicum should preserve the recumbent position.

Dose.—℥xx. to ℥℥j.

VINUM IPECACUANHÆ.

Wine of Ipecacuanha.

The proportion is 15 grains to half a fluidounce. Active

Take of Ipecacuanha, bruised, two ounces and a half;
Sherry Wine, two pints:

Macerate for fourteen days, and strain.

Remedial Action.—Expectorant, diaphoretic, and emetic. If it pass the pylorus in any considerable quantity, it usually acts powerfully on the bowels. The most simple and primary operation of this medicine is as an excitant on the mucous tract. Hence its stomachic power; and hence, in larger doses, the vomiting induced by it. Its power of relaxing the skin, and of diminishing febrile action, is secondary, just as the same effects produced by other powerful irritants are secondary.

Dose.—℥xx. to fʒj.; or, as an emetic, fʒiij. to fʒj.; or, for infants, a teaspoonful.

Cautions.

principle, Emetina. This substance is white, pulverulent, without smell, but of a bitter taste. It is incompatible with infusion of galls, gallic acid, &c., and it is used in France instead of the root. In over doses it produces inflammation of the stomach, bowels, and lungs.

VINUM OPII.

Wine of Opium.

Take of Purified extract of Opium, two ounces and a half;

Cinnamon, bruised,

Cloves, bruised, of each, two drachms and a half;

Sherry Wine, two pints:

Macerate for fourteen days, and strain.

Remedial Use.—*Vide* Tinctura Opii. It is nearly similar to the liquid laudanum of Sydenham, and contains $\frac{1}{8}$ less of opium than the tincture, but this last is prepared from the hard gum not purified.

Dose.—℥x. to fʒj.

Ford's Laudanum is similar to this preparation, except that the menstruum employed is a weak spirit.

Sydenham's Liquid Laudanum.

℞ Vini Hispan. ℥bj.

Opii, ʒij.

Croci, ʒj.

Pulv. Cinnam.

Pulv. Caryophill. āā

ʒj.

Infunde simul in B. M. per dies tres: coletur et servetur pro usu.

N. B. Sydenham's Laudanum is preferred throughout all Europe, our own country excepted.

VINUM VERATRI.

Wine of White Hellebore.

Take of White Hellebore [Root] sliced, eight ounces;

Sherry Wine, two pints:

Macerate for fourteen days, and strain.

Active principle, Veratria. The proportion of the root to the wine is gr. xij. to the fluidrachm.

Cautions.

℞ Vini Veratri, fʒss.
 Tinct. Jalapæ, fʒiiss.
 M.
 Cochl. minimum pro
 dosi.

Remedial Use.—Counter-derivative, cathartic, and, by revulsion, suspending the gouty paroxysm, like colchicum, &c. Used in certain chronic affections of the head, mania, &c. For further account, *vide* Veratria, page 69. In palsy of vital organs I have occasionally used it, combined with tincture of jalap, as 'in the margin.

Dose.—℥x. to fʒss.

U N G U E N T A.

Ointments.

UNGUENTUM ANTIMONII POTASSIO-TARTRATIS.

Ointment of Potassio-tartrate of Antimony.

Emetic tartar is absorbed if used over a large extent of surface.

Liniment. Crotonis.

℞ Ol. Crotonis Tiglii,
 fʒj.
 Ol. Olivæ, fʒij.
 M.

Take of Potassio-tartrate of Antimony, powdered, an ounce ;
 Lard, four ounces :

Mix.

Remedial Use.—As a counter-irritant, applied to the chest in pneumonia, bronchitis, incipient phthisis, and local affections of joints. It requires caution. It is curious that a single grain diffused through a Burgundy pitch plaster will sometimes produce the usual effects of a much larger quantity. Croton oil is used by the oculists as a counter-irritant, rubbed into the nape of the neck. *Vide* Liniment. Crotonis in the margin. It produces small pustules, with considerable erythema.

UNGUENTUM CANTHARIDIS.

Ointment of Cantharides (Spanish Fly).

Active principle,
 Cantharidine.

Take of Cantharides, rubbed into a very fine powder, an ounce ;
 Distilled Water, four fluidounces ;
 Cerate of Resin, four ounces :

Boil the Water with the Cantharides down to one half, and strain it. Mix the Cerate with the strained liquor, then evaporate it to a proper consistence.

Remedial Use.—Chiefly to promote discharge from surfaces already vesicated, but the ceratum sabinæ, when fresh and green, induces a freer discharge with less irritation to the patient.

Cautions.

Unguent. Lyttæ,
P. L. 1809.

UNGUENTUM CETACEI.

Ointment of Spermaceti.

Take of Spermaceti, six drachms ;
White Wax, two drachms ;
Olive Oil, three fluidounces :

Having melted them together over a slow fire, constantly stir until they are cold.

Remedial Use.—*Vide* Ceratum Cetacei.

In Psoriasis, Impetigo.

℞ Æruginis subtilis-
simæ pulv. ʒj.
Ung. Cetac.
Cerati Resinæ, āā
ʒiij.
Ol. Olivæ, ʒij.
Ft. ung.

Smellome's Eye-
salve resembles the
above, but is about
one-half as strong of
the verdigris.

UNGUENTUM CREASOTI.

Ointment of Creasote.

Take of Creasote, half a fluidrachm ;
Lard, an ounce :

Rub and incorporate them.

Remedial Use.—It has been employed in tænia capitis, as a substitute for the old ointment of pitch.

℞ Ung. Creasoti,
Ung. Sulphuris, āā
p. æq.
M.

UNGUENTUM ELEMI.

Ointment of Elemi.

Take of Elemi, a pound ;
Common Turpentine, ten ounces ;
Suet, two pounds ;
Olive Oil, two fluidounces :

In some of the old
Pharmacopœias this
was called "Yellow
Basilicon," but our
Basilicon is the Cera-
tum Resinæ.

Cautions.

Melt the Elemi with the Suet, then remove from the fire, and with these immediately mix in the Turpentine and the Oil; then express them through a linen cloth.

Remedial Use.—A good stimulating dressing for indolent ulcers.

UNGUENTUM GALLÆ COMPOSITUM.

Compound Ointment of Galls.

R Pulv. Alumin. exsic.
Pulv. Gallæ, āā
p. æq.
Contere.

Take of Galls, finely powdered, two drachms;
Lard, two ounces;
Hard Opium, finely powdered, half a drachm:

Mix.

Remedial Use.—Chiefly as an astringent for lax hæmorrhoids, and in the last or bleeding stage of open cancer. I have known the powder annexed to have cured a soft polypus of the nose.

UNGUENTUM HYDRARGYRI FORTIUS.

Stronger Ointment of Mercury.

The practice of admixing a portion of old mercurial ointment seems to be the least objectionable mode of accelerating this process. This ointment contains ʒj. of mercury in ʒij.

Take of Mercury, two pounds;
Lard, twenty-three ounces;
Suet, an ounce:

First rub the Mercury with the Suet and a little of the Lard, until globules are no longer to be seen; then add the remainder of the Lard, and mix.

Remedial Use.—The most usual external formula for introducing mercury into the system. When the surface of the body is much above the natural standard, this remedy is absorbed with great difficulty. *Vide* the preparations of mercury, from page 151 to page 158.

Cautions.

UNGUENTUM HYDRARGYRI MITIUS.

Milder Ointment of Mercury.

Take of Stronger Ointment of Mercury, a pound ;
Lard, two pounds :

Mix.

Remedial Use.—Same as the preceding, and locally as a dressing.

ʒj. of mercury is contained in ʒvi. of the ointment.

UNGUENTUM HYDRARGYRI NITRATIS.

Ointment of Nitrate of Mercury.

Take of Mercury, an ounce ;
Nitric Acid, eleven fluidrachms ;
Lard, six ounces ;
Olive-oil, four fluidounces :

First dissolve the Mercury in the Acid ; then mix the liquor while yet hot with the Lard and Oil previously melted together.

Remedial Use.—In scald-head, impetigo, and other eruptions. Equal weights of the leaves of fox-glove and lard form the unguentum digitalis, a provincial remedy for tænia capitis.

Citrine Ointment.

Singleton's Eye-salve, or Golden Ointment ; but the original nostrum of that name was a preparation of sulphuret of arsenic with spermaceti ointment.

Nitric acid acts chemically on lard, and in the hottest weather will, in a few days, form a hard, inconvenient mass. Butter is the best substitute ; and if purchased at proper seasons, it is equally cheap.

UNGUENTUM HYDRARGYRI NITRICO-OXYDI.

Ointment of Nitric-Oxide of Mercury.

Take of Nitric-oxide of Mercury, an ounce ;
White Wax, two ounces ;
Lard, six ounces :

Having melted the Wax and the Lard together, add the Nitric-oxide of Mercury very finely powdered, and mix.

Remedial Use.—As a detergent and stimulant for foul ulcers. The plaster, as in the margin, adapted to the size of the wound has a powerfully healing effect on indolent local ulcers, and is an example of the effects of iron and mercury combined.

Vulgò, Red Precipitate Ointment.

℞ Emp. roborant.
P. E.

Emp. Resinæ, āā ʒij.
Hyd. Nitrico-Oxydi
pulv. ʒj.

Simul liqua et s. a.
ft. emplastrum.

Cautions.

UNGUENTUM HYDRARGYRI IODIDI.

Ointment of Iodide of Mercury.

Ricord recommends
 ℥j. to an ounce of lard.

The proportion ordered by the College seems to be excessive. Ricord's is 1 to 24; that of the College 1 to 8.

This is prepared like that of the Nitric-oxide of Mercury.

UNGUENTUM HYDRARGYRI BINIODIDI.

Ointment of Biniodide of Mercury.

This is prepared similarly with the two last.

Remedial Use.—These ointments have been used chiefly in hospital practice for ill-conditioned sores which had long resisted the ordinary preparations of mercury, and also for scrofulous ulcers. Their employment requires the greatest caution.

UNGUENTUM HYDRARGYRI AMMONIO-CHLORIDI.

Ointment of Ammonio-Chloride of Mercury.

Vulgo, White Precipitate Ointment.

Take of Ammonio-chloride of Mercury, a drachm;
 Lard, an ounce and a half:

Having melted the Lard over a slow fire, add Ammonio-chloride of Mercury, and mix.

Remedial Use.—Externally in certain cutaneous affections; but it should not be employed over any considerable extent of surface.

UNGUENTUM IODINII COMPOSITUM.

Compound Ointment of Iodine.

Formula.
 R Ung. Hyd. fort.
 Ung. Iodini C.
 āā p. æq.
 M.

This is the most effi-

Take of Iodine, half a drachm;
 Iodide of Potassium, a drachm;
 Rectified Spirit, a fluidrachm;
 Lard, two ounces:

First rub the Iodine and the Iodide of Potassium with the Spirit, then with the Lard.

Remedial Use.—In bronchocele, ovarian dropsy, ovarian enlargement, and other tumours. A little camphor is said to promote its operation.

Cautions.

cacious form with which we are acquainted, for promoting the absorption of tumours.

UNGUENTUM PICIS LIQUIDÆ.

Ointment of liquid Pitch.

Take of liquid Pitch [Tar],
Suet, of each, a pound :

Mix them together, and express through a linen cloth.

Remedial Use.—Chiefly in scald-head. Equal parts of this and the sulphur ointment are commonly employed in the hospitals.

In the columns of the *Materia Medica*, the College indicate the prepared liquid resin, but tar is not a prepared resin.

UNGUENTUM PICIS NIGRÆ.

Ointment of Black Pitch.

Take of Black Pitch,
Wax,
Resin, of each, nine ounces ;
Olive-oil, sixteen fluidounces :

Melt them together, and express through a linen cloth.

Remedial Use.—As a detergent and stimulant for indolent ulcers.

Black pitch is inspissated tar; 5 barrels of tar yield 2 of pitch.

UNGUENTUM PLUMBI COMPOSITUM.

Compound Ointment of Lead.

Take of Prepared Chalk, eight ounces ;
Distilled Vinegar, six fluidounces ;
Plaster of Lead, three pounds ;
Olive-oil, a pint :

Neutral Cerate.

Whiting is a pure form of chalk.

Cautions.

Dissolve the Plaster in the Oil over a slow fire : then, having separately mixed the Chalk with the Vinegar, wait till the effervescence is finished, and add them to the former ingredients, stirring constantly until they are cool.

Remedial Use.—Said to be a good dressing both for irritable and indolent ulcers. An additional half pint of oil makes a more convenient ointment. It seems scarcely calculated to meet two such opposite conditions of sores.

UNGUENTUM PLUMBI IODIDI.

Ointment of Iodide of Lead.

It ought never to be used without inquiring whether the patient is easily disturbed by lead.

Take of Iodide of Lead, an ounce ;

Lard, eight ounces :

Rub them together, and mix.

Remedial Use.—As a discutient ointment for scrofulous tumours, bronchocele, &c.—*Vide* Plumbi Iodidum.

UNGUENTUM SAMBUCL.

Ointment of Elder (Flowers).

R Sambuci Corticis,

℥j.

Aquæ, f℥xvj.

Decoque ad f℥x.

Dosis. — f℥ij. ter
quotidie.

In dropsy and some
cutaneous affections.

Take of Elder [Flowers],

Lard, of each, two pounds :

Boil the Elder Flowers in the Lard until they become crisp, then press through a linen cloth.

Remedial Use.—An emollient dressing. The bark of the elder tree is powerfully purgative and emetic, and a jam or rob, as it was called, of the berries was in former times admitted into the London Pharmacopœia as a diuretic laxative, and was a domestic remedy for the cure of gravel.

UNGUENTUM SULPHURIS.

Ointment of Sulphur.

This is the proper
sulphur ointment for
young children.

Take of Sulphur, three ounces ;

Lard, half a pound ;

Oil of Bergamot, twenty minims :

Mix.

Remedial Use.—In psora and many other cutaneous diseases, and especially in herpes. We are told, that it changes the mode of vitality of this membrane, a phrase too obscure for our comprehension. That sulphur is internally a peculiar stimulant we can readily see, and that it may be employed until the circulation becomes over excited we are assured by respectable authorities.

Cautions.

Dr. Clarke's lotion for psora in children consists of an ounce of sulphur, over which a quart of boiling water is allowed to stand for twelve hours.

UNGUENTUM SULPHURIS COMPOSITUM.

Compound Sulphur-Ointment.

Take of Sulphur, half a pound ;
 White Hellebore, finely powdered, two ounces ;
 Nitrate of Potassa, a drachm ;
 Soft Soap, half a pound ;
 Lard, a pound and a half ;
 Oil of Bergamot, thirty minims :

Mix.

Remedial Use.—Chiefly in psora, *vide* Ung. Sulphuris. One drachm of finely powdered red precipitate is a good adjunct in bad cases. It should be well incorporated.

In infants and children this ointment often induces vomiting and purging to a serious degree.

Bateman's Itch Ointment.

℞ Potassæ (Sub-) Carbon. ʒss.
 Aq. Rosæ, fʒj.
 Hydrarg. Sulph. rub. ʒj.
 Ol. Bergamii, fʒss.
 Sulphuris,
 Adipis, āā ʒxj.
 M.

UNGUENTUM VERATRI.

Ointment of (White) Hellebore.

Take of White Hellebore, finely powdered, two ounces ;
 Lard, eight ounces ;
 Oil of Lemons, twenty minims :

Mix.

Remedial Use.—Chiefly in psora, and occasionally in some other cutaneous affections. Finely powdered cocculus Indicus, mixed up with warm castor oil, is an Indian remedy for the itch.

Beware of using it for children.

Edinburgh Ointment.

Like this, but with the addition of a little sal-ammoniac.

Cautions.

UNGUENTUM ZINCI.

Ointment of Zinc.

*Turner's Cerate, or
Ceratum Calaminæ.*

R. Calaminæ ppt.

Ceræ flavæ, āā fss.

Olivæ Olei, Oj.

Mix the oil with the melted wax, remove from the fire, and as it thickens stir in the calamine, till the mass cools.

Take of Oxide of Zinc, an ounce ;
Lard, six ounces :

Mix.

Remedial Use.—As an astringent in ophthalmia tarsi, leucorrhœa with excoriations, also in chapped nipples, &c. Turner's Cerate, the old digestive preparation of zinc, is omitted in the present Pharmacopœia, but it is so commonly employed upon ulcerated surfaces that we have thought fit to annex the formula in the margin.

TABLE

OF

FORMER AND NEW NAMES.

FORMER NAMES.	NEW NAMES.
A	
Acidum aceticum dilutum.	Acetum destillatum.
——— muriaticum.	Acidum hydrochloricum.
Ammoniae Murias.	Ammoniae Hydrochloras.
——— Subcarbonas.	——— Sesquicarbonas.
Antimonii Sulphuretum.	Antimonii Sesquisulphuretum.
——— Sulphuretum præcipita- tum.	——— Oxysulphuretum.
Antimonium tartarizatum.	——— Potassio-Tartras.
Arsenicum album.	Acidum Arseniosum.
B	
Bismuthi Subnitras.	Bismuthi Trisnitras.
C	
Calcis Murias.	Calcii Chloridum.
Ceratum simplex.	Ceratum.
Confectio Amygdalarum.	Confectio Amygdalæ.
——— Aurantiorum.	——— Aurantii.
——— Scammoneæ.	——— Scammonii.
Cuprum ammoniatum.	Cupri Ammonio-Sulphas.
D	
Decoctum Cinchonæ.	Decoctum Cinchonæ cordifoliæ.
——— Lichenis.	——— Cetrariæ.
——— Sarsaparillæ.	——— Sarzæ.
——— Sarsaparillæ compositum.	——— Sarzæ compositum.

FORMER NAMES.

NEW NAMES.

E

Emplastrum Picis compositum.	Emplastrum Picis.
Extractum Cinchonæ.	Extractum Cinchonæ cordifoliæ.
———— Opii.	———— Opii purificatum.

F

Ferri Subcarbonas.	Ferri Sesquioxylum.
Ferrum ammoniatum.	—— Ammonio-Chloridum.
———— tartarizatum.	—— Potassio-Tartras.

H

Hydrargyri Oxydum cinereum.	Hydrargyri Oxydum.
———— Oxydum rubrum.	———— Binoxylum.
———— Oxymurias.	———— Bichloridum.
———— Submurias.	———— Chloridum.
———— Sulphuretum nigrum.	———— Sulphuretum cum Sulphure.
———— Sulphuretum rubrum.	———— Bisulphuretum.
———— præcipitatum album.	———— Ammonio-Chloridum.

I

Infusum Caryophyllorum.	Infusum Caryophylli.
-------------------------	----------------------

L

Linimentum Ammonia fortius.	Linimentum Ammonia.
———— Ammonia Subcarbonatis.	———— Ammonia Sesquicarbonatis.
———— Hydrargyri.	———— Hydrargyri compositum.
———— Saponis compositum.	———— Saponis.
Liquor Ammonia Subcarbonatis.	Liquor Ammonia Sesquicarbonatis.
———— Arsenicalis.	———— Potassæ Arsenitis.
———— Calcis Muriatis.	———— Calcii Chloridi.
———— Cupri ammoniati.	———— Cupri Ammonio-sulphatis.
———— Hydrargyri Oxymuriatis.	———— Hydrargyri Bichloridi.
———— Plumbi Subacetatis.	———— Plumbi Diacetatis.
———— Potassæ Subcarbonatis.	———— Potassæ Carbonatis.

FORMER NAMES.

NEW NAMES.

M

Magnesiae Subcarbonas.
 Mistura Amygdalarum.
 Mucilago Acaciae.
 ——— Amyli.

Magnesiae Carbonas.
 Mistura Amygdalæ.
 ——— Acaciae.
 Decoctum Amyli.

O

Oleum Pulegii.
 ——— Terebinthinæ rectificatum.
 Oxymel simplex.

Oleum Menthæ Pulegii.
 ——— Terebinthinæ purificatum.
 Oxymel.

P

Pilulæ Hydrargyri Submuriatis
 compositæ.
 ——— Saponis cum Opio.
 Plumbi Oxydum semivitreum.
 ——— Subcarbonas.
 Potassa fusa.
 Potassæ Carbonas.
 ——— Subcarbonas.
 ——— Supertartras.
 ——— Sulphuretum.
 Pulvis Antimonialis.

Pilulæ Hydrargyri Chloridi compo-
 sitæ.
 ——— Saponis compositæ.
 Plumbi Oxydum.
 ——— Carbonas.
 Potassæ Hydras.
 ——— Bicarbonas.
 ——— Carbonas.
 ——— Bitartras.
 Potassii Sulphuretum.
 Pulvis Antimonii compositus.

S

Sodæ Carbonas.
 ——— Murias.
 ——— Subboras.
 ——— Subcarbonas.
 Soda tartarizata.
 Spiritus Camphoræ.
 ——— Lavandulæ compositus.
 ——— Pulegii.
 Syrupus Aurantiorum.
 ——— Sarsaparillæ.
 ——— simplex.

Sodæ Sesquicarbonas.
 Sodii Chloridum.
 Sodæ Biboras.
 ——— Carbonas.
 ——— Potassio-Tartras.
 Tinctura Camphoræ.
 ——— Lavandulæ composita.
 Spiritus Menthæ Pulegii.
 Syrupus Aurantii.
 ——— Sarzæ.
 Syrupus.

FORMER NAMES.

NEW NAMES.

T

Tinctura Ferri ammoniati.

—— Ferri Muriatis.

—— Sennæ.

Tinctura Ferri Ammonio-Chloridi.

—— Ferri Sesquichloridi.

—— Sennæ composita.

V

Vinum Antimonii tartarizati.

Vinum Antimonii Potassio-Tartratis.

U

Unguentum Elemi compositum.

—— Hydrargyri præcipitati
albi.

Unguentum Elemi.

—— Hydrargyri Ammonio-
Chloridi.

POSOLOGICAL TABLE.

[Where the doses do not answer to those indicated in the body of my work, I wish it to be understood that I have formed the Table from an estimate of authorities in general, but that the doses scattered through the work are founded on my own experience.]

Absinthium	ʒj. to	ʒj.
Acacia (Gummi)	ʒss.	ʒiij.
Acetum Colchici	fʒss.	fʒij.
——— destillatum	fʒj.	fʒjss.
——— Scillæ	℥xx.	fʒij.
Acidum Benzoicum	gr. v.	ʒj.
——— Citricum	gr. x.	ʒss.
——— Hydrochloricum	℥v.	℥xx.
——— dilutum	℥xx.	fʒj.
——— Hydrocyanicum dilutum	℥v.	upwards.
——— (Scheele's)	℥ij.	upwards.
——— Nitricum dilutum	℥x.	℥xl.
——— Phosphoricum dilutum	℥xx.	fʒj.
——— Sulphuricum dilutum	℥x.	℥xl.
——— Tartaricum	gr. x.	ʒss.
Aconiti Folia	gr. j.	gr. v.
——— Radix	gr. $\frac{1}{8}$	gr. j.
Æther Sulphuricus	℥xx.	fʒij.
Ærugo	gr. $\frac{1}{4}$	gr. j.
Aloës Extractum	gr. v.	gr. xv.
Alumen	gr. x.	ʒj.
Ammoniacum	gr. x.	ʒss.
Ammoniæ Hydrochloras	gr. v.	ʒj.
——— Sesquicarbonas	gr. v.	ʒj.
Anethi Fructus (Semina)	gr. x.	ʒj.
Anisi Fructus (Semina)	gr. x.	ʒj.
Anthemidis Flores	gr. x.	ʒss.
Antimonii Oxysulphuretum	gr. j.	gr. v.
——— Potassio-tartras (diaphoretic)	gr. $\frac{1}{4}$	gr. ss.

Antimonii Potassio-tartras (emetic)	. . .	gr. j. to gr. v.	
———— (contra-stimulant)	. . .	gr. ij. omni semi-horâ.	
———— Sesquisulphuretum	. . .	gr. x.	ʒss.
Aqua Anethi	. . .	fʒj.	fʒiv.
—— Aurantii (Florum)	. . .		
—— Carui	. . .		
—— Cinnamomi	. . .		
—— Fœniculi	. . .		
—— Menthæ piperitæ	. . .		
———— pulegii	. . .		
———— viridis	. . .		
—— Pimentæ	. . .		
Argenti Nitras	. . .	gr. $\frac{1}{8}$	gr. ij.
Armoraciæ Radix	. . .	ʒj.	ʒj.
Aspidii Filicis Radix	. . .	ʒij.	ʒiij.
Assafœtida	. . .	gr. x.	ʒss.
Balsamum Peruvianum	. . .	gr. x.	ʒss.
———— Tolutanum	. . .	gr. x.	ʒss.
Belladonnæ Folia	. . .	gr. ss.	gr. v.
Benzoinum	. . .	gr. x.	ʒss.
Bismuthi Trisnitræ	. . .	gr. v.	gr. xv.
Cajaputi Oleum	. . .	℥j.	℥v.
Calumbæ Radix	. . .	gr. x.	ʒss.
Cambogia	. . .	gr. ij.	gr. x.
Camphora	. . .	gr. iij.	ʒj.
Canellæ Cortex	. . .	gr. x.	ʒss.
Capsici Baccæ	. . .	gr. v.	gr. x.
Cardamines Flores	. . .	ʒj.	ʒj.
Cardamomi Semina	. . .	gr. v.	ʒss.
Carui Fructus	. . .	gr. x.	ʒj.
Caryophylli	. . .	gr. v.	ʒss.
———— Oleum	. . .	℥ij.	℥v.
Cascarillæ Cortex	. . .	gr. x.	ʒj.
Cassiae Pulpa	. . .	ʒss.	ʒj.
Castoreum	. . .	gr. v.	ʒj.
Catechu	. . .	gr. x.	ʒss.
Centaurii Cacumina	. . .	gr. xv.	ʒj.
Cetaceum	. . .	ʒj.	ʒij.

Chimaphilæ Flores	᠑i.	to 3i.
Cinchonæ cordifoliæ Cortex	gr. x.	3iss.
———— lancifoliæ Cortex	gr. x.	3iss.
———— oblongifoliæ Cortex	gr. x.	3iss.
———— (either species) as a febrifuge	3j.	3iij.
Cinnamomi Cortex	gr. v.	᠑j.
———— Oleum	℥j.	℥iij.
Colchici Cormus	gr. ij.	gr. x.
———— Semina	gr. j.	gr. v.
Colocynthis Pulpa	gr. j.	gr. v.
Confectio Amygdalæ	3j.	3ij.
———— Aromatica	gr. x.	3j.
———— Aurantii	3j.	3j.
———— Cassiæ	3ij.	3j.
———— Opii	gr. x.	3ss.
———— Piperis nigri	3j.	3ij.
———— Rosæ caninæ	3j.	3j.
———— Gallicæ	3j.	3j.
———— Rutæ	3ss.	3ij.
———— Scammonii	᠑j.	3j.
———— Sennæ	3ij.	3j.
Conii Folia	gr. v.	᠑j.
Contrajervæ Radix	gr. x.	᠑ij.
Copaiba	᠑j.	3j.
Coriandri Fructus	᠑j.	3j.
Creasoton	℥iv.	℥x.
Creta præparata	gr. x.	᠑ij.
Cubeba	3j.	3iij.
Cupri Ammonio-Sulphas	gr. ¼	gr. v.
Cupri Sulphas	gr. ss.	gr. ij.
———— (emetic)	gr. ij.	gr. x.
Cuspariæ Cortex	gr. x.	3j.
Cymini Fructus	᠑j.	3j.
Dauci Fructus	᠑j.	3j.
Decoctum Aloës compositum	f3ss.	f3ij.
———— Cetrariæ	f3j.	f3iv.
———— Chimaphilæ	f3j.	f3ij.
———— Cinchonæ	f3j.	f3iij.
———— Dulcamaræ	f3ss.	f3ij.

Decoctum Granati	f℥ss. to f℥ij.
———— Sarzæ	f℥iv. f℥viij.
———— compositum	f℥iv. f℥viij.
———— Scoparii compositum	f℥j. f℥iiij.
———— Senegæ	f℥iss. f℥iiij.
———— Tormentillæ	f℥j. f℥iss.
———— Ulmi	f℥iv. f℥vj.
———— Uvæ Ursi	f℥j. f℥ij.
Digitalis Folia	gr. ss. gr. iiij.

Extractum Aconiti (Foliorum)	gr. ss. gr. v.
———— Radicis	gr. $\frac{1}{12}$ gr. ij.
———— Aloës purificatum	gr. v. ʒj.
———— Belladonnæ	gr. ss. gr. ij.
———— Cinchonæ	gr. x. ʒss.
———— Colchici Aceticum	gr. ss. gr. iiij.
———— Cormi	gr. j. gr. iiij.
———— Colocynthidis	gr. v. ʒj.
———— compositum	gr. v. ʒj.
———— Conii	gr. v. ʒj.
———— Digitalis	gr. ss. gr. ij.
———— Elaterii	gr. ss. gr. ij.
———— Gentianæ	gr. x. ʒss.
———— Hæmatoxyli	gr. x. ʒss.
———— Hyoscyami	gr. v. ʒj.
———— Jalapæ	gr. x. ʒj.
———— Lactucæ	gr. v. ʒj.
———— Lupuli	gr. v. ʒj.
———— Opii purificatum	gr. j. gr. v.
———— Papaveris	gr. v. ʒj.
———— Pareiræ	gr. x. ʒss.
———— Rhei	gr. x. ʒss.
———— Sarzæ	gr. x. ʒj.
———— Stramonii	gr. $\frac{1}{6}$ gr. ij.
———— Taraxaci	gr. x. ʒj.
———— Uvæ Ursi	gr. x. ʒj.

Ferri Ammonio-chloridum	gr. iiij. gr. x.
———— Iodidum	gr. j. gr. iiij.
———— Potassio-tartras	gr. x. ʒss.

Ferri Sesquioxylum	.	.	.	.	.	gr. v. to	ʒj.
— Sulphas	.	.	.	.	.	gr. j.	gr. v.
Fœniculi Fructus	.	.	.	.	.	ʒj.	ʒj.
Galbani Gummi-resina	.	.	.	.	.	gr. x.	ʒss.
Gallæ	.	.	.	.	.	ʒss.	ʒj.
Gentianæ Radix	.	.	.	.	.	gr. x.	ʒss.
Granati Cortex	.	.	.	.	.	ʒj.	ʒj.
Guaiaci Resina	.	.	.	.	.	gr. x.	ʒss.
Hellebori Radix	.	.	.	.	.	gr. v.	ʒi.
Hydrargyri Bichloridum	.	.	.	.	.	gr. $\frac{1}{8}$	gr. $\frac{1}{4}$
— Binioididum	.	.	.	.	.	gr. ss.	gr. j.
— Binoxylum	.	.	.	.	.	gr. ss.	gr. j.
— Chloridum (alterative)	.	.	.	.	.	gr. $\frac{1}{4}$	gr. j.
— (purgative)	.	.	.	.	.	gr. iiij.	gr. x.
— Iodidum	.	.	.	.	.	gr. j.	gr. iiij.
— Oxylum	.	.	.	.	.	gr. j.	gr. v.
— Sulphuretum cum Sulphure	.	.	.	.	.	gr. v.	ʒss.
Hydrargyrum cum Creta	.	.	.	.	.	gr. v.	ʒj.
Hyoseyami Folia	.	.	.	.	.	gr. v.	gr. x.
Jalapæ Radix	.	.	.	.	.	gr. x.	ʒij.
Infusum Anthemidis	.	.	.	.	.	fʒj.	fʒij.
— Armoraciæ compositum	.	.	.	.	.	fʒj.	fʒiss.
— Aurantii compositum	.	.	.	.	.	fʒj.	fʒij.
— Calumbæ	.	.	.	.	.	fʒiss.	fʒij.
— Caryophylli	.	.	.	.	.	fʒj.	fʒij.
— Cascarillæ	.	.	.	.	.	fʒiss.	fʒij.
— Catechu compositum	.	.	.	.	.	fʒj.	fʒiiij.
— Cinchonæ	.	.	.	.	.	fʒj.	fʒiiij.
— Cuspariæ	.	.	.	.	.	fʒiss.	fʒij.
— Digitalis	.	.	.	.	.	fʒij.	fʒj.
— Diosmæ	.	.	.	.	.	fʒij.	fʒiiij.
— Gentianæ compositum	.	.	.	.	.	fʒiss.	fʒij.
— Krameriæ	.	.	.	.	.	fʒiss.	fʒij.
— Lupuli	.	.	.	.	.	fʒj.	fʒiss.
— Pareiræ	.	.	.	.	.	fʒj.	fʒiss.
— Quassiæ	.	.	.	.	.	fʒiss.	fʒij.
— Rhei	.	.	.	.	.	fʒj.	fʒiiij.

Infusum Rosæ compositum	fʒj.	to fʒiss.
——— Scoparii	fʒj.	fʒij.
——— Sennæ compositum	fʒiij.	fʒiv.
——— Serpentariæ	fʒj.	fʒij.
——— Simarubæ	fʒj.	fʒij.
——— Valerianæ	fʒiss.	fʒij.
Inulæ Radix	gr. v.	ʒss.
Iodinium	gr. $\frac{1}{8}$	gr. ij.
Ipecacuanha, as a diaphoretic or expectorant	gr. ss.	gr. ij.
——— as an emetic	gr. x.	ʒij.
Kino	gr. x.	ʒss.
Krameria	gr. x.	ʒss.
Lavandulæ Flores	ʒj.	ʒj.
Lauri Baccæ et Folia	gr. x.	ʒss.
Lichen	ʒj.	ʒj.
Liquor Ammonię	℥x.	℥xxx.
——— Acetatis	fʒiv.	fʒvj.
——— Sesquicarbonatis	fʒss.	fʒj.
——— Calcis	fʒj.	fʒiv.
——— Calcii Chloridi	℥xl.	fʒij.
——— Hydrargyri Bichloridi	fʒss.	fʒij.
——— Potassæ	℥x.	fʒss.
——— Arsenitis	℥v.	℥xxx.
——— Carbonatis	℥x.	fʒj.
——— Potassii Iodidi compositus	fʒss.	fʒss.
Lobeliæ pulv.	gr. v.	ʒj.
Magnesia	ʒj.	ʒj.
Magnesiæ Carbonas	ʒss.	ʒj.
——— Sulphas	ʒss.	ʒiss.
Malva	ʒj.	ʒj.
Manna	ʒss.	ʒij.
Mastiche	gr. x.	ʒss.
Marrubium	ʒj.	ʒj.
Mentha piperita	gr. x.	ʒj.
——— viridis	gr. x.	ʒj.
Menyanthes	ʒss.	ʒj.
Mezerei Cortex	gr. j.	gr. x.

Mistura Acaciæ	f℥ss. to f℥j.
——— Ammoniaci	f℥ss. f℥j.
——— Assafoetidæ	f℥ss. f℥j.
——— Camphoræ	f℥j. f℥ij.
——— Cascarillæ composita	f℥j. f℥iss.
——— Cretæ	f℥j. f℥ij.
——— Ferri composita	f℥ss. f℥ij.
——— Gentianæ composita	f℥j. f℥ij.
——— Guaiaci	f℥ss. f℥ij.
——— Moschi	f℥j. f℥ij.
——— Spiritûs Vini Gallici	f℥ss. f℥iss.
Morphiæ Acetas	gr. ½ gr. j.
——— Hydrochloras	gr. ½ gr. j.
Moschus	gr. iiij. ʒj.
Mucunæ Pubes	gr. v. ʒj.
Myristicæ Nuclei	gr. v. gr. x.
Myrrha	gr. x. ʒj.

Nux vomica gr. iiij. ʒss.

Oleum Anisi	℥j. ℥v.
——— Anthemidis	℥j. ℥v.
——— Carui	℥j. ℥v.
——— Caryophylli	℥j. ℥v.
——— Cinnamomi	℥j. ℥iiij.
——— Crotonis Tiglii (not in the P. L.)	℥j. ℥vj.
——— Juniperi	℥j. ℥v.
——— Lavandulæ	℥j. ℥v.
——— Menthæ piperitæ	℥j. ℥iiij.
——— viridis	℥j. ℥v.
——— pulegii	℥j. ℥v.
——— Origani	℥j. ℥iiij.
——— Pimentæ	℥j. ℥iiij.
——— Ricini	f℥iv. f℥iss.
——— Rosmarini	℥ij. ℥v.
——— Succini	℥v. ℥x.
——— Terebinthinæ purificatum (diuretic)	℥v. f℥ss.
——— (vermifuge)	f℥ij. f℥iss.
Olibanum	gr. x. ʒss.
Opium	gr. ss. gr. v.

Opopanax	gr. x.	to ʒss.
Oxymel	fʒj.	fʒij.
—— Scillæ	fʒss.	fʒij.
Pareira	gr. x.	ʒss.
Petroleum	℥x.	fʒss.
Pilulæ Aloës compositæ	gr. x.	ʒj.
—— cum Myrrhâ	gr. x.	ʒj.
—— Cambogiæ compositæ	gr. x.	ʒj.
—— Conii compositæ	gr. iiij.	gr. x.
—— Ferri compositæ	gr. x.	ʒj.
—— Galbani compositæ	gr. x.	ʒj.
—— Hydrargyri (alterative)	gr. i.	gr. v.
—— (purgative)	gr. x.	ʒj.
—— Chloridi compositæ	gr. v.	gr. x.
—— Iodidi	gr. v.	gr. x.
—— Ipecacuanhæ compositæ	gr. v.	ʒj.
—— Rhei compositæ	gr. x.	gr. xx.
—— Saponis compositæ	gr. iiij.	gr. x.
—— Sagapeni compositæ	gr. v.	gr. x.
—— Scillæ compositæ	gr. x.	ʒj.
—— Styracis compositæ	gr. iiij.	gr. x.
Pimentæ Baccæ	gr. v.	ʒj.
Piperis longi Fructus	gr. v.	ʒj.
—— nigri Baccæ	gr. v.	ʒj.
Plumbi Acetas	gr. ss.	gr. iiij.
—— Iodidum	gr. ¼	gr. ij.
Potassæ Acetas	ʒj.	ʒj.
—— as an aperient	ʒj.	ʒss.
—— Bicarbonas	gr. x.	ʒss.
—— Bisulphas	gr. x.	ʒj.
—— Bitartras	ʒj.	ʒss.
—— Carbonas	gr. x.	ʒss.
—— Nitras	gr. x.	ʒss.
—— Sulphas	gr. x.	ʒij.
—— Tartras	ʒj.	ʒj.
Potassii Bromidum	gr. iiij.	gr. x.
—— Iodidum	gr. v.	gr. x.
Pulvis Aloës compositus	gr. x.	ʒj.
—— Antimonii compositus	gr. v.	gr. x.

Pulvis Cinnamomi compositus	gr. v. to gr. x.
——— Cretæ compositus	gr. v. ʒij.
——— Cretæ compositus cum Opio	gr. x. ʒij.
——— Jalapæ compositus	ʒj. ʒij.
——— Ipecacuanhæ compositus	gr. v. ʒj.
——— Kino compositus	gr. v. ʒj.
——— Scammonii compositus	gr. v. ʒj.
——— Tragacanthæ compositus	gr. x. ʒj.
Pyrethri Radix	gr. v. gr. x.
Quassiæ Lignum	gr. v. ʒss.
Quercûs Cortex	gr. x. ʒss.
Quinæ Disulphas (tonic)	gr. ¼ gr. ij.
——— (febrifuge)	gr. ij. gr. x.
Rhamni Baccæ	ʒj. ʒij.
Rhei Radix	gr. x. ʒss.
Rosæ caninæ Pulpa	ʒj. ʒj.
Rosæ centifoliæ Petala	ʒj. ʒj.
—— Gallicæ Petala	ʒj. ʒj.
Rosmarini Cacumina	gr. x. ʒss.
Rutæ Folia	gr. xv. ʒij.
Sabinæ Folia	gr. v. gr. xv.
Sagapenum	gr. x. ʒss.
Sapo durus	gr. v. ʒss.
Sarzæ Radix	ʒj. ʒj.
Sassafras Lignum	ʒj. ʒj.
Scammonium	gr. v. ʒj.
Scillæ Radix recens	gr. v. gr. xv.
——— exsiccata	gr. j. gr. iiij.
Senegæ Radix	ʒj. ʒij.
Sennæ Folia	ʒj. ʒj.
Serpentariæ Radix	gr. x. ʒss.
Simarubæ Cortex	gr. x. ʒss.
Sinapis Semina	gr. x. ʒss.
——— in powder, as an emetic	ʒij. ʒss.
Sodæ Biboras	gr. x. ʒss.
—— Carbonas	gr. x. ʒss.

Sodæ Carbonas exsiccata	gr. v. to gr. xv.	
— Potassio-tartras	ʒij.	ʒj.
— Sesquicarbonas	gr. x.	ʒss.
— Sulphas	ʒss.	ʒij.
Spigeliæ Radix	gr. x.	ʒij.
Spiritus Ætheris nitrici	℥x.	℥xl.
— sulphurici compositus	fʒss.	fʒij.
— Ammoniae aromaticus	fʒss.	fʒj.
— foetidus	℥xv.	℥xxx.
— Anisi	fʒij.	fʒss.
— Armoraciæ compositus	fʒij.	fʒss.
— Carui	fʒij.	fʒss.
— Cinnamomi	fʒij.	fʒss.
— Juniperi compositus	fʒij.	fʒj.
— Menthæ piperitæ	fʒij.	fʒss.
— pulegii	fʒij.	fʒss.
— viridis	fʒij.	fʒss.
— Myristicæ	fʒij.	fʒss.
— Pimentæ	fʒij.	fʒss.
Strychnia	gr. $\frac{1}{16}$	gr. $\frac{1}{8}$
Styracis Balsamum	gr. x.	ʒss.
Sulphur	ʒj.	ʒij.
Syrupus Papaveris	fʒj.	fʒj.
— Rhamni	fʒss.	fʒj.
— Sarzæ	fʒj.	fʒss.
— Sennæ	fʒij.	fʒiv.
Tabaci Folia	gr. ss.	gr. v.
Tamarindi Pulpa	ʒss.	ʒj.
Terebinthina Canadensis	ʒj.	ʒj.
— Chia	ʒj.	ʒj.
— vulgaris	ʒj.	ʒj.
Tiglii Oleum	℥j.	℥ij.
Tinctura Aloës	fʒss.	fʒiss.
— composita (as a stomachic)	fʒj.	fʒij.
— Ammoniae composita	℥v.	℥xv.
— Assafoetidæ	fʒss.	fʒij.
— Aurantii	fʒij.	fʒiij.
— Balsami Tolutani	fʒj.	fʒij.
— Benzoini composita	fʒss.	fʒij.

Tinctura Calumbæ	f3j.	to f3iij.
——— Camphoræ composita	f3j.	f3iij.
——— Cantharidis	℥x.	℥xl.
——— Capsici	℥x.	f3j.
——— Cardamomi	f3j.	f3ij.
——— composita	f3j.	f3ij.
——— Cascarillæ	f3j.	f3ij.
——— Castorei	℥xx.	f3ij.
——— Catechu	f3j.	f3iij.
——— Cinchonæ	f3j.	f3iij.
——— composita	f3j.	f3iij.
——— Cinnamomi	f3j.	f3ij.
——— composita	f3j.	f3ij.
——— Colchici	℥xx.	℥xl.
——— composita	f3ss.	f3j.
——— Conii	f3ss.	f3j.
——— Cubebæ	f3j.	f3iij.
——— Digitalis	℥x.	℥xl.
——— Ferri ammonio-chloridi	f3ss.	f3ij.
——— sesquichloridi	℥x.	f3j.
——— Gentianæ composita	f3j.	f3ij.
——— Guaiaci	f3j.	f3vj.
——— composita	f3ss.	f3j.
——— Hellebori	f3ss.	f3j.
——— Hyoscyami	f3ss.	f3ij.
——— Jalapæ	f3j.	f3ss.
——— Kino	f3j.	f3ij.
——— Lavandulæ composita	f3ss.	f3ij.
——— Lupuli	f3ss.	f3ij.
——— Myrrhæ	f3ss.	f3j.
——— Opii	℥x.	f3j.
——— Rhei composita	f3ij.	f3iss.
——— Scillæ	℥x.	f3ss.
——— Sennæ composita	f3ij.	f3j.
——— Serpentariæ	f3j.	f3iij.
——— Valerianæ	f3j.	f3iij.
——— composita	f3ss.	f3j.
——— Zingiberis	f3i.	f3ij.
Tormentillæ Radix	gr. x.	3ss.
Toxicodendri Folia	gr. ss.	gr. iv.

Tragacantha	gr. x. to ʒj.	
Valerianæ Radix	ʒj.	ʒij.
Veratria	gr. $\frac{1}{8}$	gr. $\frac{1}{4}$
Veratri Radix	gr. ij.	gr. v.
Vinum Aloës	fʒss.	fʒij.
——— Antimonii potassio-tartratis	℥xv.	fʒj.
——— as an emetic	fʒss.	fʒiss.
——— Colchici	℥xx.	fʒj.
——— Ipecacuanhæ (as a diaphoretic)	℥xx.	℥xl.
——— (as an emetic)	fʒij.	fʒss.
——— Opii	℥x.	fʒj.
——— Veratri	℥v.	℥xv.
Uva Ursi	gr. x.	ʒj.
Zinci Oxydum	gr. ij.	gr. x.
—— Sulphas	gr. j.	gr. v.
——— as an emetic	gr. x.	ʒss.
Zingiberis Radix	gr. v.	ʒj.

The following Table, drawn up by Gaubius, may be used as a guide by young practitioners, for the administration of active substances in different periods of life; however, it must not be considered as an invariable rule from which they cannot depart.

For an adult, the whole dose taken as unity, one.

Under one year . . . one-fifteenth to one twelfth.

—— two years . . . one-tenth.

—— three years . . . one-sixth.

—— four years . . . one-fourth.

—— seven years . . . one-third.

—— fourteen years . . . one-half.

—— twenty years . . . two-thirds.

From twenty to sixty . . . one.

Above this age, an inverse graduation must be followed; but this Table cannot be uniformly relied upon; since of some medicines children will bear a dose nearly equal to that required for adults, while they are peculiarly susceptible to the effects of other remedies which cannot be exhibited with safety by reference to this scale.

TABULAR VIEW OF THE COMPOSITION OF MINERAL WATERS.*

One Pint (Wine Measure) contains the following Ingredients :

WATERS.	GASES.			CARBONATES.			SULPHATES.			MURIATES.			Oxide of Iron.	Silica.	Temperature.	Total of Saline Contents	AUTHORITY.
	Nitrogen, C. I.	Carbonic Acid, C. I.	Sulphuretted Hydrogen, C. I.	Carbonate of Soda, grains.	Carbonate of Magnesia, grains.	Carbonate of Lime, grains.	Sulphate of Soda, grains.	Sulphate of Magnesia, grains.	Sulphate of Lime, grains.	Muriate of Soda, grains.	Muriate of Magnesia, grains.	Muriate of Lime.					
CARBONATED.																	
Seltzer.....	..	17.	..	4.	5.	3.	..	5.5	8.5	17.	..	..	..	..	Cold	29.	Bergman.
Pymont	..	26.	..	..	10.	4.5	..	..	..	1.5	..	..	..	..	do.	30.6	Ditto.
Spa	..	13.	..	1.5	4.5	1.5	..	..	..	0.2	..	..	..	..	do.	8.3	Ditto.
Carlsbad	..	5.	..	5.	..	1.5	8.5	..	..	4.5	..	..	a trace	0.3	165°	19.8	Klaproth.
Ponges	..	30.	..	10.	1.2	12.	..	..	..	2.2	..	..	2.5	0.5	Cold	28.4	Hassenfratz.
Saint Parize.....	..	22.	..	..	0.5	11.5	..	..	13.	..	..	..	..	..	do.	25.	Ditto.
SULPHUROUS.																	
Harrogate	0.8	1.	2.3	..	0.7	2.5	..	1.3	..	77.	11.	1.5	..	..	do.	94.	Garnet.
Moffat	0.5	0.6	1.2	..	..	..	..	..	..	4.5	..	..	..	..	do.	4.5	Ditto.
Aix-la-Chapelle	..	..	5.5	12.	..	4.2	..	..	..	5.	..	..	..	..	143°	21.2	Bergman.
Cheltenham Sulphur Spring	..	..	1.5	..	..	..	23.5	5.	1.2	35.	..	..	0.3	..	Cold	65.	Parkes & Brande.
SALINE.																	
Seidlitz	..	..	..	..	2.5	0.8	..	180.	5.	..	4.5	..	..	..	do.	192.8	Bergman.
Cheltenham Pure Saline..	..	..	..	..	..	..	15.	11.	4.5	50.	..	..	..	..	do.	80.5	Parkes & Brande.
Bristol	..	3.5	..	..	..	1.5	1.5	..	1.5	0.5	1.	..	..	..	74°	6.	Carrick.
Buxton.....	0.2	..	..	..	..	1.3	..	..	0.3	0.2	..	..	0.03	..	82°	1.83	Pearson.
Bath.....	..	1.2	..	..	..	0.8	1.5	..	9.	3.3	..	..	a trace	0.2	116°	14.6	Phillips.
Scarborough	..	..	..	..	..	a trace	20.	..	a trace	..	..	..	ditto	..	Cold	2.9	Saunders.
Barège	..	..	uncertain	2.5	..	ditto	..	..	9.	0.5	..	..	..	..	120°	3.	Ditto.
Plombières	..	..	..	2.2	..	0.3	2.3	..	..	1.5	..	..	..	0.3	?	66.	Vanquelin.
Kilburn	..	3.5	8.5 ?	..	0.5	1.	12.	37.	5.5	2.5	5.5	0.2	a trace	..	Cold	64.2	Schmeisser.
Leamington New Bath ..	0.4	a trace	a trace	..	..	..	19.	..	14.	53.	1.5	..	0.8	..	do.	88.3	Lambe.
Leamington Old Bath....	0.3	..	ditto	..	..	..	7.5	7.	18.	41.	..	..	..	..	do.	73.5	Ditto.
CHALYBEATE.																	
Tunbridge	0.59	1.	{ a trace of oxygen }	..	..	0.03	..	..	0.17	0.30	0.03	0.05	0.28	..	do.	0.56	Seadamore.
Cheltenham Chalybeate ..	..	2.5	..	0.5	..	..	22.7	6.	2.5	41.3	..	..	0.8	..	do.	73.8	Parkes & Brande.
Brighton	..	2.2	..	..	..	..	..	..	4.	3.	0.75	..	1.4	0.14	do.	9.29	Marcel.

* This and the following Table are extracted from Professor Brande's "Manual of Chemistry."

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AND OF VARIOUS FORMULE OCCURRING IN THE CAUTIONAL MARGINS.

"Magis in exemplo quam in precepto."

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S U P P L E M E N T.

A C I D A.

Acids.

ACETUM DESTILLATUM.

Distilled Vinegar.

Acetum Destillatum, P. L. 1720, to P. L. 1788.

Acidum Aceticum, P. L. 1809.

Acidum Aceticum Dilutum, P. L. 1824.

Preparation.—By the heat employed the vinegar rises in vapour, and as it passes through the tube of the still it again becomes liquid as it cools, and is thus freed from any artificial impurity (sulphuric acid), and from a part of the natural impurities, which are always found in it, such as colouring matter, mucilage, &c.; but by the present process it will always contain a little alcohol.

Tests.—For the tests of impurities in this, and as regards all other preparations, *vide* “Notes” at the commencement of the Pharmacopœia, and in the Caution column of the body of the work.

Properties.—Distilled vinegar is colourless; of a flat empyreumatic odour and taste; not so refreshing as the common vinegar is found to be before distillation, owing, perhaps, to the partial decomposition of colouring matter and mucilage by the heat necessary for the process.

Officinal Preparations.—*Acetum Colchici*, *Acetum Scillæ*, *Liquor Ammoniae Acetatis*.

Commentary.—It must be carefully remarked, that the present Pharmacopœia contains three preparations of acetic acid of different strengths:—

Acetum, various (commonly prepared by fermentation from malt).

Acetum Destillatum, 4·6 per cent.

Acidum Aceticum, 30·7 per cent.

We must endeavour to avoid error amid this confusion of nomenclature. In P. L. 1809, the present *Acetum Destillatum* was called *Acidum Aceticum*; therefore in compounding a prescription under that Pharmacopœia, the modern dispenser will, if he use the present *Acidum Aceticum*, insert seven times as much real acid as was intended by the prescriber; and if in a collyrium, he will destroy the eyes; if in an internal preparation, the mucous membrane of the patient. To shew the folly and danger of this confusion, we have only to refer to the oxymel of the present

Pharmacopœia. The dose, say the College (*qui facit per alium facit per se*), is up to ʒj . That will be equivalent to ʒiss of common vinegar. Who can doubt that such a dose, two or three times repeated, would destroy the life of a delicate invalid, and distress even the robust? It is the soldier's antidote in intoxication by ardent spirits. It would have been better to have adopted the terms "Acetum commune," "Acetum Destillatum," "Acidum Aceticum fortius." The oxymel contains 30 fluidounces of Acetic Acid to 120 ounces of honey, or one-fourth of the acid. ʒij of Acetic Acid of 30·7, will be equal to ʒiss of common vinegar; and if not properly diluted, it will be more mischievous than a pint of this last.

ACIDUM ACETICUM.

Acetic Acid.

Acidum Acetosum, P. L. 1788.

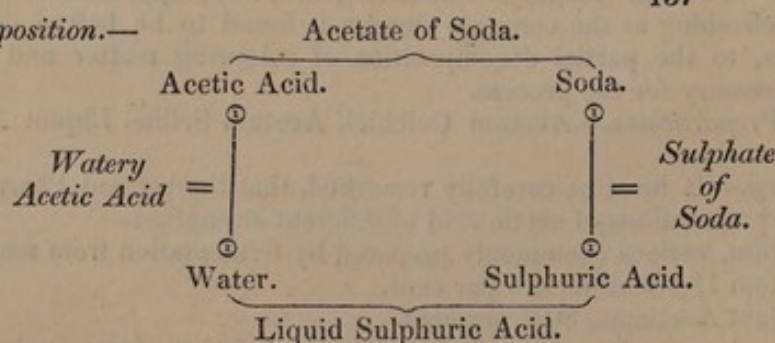
Acidum Aceticum Fortius, P. L. 1824.

Composition.—Dry Acetic Acid30·8
Water69·2
100

Commentary.—The *Acidum Aceticum fortius*, *è ligno destillatum*, as contained in the last Pharmacopœia, is rejected from the present; but as no process is given for the manufacture of the acetate of soda, we are to presume that the manufacturing chemist may use the pyroligneous acid for that purpose. It is prepared by heating and decomposing wood in iron cylinders, and combining the impure acid with soda. The acetate thus formed is purified by repeated solution and crystallization.

Acetic Acid.....	1 equivalent	= 51
Soda.....	1	= 32
Water.....	6	= 54
		137

Decomposition.—



The eye following the lines will catch the exchange. *Results*, Watery Acetic Acid, P. L. 30·7, and one equivalent of Sulphate of Soda dry.

College Preparations.—Acetum Cantharidis, Potassæ Acetas, Plumbi Acetas, Morphiæ Acetas, Oxymel.

Commentary.—When the reader has duly perused this process, he will not think it unimportant that I inform him, that if he make the acid by this process,

or by any process, without first taking out a license, which will cost him 100*l.* he is liable to a heavy penalty. It will be convenient to bear in mind, that in the vinegar trade the term per centage, expressive of the strength of vinegar, is not used in the same sense in which we more correctly employ it. Beaufoy's vinegar for example, of 40 per cent above proof, only contains 25 per cent of real acid; or, as they would say, it contains 5 vinegars, reckoning 10 per cent for every additional 5 of real acid; and 10 for the first 5 per cent.

ACETUM CANTHARIDIS. (*EPISPASTICUM*.)

Vinegar of Cantharides. (*Epispasticum*.)

Composition.—The Cantharides contain an acrid principle, called Cantharadin; a fatty matter; a green oil, inert and soluble in alcohol; black and yellow matter; uric and acetic acids, and traces of the earthy phosphates. This vinegar should always be used tepid.

ACETUM COLCHICI.

Vinegar of Meadow Saffron.

Acetum Colchici, P. L. 1809, P. L. 1824.

Commentary.—For nearly twenty years we were told by those gentlemen who are denominated, *par excellence*, “Principes artis,” that the virtue of this plant resides in a vegetable alkali, like to that contained in the white hellebore. It is now said to contain a distinct alkali, called by the harmonious name of Colchicia.

Process for obtaining Colchicia.—Digest meadow-saffron seed in boiling alcohol; detach the acid from the salt thus dissolved, using magnesia as your precipitant, and the colchicia will be deposited, together with the excess of magnesia. Re-dissolve the colchicia by a second portion of alcohol, and then crystallize.

Properties.—Crystals acicular; inodorous; taste at first bitter, and afterwards acrid. It differs from veratria in not exciting sneezing, and in being soluble in water. Highly poisonous.

Composition.—To save time and needless repetition, it may be assumed that all the vegetable alkalies consist of carbon, hydrogen, azote, and oxygen; for which I recommend as a mnemonic the word CHAOS, which will conduct the memory to these four elements, while the terminal *s* will remind the student that they are salifiable, and save endless repetition, as thus:—

C arbon,
H ydrogen, -
A zote,
O xygen,
s alifiable.

ACETUM SCILLÆ.

Vinegar of Squill.

Acetum Scilliticum, P. L. 1720, P. L. 1745.

Active principle, Scillitine; most probably constituted of CHAOs.

Prep. of Scillitine.—Scillitine may be obtained by macerating squills in alcohol; evaporating the solution, after separating the alcohol by distillation; and again treating the residue with spirit and with æther.

Properties.—Its colour is bright yellow; it is flocculent, but softens in hot water, and forms into a mass, which, after the process of drying, acquires a brownish colour; its odour is urinous; its taste, acrid and bitter. It is highly destructive. This is the principle which renders the squill bulb so effective a counter-irritant, for which purpose it was a favourite rubefacient among the ancients, and was rubbed over the stomach to check vomiting.

ACIDUM BENZOICUM.

Benzoic Acid.

Flores Benzöini, P. L. 1720.*Flores Benzöes*, P. L. 1788.*Acidum Benzoicum*, P. L. 1809, P. L. 1824.

<i>Composition.</i> —14 equivalents of Carbon			6 × 14 = 84
5	———	Hydrogen.....	1 × 5 = 5
3	———	Oxygen	8 × 3 = 24
			113
1 equivalent of water in the crystals.....			9
			122

Or, according to former analyses,

15 equivalents of Carbon			6 × 15 = 90
6	———	Hydrogen.....	1 × 6 = 6
3	———	Oxygen.....	8 × 3 = 24
			120

Theory of Sublimation.—The acid is volatilized by the heat, and, rising into the upper and cooler part of the apparatus, is gradually condensed there.

Properties.—Colourless, when pure; crystals soft, somewhat flexible, and slightly odorous like benzoin; taste aromatic, and very slightly sour; not affected by exposure to air; soluble in 200 times its weight of cold, or in 24 of boiling water; and the solution on cooling yields a crystalline mass, having the appearance of fat; largely soluble in alcohol. The solution of this acid very slightly affects litmus; it melts and sublimates at a moderate heat, and burns with a bright yellow flame if the heat be considerably raised; not decomposed by liquid sulphuric, nor by nitric acid. Unites with the alkalies and metallic oxides, to form benzoates.

Commentary.—It is of no great consequence whether the white or brown benzoïn be employed in the process, since they both contain nearly 20 per cent of benzoic acid. The impurities are resin and a trace of volatile oil. The oil, which is directed to be separated by expression, is conjectured to be formed by the decomposition, and renewed composition of the resin.

Character of the Benzoates.—Taste, usually saline and subacid; decomposed by most other acids, with the separation of benzoic acid; soluble in the hot solutions of the acetate of potassa and soda, and of nitrate of soda; insoluble in solutions of nitre and sulphate of potassa and soda. The alkaline benzoates are decomposed by destructive distillation into carbonates, with the formation of various new products.—(Vide TURNER'S "Chemistry," Part III., page 826.)

ACIDUM CITRICUM.

Citric Acid.

Acidum Citricum, P. L. 1809, P. L. 1824.

<i>Composition.</i> —2 equivalents of Hydrogen.....				$1 \times 2 = 2$
4	—	Carbon	$6 \times 4 = 24$	
4	—	Oxygen.....	$8 \times 4 = 32$	
				Equivalent... 58 Anhydrous.
<i>Crystals of Commerce.</i> —3 equivalents of dry Acid				$58 \times 3 = 174$
4	—	Water...	$9 \times 4 = 36$	
				Equivalent..... 210

Decomposition.—The lime of the chalk unites with the citric acid, forming a citrate of lime, which is nearly insoluble, and therefore precipitated, and the carbonic acid is expelled. The precipitate is washed, and decomposed by boiling it with diluted sulphuric acid, which unites with the lime, and leaves the citric acid in solution.

Products.—Stage 1.—Citrate of Lime precipitated.

Carbonic Acid expelled.

Mucilage and Water remain.

Stage 2.—Sulphate of Lime precipitated.

Citric Acid in solution, afterwards crystallized.

Both are simple decompositions, and need no diagram.

A separates B from C, because A (Citric Acid) has a greater affinity for B (Lime) than for C (Carbonic Acid).

We shall use diagrams occasionally, but can see no necessity thus to illustrate facts so simple as single elective affinity. The most obtuse individual can surely understand that one substance having a certain affection for a second substance, may however desert and unite with a third substance for which it has a stronger affection, whenever such third substance is proffered under favourable circumstances for union.

Properties.—The crystals are colourless, inodorous, and intensely sour; soon becoming damp by exposure to a moist atmosphere; and their form is a right rhombic prism.

Commentary.—A solution of the above acid, like lemon juice, becomes mouldy by being kept. An ounce and a half to a pint of distilled water is equal in strength to the best fresh lemon juice, but certainly does not possess the fragrance and freshness of the vegetable juice.

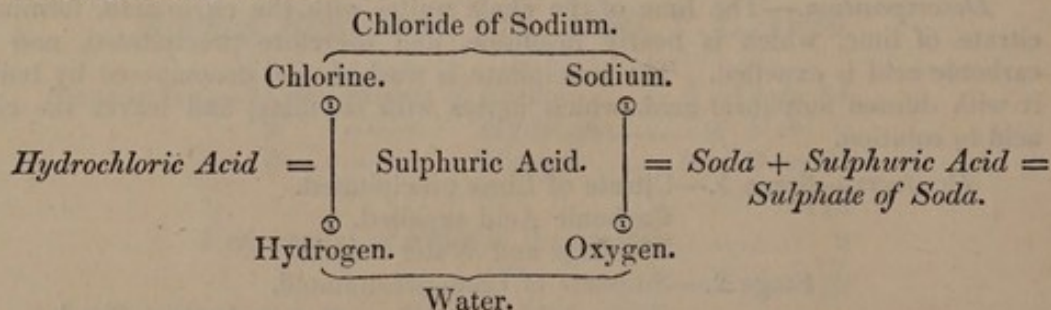
ACIDUM HYDROCHLORICUM (*LIQUIDUM*).Hydrochloric Acid (*Liquid*).*Spiritus Salis*, P. L. 1720.*Spiritus Salis Marini Glauberi*, P. L. 1745.*Acidum Muriaticum*, P. L. 1788, 1809, 1824.

Composition.—Two-thirds water, one-third hydrochloric acid gas, which is itself composed of—

1 equivalent of Hydrogen	=	1	or	2.7
1 ————— Chlorine	=	36		97.3
Equivalent...		37		100

Decomposition.—For the better understanding of other decompositions in which hydrochloric acid plays a conspicuous part, the student will do well to bear in mind that this acid is decomposed by metals, which are dissolved by it with the evolution of hydrogen gas; but if an oxidized metal be acted upon by it, in that case, the oxygen of such oxide unites with the hydrogen to form water, and the chlorine with the metal to form a chloride; while the proper salts of this acid are called hydrochlorates, or muriates. Chloride of sodium is composed of one equivalent of chlorine and one of sodium. This is put into a retort with liquid sulphuric acid and water. The water yields its hydrogen to the chlorine to form hydrochloric acid gas, which passes into the receiver; while its oxygen unites with the sodium to form an equivalent of soda, which neutralizes the sulphuric acid.

Products.—Hydrochloric acid gas dissolved in the water, sulphate of soda in the retort, generally with some excess of acid.



The water is supplied from the sulphuric acid, and the dry acid unites with the soda to form the residuary sulphate. If the student knows the atomic weights, nothing is easier than to ring the changes upon them, as for example: "60 parts of chloride of sodium are distilled with 49 parts of sulphuric acid, consisting of 40 parts of dry acid and 9 parts of water. The water is decomposed, its 1 of hydrogen uniting with 36 of chlorine to form 37 of hydrochloric acid, and the 8 of oxygen with the 24 of sodium to form 32 of soda, which are neutralised by the 40 of sulphuric acid, to form 72 of sulphate of soda. The reader will therefore remark, that if he know the atomic weights he can at all times insert these numbers at his own pleasure; and if he know them not, it will be his business to learn them. He will therefore only occasionally be supplied with such examples in the present work.—(Vide Atomic Weights at the end).

Properties.—Hydrochloric acid gas is colourless, invisible when not in contact with the air; of a pungent odour; sour acid taste; irrespirable; unflammable; and a non-supporter of combustion. It is elastic under ordinary circumstances, but liquid under the pressure of 40 atmospheres at the temperature of 50° recovering

its gaseous condition when the pressure is removed. It is not affected by heat. When it escapes from the bottle it forms dense white fumes, owing to its great affinity for the water of the atmosphere. One cubic inch of water at 40° is capable of dissolving 480 cubic inches of this gas. If wanted in its gaseous state, it must be collected over mercury. Liquid hydrochloric acid, as above, should be limpid, and free from all tint; its specific gravity is 1.16.

Commentary.—One fluidounce of the above liquid, with three fluidounces of distilled water, constitute the “acidum hydrochloricum dilutum.”

ACIDUM HYDROCYANICUM DILUTUM.

Diluted Hydrocyanic Acid.

(*Prussic Acid.*)

2 per Cent.

<i>Composition.</i> —Real Hydrocyanic Acid	grs. 2
Water.....	98
	100

The real acid, with a due regard to its elements, must be considered as a hydrobicarett of azote, and it is constituted of—

1 equivalent of Hydrogen.....	1	or	3.7
1 ——— Cyanogen.....	26		96.3
Equivalent.....	27		100

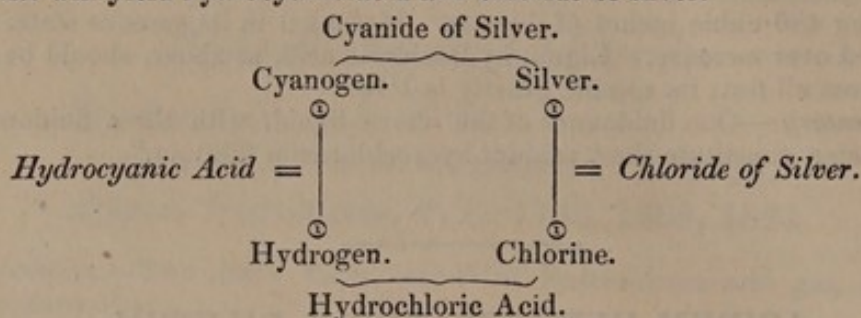
Decomposition.—This process is taken from Giese, who invented it ten years ago. The water of the sulphuric acid is decomposed; its oxygen uniting with the potassium to form potassa; its hydrogen with the cyanogen of the ferrocyanide to form hydrocyanic acid, which is distilled.

If this account be too simple, the medical student can clothe it with all the grandisonance of modern theory. He may assume that we operate on 6 equivalents of sulphuric acid, and 2 of ferrocyanide of potassium, containing 2 equivalents of cyanide of iron, 4 equivalents of cyanide of potassium, of which 3 equivalents only are decomposed, as also are 3 equivalents out of 12 equivalents of water. Assume all this, and then you can frame the following theory:—

The 3 equivalents of water are decomposed by the 3 equivalents of ferrocyanide of potassium, that is to say, 3 of oxygen with 3 of potassium form 3 of potassa, which unite with the 6 of sulphuric acid to form 3 of bisulphate of potassa; while the 3 of hydrogen with the 3 of cyanogen recently deserted by the potassium, constitute 3 equivalents of hydrocyanic acid. The ingenious reader will notice that 1 equivalent of cyanide of potassium and 2 equivalents of cyanide of iron are not yet accounted for. They are said to unite and form yellow salt. If the student duly intersperse the multiples of the atomic weights, he will not fail to pass for a complete chemist.

<i>Products.</i> —3 equivalents of Bisulphate of Potassa	384
3 ——— Hydrocyanic Acid	81
1 ——— Cyanide of Potassium } uniting to form }	174
2 ——— Cyanide of Iron..... }	
9 ——— Water	81
	(Everett) 720

In the second or extemporaneous process for procuring this acid, it is directed to be obtained from cyanide of silver and hydrochloric acid. A double exchange of elements will yield hydrocyanic acid and chloride of silver.



Properties.—A limpid liquor, of a strong pungent odour, very like that of bitter almonds. Its taste is acrid, and it is well known to be highly poisonous. The sp. gr. of the real acid is .6969. It volatilizes so readily as to freeze itself when a drop is placed upon paper. It mixes with alcohol and with water in all proportions. It is decomposed by many of the metallic oxides. It feebly affects litmus. It readily enters into spontaneous decomposition, and more rapidly if exposed to light, acquiring at first a brownish tint, and afterwards depositing a blackish sediment. The addition of a little dilute sulphuric acid, or hydrochloric acid to the medicinal acid, is reported to retard this change. When it loses its transparent appearance, and acquires a brownish tint, it is unfit for use. The diluted acid, as above prepared, containing only 2 per cent of real acid, participates in these properties in a lower degree.

Commentary.—It is impossible to avoid noticing the precarious, the uncertain, and therefore the dangerous character, of this remedy. After having been at the trouble to inquire into the manufacture of this highly poisonous substance, I find it is prepared by more than half a dozen different processes, and that but few houses can give any answer to your inquiries of its strength except, “Scheele’s strength, sir;” and when asked what they mean by that, they cannot tell. The fact is, that Scheele’s process has long been exploded as uncertain, and yielding an acid of variable strength. The strongest acid is the anhydrous, or Gay Lussac’s, as it used to be called. This requires six times its bulk of distilled water to bring it down to the strength of Magendie’s medicinal acid. Again, Magendie’s acid thus diluted, containing one-seventh of real acid by volume, is not so strong as Roubiquet’s, which is directed to be prepared by a mixture of water and the acid in equal parts. Vauquelin’s process contains $\frac{1}{35}$ by weight of real acid. The prussic acid which used to be sold at Apothecaries’ Hall contained $\frac{1}{16}$ of real acid, or more than 6 per cent; while that which we are now ordered to use only contains $\frac{1}{50}$, or 2 per cent. Surely, when we consider these widely differing degrees of concentration, we shall not be charged with offering remarks alien or impertinent, when we endeavour to impress on every prescribing practitioner, whether physician, surgeon, or apothecary, the utter absurdity of ordering the remedy, without a thorough understanding with the chemist who has prepared it, or with the dispenser whose duty it may be to compound from the prescription. With regard to the gradual deterioration of the remedy itself, however fixed and determinate the strength when it arrives from the manufacturer, it is quite unavoidable; and we are at a loss to propose any adequate means of prevention. Sulphuric or hydrochloric acids, in the quantity of a few minims to the ounce, have, as has been above suggested, been recommended for this purpose. The great volatility of the acid will, however, of itself, be sufficient to reduce its strength so as to baffle the intentions of the physician, and to render the fulfilment of his indications mere matter of contingency. The cyanide of potassium has been recommended as a substitute for the acid, since it is not liable to such variety, and is reported to possess the sedative effects of the

acid in a lower degree. Its dose is $\frac{1}{8}$ of a grain, gradually increased; and it may be given in syrup, or in any simple water, or in barley-water. The manufacturing chemists of London profess to supply the acid of two degrees of strength, namely, that in obedience to the college mandate, at 2 per cent, and that which is foolishly called Scheele's strength, which is reported to be 6 per cent. The greater part used in Scotland, and prepared by the formula of Mr. Clarke, of Glasgow, contains nearly 3 per cent. I am told that 6 minims of hydrocyanic acid are occasionally taken as a favourite remedy for allaying gastric irritation after a debauch; and that some have taken a larger dose. If, however, the acid of 6 per cent be proffered under such circumstances, the danger will be considerable. The manufacturers do not act prudently in sending out the two articles in bottles of the same size and form, and, as regards the general appearance, with the same description and colour of label.

At some very respectable retail houses I have had shewn to me specimens labelled "*Hydrocyanic Acid—dose from one to three drops,*" without further notice of the strength. Another label I have seen, which tells us that "this acid is twice the strength of that prepared by Vauquelin's process." Mr. Squire states the medium dose of his stronger acid as two minims, and that it is nearly three times as strong as the college acid. I cannot see the practical utility of stating the comparative strength of several preparations, instead of the absolute strength of each. I would recommend every label to be sent out thus:—

(Dilute) Hydrocyanic Acid, P. L. 1836.

2 per cent Real Acid,

98 Water.

100

or (if it must be sent out of different degrees of strength),

Hydrocyanic Acid (stronger),

4, 5, or 6 per cent Real Acid, as it may be, &c. &c.

And where the acid is sent in two or more different degrees of strength, the bottles, directions on the labels, and the colour of the labels, ought to be made as distinct as possible. It is generally stated, on the authority of the first chemists, that all hydrocyanic acid loses its transparency in a short time, and deposits a dark matter, the whole column of liquid at the same time assuming a deep brown tint. It has been asserted, both at the Royal Institution and by the late Dr. Turner, that the manufacturers of the article for consumption add a few drops of mineral acid (sulphuric or hydrochloric), to prevent this deposit. On analysis, it was found by Gay Lussac to contain carbon and nitrogen; and M. P. Boullay considers it to be a peculiar acid composed of carbon, hydrogen, and nitrogen; and for which he originated the name of azulmic acid. This statement, however, is denied by several good practical chemists, who have each and all assured me, that, if properly prepared, it will remain transparent, and suffer no decomposition whatever. Mr. Midgeley, of the Strand, has about three half pints of acid, of which he sent me a specimen, with the following memorandum:—

"This acid was prepared more than twelve years ago, from the triple prussiate of potash (ferrocyanide of potassium), decomposed by the bisulphate of potash. The exact proportions at this lapse of time are not remembered; but it is presumed that the quantity of the latter salt was regulated so as to supply, by computation, disengageable acid sufficient to decompose the former. The resulting acid has remained in a green glass bottle stopped; and although its strength is necessarily much impaired by the repeated removal of the stopper throughout the above period, yet it has never had any deposit, nor has it shewn the least diminution of limpidity; but is as transparent now as it was when it was put into the bottle twelve years ago." The quantity of water employed is not stated.

If allowed to interpose my own opinion, I should certainly presume that the decomposition is retarded by the dilution with water, and by the presence of a

mineral acid. Dr. Christison examined a specimen which he had kept two years and a half, unchanged, though exposed to day-light, and he stated it to contain a small quantity of sulphuric acid. So again in Mr. Midgeley's specimen now before me (and his process seems to be a very good one), perfectly transparent, but very weak after having been in a certain degree exposed to light for twelve years, it may be fairly presumed that it is to the circumstance of its having been distilled from a bisulphate, that we are to look for the reason of its having so long preserved its transparency.

In my "Pharmacopœia," page 53, I affixed a caution-note on the difficulty of dissolving two ounces of the ferrocyanide in half a pint of water. I perceive that Giese directs it to be first finely powdered, which is omitted in the college formula.

In closing my remarks on this medicine, I cannot help regretting that many, nay a majority, of the physicians of this metropolis, are ordering the acid of "Scheele's strength," which I can tell them is not defined, instead of the collegiate strength, which is defined. That the remark may not be misunderstood, it may be as well to add, that no hydrocyanic acid lately met with in the London market contains 6 per cent, much of it not 4 per cent; and, however the system of single and double X may be interesting to brewers and publicans, the encouragement of such a practice in the sale of an article in the highest degree poisonous, by men who are supposed to be the guardians of public health, is inconvenient and unbecoming, and only to be accounted for by those who are aware how little attention is usually paid by them to these "trifling subjects." That they may learn how far they can rely upon the phrase "Scheele's strength," I beg to state to them, that at one chemist's shop an ingenuous dispenser told me he did not know exactly how strong the medicine was, but he had given two drachms to a cat without much effect; and I know it required one ounce of the acid so labelled to destroy a middling-sized dog. What indication in disease can by possibility require a stronger acid than that of 2 per cent? If any, my criticism falls to the ground.

ACIDUM NITRICUM.

Nitric Acid (Liquid).

Aqua fortis, simplex et duplex, P. L. 1720.

Spiritus Nitri Glauberi, P. L. 1745.

Acidum Nitrosum, P. L. 1788.

Acidum Nitricum, P. L. 1809, P. L. 1824.

Composition.—Dry Nitric Acid, 2 equivalents..... $54 \times 2 = 108$
 Water..... 3 ——— $9 \times 3 = 27$
135

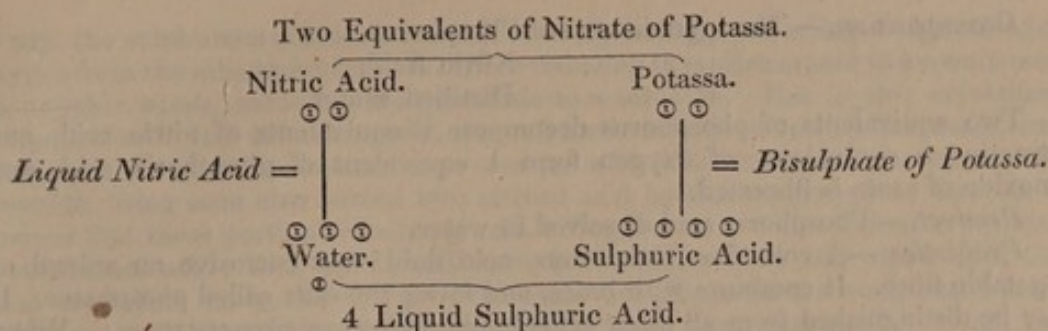
Dry Nitric Acid consists of—

5 equivalents of Oxygen..... $8 \times 5 = 40$
 1 ——— Azote..... $= 14$
54

Decomposition.—Ingredients are—

Nitrate of Potassa, dried, 2 equivalents
 Sulphuric Acid..... 4 ———

The 2 equivalents of nitric acid unite with 3 equivalents of water to form 2 equivalents of liquid nitric acid, while the 4 equivalents of sulphuric acid with the remainder of the water unite with the 2 equivalents of potassa to form 2 equivalents of bisulphate of potassa.



The nitric acid abstracts three equivalents of water, the fourth being detained in the bisulphate.

The equivalent of water below that word unites with the sulphuric acid; the 3 above unite with the 2 equivalents of dry nitric acid to form liquid nitric acid. As, however, there is much difference of opinion as to the quantity of water which unites with the nitric acid, some saying 2 to 1, and others 3 to 2, I should recommend the student first to learn the theory in these simple terms following:—

“The sulphuric acid unites with the potassa, forming a bisulphate of potassa, which is left in the retort; the dry nitric acid, attracting the water, forms liquid nitric acid.”

Mr. Brande has a diagram in his last "Manual of Chemistry," page 559, founded on the supposition that liquid nitric acid consists of 2 water and 1 dry acid.

Properties.—Liquid nitric acid is a transparent colourless fluid. It exhales white disagreeable fumes, and its taste is sour and corrosive. It always contains water. Its assigned specific gravity is 1.5; but this of course fluctuates with the quantity of water it contains. As found in the shops it has a yellowish tint, owing to the presence of an unimportant portion of nitrous acid; but even in this state it is sufficiently pure for pharmaceutical purposes. It has never been obtained in the dry state. The concentrated acid does not usually act on the metals; but, if water be added, the acid becomes partly decomposed, and deep red vapours (nitrous acid gas) appear; while the newly-formed oxide unites with the undecomposed acid to form a nitrate.

ACIDUM NITRICUM DILUTUM.

Diluted Nitric Acid.

Acidum Nitrosum dilutum, P. L. 1788.

Acidum Nitricum dilutum, P. L. 1809, P. L. 1824.

Relative Strength.—Ten fluidounces of the diluted acid contain one fluidounce of the undiluted. The sp. gr. is 1.080.

ACIDUM PHOSPHORICUM DILUTUM.

Diluted Phosphoric Acid.

<i>Composition.</i> —5 equivalents of Oxygen	8 × 5 = 40
2 ——— Phosphorus	16 × 2 = 32
Equivalent.....	72

Diluted with water.

Decomposition.—The ingredients are Phosphorus,
Nitric Acid,
Distilled Water.

Two equivalents of phosphorus decompose 2 equivalents of nitric acid, and attracting 5 equivalents of oxygen form 1 equivalent of phosphoric acid, and binoxide of azote is liberated.

Product.—Phosphoric acid dissolved in water.

Properties.—A colourless, inodorous, acid fluid; not corrosive on animal or vegetable fibre. It combines with bases, and forms the salts called phosphates. It may be distinguished from all other acids by the following circumstances:—When carefully neutralized by pure carbonate of potassa or soda, it forms a solution in which no precipitate or change of colour is produced when a stream of hydrosulphurous acid gas is passed through it, but which is precipitated *white* by a solution of acetate of lead, and *yellow* by nitrate of silver: the first precipitate, the phosphate of lead, dissolves completely on the addition of nitric or phosphoric acid; the second, the phosphate of silver, is dissolved by both these acids, and by ammonia.

Commentary.—The phosphatic salts are used largely in some parts of the continent. Phosphate of soda was at one time a favourite remedy in this country, as a mild aperient, possessing a taste less unpleasant than other salines; and the phosphate of mercury is at present extensively employed in Germany.

ACIDUM SULPHURICUM DILUTUM.

Diluted Sulphuric Acid.

Spiritus Vitrioli tenuis, P. L. 1745.

Acidum Vitriolicum dilutum, 1788.

Acidum Sulphuricum dilutum, P. L. 1809, P. L. 1824.

Chemical Process, &c.—Sulphuric acid has a very intense affinity for water, and unites with it in every proportion. The combination takes place with a sudden developement of heat. When four parts by weight of concentrated sulphuric acid are mixed with one of water, the temperature, according to the experiments of Dr. Ure, rises to 300°. Sulphuric acid of commerce freezes at 15°. Diluted with water, so as to have a specific gravity of 1.78, it congeals even at above 32°. The composition of sulphuric acid is founded on the observation of Gay Lussac, that when the vapour of sulphuric acid is passed through a small porcelain tube heated to redness, it is resolved into two measures of sulphurous acid, and one of oxygen. We possess an unerring test of the presence of this acid; for, if a solution of chloride of barium is added to a liquid containing sulphuric acid, sulphate of baryta is formed, and precipitated white. Sulphuric acid is prepared by burning sulphur with $\frac{1}{8}$ its weight of nitrate of potassa in a furnace, so contrived that the current of air which feeds the combustion conducts the gaseous products into a capacious leaden chamber, on the bottom of which water has been poured, so as to rise to the depth of several inches. Several theories have in my time been given in explanation of this process; the following is the most approved:—During the combustion the sulphur is principally converted into sulphurous acid, and the nitric acid of the nitre being decomposed, gives off binoxide of azote, which in contact with the air necessarily becomes quatoxide or nitrous acid gas; so we have to consider that the mutual action of humidity, sulphurous acid and nitrous acid, forms a crystalline compound of sulphuric acid, hyponitrous acid, and water; that is

to say, the sulphurous acid is converted into sulphuric by attracting 1 equivalent of oxygen from the nitrous acid, and therefore reducing that nitrous acid to hyponitrous; or, in other words, reducing the quatoxide to a teroxide. But as this crystalline compound solid falls into the water, the sulphuric acid is taken by the water, and nitrous acid and binoxide of azote escape with effervescence; the latter, the binoxide, being soon also formed into nitrous acid by the oxygen of the air. It is obvious that these portions of nitrous acid will again meet with successive portions of sulphurous acid; with which, and with the humidity, they will again form the same crystalline body, consisting of sulphuric acid, hyponitrous acid, and water; and so on, until the whole of the sulphur shall have been consumed. When the water of the chamber is sufficiently charged with acid, it is drawn off, and concentrated by evaporation. In the furnace, the potassa will be found to have combined with an equivalent of sulphuric acid, formed by the direct union of a portion of the sulphur with 3 equivalents of oxygen from the nitric acid. The student would do well to consider the changes under three heads:—

1. Changes in the furnace. Products.—Binoxide of azote, deflagrated sulphate of potassa.
2. Changes in the air.—Sulphurous acid, nitrous acid, reacting with watery vapour so as to form a crystalline compound, consisting of sulphuric acid, hyponitrous acid, and water.
3. Changes in the water.—This crystalline compound decomposed, the sulphuric acid combining with the water on the floor of the chamber, and the hyponitrous acid by a new arrangement of elements, giving off binoxide of azote, and nitrous acid, the former being also converted *in ascensu* into nitrous acid.

ACIDUM TARTARICUM.

Tartaric Acid.

Acidum Tartaricum, P. L. 1824.

Composition.—Anhydrous Tartaric Acid consists of—

4 equivalents of Carbon	$6 \times 4 = 24$
5 ——— Oxygen	$8 \times 5 = 40$
2 ——— Hydrogen	$1 \times 2 = 2$
Equivalent.....	66

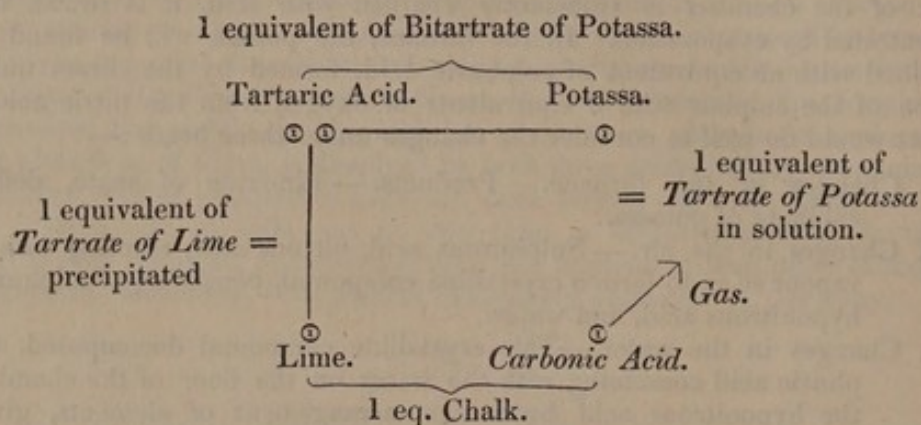
The crystals are constituted of—

1 equivalent of Anhydrous Acid	66
1 ——— Water	9
	75

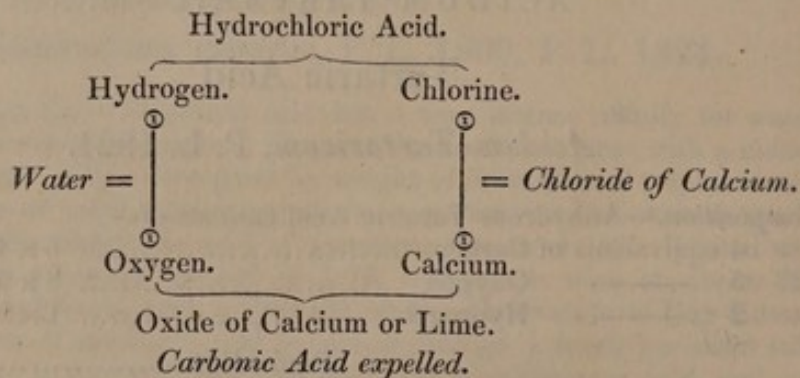
Decomposition.—In boiling the bitartrate of potassa, consisting of 2 equivalents of tartaric acid and 1 equivalent of potassa, with chalk, consisting of 1 equivalent of carbonic acid, and 1 equivalent of lime, half the tartaric acid, or 1 equivalent, unites with the lime to form 1 equivalent of tartrate of lime, which is precipitated, and a tartrate of potassa is left in solution. Having separated this portion of tartrate of lime, we proceed by a distinct process to obtain another portion of tartrate of lime; first, by the action of hydrochloric acid on a distinct proportion of chalk, which forms chloride of calcium and water; and next, by adding this solution of chloride of calcium to the residuary solution of tartrate of potassa.

The chlorine combines with the potassium of the potassa, and forms a chloride of potassium, while the oxygen of the potassa unites with the calcium to form lime, which being attracted by the tartaric acid constitutes the second portion of tartrate of lime. Both portions are then decomposed by diluted sulphuric acid, which unites with the whole of the lime, and the tartaric acid remains in solution to be afterwards crystallized:—

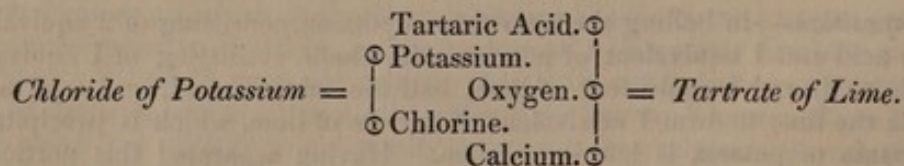
Stage 1.—*Products.*—Tartrate of Lime precipitated.
Tartrate of Potassa in solution.
Carbonic Acid Gas given off.



Stage 2.—*Products.*—Process to obtain a solution of Chloride of Calcium.
Chloride of Calcium in solution.
Water.
Carbonic Acid Gas revolved.



Stage 3.—*Products.*—Tartrate of Lime precipitated.
Chloride of Potassium in solution.



Stage 4.—*Products.*—Sulphate of Lime precipitated.
Tartaric Acid left in solution to be crystallized.

ÆTHEREA.

Æthers.

ÆTHER SULPHURICUS.

Sulphuric Æther.

Æther vitriolicus, P.L. 1788.

Æther rectificatus, P.L. 1809, P.L. 1824.

<i>Composition.</i> —4 equivalents of Carbon		6 × 4 = 24
1 equivalent of Oxygen.....		= 8
5 equivalents of Hydrogen.....	1 × 5 =	5
		37
Or,	2 equivalents of Olefiant Gas.....	14 × 2 = 28
	1 equivalent of Vapour of Water	= 9
		37

Decomposition.—2 equivalents of alcohol lose 1 equivalent of water, which is retained by the sulphuric acid in the retort; and the remaining equivalent of water, uniting with the 2 equivalents of olefiant gas, forms 1 equivalent of sulphuric æther: so that it is manifest that 2 equivalents of alcohol are necessary to the formation of 1 equivalent of æther. The nature of the reaction is as yet but imperfectly understood.* Mr. Hennel considers, that in the conversion of alcohol into æther, as a preliminary step, an acid consisting of two equivalents of sulphuric acid, and 1 equivalent of quadrihydrocarbon, or etherine, is formed; which he, after Vogel, terms sulphovinic acid. He considers this acid as the agent by which etherine is first formed, and then so liberated as to unite with the water.

Properties.—Extremely volatile, so that it is impossible to pour it from one bottle into another; or repeatedly to open the vessel containing it without considerable loss by evaporation. It is colourless; has a well-known peculiar smell, a warm taste, and a fragrant odour; respirable in the form of vapour when mixed with atmospheric air. When exposed to the air it forms a portion of acetic acid, and acquires the property of reddening litmus paper. Specific gravity of the purest æther at 55° is .724: if exceeding this, it contains alcohol absolute, or mixed with water. Its evaporation, from the rapidity with which it occurs, occasions intense cold, sufficient in a cool atmosphere to freeze mercury; and if incessantly dropped on the surface of the human body, it will destroy the part by abstracting heat. It is immiscible with water; to which, however, it imparts its odour, and free alcohol, if any is present. Specific gravity of the college æther is .750.

* Read Mitscherlich "Lehrbuch der Chemie;" Berzelius's "System of Chemistry." Dabit "Annales de Chim." xxiv. 289; and "Philosoph. Transact.," 1826 and 1829.

OLEUM ÆTHEREUM.

Æthereal Oil.

Oleum Vini, P. L. 1788.

Oleum Æthereum, P. L. 1809, P. L. 1824.

Composition.—1 equivalent of Sulphuric Acid = 40
 9 ——— Carbon $6 \times 9 = 54$
 9 ——— Hydrogen $1 \times 9 = 9$

103 according to Hennell.

There are several other analyses with which it is scarcely expedient to trouble the reader, since, at present, they are all uncertain. It has been conjectured to consist of uncertain equivalents of æther and sulphuric acid; and, therefore, it has been termed sulphate of æther, and sulphatic æther.

Decomposition.—In forming sulphuric æther it will be seen that we employ 3 parts alcohol to 2 sulphuric acid. In the present process we have 4 parts acid to 2 of alcohol, and to this difference of proportion, the variation in the actions and results are altogether to be ascribed. The energetic affinity for water exerted by the acid, decomposes the æther that would otherwise result; some olefiant gas is evolved, and the oil of wine collects in the receiver in the form of a yellowish fluid, constituted as above stated.

Properties.—Colour, yellowish; odour, aromatic; taste, pungent. It is of an oily consistence, sp. gr. 1.333. It does not affect test-paper; it is nearly insoluble in water, but freely soluble in alcohol and sulphuric æther. When evaporated with an alkali, or simply boiled with a little water, it is converted into olefiant gas and sulpho-vinic acid.

SPIRITUS ÆTHERIS NITRICI.

Spirit of Nitric Æther.

Spiritus Nitri dulcis, P. L. 1745.

Spiritus Ætheris nitrosi, P. L. 1788.

Spiritus Ætheris nitrici, P. L. 1809, P. L. 1824.

<i>Composition.</i> —Hyponitrous Acid, 1 equivalent.....	=	38
Æther 1 ———	=	37
		Equivalent.....
		75

Decomposition.—The alcohol is converted into æther, and the nitric acid, reduced to hyponitrous acid, unites with the æther to form nitrous æther. Azote, protoxide of azote, binoxide of azote, and carbonic acid, are the gases evolved.

Commentary.—The acid should be gradually, and by instalments, added to the spirit, and the operator should wait to allow the mixed fluid to cool after each successive addition of acid. He should then distil in a very gentle temperature, and collect the æther in a Woulfe's apparatus.

Properties.—More volatile than sulphuric æther, but possessing many properties in common with it: odour, fragrant; taste, pungent and acidulous; sp. gr.

·834, intermediate between alcohol, which is lighter, and water, which is heavier, than this fluid. When quite pure it is neutral to test-paper, but by long keeping it spontaneously resolves itself into alcohol, nitrous acid, and a little acetic acid, and a similar change is instantly effected by mixing this æther with water, or by distilling it at a higher temperature. When added (as in the common citrate-saline mixture) to potassa, it forms nitrite, or hyponitrite of potassa, which is itself a powerful diuretic. In this case the alkali of the mixture should be used in excess, so as to leave enough to neutralize the hyponitrous or nitrous acids, and in dropsies such a combination has been in our hands decidedly efficacious. Spirit of nitric æther coagulates the tincture of guiacum, to which it imparts a deep blue colour, and strikes a deep olive with a solution of sulphate of iron.

SPIRITUS ÆTHERIS SULPHURICI COMPOSITUS.

Compound Spirit of Sulphuric Æther.

Spiritus Ætheris vitriolici compositus, P. L. 1788.

Spiritus Ætheris compositus, P. L. 1809.

Spiritus Ætheris sulphurici compositus, P. L. 1824.

(Hoffman's Anodyne Liquor).

Composition.—A solution or mixture of æthereal oil and sulphuric æther in rectified spirit. In the last Pharmacopœia this compound was directed to be prepared by adding 2 fluidrachms of æthereal oil to 16 fluidounces of spirit of sulphuric æther. From the present the spirit of sulphuric æther is excluded, and the compound spirit is prepared with sulphuric æther, æthereal oil, and rectified spirit, with the ostensible reason of rendering it more miscible with water; but in reality it is just the same preparation, save and except that it contains 3 fluidrachms of æthereal oil instead of 2 fluidrachms as heretofore.

ALKALINA.

Alkalies.

ACONITINA.

Aconitina or Aconitine.

Composition.—CHAOs, in undetermined proportions.

Decomposition.—If we are to assume that the aconitina resides in the aconite root, in combination with some acid as yet unknown, the theory of the decomposition will be as follows:—The three boilings in spirit, the distillation of the spirit,

the solution of the alcoholic extract in water, and the evaporation of the watery solution to the consistence of syrup, are all preliminary. On adding the diluted sulphuric acid, it dissolves the aconitina, and forms a sulphate of that alkaloid. The liquor of ammonia precipitates the aconitina, and a soluble sulphate of ammonia is left. The aconitina is again combined with, and dissolved by, a fresh portion of dilute sulphuric acid, then purified by animal charcoal, and again precipitated by liquid ammonia, and finally it is directed to be washed and dried.

Properties.—For the properties of aconitina, the various species of the aconitum, and the history of the plant, *vide* the section of "Poisons, their signs, antidotes, and tests."

AMMONIÆ SESQUICARBONAS.

Sesquicarbonate of Ammonia.

Sal Volatilis, P. L. 1720.

Sal Volatilis salis Ammoniaci, P. L. 1745.

Ammonia præparata, P. L. 1788.

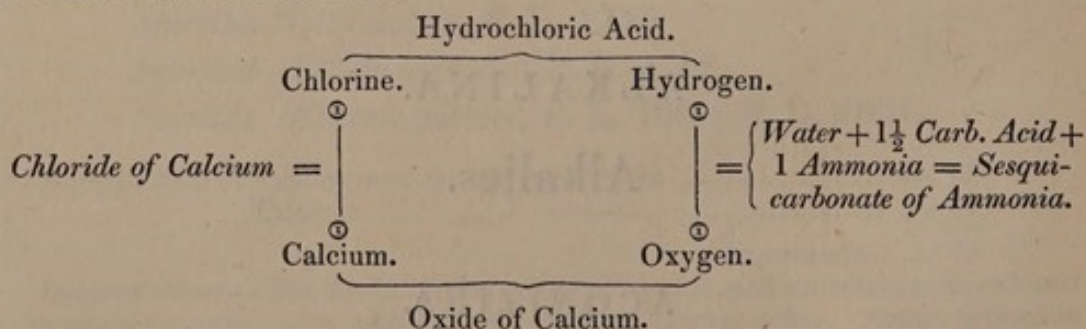
Ammoniæ Carbonas, P. L. 1809.

Ammoniæ Subcarbonas, P. L. 1824.

Six names in 116 years! The name seems also to have been volatile.

<i>Composition.</i> —1 equivalent of Ammonia		=	17
1½	Carbonic Acid.....	=	33
1	Water.....	=	9
			59
Or,			
2	equivalents of Ammonia	17 × 2 =	34
3	Carbonic Acid...	22 × 3 =	66
2	Water.....	9 × 2 =	18
			118

Decomposition.—This may be simplified by considering that a double decomposition first takes place between the elements of the hydrochloric acid and the lime; thus yielding chloride of calcium and water; the ingredients being hydrochlorate of ammonia and chalk.



Now, therefore, the 1 equivalent of water, as it forms, unites with 1½ equivalent of carbonic acid and 1 equivalent of ammonia to form a hydrated sesquicarbonate of ammonia. The other ½ equivalent of ammonia escapes.

Properties.—This salt is mediate between the carbonate and bicarbonate of ammonia. It consists of white masses, which when recently prepared are transparent, but which gradually become more or less opaque. Its odour is penetrating

and pungent; its taste, hot and saline; it turns turmeric paper of a reddish brown, and has an alkaline reaction on other vegetable colours also. By long exposure to the air it gives off carbonate of ammonia, and effloresces into a residue, which is a bicarbonate, the equivalents being just adequate for the formation of these two salts out of the sesquicarbonate. The bicarbonate is purposely formed in this way by some practitioners, who prefer this last salt as a remedy, dissolved in bitter infusion, for indigestion. At the temperature of 60° it requires four times its weight of water for solution. It is insoluble in alcohol, and it is partly volatilized and decomposed by hot water.

LIQUOR AMMONIÆ SESQUICARBONATIS.

Liquor of Sesquicarbonate of Ammonia.

Spiritus Salis Ammoniaci, P. L. 1720, P. L. 1745.

Aqua Ammoniacæ, P. L. 1788.

Liquor Ammoniacæ Carbonatis, P. L. 1809.

Liquor Ammoniacæ Subcarbonatis, P. L. 1824.

LIQUOR AMMONIÆ.

Liquor of Ammonia.

Aqua Ammoniacæ, P. L. 1788.

Liquor Ammoniacæ, P. L. 1809, P. L. 1824.

Composition.—Ammoniacal gas consists of—

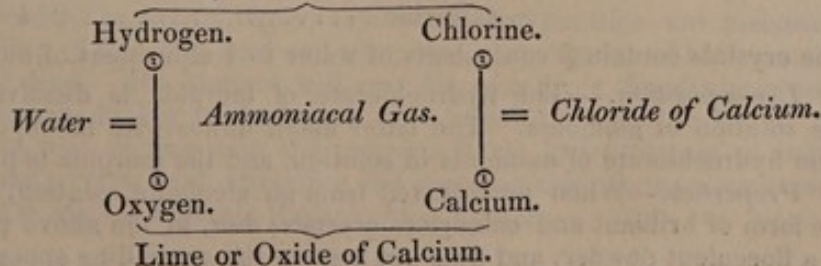
3 equivalents of Hydrogen....	$1 \times 3 = 3$
1 ——— Azote.....	$= 14$
	17

The solution contains 10 per cent of this Gas..	10
Water	90
	100

Decomposition.—Hydrochlorate of ammonia is thrown into a retort, containing lime slaked with water: lime, it must be recollected, is an oxide of calcium. The chlorine of the hydrochloric acid unites with the calcium to form chloride of calcium; while its hydrogen, attracting the oxygen of the lime, forms water: thus the ammonia being set free in the form of gas, passes over into the receiver, where it is greedily absorbed by the water, the chloride of calcium remaining in solution.

Hydrochlorate of Ammonia.

Hydrochloric Acid.



Properties.—Ammoniacal gas is invisible ; has an overpowering pungent odour, and an acrid caustic taste. It is permanently elastic at common temperatures, and its sp. gr. is 0.76. It has the usual alkaline reaction on vegetable colours, changing the blues to green, and the yellows to red ; 100 cubic inches weigh 18.19 grains. It is irrespirable, extinguishes flame, but may be burned when issuing from a capillary orifice in an atmosphere of oxygen. At the temperature of 50° under the pressure of six atmospheres and a half, it was converted by Faraday into a colourless transparent fluid, having a sp. gr. of 0.76. One cubic inch of water at 50° absorbs 670 cubic inches of this gas, and the saturated solution has a sp. gr. of 0.875. The sp. gr. of the above solution is 0.96, and its strength is estimated at 10 per cent.

LIQUOR AMMONIÆ ACETATIS.

Liquor of Acetate of Ammonia.

(Spirit of Mindererus.)

Much complaint has been made of the present proportions ; but here the error is with the critics. Distilled Vinegar ought to contain 4.6 per cent of acetic acid ; if it contain only 3 per cent, of course the quantity of the sesquicarbonate will be superabundant. This is a question entirely between the dispenser and the tradesman who supplies him with the acid. Again, if we purchase pyroligneous acid of 3 per cent, we commit two errors at one and the same time : first, we have comparatively an impure acid ; and, secondly, from its weakness, we shall not have the due proportion of the acetate of ammonia in any given quantity of the liquor. So, again, those gentlemen who complain of the alteration in the quantity of the sesquicarbonate are alike at fault : we now have four ounces and a half in two pints of 40 fluidounces ; we formerly had two ounces to 32 fluidounces, so that the proportions are exactly the same.

MORPHIA.

Morphia.

Composition.—C H A O s.

Anhydrous morphia consists of the usual elements of the alkaloids, and the following proportions :—

34	equivalents of Carbon	.....	6 × 34 = 204	or 71.80	Liebig.
18	Hydrogen	.....	= 18	6.34	
1	Azote	.....	= 14	4.96	
6	Oxygen	.....	8 × 6 = 48	16.90	
	salifiable	.....	284	100	

The crystals contain 2 equivalents of water to 1 equivalent of morphia.

Decomposition.—The hydrochlorate of morphia is dissolved, and added to the solution of ammonia. The latter alkali unites with the hydrochloric acid to form hydrochlorate of ammonia in solution, and the morphia is precipitated.

Properties.—When precipitated from an alcoholic solution, morphia assumes the form of brilliant and colourless crystals ; but, in the above process, it appears as a flocculent powder, and does not assume the crystalline appearance until it has

been stirred and allowed to stand. Morphia, though insoluble in water, is soluble in the saliva of the mouth, to which it imparts an extremely bitter taste. It requires for its solution 100 parts even of boiling water. It dissolves in 40 parts of cold alcohol, and in 30 of boiling absolute alcohol. It is almost insoluble in æther, in which fluid narcotine is readily dissolved; hence it is the usual mode of freeing it from this last impurity. One pound of Turkey opium yields about an ounce of morphia. When the crystals of morphia are submitted to a gentle heat they become opaque, and at a higher temperature they fuse into a yellow liquid, which, as it cools, becomes white and crystalline.

MORPHIÆ ACETAS.

Acetate of Morphia.

<i>Composition.</i> —1 equivalent of Acetic Acid	.....	=	51	or	15.23
1	———	Morphia.....	=	284	84.77
				335	100

The salt, as obtained by evaporation to dryness, is stronger than the crystals, which no doubt contain water. Hence the discrepancy of the dose, which, by some of the most experienced physicians, has been estimated at $\frac{1}{6}$ of a grain, while $\frac{1}{3}$ of a grain of our acetate is said to be scarcely equal to one grain of opium.

Chemical Process.—It is a direct union of morphia and acetic acid, the latter agent being added to the point of saturation.

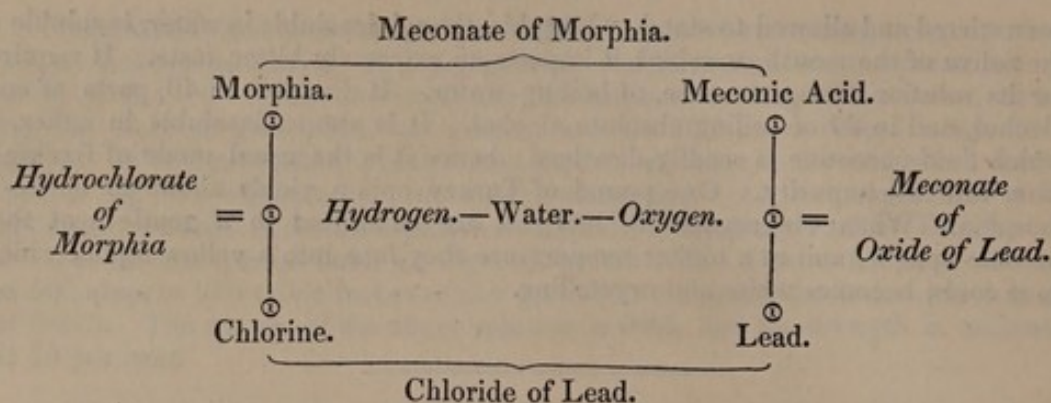
Properties.—The above solution crystallizes, not without difficulty, in acicular bundles; and, during the requisite evaporation, part of the acetic acid is sometimes dissipated, and it requires more acetic acid to dissolve it. Hence the uncertainty of its composition. The crystals are readily soluble in water, less soluble in alcohol. They are deliquescent, and not easily preserved in a constant state of dryness. Even when perfectly neutral, this salt is partially decomposed by water, and some morphia is precipitated. It is obvious, that the only form in which the acetate of morphia can be used with effect is in a solution of given strength in dilute acetic acid.

MORPHIÆ HYDROCHLORAS.

Hydrochlorate of Morphia.

<i>Composition.</i> —1 equivalent of Hydrochloric Acid	.....	=	37
1	———	Morphia	 = 284
			321

Decomposition.—The acting ingredients in this preparation are meconate of morphia, consisting of meconic acid and morphia; and chloride of lead, consisting of chlorine and lead. The student will cast his eyes over the diagram and he will see that chlorine, taking up hydrogen as it passes through the water, forms hydrochloric acid, and uniting with the morphia forms hydrochlorate of morphia. The lead takes the oxygen, and, attracting the meconic acid, forms a meconate of lead. Charcoal is used to separate the colouring matter.



Properties.—Crystals plumose, acicular; when pure, colourless; but, as often met with, they have a white-brown colour; inodorous; taste, bitter. Soluble in about 20 parts of water, and from a saturated solution in boiling water crystals are deposited on cooling. They have hitherto been considered as anhydrous; but Messrs. Hennell and Phillips represent them to contain 6 equivalents of water.

QUINÆ DISULPHAS.

Disulphate of Quina.

Commercial Name.—Sulphate of Quinine.

Composition of Quina.—C H A O s; that is to say,

20	equivalents of C arbon.....	6 × 20 =	120
12	— H ydrogen.....	1 × 12 =	12
1	— A zote	=	14
2	— O xygen.....	8 × 2 =	16
Forming a s alifiable base. Equivalent....			162

Composition of Disulphate of Quina.—

1	equivalent of Sulphuric Acid	=	40	or	9·17
2	equivalents of Quina	162 × 2 =	324		74·31
8	— Water	9 × 8 =	72		16·52
			436	in 100	parts.

Decomposition.—Firstly, bruised cinchona is repeatedly boiled with largely diluted sulphuric acid.

Products.—The kinate of quina, naturally contained in the bark, is dissolved out by the mineral acid; and thus you have in the solution kinic acid, quina, and sulphuric acid.

Secondly, Oxide of lead is added nearly to saturation.

Products.—Sulphate of lead precipitated; kinate of quina, or kinic acid and quina, remaining in solution.

Thirdly, Liquor of ammonia is gradually added to combine with the kinic acid, and precipitate the quina, which is then combined with the due quantity of sulphuric acid to form the disulphate; and the colouring matter is got rid of by digestion with animal charcoal.

Properties.—Crystals long, acicular, pearly, bitter to the taste, efflorescent.

Soluble in 740 parts of cold and 30 of boiling water. Soluble in 80 parts of alcohol, of specific gravity .850; and in a much smaller proportion of boiling alcohol of the same strength. It fuses when heated, and takes on the appearance of melted wax, and afterwards reddens and begins to decompose. Burnt in the open air, it passes first into a bulky mass of charcoal, and afterwards it is gradually and entirely consumed. When heated to 212° it is luminous. N.B.—It is commonly adulterated with water, sugar, gum, starch, salts of ammonia, gypsum, sulphate of magnesia, acetate of lime, which are all alien to the tonic indication. Sulphate of zinc might, however, be mixed by the practitioner with advantage, for the purposes of economy, in the proportion of one-third.

Commentary.—The cinchona lancifolia chiefly contains the alkali called cinchonia; the quina is principally derived from the cinchona cordifolia; the cinchona oblongifolia contains both these alkaloids.

STRYCHNIA.

Strychnia.

Composition.—C H A O s.

30	equivalents of Carbon	.....	$6 \times 30 = 180$
16	Hydrogen	....	$1 \times 16 = 16$
1	Azote	.....	$= 14$
3	Oxygen	.....	$8 \times 3 = 24$
	salifiable	.....	234

The terminal *s* in the above symbolic word C H A O s, as I have said before, denotes that the alkali is salifiable.

Decomposition.—Nux vomica consists of

Strychnia } existing as strychnates.
 Brucia .. }
 Strychnic Acid.
 Vegetable impurities.

An alcoholic extract of the nux vomica is first prepared, and this is dissolved in cold water, strained, and evaporated to the consistence of a syrup. Magnesia is added, which unites with the strychnic acid to form strychnate of magnesia; and the strychnia remaining mixed with this magnesian salt, is afterwards dissolved by the boiling spirit. The spirit being distilled, the residuary strychnia is saturated with diluted sulphuric acid, to form a sulphate of strychnia; and this salt is in its turn decomposed by liquor of ammonia, which forms a sulphate of ammonia, while the strychnia is precipitated because insoluble.

Properties.—Strychnia (discovered by Pelletier and Caventou in 1818) is contained in four or five different species of *Strychnos*, but in the above process it is directed to be prepared from the strychnos nux vomica. It is colourless, inodorous, and so intensely bitter, that a cold aqueous solution containing less than $\frac{1}{6000}$ of its weight of strychnia, may be further diluted with 100 times its bulk of water, and yet remain sensibly bitter. It is almost insoluble in cold water, and even in boiling water one part requires 2500 parts for solution. It is soluble in common alcohol, but insoluble in absolute alcohol and in æther. It has an alkaline reaction on vegetable colours, and forms salts with various acids. It is reddened by the addition of strong nitric acid; but this red tint, according to Pelletier, is due to the presence of some impurity, probably brucia.

VERATRIA.

Veratria.

Composition.—C H A O s.

34	equivalents of Carbon	.....	$6 \times 34 = 204$	or 70.83
22	Hydrogen	... 1	$\times 22 = 22$	7.63
1	Azote	.....	= 14	16.66
6	Oxygen	 8	$\times 6 = 48$	4.88
	salifiable	.....	288	100

Decomposition.—Cevadilla seeds contain gallate of veratria. The bruised seeds are boiled three times in successive additions of the spirit, and this alcoholic tincture is reduced to an extract by distillation, which separates the spirit. The residue is decomposed by boiling it in water slightly acidulated with sulphuric acid.

Product.—Sulphate of veratria left in solution.

Secondly, Magnesia is now employed to precipitate the veratria.

Products.—Veratria precipitated. Sulphate of magnesia left in solution. Nextly, the veratria is redissolved, and digested in spirit, to detach it from impurities. The spirit is again distilled off, and the veratria treated with largely diluted sulphuric acid and charcoal.

Product.—Sulphate of veratria decolorized and in solution.

Lastly, Liquor of ammonia is added to precipitate the veratria now sufficiently pure.

Products.—Veratria precipitated. Sulphate of ammonia in solution.

Properties.—Veratria is white and pulverulent, and has not been obtained in crystals. It is inodorous, and has an acrid burning taste. It fuses at 280° , and on cooling it becomes a transparent yellowish mass. It may be considered as all but insoluble in cold water, and it requires 1000 times its weight of boiling water for its solution. It is readily soluble in alcohol, less so in æther. It has an alkaline reaction, and neutralizes acids, but as a base it is weaker than the preceding alkalis. In an exceedingly minute quantity it acts with singular energy on the membrane of the nose, exciting violent sneezings. When taken internally, it produces irritation of the mucous lining of the stomach and bowels.

ANIMALIA.

Animal Preparations.

CARBO ANIMALIS PURIFICATUS.

Commercial Name.—Ivory Black.

Process.—The diluted hydrochloric acid is used to dissolve out the earthy phosphate and carbonate, which, if allowed to remain, would render the charcoal unfit for decolorization, in preparing certain of the vegetable alkalies. It is one form of carbon.

Mnemonic Symbol for the composition of Bone (human) :

A. L. M. S.

- A. Animal Matter, viz. gelatine, fat, albumen.
- L. Lime, Phosphate of, Carbonate, Fluide.
- M. Magnesia, Phosphate of
- S. Salt, Common (Chloride of Sodium).

Properties.—Charcoal is a black, insoluble, inodorous, insipid, brittle substance; an excellent conductor of electricity, but a bad conductor of heat; unchanged by the combined action of air and moisture at all common temperatures, and readily combustible in oxygen. Animal Charcoal, together with these properties, has a peculiar lustre and porosity, upon which its superior discolouring power over vegetable charcoal is said to depend.

Commentary.—The wholesale manufacturer does not always employ animal charcoal to decolorate his crystals. Some years ago it was supposed no other material would answer for this purpose, and a dead dog or pig from the river was greedily received at the factories, and paid for according to the size.

CORNU USTUM.

Burnt Horn.

Composition.—The animal matter being driven off by the heat, a sub-sesquiphosphate of lime, or bone-earth, remains nearly pure, consisting of—

1	equivalent of Phosphoric Acid....	= 36 or 46.2	
1½	——— Lime	28 + 14 = 42	53.8
		78	100

Commentary.—The hartshorn was selected on the ground of its containing a greater portion of the phosphate, and less of the albumen. We know of no preparation in which burnt horn is a direct ingredient in the present Pharmacopœia. It is indeed contained in the pulvis antimonialis, but there the hartshorn shavings are employed, and burnt with the antimony. When we come to the article Pulvis Antimonialis, we shall perhaps be able to shew our readers why burnt horn is retained in the Pharmacopœia. The pulvis cornu usti, the only preparation for which it was employed, is now rejected.

TESTÆ PRÆPARATÆ.

Prepared Shells.

Composition.—Carbonate of Lime with indurated albumen in mother-of-pearl shells, and in the porcelaneous with gelatine.

AQUÆ DESTILLATÆ.

Distilled Waters.

AQUA DESTILLATA.

Distilled Water.

AQUA ANETHI.

Dill Water.

Aqua Seminum Anethi, P. L. 1745.

Aqua Anethi, P. L. 1788, P. L. 1809, P. L. 1824.

AQUA CARUI.

Carraway Water.

Aqua Seminum Carui, P. L. 1745.

Aqua Carui, P. L. 1809, P. L. 1924.

AQUA FÆNICULI.

Fennel Water.

Aqua Fœniculi, P. L. 1745, P. L. 1788, P. L. 1809. P. L. 1824.

AQUA FLORUM AURANTII.

Orange Flower Water.

AQUA CINNAMOMI.

Cinnamon Water.

Aqua Cinnamomi tenuis, P. L. 1720.*Aqua Cinnamomi simplex*, P. L. 1745.*Aqua Cinnamomi*, P. L. 1788, P. L. 1809, P. L. 1824.

AQUA MENTHÆ PIPERITÆ.

Peppermint Water.

Aqua Menthæ Piperitidis simplex, P. L. 1745.*Aqua Menthæ Piperitidis*, P. L. 1788.*Aqua Menthæ Piperitæ*, P. L. 1809, P. L. 1824.

AQUA MENTHÆ PULEGII.

Pennyroyal Water.

Aqua Pulegii simplex, P. L. 1745.*Aqua Pulegii*, P. L. 1788, P. L. 1809, P. L. 1824.

AQUA MENTHÆ VIRIDIS.

Spearmint Water.

Aqua Menthæ vulgaris simplex, P. L. 1745.*Aqua Menthæ sativæ*, P. L. 1788.*Aquæ Menthæ viridis*, P. L. 1809, P. L. 1824.

AQUA PIMENTÆ.

Pimenta Water.

Aqua Piperis Jamaicensis, P. L. 1745.

Aqua Pimento, P. L. 1788.

Aqua Pimentæ, P. L. 1809, P. L. 1824.

AQUA ROSÆ.

Rose Water.

Aqua Rosarum Damascenarum, P. L. 1745.

Aqua Rosæ, P. L. 1788, P. L. 1809, P. L. 1824.

AQUA SAMBUCI.

Water of Elderflower.

Note.—In line 1, page 75, of my Pharmacopœia, *for parts, read pints.*

To answer many inquiries where the Oleum Sambuci is to be obtained, the Collegiate Translator hath called up the ghost of Dr. Lewis, who hath gravely informed him that elder flowers yield by distillation but a very small quantity of a viscid oil.*

* I hope my old, sometime pupil, Dr. Conolly, will read his recantation of some four or five errors in criticism; and, at all events, not ascribe it to any ignorance that I do not know where to procure oil of elder. By adulation and glossing over the injustice and errors of fools, he may have at last got a comfortable (?) berth among madmen; but let him be careful how he again plays that card at my expense. Although he may *affect* not to know (so he states) "what are Dr. Collier's claims on the fellows and licentiates of the College of Physicians," I can tell him that if *he* be ignorant, because forgetful of services, there is much more excuse for those who choose to forget after having paid for them. "*Haud ictus sapio.*"—Written acknowledgements surely ought to mean something. Was no cock near to crow while the ex-professor wrote the sentence? But I ask pardon for the comparison; Peter was not such a blockhead as to hazard a voluntary renunciation. Verily the habits of a reviewer would corrupt the ethereal mind of a recording angel.

CATAPLASMATA.

Poultices.

CATAPLASMA CONII.

Cataplasm of Hemlock.

CATAPLASMA FERMENTI.

Cataplasm of Yest.

CATAPLASMA LINI.

Cataplasm of Linseed.

CATAPLASMA SINAPIS.

Cataplasm of Mustard.

Commentary.—As the poultices in the College Pharmacopœia are limited to four, I have thought fit to add certain others, which may be convenient to the practitioner, and will be found in the Addenda.

C E R A T A.

Cerates.

CERATUM.

Cerate.

Ceratum, P. L. 1809.

Ceratum simplex, P. L. 1824.

C E R A T U M C A L A M I N Æ.

Cerate of Calamine.

Ceratum Epuloticum, P. L. 1745.

Ceratum Lapidis Calaminaris, P. L. 1788.

Ceratum Calaminæ, P. L. 1809, P. L. 1824.

C E R A T U M C A N T H A R I D I S.

Cerate of Cantharides.

Ceratum Cantharidis, P. L. 1788.

Ceratum Lyttæ, P. L. 1809.

Ceratum Cantharidis, P. L. 1824.

CERATUM CETACEI.

Cerate of Spermaceti.

Ceratum Album, P. L. 1745.

Ceratum Spermatis Ceti, P. L. 1788.

Ceratum Cetacei, P. L. 1809, P. L. 1824.

CERATUM HYDRARGYRI COMPOSITUM.

Compound Cerate of Mercury.

CERATUM PLUMBI ACETATIS.

Cerate of Acetate of Lead.

Unguentum Cerussæ Acetatæ, P. L. 1788.

Ceratum Plumbi Superacetatis, P. L. 1809.

Ceratum Plumbi Acetatis, P. L. 1824.

CERATUM PLUMBI COMPOSITUM.

Compound Cerate of Lead.

Ceratum Lithargyri Acetati, P. L. 1809.

Ceratum Plumbi compositum, P. L. 1824.

CERATUM RESINÆ.

Cerate of Resin.

Ceratum Citrinum, P. L. 1745.

Ceratum Resinæ flavæ, P. L. 1788.

Ceratum Resinæ, P. L. 1809, P. L. 1824.

CERATUM SABINÆ.

Cerate of Savine.

Ceratum Sabinæ, P. L. 1809, P. L. 1824.

CERATUM SAPONIS.

Cerate of Soap.

Ceratum Saponis, P. L. 1788, P. L. 1809, P. L. 1824.

CONFECTIONES.

Confections.

CONFECTIO AMYGDALÆ.

Confection of Almonds.

Confectio Amygdalæ, P. L. 1809.*Confectio Amygdalarum*, P. L. 1809, editio altera, P. L. 1824.

CONFECTIO AROMATICA.

Aromatic Confection.

Confectio Raleighana, P. L. 1720.*Confectio Cardiaca*, P. L. 1745.*Confectio Aromatica*, P. L. 1788, P. L. 1809, P. L. 1824.

CONFECTIO AURANTII.

Confection of Orange.

Conserva flavedinis Corticum Aurantiorum, P. L. 1720, P. L. 1745.

Conserva Corticis exterioris Aurantii Hispalensis, P. L. 1788.

Confectio Aurantii, P. L. 1809.

Confectio Aurantiorum, P. L. 1824.

CONFECTIO CASSIÆ.

Confection of Cassia.

Electuarium e Cassia, P. L. 1745.

Electuarium Cassiæ, P. L. 1788.

Confectio Cassiæ, P. L. 1809, P. L. 1824.

CONFECTIO OPII.

Confection of Opium.

Philonium Romanum, P. L. 1720.

Philonium Londinense, P. L. 1745.

Confectio Opiata, P. L. 1788.

Confectio Opii, P. L. 1809, P. L. 1824.

CONFECTIO PIPERIS NIGRI.

Confection of Black Pepper.

Confectio Piperis Nigri. P. L. 1824.

CONFECTIO ROSÆ CANINÆ.

Confection of Dog Rose [Hips].

Conserva Fructus Cynosbati, P. L. 1720, P. L. 1745.

Conserva Cynosbati, P. L. 1788.

Confectio Rosæ Caninæ, P. L. 1809, P. L. 1824.

CONFECTIO ROSÆ GALLICÆ.

Confection of the French Rose [Red].

Conserva Rosarum rubrarum, P. L. 1720, P. 1745.*Conserva Rosæ*, P. L. 1788.*Conserva Rosæ Gallicæ*, P. L. 1809, P. L. 1824.

CONFECTIO RUTÆ.

Confection of Rue.

Electarium e Baccis Lauri, P. L. 1720, P. L. 1745.*Confectio Rutæ*, P. L. 1809, P. L. 1824.

CONFECTIO SCAMMONII.

Confection of Scammony.

Electarium Caryocostinum, P. L. 1720.*Electarium e Scammonio*, P. L. 1745.*Electuarium Scammonii*, P. L. 1788.*Confectio Scammoneæ*, P. L. 1809, P. L. 1824.

CONFECTIO SENNÆ.

Confection of Senna.

Electarium Lenitivum, P. L. 1720, P. L. 1745.*Electuarium Sennæ*, P. L. 1788.*Confectio Sennæ*, P. L. 1809, P. L. 1824.

The plan of keeping the mixed ingredients in a dry state is a considerable improvement, but in the first confection (*Confectio Amygdalæ*), "the College have omitted to order the addition of water. It should have been, then, whenever the confection is to be used," add water gradually, and pound all the ingredients, &c.

D E C O C T A.

Decoctions.

DECOCTUM ALOËS COMPOSITUM.

Compound Decoction of Aloes.

Decoctum Aloës Compositum, P. L. 1809, P. L. 1824.

DECOCTUM AMYLI.

Decoction of Starch.

Mucilago Amyli, P. L. 1788, P. L. 1809, P. L. 1824.

DECOCTUM CETRARIÆ.

Decoction of Liverwort.

Decoctum Lichensis, P. L. 1809, P. L. 1824.

DECOCTUM CHIMAPHILÆ.

Decoction of Winter-green or Pyrola.*

DECOCTUM CINCHONÆ CORDIFOLIÆ.

Decoction of Heart-leaved Cinchona [Yellow].

* By reference to page 87 of my Pharmacopœia, it will be seen that I have given a formula for an infusion of Pyrola, which I am myself in the habit of using.

DECOCTUM CINCHONÆ LANCIFOLIÆ.

Decoction of Lance-leaved or Pale Bark.

Decoctum Cinchonæ, P. L. 1788, P. L. 1809, P. L. 1824.

We remarked in the caution, page 87, that this bark contains also quina, *i. e.* in addition to Cinchona ; but, according to MM. Pelletier and Caventou, it contains no quina. When we call to mind that the forests of Peru yield at least twelve species of Cinchona, according to Mutis, we need not be surprised at the difference in the analyses. Cinchonia is the active alkali of this species, and, if it contain quina, the quantity is almost inappreciable.

DECOCTUM CINCHONÆ OBLONGIFOLIÆ.

Decoction of Oblong-leaved Cinchona [Red].

DECOCTUM CYDONIÆ.

Decoction of Quince [Seeds].

Mucilago Seminis Cydonii Mali, P. L. 1788.*Decoctum Cydoniæ*, P. L. 1809, P. L. 1824.

DECOCTUM DULCAMARÆ.

Decoction of Woody Nightshade.

Decoctum Dulcamaræ, P. L. 1809, P. L. 1824.

DECOCTUM GRANATI.

Decoction of Pomegranate.

DECOCTUM HORDEI.

Decoction of Barley.

Decoctum Hordei, P. L. 1788, P. L. 1809, P. L. 1824.

DECOCTUM HORDEI COMPOSITUM.

Compound Decoction of Barley.

Decoctum Hordei Compositum, P. L. 1788, P. L. 1809, P. L. 1824.

DECOCTUM MALVÆ COMPOSITUM.

Compound Decoction of Mallow.

Decoctum Malvæ Compositum, P. L. 1809, P. L. 1824.

DECOCTUM PAPAVERIS.

Decoction of Poppy.

Decoctum Papaveris, P. L. 1809, P. L. 1824.

DECOCTUM QUERCUS.

Decoction of Oak [Bark].

Decoctum Quercus, P. L. 1809, P. L. 1824.

DECOCTUM SARZÆ.

Decoction of Sarsaparilla.

Decoctum Sarsaparillæ, P. L. 1788, P. L. 1809, P. L. 1824.

DECOCTUM SARZÆ COMPOSITUM.

Compound Decoction of Sarsaparilla.

Decoction Sarsaparillæ Compositum, P. L. 1788, P. L. 1809, P. L. 1824.

DECOCTUM SCOPARII COMPOSITUM.

Compound Decoction of Broom.

DECOCTUM SENEGÆ.

Decoction of Senega, or American Rattlesnake Root.

Decoction Senegæ, P. L. 1809, P. L. 1824.

DECOCTUM TORMENTILLÆ.

Decoction of Tormentil.

DECOCTUM ULMI.

Decoction of Elm.

Decoction Ulmi, P. L. 1788, P. L. 1809, P. L. 1824.

DECOCTUM UVÆ URSI.

Decoction of Whortleberry.

DECOCTUM VERATRI.

Decoction of White Hellebore.

Decoction Hellebori Albi, P. L. 1788.*Decoction Veratri*, P. L. 1809, P. L. 1824.

EMPLASTRA.

Plasters.

EMPLASTRUM AMMONIACI.

Plaster of Ammoniacum.

Emplastrum Ammoniaci, P. L. 1809, P. L. 1824.

EMPLASTRUM AMMONIACI CUM HYDRARGYRO.

Plaster of Ammoniacum with Mercury.

Emplastrum ex Ammoniaco cum Mercurio, P. L. 1745.

Emplastrum Ammoniaci cum Hydrargyro, P. L. 1788, P. L. 1809,
P. L. 1824.

EMPLASTRUM BELLADONNÆ.

Plaster of Deadly Nightshade.

Commentary.—This is a new plaster in our Pharmacopœia, although, as an external application, belladonna has been employed extensively for some years. Dr. W. Chevallier recommended equal parts of the extract and simple cerate in white swelling, and in rheumatic affections. The above form of plaster is used at our hospitals, as a sedative over the region of the heart, in irritability of that organ, and is applied over the sacrum in dysmenorrhœa. I have used it with advantage in painful exostosis.

EMPLASTRUM CANTHARIDIS.

Plaster of Cantharides.

Emplastrum Epispasticum, P. L. 1720.

Emplastrum Vesicatorum, P. L. 1745.

Emplastrum Cantharidis, P. L. 1788.

Emplastrum Lyttæ, P. L. 1809.

Emplastrum Cantharidis, P. L. 1824.

EMPLASTRUM CERÆ.

Plaster of Wax.

Emplastrum Attrahens, P. L. 1745.

Emplastrum Ceræ, P. L. 1788, P. L. 1809, P. L. 1824.

EMPLASTRUM GALBANI.

Plaster of Galbanum.

Diachylon Magnum cum Gummi, P. L. 1720.

Emplastrum Commune cum Gummi, P. L. 1745.

Emplastrum Lithargyri compositum, P. L. 1788.

Emplastrum Galbani compositum, P. L. 1809, P. L. 1824.

EMPLASTRUM HYDRARGYRI.

Plaster of Mercury.

Emplastrum Mercuriale, P. L. 1720.

Emplastrum Commune Mercuriale, P. L. 1745.

Emplastrum Lythargyri cum Hydrargyro, P. L. 1788.

Emplastrum Hydrargyri, P. L. 1809, P. L. 1824.

Commentary.—In this plaster, about eight ounces of oxide of lead exist in admixture (chemical or mechanical?) with three ounces of mercury. It is difficult to imagine what led our predecessors to combine mercury with lead as an external

remedy. It is easy to see why they should not have done so. The character of the oxide of lead, as of its salts, is desiccative, repressing, sedative even (if persisted in) to paralysis. That of oxide of mercury and its salts is nearly the reverse, and if it paralyses a part of the body, such effect follows only after a long-continued over-excitement; yet we find this combination in nearly every Pharmacopœia in Europe.—*Cui bono?* As certain oxides of metals are known to unite together in definite proportions, it is not improbable that such compounds will by and by be ushered in as new, efficacious, and invaluable remedies.

EMPLASTRUM OPII.

Plaster of Opium.

Emplastrum Opii, P. L. 1809, P. L. 1824.

EMPLASTRUM PICIS.

Plaster of Pitch.

Emplastrum Cephalicum, P. L. 1745.

Emplastrum Picis Burgundicæ, P. L. 1788.

Emplastrum Picis compositum, P. L. 1809, P. L. 182

EMPLASTRUM PLUMBI.

Plaster of Lead.

Diachylon Simplex, P. L. 1720.

Emplastrum Commune, P. L. 1745.

Emplastrum Lithargyri, P. L. 1788.

Emplastrum Plumbi, P. L. 1809, P. L. 1824.

Commentary.—The oldest name for this plaster, and that by which, even now, it is most commonly known in Wales, and many parts of England, is Diapalme; and that is the provincial term for it in France also.

EMPLASTRUM RESINÆ.

Plaster of Resin.

Emplastrum Commune adhæsivum, P. L. 1745.

Emplastrum Lithargyri cum Resina, P. L. 1788.

Emplastrum Resinæ, P. L. 1809, P. L. 1824

EMPLASTRUM SAPONIS.

Plaster of Soap.

Emplastrum e Sapone, P. L. 1720, P. L. 1745.*Emplastrum Saponis*, P. L. 1788, P. L. 1809, P. L. 1824.

ENEMATA.

Clysters.

ENEMA ALOËS.

Clyster of Aloes.

ENEMA COLOCYNTHIDIS.

Clyster of Colocynth.

ENEMA OPII.

Clyster of Opium.

ENEMA TABACI.

Clyster of Tobacco.

ENEMA TEREBINTHINÆ.

Clyster of Turpentine.

EXTRACTA.

Extracts.

EXTRACTUM ACONITI.

Extract of Aconite, Monk's Hood, or Wolfsbane.

Extractum Aconiti, P.L. 1809, P.L. 1824.

Characters.—Colour, deep chocolate, almost black; odour, slightly herbaceous; taste, somewhat acrid, leaving a numbness on that part of the tongue to which it has been applied.

This extract is prepared from the leaves, but that from the root is preferred by many. I have taken some pains in comparing the species of aconitum, and the results of my investigation will be found in the section on "Poisons, their signs, tests, and antidotes."

EXTRACTUM BELLADONNÆ.

Extract of Deadly Nightshade.

Extractum Belladonnæ, P.L. 1809, P.L. 1824.

Characters.—Colour, deep chocolate; odour, like that of the fresh-bruised plant; taste, bitter; the inferior preparations smell like tobacco.

Commentary.—We are chiefly indebted to Mr. Brandes for the discovery and description of atropia, the alkaloid principle of belladonna. It is obtained from the root of the plant, dried and powdered, which is said to yield not more than a three-thousandth part of pure atropia. This alkali is colourless, inodorous, and its solution has a bitter taste; it crystallizes in white silky prisms; it is soluble in anhydrous alcohol, in æther, and in about 500 parts of cold water. This last solution readily dilates the pupil if dropped into the eye; it forms definite compounds with the acids; its sulphate and acetate are more crystallizable than the muriate or nitrate. It is precipitated from these four combinations by potassa and ammonia, by infusion of galls, and by the chlorides of gold and platina; with which two last it forms

compounds, gradually crystallizing. Heated with potassa, it is easily decomposed with the evolution of ammonia. It consists, according to Liebig, of

C	68 × 6 =	408
H	23 × 1 =	23
A	1 =	14
O	12 × 8 =	96
s		<u>541</u>

EXTRACTUM COLCHICI CORMI.

Extract of the Cormus of Meadow Saffron.

Characters.—I have had no opportunity of observing the characters of this extract. It is not kept in the shops.

EXTRACTUM CONII.

Extract of Hemlock.

Succus Cicutæ Spissatus, P.L. 1788.

Extractum Conii, P.L. 1809, P.L. 1824.

Characters.—Colour, more or less of a bright grass-green;* odour, like that of the fresh-bruised plant, neither rank nor empyreumatic; it should emit a strong mouse odour on being triturated with caustic potassa.

Commentary.—The active principle of hemlock is *Conid*. It differs from all the others (if we except *nicotina*) in being both fluid and volatile. It is a limpid volatile oil, lighter than water, and possessing a strong disgusting odour, extremely diffusible. It has an acrid taste, and a decided alkaline reaction on turmeric and litmus. It forms salts with acids, not however crystallizable. It imparts its odour and taste to water, in which it is very sparingly soluble. It acquires a dark tint by exposure to the air, and becoming decomposed it evolves ammonia. It boils at 370°. It is a rapid and violent poison. (*Vide* the section on "Poisons," &c., *ad finem*.) It consists of

C	11 equivalents =	66
H	12 ——— =	12
A	1 ——— =	14
O	1 ——— =	8
s	alifiable	<u>100</u>

The extract enters into the Cataplasma Conii and Pilulæ Conii Compositæ.

* I am aware that some operative pharmacists impart an artificial green colour to certain extracts. The whole of these characters, are, however, to be relied upon, as distinguishing the genuine from the carbonized extract.

EXTRACTUM DIGITALIS.

Extract of Foxglove.

Characters.—Colour, brownish green ; odour, slightly herbaceous ; taste, bitter.

Commentary.—M. Leroyer gives a process for obtaining the active principle of foxglove, which is enumerated as an alkaloid and called *Digitalia*. Its properties and habitudes have as yet been imperfectly ascertained. *Digitalia*, according to M. Leroyer, is brown, of the consistence of pitch, and remarkably deliquescent, slightly alkaline, intensely bitter, and with difficulty, if at all, crystallizable. The experiments made upon several species of animals by Prevost, would serve to shew that it possesses in a high degree the virtues of digitalis.

EXTRACTUM HYOSCYAMI.

Extract of Henbane.

Extractum Hyoscyami, P.L. 1809, P.L. 1824.

Character.—Colour, dark dusky green ; odour and taste, strongly virose, and peculiar to the plant.

Commentary.—Hyoscyama, the alkaloid active principle of henbane, is white, inodorous, and of a disagreeable bitter taste. It is very slightly soluble in water, and commonly described as insoluble, but it is very soluble in æther and in alcohol ; it yields a white precipitate with tincture of galls, and a yellowish white one with chloride of gold. It has alkaline properties when in a moist state, and unites with acids to form crystalline salts. It yields ammonia under a strong heat, and it most probably consists of CHAOs.

EXTRACTUM LACTUCÆ.

Extract of Lettuce.

Extractum Lactucæ, P. L. 1824.

Characters.—Odour, virose ; taste, sweetish, with a mixture of bitter, somewhat like that of opium ; colour, brown-black ; powerfully attracting moisture from the atmosphere.

Commentary.—The wild lettuce, "*Lactuca virosa*," is found abundantly in the vicinity of London. It is a biennial indigenous plant, growing on the sides of roads, and flowering in July. The whole plant contains a milky juice, possessing an opiate virose smell, and a bitter subacid taste. As to the "*Lactuca sativa*," the quantity of active material contained in it is very slight, compared with that yielded by the wild species. The juice of the garden lettuce is white, that of the

wild lettuce is yellow, of a very unpleasant smell, resembling that of opium, and of a bitter nauseous taste. Those who may wish to prepare the extract from the wild lettuce (*Lactuca virosa*), will find it flowering in July, growing on the road sides and on hedge-banks. Its primary leaves are very large, broad, and a little waved, but not divided at the edges; their colour, pale green. The stalk is round, green, smooth, and rises five feet from the ground, being divided at the top into many branches. The flowers stand at the tops of these branches, numerous, small, and yellow.

Hill, in his "British Herbal," speaks favourably of this plant. "This is one of those English plants which deserve to be more known in medicine: it is called poisonous, and men have been frightened from its use; but it is a very gentle and safe opiate. The best way of giving it is in a syrup, made from a decoction of the fresh leaves and stalk. This I write from experience."—*British Herbal*, page 436.

EXTRACTUM ALOËS PURIFICATUM.

Purified Extract of Aloes.

Extractum Aloës, P. L. 1809.

Extractum Aloës Purificatum, P. L. 1824.

Characters.—Colour, intense chocolate; odour, slightly aromatic; fracture, brittle; taste, intensely bitter.

EXTRACTUM CINCHONÆ CORDIFOLIÆ.

Extract of Yellow (Heart-leaved) Cinchona.

Commentary.—This extract is not to be found in the chemists' shops.

EXTRACTUM CINCHONÆ LANCIFOLIÆ.

Extract of Lance-leaved (Pale) Cinchona.

Extractum Corticis Peruviani, P. L. 1745, P. L. 1788.

Extractum Cinchonæ, P. L. 1788, P. L. 1809, P. L. 1824.

Characters.—Odour, like that of burnt treacle, and slightly of the powdered bark; taste, acid, bitter, and astringent; colour, reddish-black: a solution of 5 grains in an ounce of water strongly affects litmus. I will not say that these ought to be the characters of the extract, but all the soft specimens I have met with in the first houses near me have uniformly presented these qualities. The hard, resinous extract, is free from acidity. Mr. Phillips says, the extract ought to be nearly inodorous, of a dark brown colour, and bitter. Truth compels me to state that I have nowhere found it with these eligible characters.

The foreign extract, such as I have seen, is superior to the English. It has not the treacle odour; it forms a transparent solution in water (which the English does not), and it is not acid.

EXTRACTUM CINCHONÆ OBLONGIFOLIÆ.

Extract of Oblong-leaved (Red) Cinchona.

Commentary.—This is another extract not to be found in the shops.

EXTRACTUM COLCHICI ACETICUM.

Acetic Extract of Colchicum (Meadow Saffron).

Characters.—Colour, light brown; odour, of acetic acid.

EXTRACTUM COLOCYNTHIDIS.

Extract of Colocynth.

Extractum Colocynthidis, P. L. 1809, P. L. 1824.

Characters.—Colour, light opaque brown; almost inodorous.

Commentary.—Colocyntine, according to M. Vauquelin, is the resinoid active principle of the bitter apple. It is readily soluble in alcohol; sparingly so in water; readily soluble in acids and alkalies; intensely bitter, and highly drastic as a purge.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

Compound Extract of Colocynth.

Extractum Catharticum, P. L. 1745.

Extractum Colocynthidis compositum, P. L. 1788 to P. L. 1824.

Characters.—Colour, dark as liquorice-extract; odour, of the cardamoms; taste, bitter and aromatic.

EXTRACTUM ELATERII.

Extract of Elaterium or Wild Cucumber.

Elaterium P. L. 1720, P. L. 1745, P. L. 1788.*Extractum Elaterii*, P. L. 1809, P. L. 1824.

Characters.—It has a slate-pencil colour; its taste is bitter and acrid. It should be light, easily reduced to powder, and inflammable. Mr. Hennel separated from it, by the action of alcohol, minute colourless crystals, nearly insoluble in water or dilute acids, and sparingly so in æther. The portion undissolved by the alcohol was treated with æther, which dissolved a greenish extract, having all the properties of a resin, and possessing, in a concentrated form, all the medicinal properties of elaterium. A solution of $3\frac{1}{2}$ grains in an ounce of alcohol acted powerfully as a hydragogue.

Elaterium, by analysis, yielded very nearly—

Elatin (green resinous extract)	17
Bitter principle?	44
Starch	6
Woody fibre	27
Earthy matter	7
	101

In commerce, two distinct kinds of elaterium are commonly met with. The one in irregular, dry, pulverulent fragments, of a dusky green hue; the other in thin hard plates, of a slate-pencil colour, with a slight shade of green. The latter is by far the more potent.

EXTRACTUM GENTIANÆ.

Extract of Gentian.

Extractum Gentianæ, P. L. 1745 to P. L. 1824.

Characters.—Colour, light transparent brown; scarcely any odour; taste, bitter and aromatic, like the root. This ought to be the character; but, as commonly met with, it is black, like liquorice.

EXTRACTUM GLYCYRRHIZÆ.

Extract of Liquorice.

Extractum Glycyrrhizæ, P. L. 1745 to P. L. 1824.

Characters.—Odour, agreeable; colour, jet black; taste, intensely sweet.

EXTRACTUM HÆMATOXYLI.

Extract of Logwood.

Extractum Ligni Campechensis, P. L. 1745, P. L. 1788.

Extractum Hæmatoxyli, P. L. 1788, *ed. altera*, P. L. 1809,
P. L. 1824.

Characters.—Colour, almost black; odour, slightly of liquorice; taste, intensely sweet.

EXTRACTUM LUPULI.

Extract of Hops.

Extractum Humuli, P. L. 1809, P. L. 1824.

Characters.—Colour, dusky light brown; odour, something like that of brown sugar; taste, like that of the bitter of hops unimpaired.

EXTRACTUM PAREIRÆ.

Extract of Pareira.

Characters.—Colour, chocolate brown; odour, of brown sugar; taste, at first sweet, afterwards of a warm bitter.

EXTRACTUM SARSÆ.

Extract of Sarsaparilla.

Extractum Sarsaparillæ, P. L. 1809, P. L. 1824.

Characters.—Colour, intense red, approaching to black; odour and taste, peculiar to sarsaparilla.

Commentary.—Sarsaparilla contains a peculiar proximate principle, which, on the authority of Berzelius and Gmelin, may be described as white, pulverulent, heavier than distilled water; taste, bitter and astringent; and of a peculiar odour. Slightly soluble in warm water and cold alcohol, and entirely so in boiling alcohol. It reddens turmeric, and forms neutral salts with acids.

EXTRACTUM TARAXACI.

Extract of Dandelion.

Extractum Taraxaci, P. L. 1809, P. L. 1824.

Characters.—"This extract (as commonly met with) has a sweet taste, and is readily soluble in water; but Mr. Squire of Oxford-street, who has paid much attention to this and other extracts, informs me that when cautiously prepared it is bitter, and that when sweet the efficacy of the remedy is impaired. When carefully prepared, Extract of Dandelion is of a brown colour, has a sensibly bitter taste, and a peculiar aroma, but it is not sweet." I have taken this extract from Brande's "Manual" at Mr. Squire's suggestion; but he will allow me to add that, with every deference to his judgment, as to one who has paid much attention to extracts (and more satisfactory extracts I have never seen), it requires much observation and practical experience to say how far the remedial effects of an alterative medicine may have been impaired.

EXTRACTUM UVÆ URSI.

Extract of Whortleberry [leaves].

Characters.—Colour, dark olive; odour, faint; and taste, intensely astringent.

EXTRACTUM JALAPÆ.

Extract of Jalap.

Extractum Jalapii, P. L. 1745, P. L. 1788.*Extractum Jalapæ*, P. L. 1809, P. L. 1824.

Characters.—Colour, deep brown; slightly odorous; taste, powerful of the root.

Commentary.—Jalap, according to analysis, consists of—

Resin	10
Starch and Albumen	5
Gummy Extract	44
Lignin	28
Salts, Water, and Loss....	13
	100

The average produce of the above extract, from a fair sample of the root, is 66 per cent. It was supposed to contain an active principle called Jalapine, one of the many chemical dreams not yet verified.

EXTRACTUM OPII PURIFICATUM.

Purified Extract of Opium.

Opium Colatum, vel Extractum Thebaicum, P. L. 1720, P. L. 1745.

Opium Purificatum, P. L. 1788.

Extractum Opii, P. L. 1809, P. L. 1824.

Characters.—Odour, slight, until warmed; colour, dark brown; taste, bitter.

Commentary.—In the Paris Pharmacopœia a vinous extract is introduced. For those who take liquid laudanum habitually, old opium dissolved in good sherry is the least objectionable form, and by increasing the quantity of the wine, the opium may proportionably be diminished without distressing the most confirmed opium eater, if done very gradually.

EXTRACTUM PAPAVERIS.

Extract of Poppy.

Extractum Papaveris, P. L. 1809, P. L. 1824.

Characters.—Odour, virose, like the poppy, quite different from that of opium; colour, glistening black; taste, slightly bitter, mixed with that of the common extract of liquorice.

EXTRACTUM RHEI.

Extract of Rhubarb.

Extractum Rhei, P. L. 1809, P. L. 1824.

Characters.—Colour, intense yellow, approaching black; odour, very strong of the root; and taste, strongly astringent and aromatic.

EXTRACTUM STRAMONII.

Extract of Stramonium [or Thorn-Apple Seed].

Extractum Stramonii, P. L. 1824.

Characters.—More or less of a grass-green colour; odour, herbaceous; taste, powerfully penetrating, subsaline, aromatic.

General Commentary.—I have with some care compared the quality of extracts as they occur in this metropolis. It would give me much pain to make a single observation hurtful to the feelings, or injurious to the interests, of any individual engaged in the drug trade; but I am bound by a deep sense of duty to say that this class of medicines are the most varying, imperfect, and therefore, to effect a definite remedial indication, the most inadequate, of all contained in the Pharmacopœia. Some, like aconite, are impaired in so short a time, as to scarcely compensate for the trouble of preparing them; but the majority are defective from bad management in the process. Mr. Squire justly observes, that, as a general rule, they should be made by expressing the juice from the recently gathered vegetable as rapidly as possible, by exposing it in thin strata to a current of very dry air. Practical experiments have fully demonstrated the advantage this process possesses over all others at present in use, for it was shewn that 10 grains of common extract thus prepared were more than equal to 20 grains of that prepared *in vacuo*, and more than equal to 60 grains of that prepared by the process of boiling down the juice to an extract. The principal error committed by dispensing chemists, and in a great degree by practitioners, is the purchasing the extracts in too large a quantity. Hence the consumption at the end of a year or two, leaves a surplus, which, at the dictates of economy, is made to answer for years ensuing, and it often becomes a sort of heirloom, from father to son, or from predecessor to successor, to the disappointment of the prescriber, and to the manifest injury of the patient.

I N F U S A.

Infusions.

I N F U S U M A N T H E M I D I S.

Infusion of Chamomile.

Infusum Anthemidis, P. L. 1809, P. L. 1824.

I N F U S U M A R M O R A C I Æ C O M P O S I T U M.

Compound Infusion of Horseradish.

Infusum Armoracæ compositum, P. L. 1809, P. L. 1824.

INFUSUM AURANTII COMPOSITUM.

Compound Infusion of Orange Peel.

Infusum Aurantii compositum, P. L. 1809, P. L. 1824.

INFUSUM CALUMBÆ.

Infusion of Calumba.

Infusum Calumbæ, P. L. 1809, P. L. 1824.

INFUSUM CARYOPHYLLI.

Infusion of Cloves.

Infusum Caryophyllorum, P. L. 1809, P. L. 1824.

INFUSUM CASCARILLÆ.

Infusion of Cascarilla.

Infusum Cascarillæ, P. L. 1809, P. L. 1824.

INFUSUM CATECHU COMPOSITUM.

Compound Infusion of Catechu.

Infusum Catechu, P. L. 1809.*Infusum Catechu compositum*, P. L. 1824.

INFUSUM CINCHONÆ [LANCIFOLIÆ].

Infusion of Cinchona.

Infusum Cinchonæ, P. L. 1809, P. L. 1824.

INFUSUM CUSPARIÆ.

Infusion of Cusparia.

Infusum Cuspariæ, P. L. 1809, P. L. 1824.

INFUSUM DIGITALIS.

Infusion of Foxglove.

Infusum Digitalis, P. L. 1809, P. L. 1824.

INFUSUM DIOSMÆ.

Infusion of Buchu.

INFUSUM GENTIANÆ COMPOSITUM.

Compound Infusion of Gentian.

Infusum Amarum simplex, P. L. 1720, P. L. 1745.*Infusum Gentianæ compositum*, P. L. 1809, P. L. 1824.

INFUSUM KRAMERIÆ.

Infusion of Rhatany.

INFUSUM LINI COMPOSITUM.

Compound Infusion of Linseed.

Infusum Lini, P. L. 1809.*Infusum Lini compositum*, P. L. 1824.

INFUSUM LUPULI.

Infusion of Hops.

INFUSUM PAREIRÆ.

Infusion of Pareira.

INFUSUM QUASSIÆ.

Infusion of Quassia.

Infusum Quassiae, P. L. 1809. P. L. 1824.

INFUSUM RHEI.

Infusion of Rhubarb.

Infusum Rhei, P. L. 1809, P. L. 1824.

INFUSUM ROSÆ COMPOSITUM.

Compound Infusion of Roses.

INFUSUM SCOPARII.

Infusion of Broom.

INFUSUM SENNÆ COMPOSITUM.

Compound Infusion of Senna.

Infusum Sennæ, P. L. 1720.

Infusum Sennæ commune, P. L. 1745.

Infusum Sennæ simplex, P. L. 1788.

Infusum Sennæ, P. L. 1809.

Infusum Sennæ compositum, P. L. 1824.

INFUSUM SERPENTARIÆ.

Infusion of Serpentary.

INFUSUM SIMARUBÆ.

Infusion of Simaruba.

Infusum Simaroubæ, P. L. 1809, P. L. 1824.

INFUSUM VALERIANÆ.

Infusion of Valerian.

General Commentary.—The disadvantages and objections made to these preparations are chiefly based on the laziness or false economy of dispensers. Infusions cannot be procured at a minute's notice; they will not keep, or ought not to be kept, beyond the day. Every dispenser ought to have his set of infusion pots; and it ought to be a rule that they be emptied and cleaned out every morning. Some might not require it, some would; therefore, as a general rule, it will be found most advantageous to insist upon their being emptied every morning as regularly as the helper takes down the shutters. Let the dispenser have no sundry misgivings of the loss of the treasure thus daily ejected; for the few pence loss he will be amply repaid by the character of his infusions. With regard to the delay in compounding a prescription, there are few cases in which four hours would make much difference. In cases of hæmorrhage, when infusion of roses has been prescribed, the delay of six hours may be inconvenient. In such a case, instead of using the

concentrated infusion, which, of all I have seen, is the worst preparation, I would recommend the compounder to use a double quantity of the leaves, or even quadruple, so as to supply the remedy within half an hour. I wish it were in my power to recommend the concentrated infusions; for a well-known proprietor who extensively prepares them has been kind enough to write me a sketch of his plans and views, and doubtless some of them, when they leave his laboratory, are very eligible: but the system is bad; it leads to deterioration—it is an apology for deterioration—it is a premium for idleness. That they have been for some years before the public, and have been extensively used by medical practitioners, is, in my opinion, so much the worse for the public, and so much the worse for patients. It has been suggested to me by the same respectable pharmacist, that as the active principle of senna, when dissolved in water, combines rapidly with the oxygen of the atmosphere, forming an insoluble compound, which is entirely devoid of efficiency, and as this injurious change is accelerated by heat, a concentrated preparation obtained by the process of evaporation at a very low temperature, so managed as entirely to exclude the atmospheric air, must be a valuable substitute.

LINIMENTA.

Liniments.

LINIMENTUM ÆRUGINIS.

Liniment of Verdigris

Unguentum Ægyptiacum, P. L. 1720.

Mel Ægyptiacum, P. L. 1745.

Oxymel Æruginis, P. L. 1788.

Linimentum Æruginis, P. L. 1809, P. L. 1824.

Composition.—Verdigris is a diacetate, or, as formerly called, an impure subacetate of copper, a dibasic salt, consisting of—

2	equivalents of Oxide of Copper	.....	40 × 2	=	80
1	—————	Acetic Acid	.....	=	51
6	—————	Water	.....	9 × 6	= 54
					185

It is prepared by exposing thin plates of copper to the action of acetic acid, or its fumes, either by interposing woollen cloths moistened with this acid, or the husks and stalks of grapes or raisins, in a state of acetous fermentation. The corroded surface is from time to time scraped, and the operation repeated until the plate is destroyed.

LINIMENTUM AMMONIÆ.

Liniment of Ammonia.

Linimentum Ammoniæ Fortius, P. L. 1788, P. L. 1809, P. L. 1824.

LINIMENTUM AMMONIÆ SESQUICARBONATIS.

Liniment of Sesquicarbonate of Ammonia.

Linimentum Volatile, P. L. 1745.

Linimentum Ammoniæ, P. L. 1788.

Linimentum Ammoniæ Carbonatis, P. L. 1809.

Linimentum Ammoniæ Subcarbonatis, P. L. 1824.

LINIMENTUM CAMPHORÆ.

Liniment of Camphor.

Linimentum Camphoræ, P. L. 1809, P. L. 1824.

LINIMENTUM CAMPHORÆ COMPOSITUM.

Compound Liniment of Camphor.

Linimentum Camphoræ compositum, P. L. 1788, P. L. 1809,
P. L. 1824.

LINIMENTUM HYDRARGYRI COMPOSITUM.

Compound Liniment of Mercury.

Linimentum Hydrargyri, P. L. 1809.

Linimentum Hydrargyri compositum, P. L. 1824.

LINIMENTUM OPII.

Liniment of Opium.

LINIMENTUM SAPONIS.

Liniment of Soap.

Linimentum Saponaceum, P. L. 1745.*Linimentum Saponis compositum*, P. L. 1788, P. L. 1809,
P. L. 1824.

LINIMENTUM TEREBINTHINÆ.

Liniment of Turpentine.

MELLITA.

Preparations of Honey.

MEL BORACIS.

Honey of Borax.

Mel Boracis, P. L. 1809, P. L. 1824.

MEL ROSÆ.

Honey of Rose.

Mel Rosarum, P. L. 1720.

Mel Rosaceum, P. L. 1745.

Mel Rosæ, P. L. 1788, P. L. 1809, P. L. 1824.

OXYMEL.

Oxymel.

Oxymel Simplex, P. L. 1720, P. L. 1745.

Mel Acetatum, P. L. 1788.

Oxymel, P. L. 1809.

Oxymel Simplex, P. L. 1824.

OXYMEL SCILLÆ.

Oxymel of Squill.

Oxymel Scilliticum, P. L. 1720, P. L. 1745.

Oxymel Scillæ, P. L. 1788, P. L. 1809, P. L. 1824.

METALLICA.

Metallic Preparations.

PRÆPARATA EX ALUMINIO.

Preparations of Aluminium.

ALUMINIUM, the metallic base of alumina, is in the form of a grey powder, or in small scales or spangles. It requires for its fusion a temperature higher than the fusing point of iron. Heated to redness in the open air, it burns with a vivid light, and yields alumina. It is not oxidized at common temperatures, nor tarnished by water. Sulphuric and nitric acids, even when concentrated, do not affect it at common temperatures; but, by the aid of heat, the former rapidly dissolves it, and sulphurous acid gas is disengaged.

ALUMEN EXSICCATUM.

Dried Alum.

Alumen Ustum, P. L. 1788.

Alumen Exsiccatum, P. L. 1809, P. L. 1824.

Composition of Alum before exsiccation—

3	equivalents of Sulphate of Alumina...	58	×	3	=	174
1	————— Sulphate of Potassa ..				=	88
25	————— Water.....	9	×	25	=	225
				Equivalent		487

Alumina consists of—

1	equivalent of Aluminium...	=	10
1	————— Oxygen.....	=	8
	Equivalent		18

Properties.—Alum has an astringent, sour taste, tempered by a certain degree of sweetness; it reddens vegetable blues; is soluble in about five times its weight of cold water, and in rather more than its own weight of boiling water, according to Brande; or, according to the college authority, in eighteen times its weight of water at 60°, and in three-fourths of its weight at 212°. At a red heat it loses part of its acid.

Process.—The crystals, when heated, become fused in their own water of crystallization, which is gradually expelled; and if the heat be too much raised, a part of the acid is also dissipated. Alum is usually prepared by roasting and lixiviating alum slate, or certain clays containing pyrites, and adding to the leys a certain quantity of sulphate of potassa, which at the works near Glasgow is obtained by burning common sea-weed, collected upon the coast.

PRÆPARATA EX ANTIMONIO.

Preparations of Antimony.

ANTIMONY, a word derived from anti-moine, signifying antimonk, from the circumstance of some monks having been poisoned by the injudicious use of a preparation of it, is commonly found in the state of sulphuret, although sometimes native. This ore is the *stibium* of the ancients, who regarded it as the metal itself, while the real metal was called by them *regulus* of antimony. It is a brittle metal, of a white colour, verging to a bluish gray, and possessed of considerable lustre. Its sp. gr. is 6.7. It fuses at 810° , and yields crystals on cooling. Unlike that of most other metals, arsenic excepted, its primary form is a rhomboedron. Heated to a full red heat, in a covered crucible, and then suddenly exposed to the air, it inflames, and burns with a white light. The vapour arising from this combustion, if condensed on a cool surface, forms the sesquioxide-crystals, formerly called *argentine flowers of antimony*. Antimony unites with oxygen in three proportions.

$1\frac{1}{2}$ eq. of Antimony	+ 1	eq. of Oxygen	= Sesquioxide of Antimony.
1	—	+ 2	= Antimonious Acid or Deutoxide.
1	—	+ $2\frac{1}{2}$	= Antimonic Acid or Peroxide.

ANTIMONII OXYSULPHURETUM.

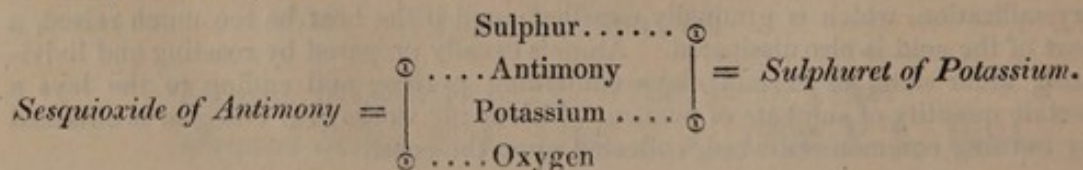
Oxysulphuret of Antimony.

Sulphur Antimonii præcipitatum, P. L. 1745, P. L. 1788.

Antimonii Sulphuretum præcipitatum, P. L. 1809, P. L. 1824.

Composition.—This is conjectural, but it is commonly considered to be a combination of sesquioxide of antimony, and sesquisulphuret of antimony with water.

Decomposition.—Sesquisulphuret of antimony, consisting of sulphur and antimony, is boiled in a solution of potassa, which consists of potassium and oxygen. A portion of each exchange elements,—sulphur with potassium, to form sulphuret of potassium, and antimony with oxygen to form sesquioxide of antimony, which remain in solution, mixed with the remaining undecomposed sesquisulphuret of antimony and the potassa.



On adding the dilute sulphuric acid, it saturates the potassa to form sulphate of potassa in solution; and by diminishing the solvent power of the liquor, the oxide of antimony with sulphuret of antimony is precipitated, constituting the oxysulphuret of antimony. The sulphuret of potassium is also disturbed, the potassium is converted into potassa, at the expense of oxygen from the water, while the hydrogen combines with the sulphur to form hydrosulphuric acid (sulphuretted hydrogen) gas, which is expelled.

Properties.—Colour, bright orange; taste, slightly styptic; odour, none. Insoluble in water. Not readily acted upon by the acids. Mr. Phillips found that in boiling it with bitartrate of potassa, the oxysulphuret lost 12 per cent by weight, which is the amount of sesquioxide it contains. Berzelius contends that this oxide is not in a state of chemical union with the sulphuret, but tenaciously adhering to it; and he rightly argues, says Turner, "that the question is not whether oxide of antimony is sometimes or generally present in a kermes, but whether the latter can exist without oxide of antimony." This question he has answered affirmatively and conclusively.

ANTIMONII POTASSIO-TARTRAS.

Potassio-tartrate of Antimony.

Tartarus Emeticus, P. L. 1720.

Tartarum Emeticum, P. L. 1745.*

Antimonium Tartarizatum, P. L. 1788, P. L. 1824.

Composition.—

1 equivalent of Tartrate of Potassa	..	66 + 48 =	114
1 ——— Ditartrate of Sesqui-			
		oxide of Antimony	66 + 154 = 220
3 ——— Water	.....	9 × 3 =	27
			361

The emetic tartar of the last Pharmacopœia was stated by Mr. Brande to consist of—

1 equivalent of Tris-prototartrate of Antimony.
 1 ——— Tartrate of Potassa,
 with water of crystallization.

Decomposition.—The chemical exchanges in this process are much more complicated than in those of the formula for emetic tartar, in the last Pharmacopœia. According to the older method, glass of antimony, consisting of 85 parts of protoxide, now called sesquioxide of antimony, and 15 of sulphuret of antimony, were boiled with a solution of bitartrate of potassa; and according to the chemical authorities of that time, one equivalent of tartaric acid was attracted by three of the protoxide, to form a tris-prototartrate of the metal, which uniting with the tartrate of potassa, was said to form a double salt, while the sulphuret was detached. This will serve as an introduction to explain the present process. The first object is to oxydize the metal. On mixing and igniting the sesquisulphuret of antimony with the nitre, three equivalents of oxygen from the decomposed nitrate of potassa, unite with two of antimony, to form two equivalents

* This edition was published in 1746, which date it bears, but the date of the *imprimatur* is 1745.

of sesquioxide of antimony, or $1\frac{1}{2}$ equivalent with 1 equivalent. So also the sulphur of the sesquisulphuret attracts oxygen from the decomposed nitric acid, to form sulphuric acid, which in its turn attaches itself to the potassa-base to form a sulphate of potassa, and various gases are evolved. The only use of the hydrochloric acid is to detach any free potassa, and to prevent the formation of sulphuret of potassium. The residue is freed from the sulphate of potassa and chloride of potassium by washing with boiling water, until it is free from taste.

Product.—Sesquioxide of antimony with some sulphuret of antimony.

This is boiled with the bitartrate of potassa, containing, as above said, two equivalents of tartaric acid, and one equivalent of potassa. One equivalent of the acid unites with two equivalents of the sesquioxide, to form a ditartrate of antimony; which combining with the tartrate of potassa, forms a salt which has been considered by some a double, by others a triple compound, and is now called potassio-tartrate of Antimony.

Properties.—Crystals, octoëdral; white; slightly efflorescent; having a styptic taste, in which that of the cream of tartar is not altogether lost. Soluble in 14 parts of cold, and 2 of boiling water. Solution decomposed by keeping, and by the addition of undistilled water.

Commentary.—The common practice of dissolving this active compound in impure water, is highly injudicious. Two ounces of hard water will decompose a considerable dose of emetic tartar, and thus it has happened that nearly a whole bottle full of such solution has been consumed without inducing vomiting. This in some cases, as in cynanche trachealis, might be a very serious disadvantage, especially in a country practice at some distance from a further supply: for in croup, as in some other diseases, the mucous secretion clothing and adhering to the inner surface of the stomach, renders it no easy matter to induce vomiting by any moderate doses.

VINUM ANTIMONII POTASSIO-TARTRATIS.

Wine of Potassio-tartrate of Antimony.

Vinum Antimonii Tartarizati, P. L. 1788.

Liquor Antimonii Tartarizati, P. L. 1809, P. L. 1824.

PULVIS ANTIMONII COMPOSITUS.

Compound Powder of Antimony.

Pulvis Antimonialis, P. L. 1788, P. L. 1809, P. L. 1824.

Composition.—1 equivalent of Oxide of Antimony or
Antimonious Acid, consisting of 16 oxy. + 66 ant. = 82
mixed with Phosphate of Lime.

Twenty years ago I stated my belief of this being nothing more than a mechanical mixture of the oxide with phosphate of lime, in page 56 of my Pharmacopœia.

Decomposition.—Sesquisulphuret of antimony, consisting of sulphur and antimony, is heated with hartshorn shavings, consisting of phosphate of lime and animal matter. The sulphur and gelatine are dissipated, and the antimony attracting oxygen from the air, remains in the crucible in the state of antimonious acid, mixed with the unchanged phosphate of lime.

Commentary.—James's powder, which has long had a considerable share of the public confidence, consists of—

Antimonious Acid	56
Phosphate of Lime	44
	100

Thus the high state of oxidizement of both these preparations, the antimonial powder and the James's, render them comparatively inactive. It is not however correct, that all the antimonial powder is similarly constituted: Mr. Brande tells us that he found specimens containing various proportions of the sesquioxide and the antimonious acid. Probably the best mode of preparing a substitute, would be by intimately mixing either sesquioxide of antimony or emetic tartar in certain proportions with the cornu ustum; and, if not with this design, it would be difficult to say why the last mentioned preparation maintains its place in the present Pharmacopœia. If, after the exposure of the chemical constitution of these antimonials, practitioners persist in using either the pulvis antimonialis, or the pulvis Jacobi, they ought certainly to be satisfied that these preparations contain the sesquioxide. One drachm of sesquioxide of antimony, or half a drachm of emetic tartar, rubbed with one ounce of finely powdered burnt horn, and intimately mixed, would form a better preparation than either of the above; and such a mixture would be more satisfactory, because no longer uncertain both in constitution and effect. The sesquioxide of antimony was directed (P.L. 1809) to be precipitated from a solution of emetic tartar by the addition of subcarbonate of ammonia. It may also be obtained by adding a sesquichloride of antimony, prepared by boiling the native sulphuret in hydrochloric acid, to distilled water. Sesquioxide of antimony and some undecomposed chloride are precipitated; which latter compound may be decomposed by the addition of carbonate of potassa, and the process of elutriation. The pure sesquioxide is the residue. It may still more simply be procured by precipitation, by means of a soda or potassa-carbonate.

Properties of the Sesquioxide of Antimony.—A dusky white powder, sp. gr. 5.666. By heat it assumes a yellow appearance. It fuses at a red heat in close vessels into a yellow fluid, which as it cools becomes a grey crystalline mass. Sublimed in contact with the atmosphere, it absorbs oxygen, and forms antimonious acid, but if the air be excluded, it sublimes unchanged.

PRÆPARATA EX ARGENTO.

Preparations of Silver.

SILVER is one of the seven metals well known to the ancients. It not unfrequently occurs native, both massive and in crystals; it is also found alloyed with gold, tellurium, antimony, copper, arsenic, and sulphur. The lead ore of our own British mines (galena) is rarely free from traces of silver; and in former times silver has been obtained from this source, and from alloys with copper ore. It is the most perfectly clear white of all the metals. Pure sulphuric or nitric acid acts upon and dissolves it, forming a sulphate or a nitrate of silver; but the former acid requires the aid of heat. It combines with oxygen in one definite proportion only, namely, 1 equivalent of silver, $108 + 1$ equivalent of oxygen, $8 = 116$. Silver is precipitated in the metallic state by most other metals. When mercury is employed for this purpose, the silver assumes an arborescent appearance, called *Arbor Dianæ*.

ARGENTI CYANIDUM.

Cyanide of Silver.

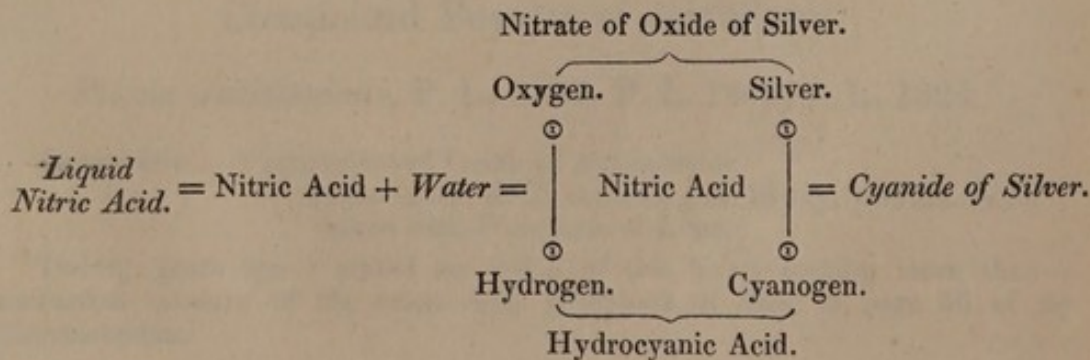
(Otherwise called Cyanuret of Silver.)

Composition.—	1 equivalent of Silver	=	108	or	80.6
	1 ——— Cyanogen . . .	=	26		19.4
			134		100

Cyanogen is itself composed of—

2 equivalents of Carbon, $12 + 1$ equivalent of Azote, $14 =$ equivalent 26.

Decomposition.—On adding hydrocyanic acid to a solution of nitrate of silver, the cyanogen unites with the silver to form the cyanide as above; while the oxygen from the silver unites with the hydrogen to form water.



PRÆPARATUM EX ARSENICO.

Preparation of Arsenic.

Properties of Arsenic.—Metallic arsenic is of a steel grey colour ; very brittle ; crystalline in its texture, and possessing, when fresh broken, considerable lustre. Its sp. gr. is 5·8. It readily volatilizes, and sublimes in close vessels at 360°. Its equivalent is 38, according to Thomson ; 37·7 according to Turner. It unites with oxygen in two definite proportions, forming the super-oxidized oxides of the old school, now more properly called arsenious, and arsenic acids, from their property of combining with other metallic oxide bases.

LIQUOR POTASSÆ ARSENITIS.

Solution of Arsenite of Potassa.

Liquor Arsenicalis, P. L. 1809, P. L. 1824.

(Fowler's Solution.)

Composition.—It contains 1 grain of arsenious acid in 2 fluidrachms of the solution, united with 1 equivalent of potassa.

Decomposition.—The arsenious acid unites with the potassa to form an arsenite of potassa, while the carbonic acid is expelled. Simple elective affinity. A withdraws B from its combination with C, because a greater affinity exists under ordinary circumstances between A and B than between B and C.

Arsenious Acid is composed of—

$$\begin{array}{rcl} 1 \text{ equivalent of Arsenic} & = & 38 \text{ or } 74\cdot24 \\ 1\frac{1}{2} \text{ ————— Oxygen} & = & \frac{12}{50} \quad \frac{25\cdot76}{100} \end{array}$$

Arsenic Acid is composed of—

$$\begin{array}{rcl} 1 \text{ equivalent of Arsenic} & = & 38 \\ 2\frac{1}{2} \text{ ————— Oxygen} & = & \frac{20}{58} \end{array}$$

Properties of Arsenious Acid, or White Arsenic, or Oxide of Arsenic.—The white arsenic of commerce is chiefly an article of import ; and, as commonly met with, it consists of white, semi-transparent, brittle masses, partly opaque, and partly vitreous when fractured. Its sp. gr. is 3·72, varying with the greater or less proportion of the transparent part, which is the heaviest : it becomes more opaque by keeping. It is well known to be virulently poisonous ; producing

inflammation of the stomach and bowels, and more frequently destroying by the exhaustion it occasions before gangrene. It has no smell when perfectly free from metallic arsenic. It is erroneously described by chemists as completely tasteless; but although scarcely tasted in small quantities, and rapidly removed from the tongue, patients who have recovered after taking considerable portions of it, continue to taste it intensely until it is entirely ejected, and for days afterwards. It is volatile at 380° , and does not, as has been said, give out garlick fumes, unless a minute portion of metallic arsenic be present, or unless a portion of the white arsenic be reduced by coming in contact with carbonaceous matter. According to Klaproth, 1000 parts of boiling water dissolve 77.75 of arsenious acid, and the solution deposits 47.75 after having cooled down to 60° ; but the same quantity of water at 60° when mixed with the acid in powder, only dissolves two parts and a half.

PRÆPARATA È BARIO.

Preparations of Barium.

Properties of Metallic Barium.—Davy discovered this metal in 1808. It is of a dark grey colour, and has a sp. gr. of about 2. It rapidly absorbs oxygen; and under a gentle heat it burns with a red light, forming baryta. It decomposes water with the evolution of hydrogen, and baryta is left in solution. Its equivalent is 69.

Baryta, or Oxide of Barium, is also of a slightly grey colour, very difficult of fusion; inodorous; taste, strongly alkaline; greens vegetable blues; soluble in water, insoluble in alcohol.

It consists of—

			Davy.
1 equivalent of Barium	 =	68 or 69	89.7
1 ——— Oxygen	 =	8 8	10.3
	Equivalent....	76 or 77	100

It has a name assigned to it, expressive of its having been considered as the heaviest of the earths.

Carbonate of Baryta.—It more usually occurs in irregular masses. Its primitive crystal is an obtuse rhomboid; but sometimes it forms pyramidal six-sided prisms. It is very sparingly soluble either in hot or cold water, but nevertheless highly poisonous. It is colourless, and has no action on vegetable colours. It is very sparingly soluble in a solution of carbonic acid. It is commonly used as the source of pure baryta and its salts: hence it is selected for the preparation of chloride of barium.

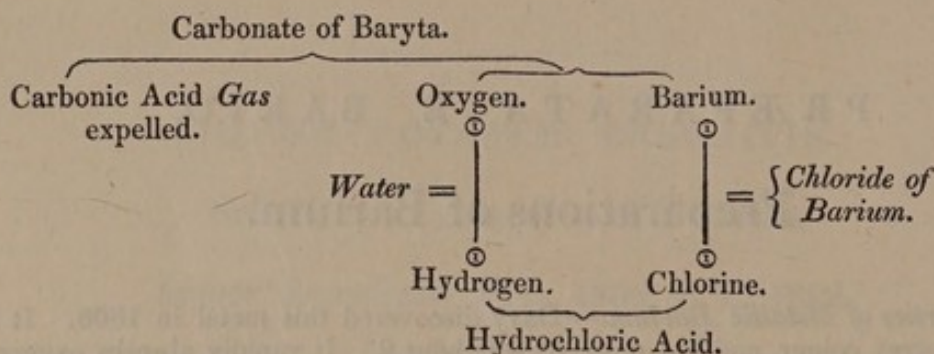
BARIUM CHLORIDUM.

Chloride of Barium.

Composition of Chloride of Barium.—It consists of—

1 equivalent of Chlorine.....	= 36
1 ——— Barium	= 68
	104

Decomposition.—When the diluted hydrochloric acid is mixed with the carbonate of baryta, and heat is employed, the carbonic acid is expelled. Water is formed by the union of the oxygen of the baryta with the hydrogen of the hydrochloric acid; while the chlorine uniting with the barium forms a chloride of barium in solution, which is afterwards crystallized.



Products.—Carbonic Acid Gas.

Water.

Chloride of Barium.

Properties.—The crystals of chloride of barium consist of 104.12 parts of chloride of barium and 18 parts of water. They are not affected by exposure to the atmosphere in its ordinary condition; but in a very dry atmosphere at 60° they lose their water, which they afterwards recover by exposure to a moist air: 100 parts of water at 60° dissolve 43½ parts of these crystals, and 78 parts at 222°, which is the boiling point of this solution. They are insoluble in alcohol.

LIQUOR BARIUM CHLORIDI.

Solution of Chloride of Barium.

Commentary.—This solution is extensively employed as a test of the presence of sulphuric acid, or its compounds.

PRÆPARATUM È BISMUTHO.

Preparation of Bismuth.

BISMUTH was first described by Agricola in 1529. It occurs both native and combined with sulphur, oxygen, arsenic, and other substances. It is most commonly obtained from the impure native bismuth. Its colour is reddish-white, and it possesses considerable brilliancy. Its sp. gr. is 10. It may be hammered into plates when warm, although brittle when cold. It melts at 476° . Its equivalent number is 72; and it unites in two proportions with oxygen, $72 + 8$ oxygen, the protoxide; and $72 + 12$ the peroxide. The last does not form salts with acids. Although Agricola first described this metal under the name of *plumbum cinereum*, traces of it occur (according to Dr. Parr) in Basil Valentine, who was born about the year 1400.

BISMUTHI TRISNITRAS.

Trisnitrate of Bismuth.

Bismuthi Subnitrates, P. L. 1824.*Composition.*—

4 equivalents of Oxide of Bismuth ..	$80 \times 4 =$	320
1 ——— Nitric Acid	$=$	54
2 ——— of Water	$9 \times 2 =$	18

Equivalent . . . 392 according to Brande.

Or, according to the College authority, it consists of—

3 equivalents of Oxide of Bismuth ..	$80 \times 3 =$	240	or 18.36
1 ——— Nitric Acid	$=$	54	81.64
		294	100

Decomposition.—As in the preparing of nitrate of silver, so in this preparation, the metal decomposes part of the nitric acid. 3 equivalents of oxygen unite respectively with 3 of the bismuth to form 3 equivalents of oxide of bismuth; and nitric oxide gas being evolved is converted into the orange-coloured sour nitrous acid gas, by attracting oxygen from the air. The oxide of silver unites with the remaining nitric acid to form a nitrate of silver in solution. On adding the water it attracts the greater part of the nitric acid, and precipitates the tris-nitrate composed as above.

Properties.—Trisnitrate (often called subnitrate) of bismuth, otherwise called magistery of bismuth, *pearl white*, or *blanc de fard*, is a white, inodorous, and insipid powder; insoluble in water, and blackened by contact with hydrosulphurous acid. From its whiteness it is sometimes (but inconveniently) employed for improving the complexion.

PRÆPARATA È CALCIO.

Preparations of Calcium.

Properties of Calcium.—Calcium, the metallic base of lime, was also discovered by Davy. It is whiter than barium or strontium, and is converted into lime by being oxidized. Nothing more is at present known concerning its properties.

CALX.

Lime.

Calx Viva, P. L. 1720.

Calx, P. L. 1809, P. L. 1824.

Composition of Lime.—Chalk is one variety of carbonate of lime consisting of—

1 equivalent of Lime	= 28
1 ——— Carbonic Acid	= 22
	<u>50</u>

Calx or lime is an oxide of calcium consisting of—

1 equivalent of Oxygen	= 8
1 ——— Calcium	= 20

28 or with Turner and Gmelin 20·5.

Decomposition.—The carbonic acid and moisture are expelled by heat.

Properties.—Lime is whitish, with a slightly grey tint; moderately hard, but pulverizable. It has an acrid caustic taste; corrodes animal substance; greens vegetable blues; and, although itself very difficult of fusion, it is a powerful flux in the process of smelting metals. Exposed to air it becomes slaked by absorbing water, and is slowly converted into a carbonate.

Commentary.—Free exposure to the atmosphere is indispensable to the expulsion of the carbonic acid. Bucholz found that upon strongly heating chalk closely pressed in a crucible, the access of air and watery vapour being excluded, scarcely any carbonic acid was driven off. So again, Sir J. Hall succeeded in fusing chalk without escape of carbonic acid, thereby imitating the supposed natural process of fusion in the formation of marble. Lime-burners ought to notice this fact.

LIQUOR CALCIS. (HYDRATIS?)

Liquor of Lime. (Hydrate of?)

Aqua Calcis, P. L. 1720.*Aqua Calcis simplex*, P. L. 1745.*Aqua Calcis*, P. L. 1788.*Liquor Calcis*, P. L. 1809.

Hydrate of lime, or slaked lime, consists of solidified water with lime. Its formation is attended with the evolution of much heat, and a bulky powder is left consisting of—

1 equivalent of Lime	= 28
1 ——— Water	= 9
Equivalent.....	37

Properties.—This solution should be perfectly transparent, free from colour and smell, and of a styptic alkaline taste. Like lime it has an alkaline reaction on colours, turning vegetable blues green, and yellows to brown. The old liniment for burns formerly, and still sometimes used in the coal-mine districts, is a saponaceous compound of linseed oil and lime-water. Exposed to the air, lime-water absorbs carbonic acid, and no longer strikes a black precipitate with calomel; and, indeed, some surgeons prefer the calomel wash with simple distilled water.

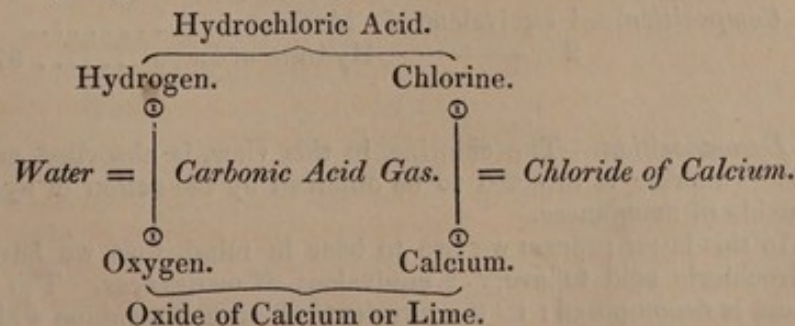
CALCII CHLORIDUM.

Chloride of Calcium.

Calcis Murias, P. L. 1824.

<i>Composition.</i> —1 equivalent of Calcium	= 20
1 ——— Chlorine	= 36
	56

Decomposition.—On adding chalk to diluted hydrochloric acid the carbonic acid is expelled, and the acid and the lime exchange elements; *i. e.* calcium with the chlorine, and the hydrogen with the oxygen.



The whole of the water is afterwards expelled.

Properties.—It is translucent, colourless, bitter and acrid; it has a strong attraction for water, and therefore deliquesces, forming what used to be termed oil of lime. At 60° one part of water dissolves four parts of the chloride. Its solubility is augmented by increase of temperature. It is copiously soluble in alcohol, with evolution of caloric.

Commentary.—It is abundantly produced in the manufacture of carbonate of ammonia, as prepared in the chemical factories in the neighbourhood of town, by the decomposition of muriate of ammonia by chalk or lime. Owing to its strong affinity for water, it is commonly used with snow to form a powerful freezing mixture.

LIQUOR CALCII CHLORIDI.

Solution of Chloride of Calcium.

Liquor Calcis Muriatis, P. L. 1809; editio emendata, P. L. 1824.

The proportions formerly used in the preparation of liquor calcis muriatis were two ounces of the salt to three of water. The proportions, it will be seen, are now four to twelve, to prevent crystallization in cold weather; an inconvenience which, in its former concentrated form, was not uncommon.

CALX CHLORINATA.

Chlorinated Lime.

(Commonly called Chloride of Lime.)

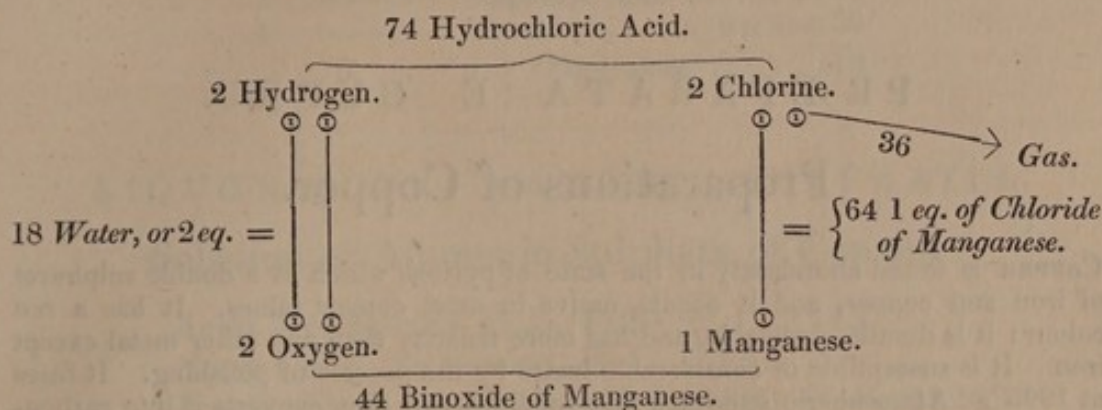
(Also called Oxymuriate of Lime and Bleaching Powder.)

<i>Composition.</i> —1 equivalent of Chlorine.....	= 36
2 ——— Hydrate of Lime 37×2	= 74
	110

Decomposition.—The chlorine, in this view, is absorbed, and unites with the lime. Chlorine is directed to be obtained by the action of hydrochloric acid on binoxide of manganese.

In this latter process we are to bear in mind, that we have 2 equivalents of hydrochloric acid to every 1 equivalent of manganese. The binoxide of manganese is decomposed; its 2 equivalents of oxygen combine with the 2 equivalents of hydrogen from the hydrochloric acid to form 2 equivalents of water, while one

of the equivalents of chlorine unites with the one equivalent of manganese to form chloride of manganese, and the other equivalent of chlorine is evolved in the gaseous state, and passed to the lime as above.



Properties.—Chlorinated lime, or chloride of lime, is a dry white powder, faintly smelling like chlorine, and having a strong taste. It is partly soluble in water, to which it imparts its bleaching properties. The solution is found to contain chlorine and lime, but the hydrate is not taken up by the water. When the chlorinated lime or its solution is exposed to the air, chlorine is set free, and carbonate of lime is generated.

Commentary.—It is used as a disinfectant, on the supposition that the hydrogen of the matter of infection is attracted by the chlorine, reasoning from its analogous effects upon putrid effluvia arising from dead animal matter; but the chemical constitution of human infecting effluvia, as of malaria, is as yet mere matter of conjecture.

CRETA PRÆPARATA.

Prepared Chalk.

Creta, P. L. 1720.

Composition.—A variety of Carbonate of Lime—

Carbonic Acid	43
Lime	56.5
Water.....	.5
	100

PRÆPARATA È CUPRO.

Preparations of Copper.

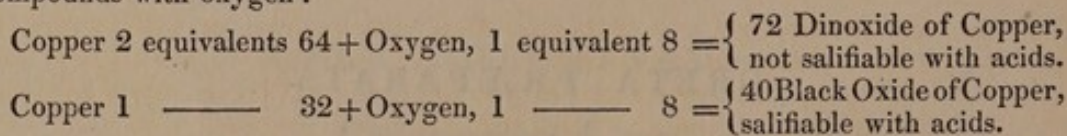
COPPER is found abundantly in the state of pyrites, which is a double sulphuret of iron and copper, and it occurs native in most copper mines. It has a red colour: it is ductile, malleable, and has more tenacity than any other metal except iron. It is susceptible of considerable lustre by the process of polishing. It fuses at 1996° . Atmospheric exposure first oxidizes, and then converts it into carbonate of the black oxide. The vegetable acids do not act upon it if air be excluded; hydrochloric and sulphuric, with difficulty; but nitric acid readily and violently dissolves, and forms it into a nitrate of the black oxide.

CUPRI AMMONIO-SULPHAS.

Ammonio-Sulphate of Copper.

Cuprum Ammoniatum, P. L. 1809, P. L. 1824.

Composition.—In order to arrive at a knowledge of the composition of the above preparation, it will be as well to premise that copper forms two definite compounds with oxygen:



The ammonio-sulphate of copper consists of a mixture of sulphate of ammonia and carbonate of copper.

Decomposition.—On triturating two equivalents of sulphate of copper with two equivalents of sesquicarbonate of ammonia, the alkali attracts the sulphuric acid, and forms a sulphate of ammonia, and the oxide of copper unites with one portion of the carbonic acid, while the other portion is expelled.

Properties.—Ammonio-sulphate of copper is of a fine azure blue colour, which deteriorates by exposure to the air; it partakes of the styptic taste of the other cupreous salts.

Commentary.—It will be seen that there is no formula for the preparing of sulphate of copper, the sulphate of commerce being considered sufficiently pure for all pharmaceutical purposes. It was formerly called blue vitriol; sulphate of zinc was in like manner called white vitriol; and sulphate of iron was named green vitriol. So, again, they were respectively called blue, white, and green copperas, and are still bought under those names for many purposes in the arts. Sulphate of copper is formed directly by dissolving the black oxide (peroxide) of copper in dilute sulphuric acid; but, on a large scale, it is prepared by roasting sulphuret of copper (*copper pyrites*), exposed to air and moisture, by which the metal is oxidized, and

the sulphur being converted into sulphuric acid, unites with the oxide to form the sulphate. It consists, in the crystalline state, of—

1	equivalent of Oxide of Copper.....	= 40
1	———— Sulphuric Acid	= 40
4	———— Water	$9 \times 4 = 36$
	Equivalent.....	<u>116</u>

LIQUOR CUPRI AMMONIO-SULPHATIS.

Solution of Ammonio-Sulphate of Copper.

Aqua Sappharina, P. L. 1720, P. L. 1745.

Aqua Cupri Ammoniati, P. L. 1788.

Liquor Cupri Ammoniati, P. L. 1809, P. L. 1824.

Commentary.—When exposed to the air, ammonia is given off, and the solution is gradually decomposed with precipitation of the oxide of copper. The presence of excess of the sesquicarbonate of ammonia, is said to prevent this change. The aqueous solution largely diluted deposits trisulphate of copper.

PRÆPARATA È FERRO.

Preparations of Iron.

IRON is most commonly found in combination with sulphur, or with oxygen, in a vast variety of mineral substances, and more sparingly in the animal and vegetable kingdoms. The red oxides of iron are included by mineralogists, under the head of red hæmatite, and the black oxide is called magnetic iron ore. Our own clay iron ore contains a carbonate of protoxide of iron, mixed with silicious, aluminous, and other foreign substances. Iron unites with oxygen in two definite and certain proportions, forming the protoxide and sesquioxide. The magnetic oxide is a compound of the two.

FERRI AMMONIO-CHLORIDUM.

Ammonio-Chloride of Iron.

Ens Veneris, P. L. 1720.

Flores Martiales, P. L. 1745.

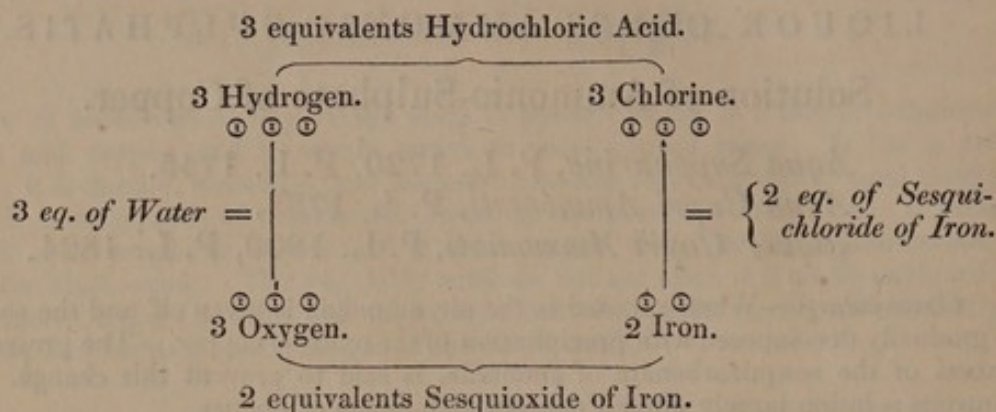
Ferrum Ammoniacale, P. L. 1788.

Ferrum Ammoniatum, P. L. 1809, P. L. 1824.

Composition.—It is a mixture of 15 parts of sesquichloride of iron, with 85 of hydrochlorate of ammonia.

Decomposition.—The student will find it more convenient, first to learn the theory of the formation of sulphate of iron, as an introduction to any or all of the other ferruginous compounds. I shall proceed, on the presumption that he already knows the nature of the oxides of iron, and their combining proportions (*Vide Ferri Sulphas*). In making the ammonio-chloride, the sesquioxide of iron is first digested with the hydrochloric acid, in a sand bath.

By a double exchange of constituents the resulting compounds will be sesquichloride of iron and water.



The resulting compound (sesquichloride of iron) is then mixed with the hydrochlorate of ammonia, forming a mixed body, which is not recognised as a definite compound.

Properties.—Colour, ruby or orange red; it becomes moist by exposure to the air; soluble in water, and partially in alcohol. Composition variable, according to the quantity of ingredients employed; not a definite salt, but, to all appearances, a mixture only of the sesquichloride of iron and hydrochlorate of ammonia. It is the ammonio-muriate of iron of many writers.

TINCTURA FERRI AMMONIO-CHLORIDI.

Tincture of Ammonio-Chloride of Iron.

Tinctura Martis, P. L. 1720.

Tinctura Florum Martialium, P. L. 1745.

Tinctura Ferri Ammoniacalis, P. L. 1788.

Tinctura Ferri Ammoniati, P. L. 1809, P. L. 1824.

Commentary.—This preparation contains 1600 grains of hydrochlorate of ammonia, to the 20 fluidounces, or 80 grains to the fluidounces. One fluidrachm, the medium dose assigned by the College, will contain nearly eight grains of the hydrochlorate and $1\frac{1}{2}$ grain of the sesquichloride. It is, in fact, a very different preparation from the *tinctura ferri sesquichloridi*, as any one who knows the powerful action of sal-ammoniac internally would at once infer.

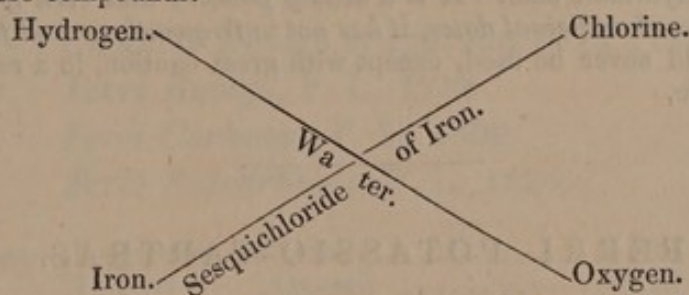
TINCTURA FERRI SESQUICHLORIDI.

Tincture of Sesquichloride of Iron.

Tinctura Martis cum Spiritu Salis, P. L. 1820.*Tinctura Martis in Spiritu Salis*, P. L. 1745.*Tinctura Ferri Muriati*, P. L. 1788.*Tinctura Ferri Muriatis*, P. L. 1809, P. L. 1824.

Composition.—This tincture is an alcoholic solution of sesquichloride of Iron. The sesquichloride consists of $1\frac{1}{2}$ equivalent of chlorine $54 + 1$ equivalent of iron $28 =$ equivalent 82 ; but in the systems of chemistry it is called a perchloride; and to avoid the absurdity of talking of half-atoms, it is said to consist of 3 equivalents of chlorine and 2 equivalents of iron.

Decomposition.—On dissolving 2 equivalents of sesquioxide of iron in 3 equivalents of hydrochloric acid, a reciprocal exchange takes place in the four elements of these compounds.



Products.—2 equivalents of sesquichloride of iron, and 3 equivalents of water. The tincture contains some excess of hydrochloric acid, which prevents precipitation.

Properties.—Colour, brownish red; smell, æthereal; taste, styptic. Sp. gr. 0.992 : —One fluidrachm contains $3\frac{3}{4}$ grains of the sesquichloride of iron.

FERRI IODIDUM.

Iodide of Iron. (Protiodide of Iron.)

<i>Composition.</i> —1 equivalent of Iodine			= 126
1	—	Iron	= 28
5	—	Water..... 9×5	= 45
Equivalents			199

It is a direct composition of single equivalents of iodine and iron.

Properties.—Before evaporation the solution is a pale green; yielding, if the water be evaporated out of contact with air, green tabular crystals. These by further exposure to heat are fused, and leave a deliquescent residue of an iron-grey colour and metallic lustre. This dry residue is soluble in water and alcohol, but such solution is soon decomposed, unless metallic iron be present; and therefore some pieces of clean iron wire are usually immersed, to prevent the formation of peroxide of iron. At page 147 of my "Pharmacopœia," in the caution column

it has been observed, that its solution deposits sesquioxide of iron unless an iron wire is kept constantly immersed in it. Further experience, however, has proved, that although the wire is made to traverse the whole column of the solution, some deposit will take place; but it is nevertheless by this means kept in a neutral state, and the best test of its neutrality is, that it ought to pass through the filter colourless as water.—SQUIRE, "Philosoph. Magazine" for July 1836, page 79.

Properties of Iodine.—Iodine was discovered by M. Courtois, of Paris, in 1812. It exists, combined with potassium or sodium, in many springs; also in marine molluscos animals, and probably in all sea water; although that of the Mediterranean is commonly quoted as the source of it. Moreover, it has been found in fossil productions: Vauquelin found it in an ore of silver. Its colour is blue-black; its lustre, metallic; its odour is allied to that of diluted chlorine; its taste is acrid. It is extremely volatile, rising in violet-coloured vapour at from 60° to 80° . Its most strikingly characteristic property is that of giving a blue colour, with a solution of starch. 100 cubic inches of the vapour weigh 264.75 grains: its sp. gr., compared with air, is 8.7, and compared with hydrogen, 125. At 120° to 130° it rises still more rapidly. It fuses at 220° and boils rapidly at 350° . It changes most vegetable colours yellow; very sparingly soluble in water, which holds in solution not more than $\frac{1}{7000}$ of its weight. It is readily soluble in alcohol and æther. It combines with metals, and forms, with oxygen, iodic, and with hydrogen, hydriodic acid. *It is a deadly poison; and even if given in what have been considered medicinal doses, it has not unfrequently proved fatal in weakly habits, and should never be used, except with great caution, in a reduced state of the powers of life.*

FERRI POTASSIO-TARTRAS.

Potassio-Tartrate of Iron.

Ferrum Tartarizatum, P. L. 1788, P. L. 1809, P. L. 1824.

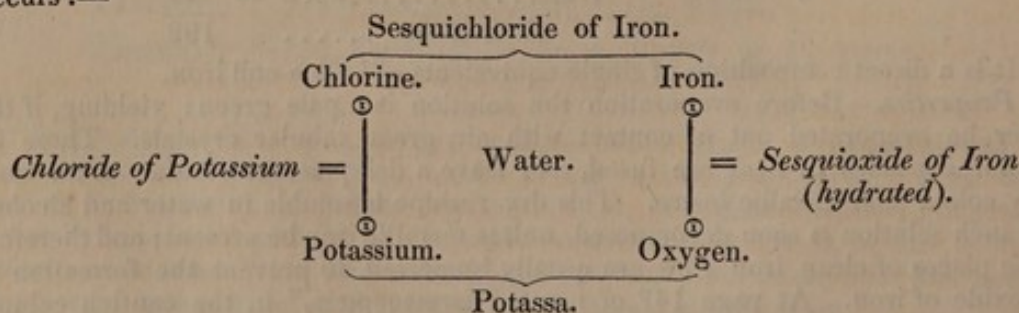
Composition.—

1 equivalent of Tartrate of Potassa.....	=	144	or	51.82
1 ——— Tartrate of Sesquioxide of Iron	=	106		48.18
Equivalent....	=	250		100

Decomposition.—In the first place, sesquioxide of iron is digested in a sand-bath, with hydrochloric acid; and the usual reciprocal exchange, already explained twice by diagrams, is the result.

Products.—1 equivalent of sesquichloride of iron, and 1 equivalent of water.

Secondly, on the addition of the solution of potassa a second double exchange occurs:—



It will be seen that the chlorine combines with the potassium, and the iron with the oxygen.

Thirdly, on boiling the precipitated hydrated sesquioxide of iron with the bitartrate of potassa, they combine in single equivalents to form the potassio-tartrate of iron; and the solution, if not quite saturated, is directed to be neutralized by the addition of ammonia.

Properties.—Colour, brownish-green; odour, none; taste, slightly chalybeate. It is readily soluble in water, and attracts moisture by exposure to the air. It has been shewn, in the Pharmacopœia, that it is incompatible with astringent vegetables, with which it gives a dark precipitate. The above process is taken from Soubeiran. It is a double salt, containing 13 per cent of the sesquioxide, according to the inventor.

FERRI SESQUIOXYDUM.

Sesquioxide of Iron.

Chalybis Rubigo præparata, P. L. 1745.

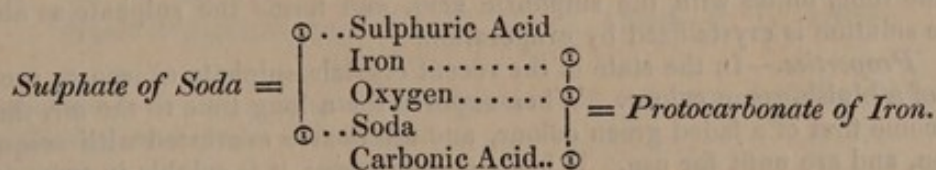
Ferri Rubigo, P. L. 1788.

Ferri Carbonas, P. L. 1809.

Ferri Subcarbonas, P. L. 1824.

Composition.—1 equivalent of Iron = 28
 $1\frac{1}{2}$ ——— Oxygen = 12
 Equivalent 40

Decomposition.—The protocarbonate is first precipitated from a solution of sulphate of iron, by a solution of carbonate of soda.



Products.—Protocarbonate of Iron precipitated.
 Sulphate of Soda in solution.

Nearly the whole of the protocarbonate is disturbed by exposure to the air during the process of washing away the sulphate of soda; and acquiring half another equivalent of oxygen, it loses its carbonic acid.

Product.—Sesquioxide of iron.

One hundred grains of this sesquioxide contain 4 grains of adherent undecomposed protocarbonate.

Properties.—It is of a brownish-red colour, seldom supplied twice together of the same hue, sometimes darker, sometimes more vivid. It is inodorous; taste, disagreeably chalybeate; soluble in hydrochloric acid, but not easily dissolved in other acids. It is commonly called peroxide of iron in the systems of chemistry. It is not magnetic.

Commentary.—Iron is only susceptible of two definite degrees of oxidizement, according to the best authorities. The hydrated protoxide, the hydrated peroxide (the mediate oxide of Gay Lussac), and the magnetic oxide, must all be considered as modifications of the protoxide and sesquioxide.

FERRI SULPHAS.

Sulphate of Iron.

Sal seu Vitriolum Martis, P. L. 1720.

Sal Martis, P. L. 1745.

Ferrum Vitriolatum, P. L. 1788.

Ferri Sulphas, P. L. 1809, P. L. 1824.

(Green Vitriol.)

<i>Composition.</i> —1 equivalent of Protoxide of Iron = 36		
1	———	Sulphuric Acid .. = 40
7	———	Water.... 9×7 = 63
		139

Decomposition.—The decomposition mainly depends upon the presence of the water. When the iron filings are thrown into the diluted acid, the water is decomposed; its 1 equivalent of oxygen unites with the iron to form a protoxide of iron, and its 1 equivalent of hydrogen escapes. The protoxide of iron, at the same time, unites with the sulphuric acid, and forms the sulphate as above, and the solution is crystallized by evaporation.

Properties.—In the state of the recent crystals, sulphate of iron or green vitriol is of a bluish-green colour. When exposed for a long time to the air, the crystals become first of a faded green colour, and afterwards encrusted with sesquioxide of iron, and are unfit for use. It has a styptic taste; it is soluble in twice its weight of cold, and three-fourths its weight of boiling water. See the Tests in the Pharmacopœia.

Commentary.—It is employed in preparing the sesquioxide of iron, the compound mixture of iron, and the compound pills of iron.

PRÆPARATA EX HYDRARGYRO.

Preparations of Mercury.

MERCURY is found native, and in the state of cinnabar, or native sulphuret. It comes principally from Idria, in Carniola, and Almaden, in Spain; the mines at these places being the most productive in the known world. The ore is subjected to heat, in contact with lime or iron filings; so that the mercury is distilled, or rather volatalized, and freed from its sulphur, which is retained. Its characteristic property is, that it is fluid at all common temperatures. Its colour is tin-white; it has a strong metallic lustre; it solidifies at 39° or 40° below zero, and is strongly disposed to crystallize as it congeals. In this solid condition it is malleable, and may be cut with the knife. At 662° it boils, and becomes vapour. Its sp. gr. at 60° is 13.5. When pure, it is perfectly volatile. It is best purified by redistillation in an iron retort.

HYDRARGYRUM CUM CRETÂ.

Mercury with Chalk.

Hydrargyrus cum Cretâ, P. L. 1788.

Hydrargyrum cum Cretâ, P. L. 1809, P. L. 1824.

Composition.—It is a mixture of protoxide of mercury, metallic mercury, minutely divided, and chalk.—BRANDE.

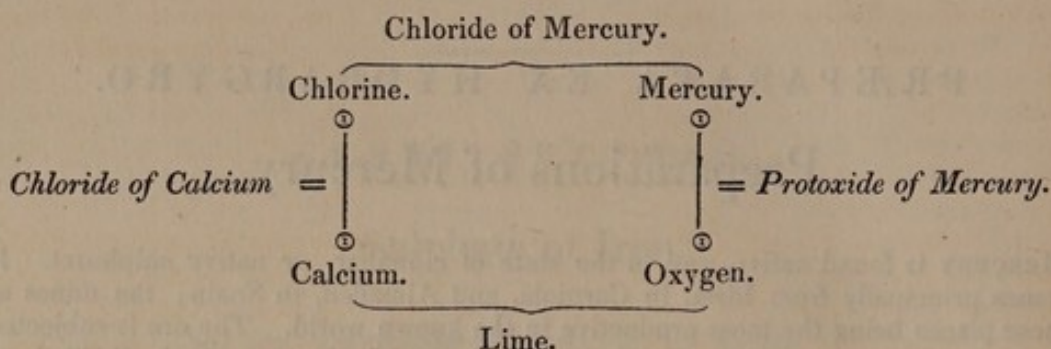
HYDRARGYRI OXYDUM.

Oxide of Mercury.

Hydrargyri Oxydum Cinereum, P. L. 1809, P. L. 1824.

<i>Composition</i> .—1 equivalent of Mercury	.....	=	202	or	96.2
1 ——— Oxygen	.....	=	8		3.8
			210		100

Decomposition.—When chloride of mercury (calomel) is thrown into lime-water, an exchange of elements takes place, the chlorine, attracting the calcium, forms a solution of chloride of calcium; while the mercury, uniting with the oxygen of the lime, forms protoxide of mercury, which is precipitated.



Properties.—A black powder, having a strong tendency to spontaneous decomposition; inodorous; acrid; insoluble in water; uniting with acids, but exerting little power as a base. From a solution of any of its salts calomel is precipitated by the addition of hydrochloric acid, which is the best characteristic test of its presence.

HYDRARGYRI BINOXYDUM.

Binoxide of Mercury.

(Peroxide of Mercury.)

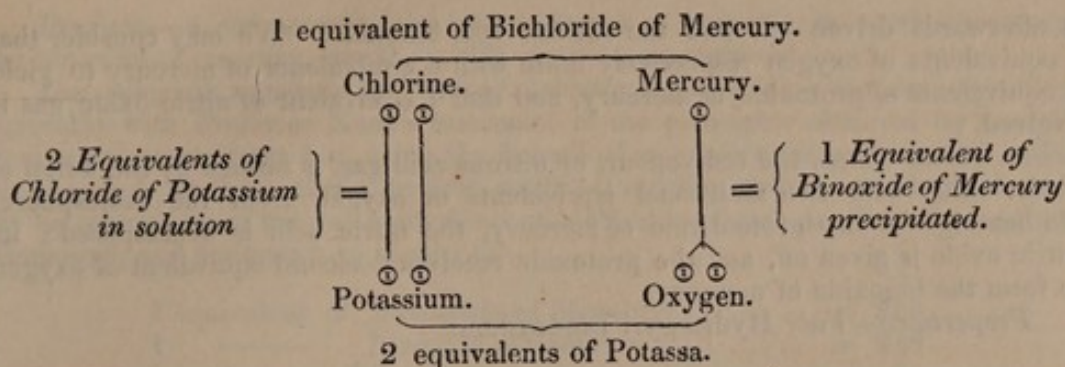
Mercurius Calcinatus, P. L. 1745.

Hydrargyrus Calcinatus, P. L. 1788.

Hydrargyri Oxydum rubrum, P. L. 1809, P. L. 1824.

<i>Composition.</i> —1 equivalent of Mercury.....	= 202	or 92·7
2 ——— Oxygen	= 16	7·3
	218	100

Decomposition.—Bichloride of mercury is dissolved in water, and liquor of potassa is added. 2 equivalents of potassa are decomposed, and their 2 equivalents of oxygen unite with the mercury to form 1 equivalent of binoxide of mercury, which is precipitated; while the 2 equivalents of chlorine from the mercury unite with the 2 equivalents of potassium to form 2 equivalents of chloride of potassium in solution.



Properties.—Binoxide of mercury has an orange-red colour, no odour, and an acrid metallic taste. It is slightly soluble in water, to which it imparts the same peculiar acrid taste, and the power of greening the blue infusion of violets. When heated nearly to redness, it is resolved into mercury and oxygen; and a similar effect, according to Guibourt, is produced by long exposure to light.

HYDRARGYRI NITRICO-OXYDUM.

Nitric-Oxide of Mercury.

Mercurius Præcipitatus Corrosivus, P. L. 1720.

Mercurius Corrosivus ruber, P. L. 1745.

Hydrargyrus Nitratus ruber, P. L. 1788.

Hydrargyri Nitrico-Oxydum, P. L. 1809, P. L. 1824.

(*Vulgò*, Red Precipitate.)

Composition.—The same as the binoxide of mercury; but it is liable to contain a small portion of nitrate of mercury, which is just as good a reason for calling it a sub-nitrate, as for calling it a nitric-oxide. The collegiate translator might have further protracted* “the withering influence of the College,” (over which, in 1816, he displayed the extreme acerbity of an uncompromising critic; and in whose company, in 1836, he discovered a new and curious combination of a truckle and a triumph), by whispering in the ears of the censors the ineptitude of the above name. On his own statement it consists of the same quantities of oxygen as the last preparation; and its composition, symbols, and incompatibles are similar. Why, therefore, call it nitric-oxide? Why not call it “*Hydrargyri Binoxydum per Acidum Nitricum*?”

Decomposition.—A portion of the nitric acid is decomposed by the mercury to form, firstly, protoxide of mercury; and secondly, by uniting with the undecomposed portion of the nitric acid, a protonitrate of mercury. The nitric acid

* Vide Mr. R. Phillips’s “Remarks on the Editio altera,” page 34, published by W. Phillips, 1816.

is afterwards driven off, and the residue is a binoxide. We may consider that 3 equivalents of oxygen respectively unite with 3 equivalents of mercury to yield 3 equivalents of protoxide of mercury, and that 1 equivalent of nitric-oxygen gas is evolved.

As before stated, the red vapour, or nitrous acid gas, is formed by the union of nitric oxide with two additional equivalents of oxygen from the atmosphere. On heating the dry protonitrate of mercury, the nitric acid is decomposed; its nitric oxide is given off, and the protoxide receives a second equivalent of oxygen to form the binoxide of mercury.

Properties.—*Vide Hydrargyri Binoxidum.*

HYDRARGYRI AMMONIO-CHLORIDUM.

Ammonio-Chloride of Mercury.

Mercurius Præcipitatus albus, P. L. 1745.

Calx Hydrargyri alba, P. L. 1788.

Hydrargyrus Præcipitatus albus, P. L. 1809.

Hydrargyrum Præcipitatum album, P. L. 1809, edit. altera,
P. L. 1824.

Composition.—This compound was originally (in 1745) ordered to be prepared by dissolving sal-ammoniac and corrosive sublimate, and precipitating with any alkali at the pleasure of the operator. Subsequently, liquor of potassa was ordered as the precipitant, and now the compound is formed in a more direct method by adding liquor of ammonia to a solution of bichloride. Mr. Brande assumes, from the experiments of Professor Kane, that it consists of (taking the old equivalent number, 200, for mercury)—

2	equivalents of Bichloride of Mercury	=	544
2	Ammonia	=	34
1	Peroxide of Mercury (<i>i. e.</i> Binoxide)	=	216
			794

or, according to Mr. Hennell, of Apothecaries' Hall, of elements equivalent to

1	equivalent of Peroxide of Mercury.
1	Hydrochlorate of Ammonia.

Decomposition.—According to Mr. Hennell's view, the exchanges would be very easily understood. Bichloride of mercury decomposes the water; 2 equivalents of chlorine with 2 equivalents of hydrogen, form 2 equivalents of hydrochloric acid; which, with 2 equivalents of ammonia, will yield 2 equivalents of the hydrochlorate of ammonia (one left in solution, and the other precipitated in the ammonio-chloride of mercury), and the corresponding 2 equivalents of oxygen unite with the 1 equivalent of mercury, to form 1 equivalent of binoxide of mercury.

Product.—A compound of the hydrochlorate of ammonia, in combination with the binoxide of mercury, would (in this view) be precipitated.

The collegiate translator has framed a theory for explaining the decomposition, agreeably with Professor Kane's statement of the principles obtained by analysis from white precipitate; but, using the license of an experienced chemist, he makes his theory to fit the analysis, by first cutting down the analysis to fit the theory: for he rejects one of the two equivalents of bichloride of mercury from the resulting compound, and assumes it to consist of—

1 equivalent of Bichloride of Mercury	=	274
1 ——— Bin oxide of Mercury.....	=	218
2 equivalents of Ammonia	=	34
		526

Thus throwing overboard the professor and his analysis, without assigning any reason why he is disposed to take this view of the composition.* If we admit that the ammonio-chloride contains 2 equivalents of bichloride of mercury, 1 equivalent of binoxide of mercury, and 2 equivalents of ammonia, the changes which occur may be as follow:—

Let us assume that we begin with 3 equivalents of bichloride of mercury to 4 equivalents of ammonia; 1 equivalent out of the 3 equivalents of bichloride is decomposed by, and reciprocally decomposes, 2 equivalents of water; and therefore the 2 of hydrogen with the 2 of chlorine will form 2 of hydrochloric acid; and this uniting with 2 out of the 4 equivalents of ammonia, will form hydrochlorate of ammonia in solution, afterwards poured off. The 2 of oxygen meantime unite with the single equivalent of mercury to form 1 equivalent of binoxide of mercury, and this precipitated with the 2 of bichloride of mercury undecomposed, and the 2 other equivalents of ammonia, constitutes the ammonio-chloride of mercury. This coincides with the analysis of Dr. Kane, and also with the statement of Mr. Brande ("Manual of Chemistry," page 791). But if we admit the precipitate to contain only 1 equivalent of the bichloride, we must assume that we commence with only 2 equivalents of the bichloride, and so we shall decompose only 1 equivalent by the water, and precipitate the other with 2 equivalents of ammonia and 1 equivalent of binoxide of mercury.

Properties.—It is a white powder, light, inodorous, and tasteless; soluble in the mineral acids, and exhales ammonia when smartly rubbed on the human body.

Collegiate Preparation.—Unguentum Hydrargyri Ammonio-Chloridi.

* After nearly extinguishing a whole college of physicians, and getting them to pay him handsomely for his merciful attempts at resuscitation, to maim one doctor must be a mere trifle to him; but if he have no satisfactory reason for damaging the professor's analysis (however able in most of his critical conflicts), he must here succumb to Kane. If, however, as an editor, I might presume to give an opinion, it would certainly be in favour of Mr. Hennell's views, bowing with all deference to the superior practical experience of both.

Properties.—Chloride of mercury, protochloride of mercury, or calomel, should be quite tasteless, inodorous, and insoluble in water. Its sp. gr. is 7.2. When it is sublimed in small vessels, it condenses in a white semi-transparent crystalline cake; but if, on the contrary, it is conducted into a very capacious and cold receiver, it falls into a perfectly white and impalpable powder, which, after proper washing, is fit for use. Mr. Brande considers that the buff aspect of calomel indicates the absence of corrosive sublimate; but it does not follow that the snow-white calomel, which now more frequently occurs in the market, should therefore contain this impurity. It becomes yellow when heated, and white again as it cools. At something below a red-heat, it vaporizes without fusion. When crystalline cake-calomel is scratched or broken in the dark, it phosphoresces. It is decomposed by the fixed alkalies and by ammonia; and it is slowly affected by exposure to the atmosphere.

HYDRARGYRI BICHLORIDUM.

Bichloride of Mercury.

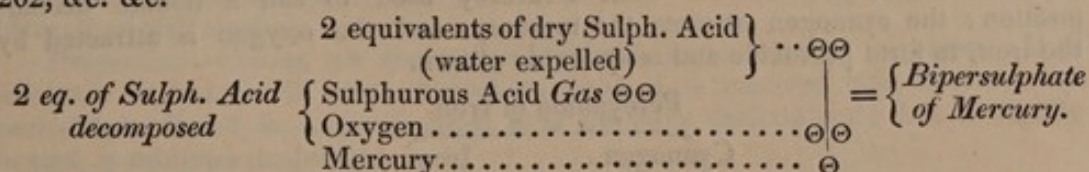
Mercurius Corrosivus Sublimatus, P. L. 1720, P. L. 1745.

Hydrargyrum Muriatus, P. L. 1788.

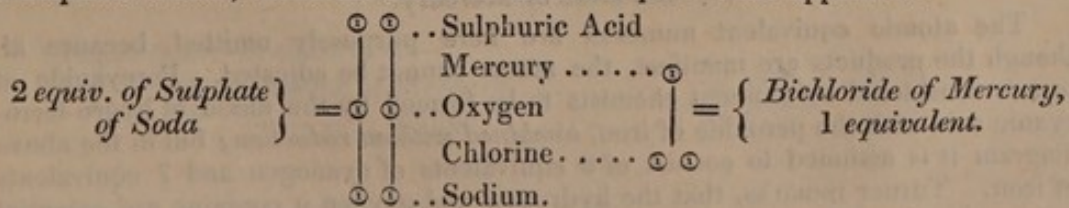
Hydrargyri Oxymurias, P. L. 1809, P. L. 1824.

Composition.—1 equivalent of Mercury = 202 or 73.73
 2 ——— Chlorine..36 × 2 = 72 26.27
 274 100

Decomposition.—First Stage. One equivalent of mercury (202) is boiled with 4 equivalents of liquid sulphuric acid (196), consisting of 4 equivalents of dry acid (160), and 4 equivalents of water (36); 2 equivalents of the dry acid (80) are decomposed, transferring 2 equivalents of oxygen (16) to the mercury, to form 1 equivalent of binocide of mercury (218), which, uniting with the other 2 equivalents of dry acid (80), form 1 equivalent of bipersulphate of mercury (298), and 2 equivalents of sulphurous acid gas are expelled (64), the 4 equivalents of water (36) being evaporated. The student can introduce the equivalent figures, or omit them, at his pleasure: as for example, 1 equivalent of mercury equal to 202, &c. &c.



Second Stage.—The bipersulphate of mercury is then mixed and sublimed with 2 equivalents of chloride of sodium. The 2 equivalents of chlorine combine with the mercury to form a bichloride of mercury, which is sublimed; the 2 equivalents of sodium, with the 2 equivalents of oxygen, to form 2 of soda, which exactly serve to neutralize the 2 of dry sulphuric acid, so as to form 2 equivalents of sulphate of soda, which are found in the lower part of the apparatus.



The atoms on the right represent the principles which unite to form the bichloride, and on the left those uniting to form the 2 equivalents of sulphate of soda.

Properties.—It is a semi-transparent, colourless substance, of a crystalline texture. It has a nauseous metallic taste, acrid and burning; and it is inodorous. It is soluble in twenty times its weight of cold, and twice its weight of boiling water, and in the same proportion of alcohol or æther. The pure and carbonated fixed alkalies throw down a hydrated peroxide of mercury from a solution of this bichloride, in the form of a yellowish-red precipitate, as in the yellow wash; but ammonia casts down a white substance, called white precipitate, the composition of which is at present uncertain.

LIQUOR HYDRARGYRI BICHLORIDI.

Solution of Bichloride of Mercury.

Liquor Hydrargyri Oxymuriatis, P. L. 1809, P. L. 1824.

Commentary.—Hydrochlorate of ammonia is employed instead of the spirit formerly used to increase the solvent power of the water.

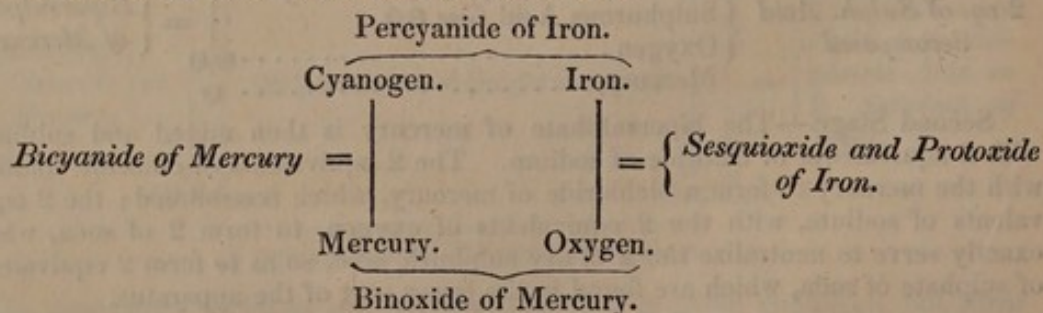
HYDRARGYRI BICYANIDUM.

Bicyanide of Mercury.

(Called also Bicyanuret of Mercury.)

<i>Composition.</i> —2 equivalents of Cyanogen	$26 \times 2 =$	52 or 20.4
1 equivalent of Mercury.....	$=$	202 79.6
		254 100

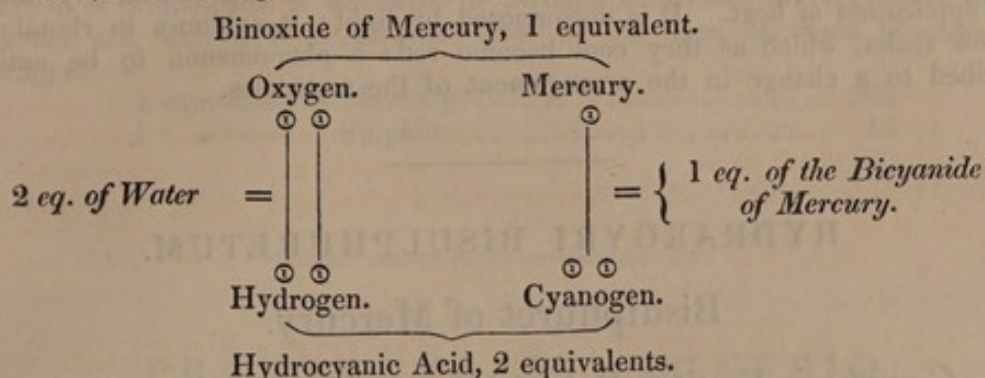
Decomposition.—Percyanide, or sesquiferrocyanuret of iron, commonly called Prussian blue, and constituted of cyanogen and iron, is boiled in water with bin-oxide of mercury. This is what Fourcroy used to call a double decomposition; the cyanogen attracts the mercury, and the oxygen is attracted by the iron, to form protoxide and sesquioxide of iron.



The atomic equivalent numbers are here purposely omitted, because although the products are manifest, the atoms cannot be adjusted. Percyanide of iron is considered by eminent chemists to be formed by the union of hydro-ferrocyanic acid with the peroxide of iron, *combined without reduction*; but in the above diagram it is assumed to consist of 9 equivalents of cyanogen and 7 equivalents of iron. Turner remarks, that the hydrogen and oxygen it contains are essential to its existence as Prussian blue.

Products.—The protoxide and sesquioxide of iron precipitated. The bicianide of mercury dissolved and crystallized.

Second Process.—When prepared by adding binoxide of mercury to hydrocyanic acid, the exchanges are as following:—



Properties.—The crystals are much more soluble in hot than in cold water. According to Brande, if the solution be filtered while hot, it deposits on cooling yellowish white crystals, in form of quadrangular prisms; but those prepared by the collegiate process should be colourless. The attraction of mercury for cyanogen is so powerful, that the compound is not disturbed by the alkalies, and the peroxide of mercury will detach the cyanogen from any of the cyanides. An aqueous solution is, however, decomposed by hydrosulphuric acid and its compounds.

Use.—To prepare hydrocyanic acid.—*Vide* Pharmacopœia, page 53.

HYDRARGYRI IODIDUM.

Iodide of Mercury.

(Protiodide of Mercury.)

<i>Composition.</i> —1 equivalent of Mercury	=	202	or 38.4
1 ————— Iodine	=	126	61.6
Equivalent		328	100

A direct combination of the metal and the iodine in single equivalents, by trituration with alcohol.

Properties.—Colour, an unclean yellow, with some mixture of green. It is insoluble in water. If long exposed to light, it is resolved into mercury and periodide. Fused in a gentle heat, it is similarly decomposed; but if rapidly heated, it sublimes unchanged.

HYDRARGYRI BINIODIDUM.

Biniodide of Mercury.

(Deutiodide, Periodide.)

Composition.—It consists of—

1 equivalent of Mercury	=	202	44.5
2 ————— Iodine	=	252	55.5
		454	100

A direct combination of 2 equivalents of iodine with 1 equivalent of the metal by trituration with alcohol, the quantity of iodine employed being exactly twice as much as in the last preparation.

Properties.—A scarlet-red powder, which is easily fusible, and turns yellow by the application of heat. It is decomposed by light; it sublimes in rhomboidal yellow scales, which as they cool become red: a phenomenon to be entirely ascribed to a change in the arrangement of the molecules.

HYDRARGYRI BISULPHURETUM.

Bisulphuret of Mercury.

Cinnabaris Factitia, P. L. 1745.

Hydrargyrus Sulphuratus ruber, P. L. 1788.

Hydrargyri Sulphuretum rubrum, P. L. 1809, P. L. 1824.

(Vermilion, Cinnabar, Persulphuret.)

<i>Composition.</i> —2 equivalents of Sulphur.....	$16 \times 2 =$	32	13.6
1 equivalent of Mercury	$=$	202	86.4
		<u>234</u>	<u>100</u>

Chemical Reaction.—The heat favours the union of 2 equivalents of sulphur and one of mercury, and by continuing it, any excess of sulphur beyond the 2 equivalents is expelled.

Properties.—Permanent, when exposed to air or moisture; colour of the powder, brilliant red; inodorous; insipid; heated to dull redness in an open vessel, the sulphur forms sulphurous acid, and the mercury escapes in vapour.

HYDRARGYRI SULPHURETUM CUM SULPHURE.

Sulphuret of Mercury with Sulphur.

Æthiops Mineralis, P. L. 1745.

Hydrargyrus cum Sulphure, P. L. 1788.

Hydrargyri Sulphuretum nigrum, P. L. 1824.

(Also now called Protosulphuret, and Æthiop's Mineral.)

Composition.—When this compound is boiled in solution of potassa, sulphur is taken up, and bisulphuret of mercury is precipitated, so that it may be inferred to be a mixture of the bisulphuret with sulphur, consisting of—

Bisulphuret of Mercury	58
Sulphur	42
	<u>100</u>

{ *Vide* "Journal of Science,"
vol. xviii. p. 294.

Properties.—Black, tasteless, and inodorous.

Commentary.—According to Guibourt, a true protosulphuret of mercury may be prepared by passing a stream of hydrosulphurous acid through a weak solution of protonitrate of mercury, or through a mixture of very finely divided calomel and water; it is thrown down in the form of black powder, consisting of

1 equivalent of Mercury	202
1 ——— Sulphur	16
	218

PRÆPARATA È MAGNESIO.

Preparations of Magnesium.

THE metal itself has considerable brilliancy and malleability, and may be fused at a red heat. It is slightly oxidized in moist air, but in a dry air it is not affected. When heated to redness, it burns with brilliancy in oxygen gas, yielding magnesia; and it spontaneously inflames in chlorine.

MAGNESIA.

Magnesia.

Magnesia Usta, P. L. 1788.

Magnesia, P. L. 1809, P. L. 1824.

<i>Composition.</i> —1 equivalent of Oxygen.....	=	8	40
1 ——— Magnesium	=	12	60
		20	100

This is the only oxide of magnesium.

Decomposition.—Carbonic acid expelled by a strong heat, leaving the pure magnesia.

Properties.—A white friable powder; insipid, colourless, and free from odour; slightly greens the blue of violet, and reddens turmeric; infusible, and all but insoluble; it forms bitter saline compounds with the acids; the bitterness of its sulphate is a distinguishing characteristic of its presence, because the sulphates of the other alkaline earths are tasteless, while those of the earths properly so called are sweet or astringent. It absorbs both water and carbonic acid by exposure to the air, and it should therefore be preserved in well-closed bottles.

Commentary.—The concentrated preparation of magnesia, sold as an aperient, is a solution of the bicarbonate, with excess of carbonic acid. Dinneford's preparation contains about 18 grs. in a fluidounce of distilled water, and the solution is effected by a pressure equal to that of 4 atmospheres. An ounce or two of this preparation, with the addition of a little lemon-juice, forms a mild aperient for delicate habits. With reference to its antacid properties, it is the best corrective and ordinary aperient throughout the stages of infancy.

MAGNESIÆ CARBONAS.

Carbonate of Magnesia.

Magnesia alba, P. L. 1788.*Magnesiæ Carbonas*, P. L. 1809.*Magnesiæ Subcarbonas*, P. L. 1824.

<i>Composition</i> .—1 equivalent of Carbonic Acid	.....	=	22	52·4
1	————	Magnesia	.....	= 20 47·6
			42	100

But this by no means coincides with either of the analyses of Kirwan, Bergman, Dalton, and others. Mr. Brande considers it a compound of 1 equivalent of quadrihydrate of magnesia, and 1 equivalent of carbonate of magnesia. It is usually found to contain water.

Decomposition.—Sulphate of magnesia and carbonate of soda are separately dissolved, and then boiled together, leading to a reciprocal exchange of acids and bases.

Properties.—It has neither colour, nor odour, nor taste, and is not affected by exposure to the atmosphere. It is more soluble in cold than in hot water, but very sparingly in either, and hence is often described as insoluble in water. By the last process it will be seen, that heat expels its carbonic acid.

Note.—For the composition and methods of preparing sulphate of magnesia with the theories of the same, refer *ad finem*, under the section of "Trade Chemicals for which there are no formulæ in the Pharmacopœia."

Commentary.—I have noticed, under the head Magnesia, the solution of bicarbonate surcharged with carbonic acid, to which the attention of the public has again lately been called by a gentleman who is styled, in various advertisements, Sir J. Murray, Dr. Murray, and Mr. Murray, and who, in his or their three advertisements (for I suppose it to be a trinity in unity), lays claim to the invention. The process is contained in several Pharmacopœias of nearly half a century back, and occurs in every system of chemistry with which I am acquainted; and his attempt by a monopoly of the article to obtain a penny a bottle on the general sale throughout England, is equally unworthy of his golden order as it is of his doctorate. On the 19th of August, 1839, Sir James allows "his fluid magnesia" to be advertised in the *Times*; and I find that not only are the advertisements in his own hand-writing, but that he calls himself in his correspondence with the trade the inventor and proprietor, and yet at a meeting* of the Surgical Society of Ireland, December 1, 1838, he professed his ignorance of the exact mode of preparing it, and frankly admitted that the process had been greatly improved by his pupils(?) now established in London. Magnesia water (bicarbonated) by the force of pressure, had been publicly sold in this metropolis at a few pence the glass twenty years ago, within my experience, and under my notice. Sir James ought to be elected as a colleague of the Censors of our Royal College, were it only for his adroitness in writing advertisements. They may find him useful in this respect when they bring out their next Pharmacopœia. Either or any of the present vendors have an equal claim to the merit of introducing the article in a more concentrated form, and so long as they do not attempt a monopoly, they have my good wishes for their success. The crystals which form on the bottles are not magnesia, but hydrated carbonate, and what becomes of them when put into hot water or a hot stomach (acid not being present in that organ) or even into cold water, *chemists ought to know*, and I shall leave the public to find out. I will gratuitously instruct any person to make it who may feel so disposed.

* At this meeting, as at another in Liverpool, the worthy knight declared (upon his honour, of course,) that he had no interest or connexion with the sale of the remedy; and yet I have seen his letters, dated only July, 1839, in which he negotiates the sale of it.

PRÆPARATA È PLUMBO.

Preparations of Lead.

NATIVE lead is extremely rare. All the lead of commerce is extracted from the native sulphuret, commonly called galena. Lead is of a bluish-grey colour, possessing considerable lustre before exposure to the atmosphere, which forms upon it a tarnish of protoxide, or of carbonate of lead. It is remarkable for its malleability; it is in a less degree ductile, and inferior in tenacity to all ductile metals. It fuses at 612° and crystallizes in octohedrons. When melted in open vessels, it presents on its surface a dross or film, which is a mixture of the metal with protoxide of lead. Lead is not affected by hydrochloric or the vegetable acids, but their presence, as in cider-vats, is supposed to accelerate the absorption of oxygen from the atmosphere.

There are four oxides of lead:—

1 equiv. Lead	104	+ 1 equiv. Oxygen	8	= { 112 Protoxide; the salifiable Oxide, or Yellow Massicot; Litharge.
3	—	312 + 4	—	32 = { 344 Deutoxide; Red Lead; Minium; Red Binoxide.
1	—	104 + 2	—	16 = 120 Peroxide, Brown Binoxide.
2	—	208 + 1	—	8 = 216 Din oxide, Suboxide.

The protoxide is placed first in this order, as being the medicinal oxide.

In its ordinary state, the protoxide is of an orange or lemon yellow, and called massicot; when fused at a high red-heat, it forms on cooling a lamellar semi-vitreous mass, of a reddish-brown colour; and when obtained in scales, it constitutes the litharge of the shops, and the variety of the protoxide directed in the Pharmacopœia.

PLUMBI ACETAS.

Acetate of Lead (Neutral).

Saccharum Saturni, P. L. 1720.

Cerussa Acetata, P. L. 1788.

Plumbi Superacetas, P. L. 1809.

Plumbi Acetas, P. L. 1824.

Composition.—The Acetate of Lead consists of—

1 equivalent of Protoxide of Lead	....	=	112	26.8
1 ——— Acetic Acid	.....	=	51	58.9
3 equivalents of Water	.....	=	27	14.3
Equivalent	....		190	100

Decomposition.—It is a direct combination of the metallic oxide with the acetic acid, and the crystals of the acetate are obtained by evaporating the solution.

Properties.—Like the solution, the crystals should be colourless. Acetate of lead has a faint, peculiar odour, and a singularly sweetish taste. The crystals are permanent at ordinary states of the atmosphere, but they effloresce at 100° . Water at 60° dissolves little better than a fourth of its weight of this acetate, and even when boiled upon the salt it takes up very little more. It is always more or less decomposed when dissolved in undistilled water, by carbonic acid and adventitious salts. If 1 part of this salt is dissolved in 24 parts of water, and a piece of zinc is suspended in the solution by means of a thread, the lead becomes detached from the salt and is deposited on the zinc, to form the *Arbor Saturni*.

LIQUOR PLUMBI DIACETATIS.

Liquor of Diacetate of Lead.

Aqua Lythargyri Acetati, P. L. 1788.

Liquor Plumbi Acetatis, P. L. 1809.

Liquor Plumbi Subacetatis, P. L. 1824.

(Goulard's Extract, or Extract of Saturn.)

Composition.—The acetic acid attracts a second equivalent of oxide of lead. The diacetate thus formed consists of—

1 equivalent of Acetic Acid.....	=	51	18.5
2 ——— Oxide of Lead.. 112×2	=	224	81.5
		275	100

Properties.—Unlike the brown preparation which we have long been accustomed to, this is colourless, and has a rough sweetish taste. It is decomposed by most common water, and the precipitates give to the admixture a milky opacity, which to the public is the most distinguishing characteristic of the diluted liquor.

LIQUOR PLUMBI DIACETATIS DILUTUS.

Diluted Liquor of Diacetate of Lead.

Aqua Lithargyri Acetati composita, P. L. 1788.

Liquor Plumbi Subacetatis dilutus, P. L. 1809, P. L. 1824.

(Goulard, or Goulard's, Lotion.)

Note.—Even when made with distilled water, this preparation will not be clear if the water has absorbed carbonic acid by long exposure to the air.

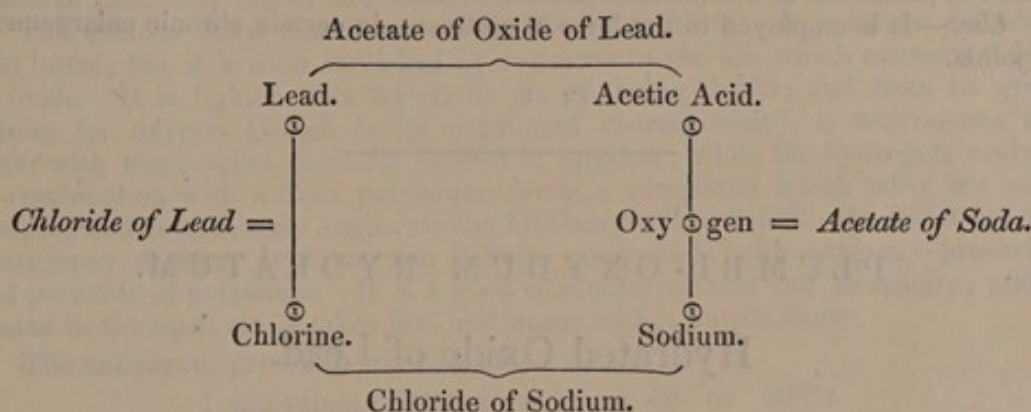
PLUMBI CHLORIDUM.

Chloride of Lead.

(Horn Lead.)

<i>Composition.</i> —1 equivalent of Chlorine	=	36	25.7
1 ——— Lead	=	104	74.3
Equivalent..		140	100

Decomposition.—Acetate of lead and chloride of sodium are separately dissolved, and the solutions are mixed. The chlorine combines with the lead to form chloride of lead precipitated; while the sodium, with the oxygen of the oxide of lead, forming soda, is neutralized by the acetic acid to form acetate of soda in solution.



Properties.—Chloride of lead is white, fusible; and on cooling, after fusion, it acquires a horn-like appearance, in which state it has been called horn lead. According to Faraday it does not absorb ammonia: it volatilizes at high temperatures. It requires for its solution 30 parts of water at 60°, or 22 parts at 212°; and from the solution, as it cools, small anhydrous, acicular crystals, are deposited. These have a sweetish taste, and are unchanged by exposure to the air. Chloride of lead may also be formed by heating laminated lead in chlorine.

Use.—It is employed in preparing hydrochlorate of morphia.

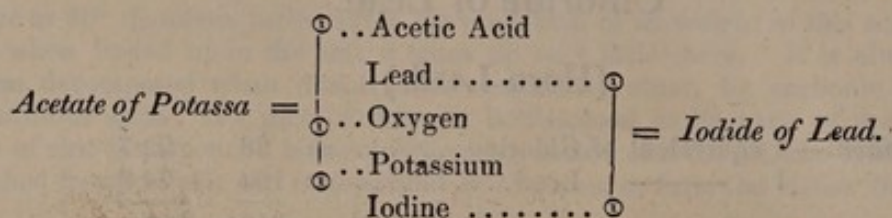
PLUMBI IODIDUM.

Iodide of Lead.

<i>Composition.</i> —1 equivalent of Iodine	=	126
1 ——— Lead	=	104
Equivalent..		230

Decomposition.—Acetate of lead and iodide of potassium are separately dissolved in water; and on mixing the solution, the exchanges are similar to those

which take place in the last process : 1 equivalent of lead unites with 1 equivalent of iodine to form 1 equivalent of iodide of lead ; the 1 equivalent of oxygen, which was previously in combination with the 1 equivalent of lead, converts the potassium into 1 equivalent of potassa, which is neutralized by the 1 equivalent of acetic acid to form 1 equivalent of acetate of potassa in solution.



Properties.—It is of a rich yellow colour, sparingly soluble in cold water : dissolves by boiling water, forming a solution which is colourless, and on cooling, brilliant yellow crystalline scales are deposited. It is soluble in liquor potassæ. Iodide of lead may also be prepared by heating leaf-lead with iodine, or by adding iodide of potassium to a solution of nitrate of lead.

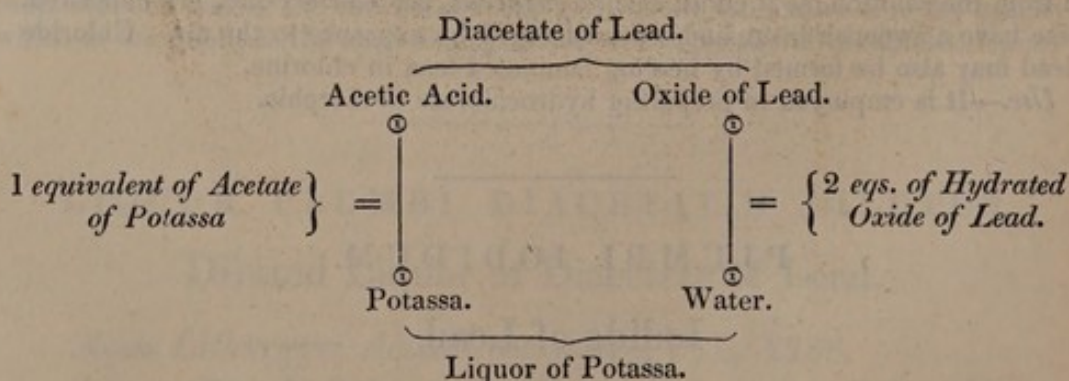
Use.—It is employed in the form of ointment, in certain chronic enlargements of joints.

PLUMBI - OXYDUM HYDRATUM.

Hydrated Oxide of Lead.

Composition.—Oxide of lead with water.

Decomposition.—Solutions of diacetate of lead and potassa are mixed. The 2 equivalents of acetic acid combine with 2 of potassa to form 2 of acetate of potassa ; while 1 equivalent of oxide of lead combines with 1 equivalent of water to form hydrated oxide of lead.



Properties.—It is a dead white powder, soluble in excess of potassa ; and hence the danger of employing too much of this last alkali. It is blackened by hydrosulphuric acid. It is almost entirely soluble in nitric acid. With hydrochloric acid it precipitates a chloride, and with sulphuric acid a sulphate of lead.

Use.—In preparing the disulphate of quina.

PRÆPARATA È POTASSIO.

Preparations of Potassium.

POTASSIUM may be obtained by submitting hydrate of potassa to the powerfully decomposing action of Voltaic electricity: the metal is evolved at the negative pole. It is also obtained by heating fused (hydrated) potassa in a bent gun-barrel, with clean iron turnings. Hydrogen gas escapes from the water of the hydrated potassa, and the oxygen is attracted by the iron. The potassium is found in globules in the tube and receiver, now commonly fitted on to the barrel. Brunner has improved both processes, by decomposing potassa by means of iron and charcoal, intimately mixed and heated in an iron bottle.

This curious metal was discovered by Davy, in 1807. It possesses considerable lustre; but it is soon tarnished by exposure to the air, which converts it into an oxide. It is lighter than water, its sp. gr. being 0.835; and from its great affinity for oxygen (which is its prominent characteristic), it decomposes the water with combustion, forming potassa in solution; while the hydrogen, evolved in combination with a little potassium, forms a compound which takes fire as it escapes, and considerably augments the brilliancy of the flame. At 55° it has the consistency of wax. It forms two definite compounds with oxygen,—protoxide and peroxide of potassium. It is a good conductor of heat and electricity; and if heated in the open air, it takes fire, and burns with a purple flame.

The anhydrous protoxide consists of—

1 equivalent of Potassium ..	=	40	or	83.34
1 ——— Oxygen	=	8		16.66
Equivalent..		48		100

The peroxide consists of—

3 equivalents of Oxygen....	$8 \times 3 =$	24
1 ——— Potassium.....	=	40
		64

Berzelius admits a suboxide, which is conjectured by others to consist of a mixture of potassium with oxygen.

LIQUOR POTASSÆ.

Liquor of Potassa.

Lixivium Saponarium, P. L. 1745.

Aqua Kali puri, P. L. 1788.

Liquor Potassæ, P. L. 1809, P. L. 1824.

Composition.—A solution of caustic potassa in distilled water.

Decomposition.—Single elective affinity. Lime being boiled with a solution of

carbonate of potassa, separates the carbonic acid to form an insoluble carbonate, and the potassa is left in solution. A separates B from C.

Properties.—Caustic solution of potassa is transparent, colourless, inodorous; its taste is extremely acid; rubbed between the fingers it partly dissolves the cuticle; it has an oily or soapy feel: sp. gr. 1.063. It attracts carbonic acid by exposure to the air; and therefore the old plan of filtering the solution is prudently dispensed with. Some chemists constantly keep a lump of quicklime in the bottle, to react upon any carbonic acid that may be absorbed. Liquor of potassa gradually acts upon white glass; and hence green glass is ordered in preference. Liebig has noticed that a strong solution of caustic potassa actually deprives carbonate of lime of its carbonic acid. Hence the propriety of using a liberal proportion of water.

LIQUOR POTASSÆ CARBONATIS.

Solution of Carbonate of Potassa.

Oleum Tartari per deliquium, P. L. 1720.

Lixivium Tartari, P. L. 1745.

Aqua Kali præparati, P. L. 1788.

Liquor Potassæ Subcarbonatis, P. L. 1809, P. L. 1824.

Properties.—It is a colourless fluid, possessing a faint alkaline smell, and a strong disagreeable taste: sp. gr. 1.473.

POTASSA CUM CALCE.

Potassa with Lime.

Causticum Commune fortius, P. L. 1745.

Calx cum Kali puro, P. L. 1788.

Potassa cum Calce, P. L. 1809, P. L. 1824.

Note.—In this admixture the lime is added to render the potassa less deliquescent, and therefore more convenient and limitable as a caustic. From the Pharmacopœia of 1745 I extract the “*Causticum Commune mitius*,” because it is still preferred by some surgeons for establishing issues.

Take of Soft Soap,

Quick Lime, of each equal weights.

Let them be thoroughly mixed at the time of use.

POTASSÆ HYDRAS.

Hydrate of Potassa.

Lapis Infernalis sive Septicus, P. L. 1720.*Kali purum*, P. L. 1788.*Potassa Fusa*, P. L. 1809, P. L. 1824.

Composition.—Caustic or pure Potassa, more properly called Hydrate of Potassa, consists of—

		Berzelius.
1 equivalent of Potassa.....	=	48 or 84
1 ——— Water.....	=	9 16
Equivalent.....		57 in 100

The process formerly consisted in boiling pure carbonate of potassa in a clean iron vessel over the fire, with half its weight of quick lime; but, according to the present mode, we boil down the caustic solution of potassa, and the white hard residue is a direct compound of potassa and water as above.

Properties.—White, brittle, hard, corrosive; evaporating at a bright-red heat; extremely deliquescent, and therefore inconvenient as a caustic: soluble in half its weight of water at 60°; unites with oils to form soap. By exposure, it attracts water and carbonic acid.

POTASSÆ ACETAS.

Acetate of Potassa.

Sal Diureticus, P. L. 1745.*Kali Acetatum*, P. L. 1788.*Potassæ Acetas*, P. L. 1809, P. L. 1824.

(Febrifuge Salt of Sylvius.)

Composition.—It consists of—

1 equivalent of Acetic Acid.....	=	51 or 51.4
1 ——— Potassa.....	=	48 48.6
Equivalent.....		99 100

Decomposition.—Carbonate of potassa decomposed by acetic acid. Single elective affinity. The potassa preferring the acetic acid, forms an acetate of potassa, and the carbonic acid is expelled. A separates B from C.

Properties.—Soluble in its own weight of water at 60° and in half its weight of boiling alcohol. It should be colourless and pulverulent. It is highly deliquescent. It is nearly, but not altogether, free from a faint acetous odour. Carbonic acid decomposes the alcoholic solution of this salt, carbonate of potassa being deposited, and acetic acid set free. Hence the student will remark, that an alteration of the circumstances, or condition of existence of bodies, may reverse their reciprocal affinities.

POTASSÆ CARBONAS.

Carbonate of Potassa.

Sal Absinthii, Sal Tartari, P. L. 1745.*Kali Præparatum*, P. L. 1788.*Potassæ Subcarbonas*, P. L. 1809, P. L. 1824.

Process of preparing the Carbonate of Potassa.—It is simply a process of purification, the impure carbonate being prepared by the incineration and lixiviation of land-plants, and chiefly from the vast natural forests of North America. It is called wood-ash, pearl-ash, and pot-ash. Much of the earthy impurities is got rid of by the process of solution and straining; but it is not a pure carbonate.

Composition.—1 equivalent of Carbonic Acid = 22 or 31.43
 1 ——— Potassa..... = 48 68.57
 Equivalent.. 70 100

The salt contains $1\frac{1}{2}$ equivalent of water.

Properties.—It is deliquescent; very soluble in water, which at 55° takes up its own weight; fusible, without decomposition, at a red heat; colourless; has an alkaline odour and taste, although described by some chemists as inodorous. It has the usual alkaline reaction, turning vegetable blues green, and yellows brown.

Collegiate Preparations.—Liquor Potassæ, Liquor Potassæ Carbonatis, Potassæ Acetas, Potassæ Sulphas, Potassæ Tartras, Potassii Sulphuretum, Liquor Potassæ Arsenitis, Spiritus Ammoniae, Spiritus Ammoniae Aromaticus, Spiritus Ammoniae foetidus, Decoctum Aloës compositum, Mistura Ferri composita, Pilulæ Ferri compositæ.

Commentary.—It is totally impossible for any dispenser to infer which of the carbonates a practitioner may mean in a prescription. I have taken some pains to inquire, and have found not a few instances of confusion, both as regards this and other newly-named preparations. The result of my inquiries (and I have repeatedly been present at such discussions between physician and chemist) is, that the latter does not know which compound the former means, and the former not unfrequently does not know which he means himself. It is the Tower of Babel again attempted to be erected in Pall Mall East. Let me ask how it is possible to know the intention of the prescriber, unless he premises the Pharmacopœia from which he quotes?

POTASSÆ BICARBONAS.

Bicarbonate of Potassa.

Potassæ Carbonas, P. L. 1809, P. L. 1824.

Composition.—2 equivalents of Carbonic Acid .. $22 \times 2 = 44$ or 43.56
 1 ——— Potassa..... = 48 47.53
 1 ——— Water = 9 8.91
 Equivalent 101 100

Decomposition.—A current of carbonic acid is passed through a solution of carbonate of potassa, which last compound we know to consist of 1 potassa and

1 carbonic acid. The potassa takes a second equivalent of carbonic acid to form a bicarbonate of potassa. The carbonic acid employed for this purpose is directed to be extricated from powdered chalk (carbonic acid and lime), by the addition of sulphuric acid diluted with water; and this is another instance of single elective affinity, so manifest as not to require explanation. As I have repeatedly stated, it is merely A separating B from C by superior power of attraction.

Properties.—Bicarbonate of potassa is not deliquescent. Its taste is only slightly alkaline. It is soluble in four parts of water at 60° and in its own weight of boiling water; but during the solution, the heat separates a portion of the carbonic acid. Like the carbonate, it is insoluble in alcohol. Dr. Wollaston first observed that it contains twice the quantity of carbonic acid existing in the carbonate.

LIQUOR POTASSÆ EFFERVESCENS.

Effervescing Solution of Potassa.

Commentary.—This is an agreeable form in which to take the bicarbonate of potassa; but where the curative object is to neutralize acidity, the presence of a large surplus of acid seems objectionable. Carbonic acid thus taken is not entirely eructated. It probably has its influence on the kidneys.

POTASSÆ SULPHAS.

Sulphate of Potassa.

Tartarum Vitriolatum, P. L. 1720, P. L. 1745.

Kali Vitriolatum, P. L. 1788.

Potassæ Sulphas, P. L. 1809, P. L. 1824.

(Sal Polychrest.)

Composition.—

		Dalton.
1 equivalent of Sulphuric Acid	= 40	or 44·7
1 ————— Potassa	= 48	55·3
Equivalent..	88	100

Decomposition.—The salt which remains after the distillation of nitric acid is here considered as a bisulphate, or supersulphate of potassa, containing an excess or surplus of acid beyond what is required to form the sulphate. This surplus of sulphuric acid is now expelled by igniting the salt in a crucible. The older method was to saturate the excess by the addition of carbonate of potassa.

Properties.—Sulphate of potassa is colourless, inodorous; has a bitter saline taste, and its crystals are anhydrous. One drachm is soluble in about two ounces of cold, or in five fluidrachms of boiling water: it is insoluble in alcohol. It decrepitates and melts at a red heat, but is not decomposed by it. It suffers no deterioration or change by exposure to the air. When one drachm has been dissolved in two ounces of any watery vehicle, by the addition of any tincture, a portion of the sulphate is precipitated.

Commentary.—The former Edinburgh Pharmacopœia, in addition to the sulphate as above procured, contained a *sulphas potassæ* obtained by deflagrating equal parts of nitre and sulphur. The process of manufacturing sulphuric acid (*vide* page 12) furnishes a similar residue.

POTASSÆ BISULPHAS.

Bisulphate of Potassa.

Potassæ Supersulphas, P. L. 1809, P. L. 1824.*Composition*.—It consists of—

2	equivalents of Sulphuric Acid	$40 \times 2 = 80$	or	54.8
1	———— Potassa	$= 48$		32.9
2	———— Water	$9 \times 2 = 18$		12.3
	Equivalent.....	146		100

Chemical Process.—In the last preparation, I stated that the salt which remains after the distillation of nitric acid is a bisulphate, or supersulphate of potassa; that is to say, either a compound of 1 potassa and 2 sulphuric acid, or 1 potassa and $1\frac{1}{2}$ sulphuric acid; in which latter case, the second equivalent is divided between the water and the sulphate of potassa, and forms what may be called a sesquisulphate of potassa. In the process above, according to the present Pharmacopœia, sulphuric acid is added to ensure the presence of sufficient acid to complete the bisulphate.—*Vide* the Analysis of Mr. Phillips, "Philosophical Magazine," N. S., vol. ii. 420.

Properties.—Sour and bitter; its sourness probably arising from the facility with which the second atom is detached; and for the same reason it is used at the Mint for cleansing copper coin. The crystals are soluble in half their weight of water at 40° . When dissolved in a large quantity of water and evaporated, crystals of the neutral sulphate are deposited, and a sour liquor remains. A steady red heat expels the excess of acid.—*Vide* Sulphate of Potassa. Alcohol added to a solution of this salt also precipitates the bisulphate.

Commentary.—This process, according to the Collegiate Translator's own shewing, is founded on a contingency; for he recognizes the salt remaining, after the distillation of nitric acid, as a bisulphate of potassa.

POTASSÆ TARTRAS.

Tartrate of Potassa (Neutral).

Tartarum Solubile, P. L. 1745.*Kali Tartarizatum*, P. L. 1788.*Potassæ Tartras*, P. L. 1809, P. L. 1824.*Composition*.—It is anhydrous, and consists of—

1	equivalent of Tartaric Acid	$= 66$	or	57.9
1	———— Potassa.....	$= 48$		42.1
	Equivalent.....	114		100

Decomposition.—Tartrate of potassa, commonly called soluble tartar, is made from cream of tartar (bitartrate of potassa) by boiling it with carbonate of potassa. By single elective affinity, the potassa unites with the second equivalent of tartaric acid, forming a neutral tartrate, and the carbonic acid escapes.

Products.—2 equivalents of Tartrate of Potassa.

1 ——— Carbonic Acid Gas evolved.

Properties.—Soluble in less than twice its weight of water, nearly insoluble in alcohol. Its taste is saline and bitter, but less disagreeable than that of most of the other saline aperients. It is slightly deliquescent in a damp atmosphere. Like the bitartrate, at a red heat it fuses, and is decomposed, and the resulting compound is carbonic acid. It should be perfectly neutral. It ought to be kept in crystals.

POTASSII BROMIDUM.

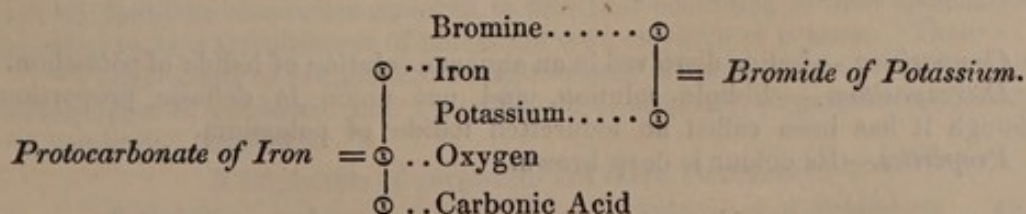
Bromide of Potassium.

Composition.—It consists of—

1 equivalent of Bromine.....	= 78
1 ——— Potassium	= 40
	118

Bromine was discovered by M. Balard, of Montpellier, and was first described by that gentleman in the "Annales de Chim. et Physique" for August 1826. It is procured from the bittern of sea water, in which it probably exists as a hydrobromate of magnesia. It is a deep reddish-brown liquid, possessing an odour remarkably suffocating and disagreeable. Sp. gr. is estimated at 3. At common temperatures a brownish-red vapour is exhaled from it, and at 116° it boils rapidly. It becomes solidified at a little below 0°. It is sparingly soluble in water; more so in alcohol; and abundantly in æther. Like chlorine, it destroys vegetable colours; and so again in its vapour, as in that of chlorine, certain substances, as phosphorus, tin, &c. spontaneously inflame. It stains the skin yellow; it is poisonous. It may be detected by evaporating the water, so as to separate its more ordinary crystallizable contents, and dropping into the mother-liquor, reduced to a small bulk, a concentrated solution of chlorine. In the absence of iodine, which may be detected by starch, a yellow tint announces bromine.

Decomposition.—In preparing the bromide of potassium, bromine and iron filings are first added to a pint and a half of water; and a gentle heat is applied until the mixture acquires a greenish colour. In this stage, the bromine unites with the iron to form a bromide of iron. On the addition of the carbonate of potassa, the potassium of the potassa unites with the bromine to form a bromide of potassium; the oxygen with the iron to form an oxide of iron; and this last, with the carbonic acid, constitutes a protocarbonate of iron.



Properties.—Anhydrous, white, fusible, crystallizing in cubes, very soluble in water, and partially so in alcohol; colourless; inodorous; not decomposed by igneous fusion.

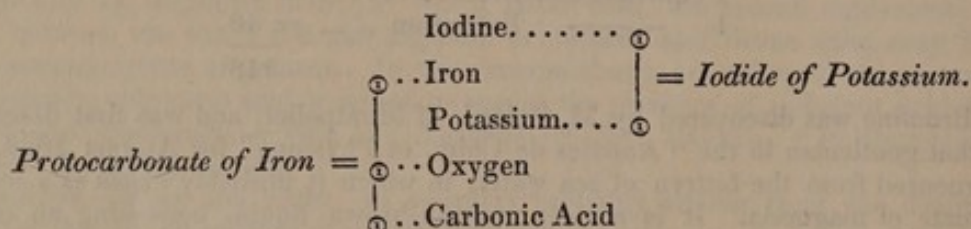
POTASSII IODIDUM.

Iodide of Potassium.

(Hydriodate of Potassa.)

Composition.—It consists of—

1 equivalent of Iodine	=	126	or	76
1 ————— Potassium	=	40		24
		166		100

Decomposition.—The same diagrams and explanation will answer to this process as to the last.*Products.*—Iodide of Potassium, and Protocarbonate of Iron.*Properties.*—A crystalline compound, colourless, inodorous, and fusible. It is very soluble in water, 100 parts taking up 143 of this salt; sparingly soluble in absolute alcohol, but more so in alcohol of sp. gr. .850; and in proof-spirit, sufficiently soluble for remedial purposes. "The crystals," says Mr. Brande, "ought not to be very deliquescent, and should perfectly dissolve in water."—*Vide Tests.*

LIQUOR POTASSII IODIDI COMPOSITUS.

Compound Liquor of Iodide of Potassium.

Composition.—Iodine dissolved in an aqueous solution of iodide of potassium.*Decomposition.*—Simple solution, and not union in definite proportions, although it has been called an ioduretted iodide of potassium.*Properties.*—Its colour is deep brown.

POTASSII SULPHURETUM.

Sulphuret of Potassium.

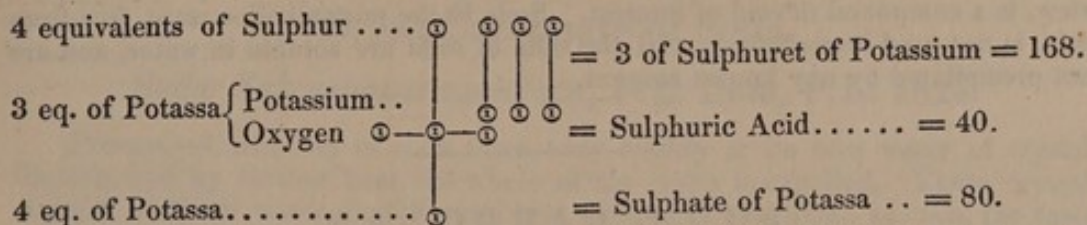
Kali Sulphuratum, P. L. 1788.*Potassæ Sulphuretum*, P. L. 1809, P. L. 1824.

(Hepar Sulphuris.)

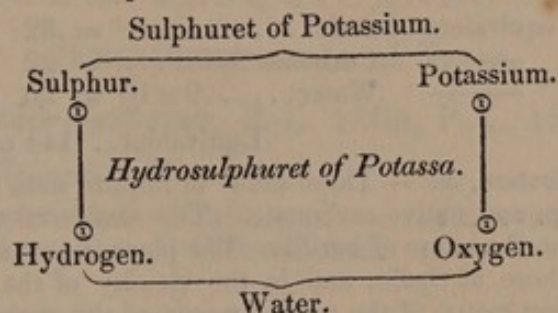
Composition.—3 equivalents of Sulphuret of Potassium.

1 equivalent of Sulphate of Potassa.

Decomposition.—4 equivalents of sulphur and 4 equivalents of carbonate of potassa (kali) are heated together, and the carbonic acid is expelled. An exchange takes place between part of the sulphur and the potassa; 3 sulphur with 3 potassium to form, as above, 3 equivalents of sulphuret of potassium; 3 corresponding equivalents of oxygen with the 4th equivalent of sulphur form sulphuric acid, which neutralizes the 4th undecomposed equivalent of potassa.



Properties.—Hard, reddish, or liver-brown substance, hence called liver of sulphur; odour, when moist, like that of rotten eggs; readily soluble in water; caustic taste; decomposed by exposure to the atmosphere, and gradually converted into sulphate of potassa. When dissolved, as in the form of lotion or bath, it decomposes water, and the sulphuret of potassium is converted into a hydrosulphuret of potassa. This compound never occurs but as the result of art.



Commentary.—When the student shall have duly learned the above theory of the reaction of the sulphur and potassium for the formation of liver of sulphur, he will no doubt be somewhat annoyed to find that according to later speculations it is stated to be a tersulphuret of potassium with sulphate of potassa. Thus—

“4 equivalents of potassa and 10 equivalents of sulphur, yield 3 equivalents of tersulphuret of potassium and 1 equivalent of sulphate of potassa.”—TURNER'S “Chemistry,” page 440.

5 sulphurets of potassium are there enumerated—

1 eq. of Sulphur	+ 1 eq. of Potassium	= Sulphuret of Potassium	eq. 56
2	+ 1	= Bisulphuret of Potassium	.. 72
5	+ 1	= Tersulphuret of Potassium	.. 88
3	+ 1	= Quadrosulphuret of Potassium	104
4	+ 1	= Quinosulphuret of Potassium	120

PRÆPARATA È SODIO.

Preparations of Sodium.

SODIUM, the metallic base of soda, is a brilliant white metal, tarnishing by exposure to the atmosphere, in consequence of its attraction for oxygen. It has many of the properties of potassium. Like this last-mentioned metal, it decomposes water with the evolution of oxygen, and occasions a hissing noise; but without the usual phenomena of combustion, unless the water is hot, when it scintillates, or even inflames: its sp. gr. is 0.972; it fuses at 206° and rises in vapour at a red heat. It combines with oxygen in two proportions: 1 equivalent of sodium and 1 equivalent of oxygen to form soda; and $1\frac{1}{2}$ of oxygen to 1 equivalent of sodium to form a sesquioxide of sodium, which, in a pharmaceutical view, is a compound devoid of interest. Soda in the pure alkaline state, free from acid, is not used in medicine. All the salts of soda are soluble in water, and are not precipitated by any known reagent.

SODÆ CARBONAS.

Carbonate of Soda.

Natron præparatum, P. L. 1788.

Sodæ Subcarbonas, P. L. 1809, P. L. 1824.

<i>Composition.</i> —1 equivalent of Soda.....			= 32
1	———	Carbonic Acid....	= 22
10	———	Water.....	$9 \times 10 = 90$

Equivalent.. 144 of the crystals.

Process of Purification, &c.—Three kinds of impure soda are met with in the market,—barilla, kelp, and native carbonate. The semifused ash of the *soda sal-sola* is imported under the name of barilla. The plant is extensively cultivated on the Mediterranean shore of Spain, and in the vicinity of the Alicant. Kelp is supplied by incinerating many of the marine weeds of the rocky coasts of Britain. These are burned in kilns, or in excavations of the ground, surrounded by stones. Kelp does not yield more than 5 per cent of carbonated alkali; and it takes, on an average, 24 tons of sea-weed to furnish 1 ton of kelp. The *fucus digitatus*, *serratus*, *nodosus*, and *vesiculosus*, or common sea-wrack, are the plants which yield most ash. With regard to the native carbonate, it constitutes but a small portion of the soda used in this country. All these specimens of the rough alkali require purification from the chloride of sodium, or chloride of potassium, contained in them; and this is effected by dissolving them in a small portion of water, filtrating the solution, and evaporating them at a gentle heat. Much, however, of the carbonate of soda now used in our own market is derived from the sulphate of soda, by a process of decomposition, which may be thus shortly described. The sulphate is ignited with chalk and charcoal; the sulphuric acid is driven off, and the soda combines with carbonic acid (to which end it is further exposed for some days in a damp cellar), yielding carbonate of soda.

Soda is itself divisible into sodium and oxygen. In 1807 it was shewn by Davy to consist of—

1 equivalent of Sodium.....	= 24
1 ——— Oxygen.....	= 8
	32

Properties.—Carbonate of soda is colourless; inodorous; has an alkaline taste; and the usual alkaline reaction on vegetable colours, greenish blues, and rendering vegetable yellows brown: the crystals contain 10 equivalents of water. It is soluble in twice its weight of water at 60°, and in less than its own weight at 212°. Exposed to a dry atmosphere its crystals effloresce, and crumble into an opaque white powder. In its anhydrous state it consists of—

1 equivalent of Soda	= 32
1 ——— Carbonic Acid.....	= 22
	54

SODÆ CARBONAS EXSICCATA.

Dried Carbonate of Soda.

Sodæ Subcarbonas exsiccata, P.L. 1809, P.L. 1824.

Process.—Carbonate of soda fuses very readily in its own water of crystallization, and by further heat the whole of the water is expelled. These crystals contain so much water, that if a red heat were to be employed at once, the fused mass would boil over. Out of 100 grains of carbonate of soda, 62 grains are mere water. Hence, in prescribing the dried carbonate, as, for example, in pills with Castile soap, it will be recollected that 10 grains are equal to 25 grains of the crystals.

SODÆ SESQUICARBONAS.

Sesquicarbonate of Soda.

Sodæ Carbonas, P.L. 1809, P.L. 1824.

Composition.—It consists of—

1 equivalent of Soda.....	= 32
1½ ——— Carbonic Acid.....	= 33
	65

The crystals contain 2 equivalents of water.

Decomposition.—A current of carbonic acid gas being transmitted through a solution of carbonate of soda, an additional half-equivalent of the carbonic acid unites with the base to form a sesquicarbonate; or, in other words, 2 equivalents of the carbonate attract an additional equivalent of carbonic acid to form 2 equivalents of the sesquicarbonate of soda.

Properties.—Colourless; inodorous; of an alkaline soapy taste; less soluble than the carbonate, and exciting but a slight alkaline reaction on vegetable colours. Exposed to a strong heat, it loses the additional half-equivalent of carbonic acid, and it is reduced to a dry carbonate of soda.

Commentary.—The sesquicarbonate of soda, the bicarbonate, and a mixture of both, are all sold indifferently under the shop-name of carbonate of soda, and it does not seem to occur either to the vendor or purchasers that any difference exists between the three articles.

S O D Æ S U L P H A S.

Sulphate of Soda.

Sal Catharticus Glauberi, P. L. 1745.*Natron Vitriolatum*, P. L. 1788.*Sodæ Sulphas*, P. L. 1809, P. L. 1824.

(Sal-Mirabile.)

Composition.—The crystals consist of—

1 equivalent of Soda.....	=	32
1 ————— Sulphuric Acid	=	40
10 ————— Water	9×10	= 90
Equivalent	=	162

Or, in the dry state,

1 equivalent of Soda	=	32	Wenzel.
1 ————— Sulphuric Acid ..	=	40	44·3
		72	55·7
			100

Decomposition.—The salt which remains after the distillation of hydrochloric acid is a sulphate of soda; but a slight excess of acid is present, which is here neutralized by the addition of a little carbonate of soda, the carbonic acid being expelled.

Properties.—Crystals efflorescent, having a strong bitter taste; soluble in 3 times its weight of water at 60°, and insoluble in alcohol. Exposed to heat, it undergoes watery fusion, melting in its own water of crystallization; and after the evaporation of its water, it may be again fused at a red heat.

S O D Æ P O T A S S I O - T A R T R A S.

Potassio-Tartrate of Soda.

Natron Tartarizatum, P. L. 1788.*Soda Tartarizata*, P. L. 1809, P. L. 1824.

(Rochelle Salt, Sel de Seignette.)

Composition.—It is a double salt, consisting of—

1 equivalent of Tartrate of Potassa....	=	114
1 ————— Tartrate of Soda.....	=	98
8 ————— Water	=	72
Equivalent..	=	284

Or, 10 equivalents of water, according to Mr. Brande.

Decomposition.—Bitartrate of potassa contains 2 equivalents of tartaric acid and 1 of potassa. On adding the bitartrate to a solution of carbonate of soda, the soda combines with one of the equivalents of tartaric acid to form a tartrate of soda; and this, with the reduced neutral tartrate, constitutes the double salt, or potassio-tartrate of soda.

Properties.—Crystals prismatic; soluble in about 5 parts of cold water; colourless; devoid of smell, and having a bitter saline taste. They are very slowly affected by exposure to the air.

LIQUOR SODÆ EFFERVESCENS.

Effervescing Liquor of Soda.

(Soda Water.)

LIQUOR SODÆ CHLORINATÆ.

Liquor of Chlorinated Soda.

(Labarraque's Soda disinfecting Liquor.)

Composition.—Not determined. The late Dr. Turner conjectured it to be a compound of chloride of sodium and carbonate of soda.

Decomposition.—Under the article Calx Chlorinata, the student will find an explanation of the evolution of chlorine gas by the action of sulphuric acid upon a mixture of chloride of sodium and binoxide of manganese. It is first passed through five fluidounces of water to detach any hydrochloric acid that may be present, so as to employ pure chlorine. Dr. Turner speaks of the mixture as being necessarily attended with an escape of carbonic acid gas; but Mr. Brande states, that if the ingredients are employed in the proper proportions, no such escape occurs, which strongly confirms Dr. Turner's view of its composition. As the compound form is susceptible of crystallization, and the crystals, when re-dissolved, re-produce the disinfecting solution, it would seem more convenient to supply it in the state of crystals, with proper directions for its extemporaneous solution.

Properties.—A pale-yellow liquid, evolving chlorine when exposed to the air; its taste is sharp, saline, and astringent: it first reddens, and then decolorates turmeric. It is but little changed by a boiling heat: its disinfecting property depends (so it is conjectured) upon the tendency of the chlorine to unite with hydrogen, which is supposed to be an element of the matter of infection.

Preparation and Properties of Chlorine.—Chlorine was first described by Scheele in 1774. It may be obtained by mixing equal weights of black (per- or bin-) oxide of manganese and hydrochloric (muriatic) acid, and heating the mixture over a lamp in a glass retort. Two equivalents of the acid are decomposed; their 2 hydrogen uniting with 2 oxygen of the binoxide of manganese form 2 water, while 1 chlorine is evolved, and the second equivalent of chlorine unites with the manganese to form chloride of manganese. Chlorine at ordinary pressures and temperatures is a gaseous fluid; but, by the pressure of four atmospheres, Dr. Faraday succeeded in condensing it into the liquid form. It is of a greenish-yellow colour; odour, pungent and offensive; taste, acrid and astringent; irrespirable; or, if respired in small quantities diluted with air, it induces great irritation of the lungs, and spasm in the muscles of the larynx; 100 cubic inches weigh between 76 and 77 grains. Its sp. gr. in reference to air is 2.470, and in reference to hydrogen as 36 to 1. It is supposed to possess considerable bleaching properties, but these more probably depend on nascent oxygen, resulting from the decomposition of water. The bleaching power of dew is ascribed to some excess of oxygen, in the form of peroxide of hydrogen.

PRÆPARATA È ZINCO.

Preparations of Zinc.

ZINC is a bluish-white metal, possessing considerable lustre; of the sp. gr. of about 6·8, although in the state of zinc wire, it is as high as 7·2. At common temperatures, zinc is tough, and with difficulty broken by the hammer; but within a few degrees of its melting point, or 773° , if smartly struck, it is so brittle that it becomes granulated. Its equivalent is 32. Thenard, and others, have described a suboxide and a peroxide, but at present one definite compound is alone admitted, namely, the oxide of zinc of the present Pharmacopœia. In commerce, the impure metal is called spelter. It is procured either by fluxing calamine by means of charcoal, or by roasting zinc blende (sulphuret of zinc).

CALAMINA PRÆPARATA.

Prepared Calamine.

Calamina præparata, P. L. 1788, to P. L. 1824.

(Native Carbonate of Zinc.)

Composition.—Specimens from Somersetshire and Derbyshire yielded—

1 equivalent of Oxide of Zinc	= 40	64·5
1 ——— Carbonic Acid	= 22	35·5
	62	100

But most calamine abounds with ferruginous, earthy, and sometimes, as in the Matlock specimens, with cupreous impurities.

ZINCI OXYDUM.

Oxide of Zinc.

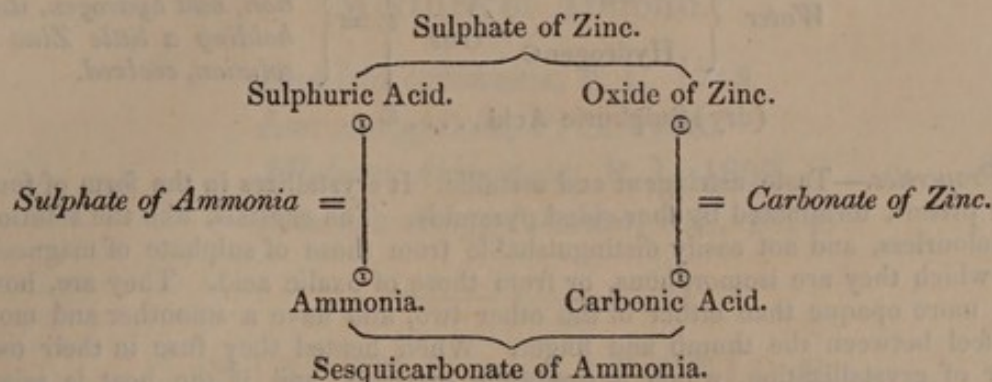
Zincum Calcinatum, P. L. 1788.

Zinci Oxydum, P. L. 1809, P. L. 1824.

Composition.—It consists of—

1 equivalent of Zinc	= 32	Proust. 80
1 ——— Oxygen	= 8	20
Equivalent	40	100

Decomposition.—Oxide of zinc is prepared by separately dissolving sulphate of zinc and sesquicarbonate of ammonia, and mixing the solutions. The exchange of acids and bases is reciprocal by double elective affinity, which the student will recognise by the perpendicular lines. We must infer that half an equivalent of carbonic acid escapes during the process.



Products.—Sulphate of ammonia in solution, carbonate of zinc precipitated; which last is afterwards reduced to the state of oxide by expelling the carbonic acid by means of heat.

Properties.—Oxide of zinc, when pure, is perfectly white, acquiring at a high temperature a tint of yellow, which it loses as it cools. It is inodorous, insipid, and insoluble in water, but readily soluble in acids and the caustic fixed alkalies. The oxide, prepared as above, has a slight tint of yellow. Eminent surgeons have stated that it does not agree with the skin and with ulcers, like the oxide prepared by combustion.

ZINCI SULPHAS.

Sulphate of Zinc.

Sal Vitrioli, P. L. 1720, P. L. 1745.

Zincum Vitriolatum, P. L. 1788.

Zinci Sulphas, P. L. 1809, P. L. 1824.

(White Vitriol, White Copperas.)

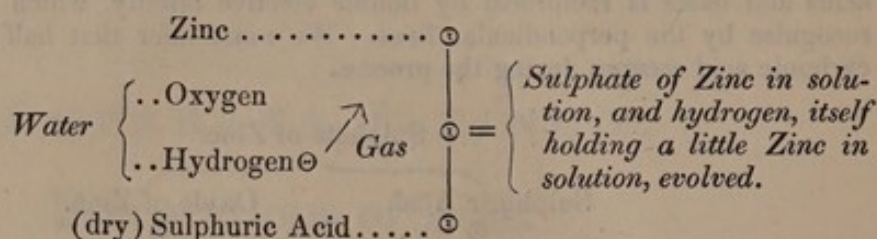
Composition.—It consists of—

		Tennant.
1 equivalent of Oxide of Zinc.....	= 40	50
1 ——— Sulphuric Acid.....	= 40	50
Equivalents..	80	100

The crystals consist of—

1 equivalent of Anhydrous Sulphate of Zinc..	= 80	56
7 ——— Water.....	9 × 7 = 63	44
Equivalents..	143	100

Decomposition.—Substituting zinc for iron, the chemical reactions are the same as those described under the head “Ferri Sulphas.”—*Vide* page 82.



Properties.—Taste, astringent and metallic. It crystallizes in the form of four-sided prisms, terminated by four-sided pyramids. The crystals, like the solution, are colourless, and not easily distinguishable from those of sulphate of magnesia, with which they are isomorphous, or from those of oxalic acid. They are, however, more opaque than either of the other two, and have a smoother and more oily feel between the thumb and finger. When heated they fuse in their own water of crystallization, which is gradually expelled; and if the heat is raised very high, the sulphuric acid is also driven off, leaving an oxide of zinc. It is soluble in $2\frac{1}{2}$ parts of water at 60° .

Though this salt is completely neutral, it reddens vegetable blue colours.

M I S T U R Æ.

Mixtures.

M I S T U R A A C A C I Æ.

Mixture of Acacia [Gum Arabic].

Mucilago Arabici Gummi, P. L. 1788.

Mucilago Acaciæ, P. L. 1809, P. L. 1824.

M I S T U R A A M M O N I A C I.

Mixture of Ammoniacum.

Mistura Ammoniaci, P. L. 1809, P. L. 1824.

MISTURA AMYGDALÆ.

Mixture of Almond.

Emulsio communis, P. L. 1745.*Lac Amygdalæ*, P. L. 1788.*Mistura Amygdalæ*, P. L. 1809.*Mistura Amygdalarum*, P. L. 1824.

MISTURA ASSAFÆTIDÆ.

Mixture of Assafoetida.

Lac Assafoetidæ, P. L. 1788.*Mistura Assafoetidæ*, P. L. 1809, P. L. 1824.

MISTURA CAMPHORÆ.

Mixture of Camphor.

Julepum è Camphorâ, P. L. 1745.*Mistura Camphorata*, P. L. 1788.*Mistura Camphoræ*, P. L. 1809, P. L. 1824.

MISTURA CASCARILLÆ COMPOSITA.

Compound Mixture of Cascarilla.

MISTURA CRETÆ.

Mixture of Chalk.

Julepum è Cretâ, P. L. 1745.*Mistura Cretacea*, P. L. 1788.*Mistura Cretæ*, P. L. 1809, P. L. 1824.

MISTURA FERRI COMPOSITA.

Compound Mixture of Iron.

Mistura Ferri Composita, P. L. 1809, P. L. 1824.

Composition.—When recently prepared it contains sulphate of potassa in solution, and protocarbonate of iron in a state of partial suspension. In about two or three days it absorbs oxygen from the air, and becomes a reddish sesquioxide, in which state it is commonly rejected as too insoluble. This, however, is inconsistent; for the protoxide is also insoluble, and the sesquioxide, under the old name of subcarbonate of iron, is the favourite tonic for diseases of excessive mobility of the nervous system. They are both soluble in the natural acids of the stomach.

Decomposition.—Double elective affinity. The protoxide of iron attracts the carbonic acid to form a protocarbonate, the sulphuric acid unites with the potassa to form a sulphate of potassa.

MISTURA GENTIANÆ COMPOSITA.

Compound Mixture of Gentian.

MISTURA GUAIIACI.

Mixture of Guaiacum.

Lac Guaiaci, P. L. 1788.

Mistura Guaiaci, P. L. 1809, P. L. 1824.

MISTURA MOSCHI.

Mixture of Musk.

Julepum è Moschá, P. L. 1745.

Mistura Moschata, P. L. 1788.

Mistura Moschi, P. L. 1809, P. L. 1824.

MISTURA SPIRITUS VINI GALLICI.

Mixture of Spirit of French Wine [Brandy].

OLEA DESTILLATA.

Distilled Oils.

THE general characters of essential oils, and the mode of detecting the spirit or fixed oil with which they may have been adulterated (the first by the milky opacity produced by the addition of water, and the last by the greasy stain left upon paper), have been already set forth in the Pharmacopœia. I am induced here to prefix an epitome of more recent discoveries, because these bodies have of late years been subjects of increasing interest, owing to the results afforded by their ultimate analysis. It has been already observed, that when distilled from their proper herbs with water, they pass over with it at the boiling-point, and the produce of the oil is said to be sometimes increased by adding salt to the water of the still, so as to elevate its boiling-point to the extent of a few degrees. The volatile oil is collected and separated from the water after distillation, by means of the Italian recipient and funnel. The epicarp of certain ikosandrious fruits, such as that of the lemon, the orange, and the bergamot, yields the oil simply by expression; but the volatile oil of seeds, herbs, and flowers, is mostly obtained by distillation. Sparingly soluble in water, their solutions are called distilled waters; largely soluble in alcohol, they thus constitute the essences of perfumers, whose business it is to study to develop the finest odours by a varied combination of the oils with certain other odoriferous materials. Moderate age improves the odour of most essential oils, but by long keeping some are concreted into a substance like spermaceti, and others absorb oxygen, and pass into the state of a thick resinous fluid. They are rapidly decomposed by the addition of nitric or sulphuric acid, and such additions to the oil of turpentine induce instant inflammation.

Some are binary compounds, or hydrocarbons; others are ternary, or oxides of hydrocarbon.

Of the first sort, are oil of turpentine, oil of lemons, and copaiva balsam, which are all three compounded of hydrogen and carbon. Most of the other essential oils belong to the second kind, or oxides of hydrocarbon; and with these may be ranked camphor, which has been shewn by Dumas to be an oxide of a hydrocarbon, identical in composition with pure oil of turpentine, and hence the new name of camphene, or camphogene, for this last fluid.

OLEUM ANISI.

Oil of Anise.

Oleum è seminibus Anisi, P. L. 1745.

Oleum essentielle Anisi, P. L. 1788.

Oleum Anisi, P. L. 1809, P. L. 1824.

OLEUM ANTHEMIDIS.

Oil of Chamomile.

Oleum Chamamalinum, P. L. 1720.

Oleum è floribus Chamameli, P. L. 1745.

Oleum Anthemidis, P. L. 1788, P. L. 1809, P. L. 1824.

OLEUM CARUI.

Oil of Carraway.

Oleum essentielle è seminibus Carui, P. L. 1745.

Oleum essentielle Carui, P. L. 1788.

Oleum Carui, P. L. 1809, P. L. 1824.

OLEUM JUNIPERI.

Oil of Juniper.

Oleum essentielle è baccis Juniperi, P. L. 1720, P. L. 1745.

Oleum essentielle Juniperi baccæ, P. L. 1788.

Oleum Juniperi, P. L. 1809, P. L. 1824.

OLEUM LAVANDULÆ.

Oil of Lavender.

Oleum essentielle è floribus Lavendulæ, P. L. 1745.

Oleum essentielle Lavendulæ, P. L. 1788.

Oleum Lavandulæ, P. L. 1809, P. L. 1824.

OLEUM MENTHÆ PIPERITÆ.

Oil of Peppermint.

Oleum essentielle è foliis Menthæ piperitidis, P. L. 1745.

Oleum essentielle Menthæ piperitidis, P. L. 1788.

Oleum Menthæ piperitæ, P. L. 1809, P. L. 1824.

OLEUM MENTHÆ PULEGII.

Oil of Pennyroyal.

Oleum essentielle è foliis Pulegii, P. L. 1745.

Oleum essentielle Pulegii, P. L. 1788.

Oleum Pulegii, P. L. 1809, P. L. 1824.

OLEUM MENTHÆ VIRIDIS.

Oil of Spearmint.

Oleum essentielle è foliis Menthæ vulgaris, P. L. 1745.

Oleum essentielle Menthæ sativæ, P. L. 1788.

Oleum Menthæ viridis, P. L. 1809, P. L. 1824.

OLEUM ORIGANI.

Oil of Marjoram.

Oleum essentielle è foliis Origani, P. L. 1745.

Oleum essentielle Origani, P. L. 1788.

Oleum Origani, P. L. 1809, P. L. 1824.

OLEUM PIMENTÆ.

Oil of Pimenta.

Oleum Pimentæ, P. L. 1809, P. L. 1824.

OLEUM ROSMARINI.

Oil of Rosemary.

Oleum essentielle è foliis Roris marini, P. L. 1745.*Oleum essentielle Roris marini*, P. L. 1788.*Oleum Rosmarini*, P. L. 1809, P. L. 1824.

OLEUM SAMBUCI.

Oil of Elder Flowers.

OLEUM SUCCINI.

Oil of Amber.

Oleum Succini Rectificatum, P. L. 1788.*Oleum Succini*, P. L. 1720, P. L. 1745, P. L. 1809, P. L. 1824.

OLEUM TEREBINTHINÆ PURIFICATUM.

Purified Oil of Turpentine.

(Also called Camphene and Camphogene.)

Oleum sive Spiritus Terebinthinæ, P. L. 1720.*Oleum Terebinthinæ Æthereum*, P. L. 1745.*Oleum Terebinthæ Rectificatum*, P. L. 1788, P. L. 1809, P. L. 1824.

PILULÆ.

Pills.

PILULÆ ALOËS COMPOSITÆ.

Compound Pills of Aloes.

Pilulæ Aloës Compositæ, P. L. 1788, P. L. 1809, P. L. 1824.

PILULÆ ALOËS CUM MYRRHA.

Pills of Aloes with Myrrh.

Pilulæ Ruffi, P. L. 1720.

Pilulæ Rufi, P. L. 1745.

Pilulæ Aloës cum Myrrha, P. L. 1788, P. L. 1809, P. L. 1824.

PILULÆ CAMBOGIÆ COMPOSITÆ.

Compound Pills of Camboge.

Pilulæ Cambogiæ compositæ, P. L. 1809, P. L. 1824.

PILULÆ CONII COMPOSITÆ.

Compound Pills of Hemlock.

PILULÆ FERRI COMPOSITÆ.

Compound Pills of Iron.

Pilulæ Ferri cum Myrrhâ, P. L. 1809.

Pilulæ Ferri Compositæ, P. L. 1824.

Decomposition.—Substitute soda for potassa, and the theory will be the same as that of Griffiths' Mixture.—*Vide* Mist. Ferri Composita.

Commentary.—I often think of the mass of some two or three hundreds of these pills found on opening the bowels of a female who had died of amenorrhœal phthisis, (the autopsy was by Haller,) and I pause in prescribing these pills.

PILULÆ GALBANI COMPOSITÆ.

Compound Pills of Galbanum.

Pilulæ Gummosæ, P. L. 1720, P. L. 1745.

Pilulæ Galbani Compositæ, P. L. 1788, P. L. 1809, P. L. 1824.

PILULÆ HYDRARGYRI.

Pills of Mercury.

Pilulæ Mercuriales, P. L. 1745.

Pilulæ Hydrargyri, P. L. 1788, P. L. 1809, P. L. 1824.

Commentary.—I see no good reason for doubting that the mercury in this pill, as in the hydrargyrum cum cretâ, and unguentum hydrargyri, is partially oxidized. I have known considerable quantities of metallic mercury—a pound or more—remain for many hours in the alimentary canal, without any other effect than what was purely mechanical; and it may be added, that certain candidates for longevity have been known to swallow a globule of mercury, the size of a pea, or larger, every day of their lives, for a long series of years. But if any faith is to be placed on analyses, the exact proportion of oxidized and minutely divided metal was stated by Professor Brande twenty years ago, although the College authority tells us that blue pill is probably nothing but metallic mercury minutely divided.

PILULÆ HYDRARGYRI CHLORIDI COMPOSITÆ.

Compound Pills of Chloride of Mercury.

Pilulæ Hydrargyri Submuriatis compositæ, P. L. 1809, P. L. 1824.

PILULÆ HYDRARGYRI IODIDI.

Pills of Iodide of Mercury.

PILULÆ IPECACUANHÆ COMPOSITÆ.

Compound Pills of Ipecacuanha.

PILULÆ RHEI COMPOSITÆ.

Compound Pills of Rhubarb.

PILULÆ SAGAPENI COMPOSITÆ.

Compound Pills of Sagapenum.

PILULÆ SAPONIS COMPOSITÆ.

Compound Pills of Soap.

Laudanum, P. L. 1720.*Pilulæ Saponaceæ*, P. L. 1745.*Pilulæ Opii*, P. L. 1788.*Pilulæ Saponis cum Opio*, P. L. 1809, P. L. 1824.

PILULÆ SCILLÆ COMPOSITÆ.

Compound Pills of Squill.

Pilulæ Scillæ, P. L. 1788.*Pilulæ Scillæ Compositæ*, P. L. 1809, P. L. 1824.

PILULÆ STYRACIS COMPOSITÆ.

Compound Pills of Storax.

Pilulæ è Styrace, P. L. 1745.

PULVERES.

Powders.

PULVIS ALOËS COMPOSITUS.

Compound Powder of Aloes.

Pulvis Aloës cum Guaiaco, P. L. 1788.

Pulvis Aloës Compositus, P. L. 1809, P. L. 1824.

PULVIS CINNAMOMI COMPOSITUS.

Compound Powder of Cinnamon.

Species Aromaticæ, P. L. 1745.

Pulvis Aromaticus, P. L. 1788.

Pulvis Cinnamomi Compositus, P. L. 1809, P. L. 1824.

PULVIS CRETÆ COMPOSITUS.

Compound Powder of Chalk.

Pulvis è Bolo compositus sine Opio, Species è Scordio sine Opio,
P. L. 1745.

Pulvis Cretæ compositus, P. L. 1788, P. L. 1809, P. L. 1824.

PULVIS CRETÆ COMPOSITUS CUM OPIO.

Compound Powder of Chalk with Opium.

Pulvis è Bolo compositus cum Opio, Species è Scordio cum Opio,
P. L. 1745.

Pulvis è Cretâ compositus cum Opio, P. L. 1788, P. L. 1809,
P. L. 1824.

PULVIS JALAPÆ COMPOSITUS.

Compound Powder of Jalap.

PULVIS IPECACUANHÆ COMPOSITUS.

Compound Powder of Ipecacuanha.

Pulvis Ipecacuanhæ Compositus, P. L. 1788, P. L. 1809, P. L. 1824.

PULVIS KINO COMPOSITUS.

Compound Powder of Kino.

Pulvis Kino compositus, P. L. 1809, P. L. 1824.

PULVIS SCAMMONII COMPOSITUS.

Compound Powder of Scammony.

Pulvis Comitæ Warwicensis, P. L. 1720.*Pulvis à Scammonio compositus*, P. L. 1745.*Pulvis Scammonii compositus*, P. L. 1788, edit. altera.*Pulvis Scammoneæ compositus*, P. L. 1809, P. L. 1824.

PULVIS TRAGACANTHÆ COMPOSITUS.

Compound Powder of Tragacanth.

Species Diatragacanthæ frigidæ, P. L. 1720.*Pulvis à Tragacanthâ compositus*, P. L. 1745.*Pulvis Tragacanthæ compositus*, P. L. 1788, P. L. 1809, P. L. 1824.

SPIRITUS.

Spirits.

ALCOHOL.

Alcohol.

Alcohol, P. L. 1788.

Alcohol, P. L. 1809, P. L. 1824.

Process.—In former Pharmacopœias the rectification of spirit was effected by kali previously heated, so as to increase its affinity for the water it was intended to separate. Pure well-burnt lime was, however, generally used in preference; and within the last few years chloride of calcium has been found to be a very effective agent for the separation of the water and the purification of the spirit. The operator should take care that the chloride is perfectly dry at the time of use.

Composition.—Alcohol is now considered to be a bihydrate of etherine. Within the last few years it was assumed to be a compound of—

1 equivalent of the Vapour of Water ..	=	9
1 ————— Olefiant Gas	=	14

Equivalent .. 23 for Alcohol.

But, according to the modern notion, its equivalent must be taken as 46, and it will consist of—

2 equivalents of Water	$9 \times 2 =$	18
1 ————— Etherine, Quadrihydrocarbon	=	28
Equivalent ..		46

In whichever light we view its constitution, the elements will accord with the analysis of Saussure :—

3 equivalents of Hydrogen..	3
2 ————— Carbon....	12
1 ————— Oxygen...	8
Equivalents ..	$23 \times 2 = 46$.

Properties.—Absolute alcohol is a transparent, colourless liquid, of a pleasant odour, and a strong pungent taste. It is deservedly ranked among the poisons. It is lighter than water; its sp. gr. when obtained in the purest form, by rectification over lime, being .791; but as it more usually occurs, it is .820 at 60°. That of the Pharmacopœia is .815; and it is seldom obtained of a lower specific gravity by the usual process of distillation. It has never been frozen. It is highly volatile and inflammable, and the products of combustion are water and carbonic acid. Alcohol, of sp. gr. of .815 boils at 176°, or 36° below the boiling point of water. When mixed with water to form proof-spirit, much heat is evolved, and the mixed liquids occupy less space than that occupied by the alcohol and water, when separate.

SPIRITUS AMMONIÆ.

Spirit of Ammonia.

Spiritus Salis Ammoniaci, P. L. 1720.

Spiritus Salis Ammoniaci dulcis, P. L. 1745.

Spiritus Ammoniæ, P. L. 1788 to P. L. 1824.

Composition.—It is a spirituous solution of neutral carbonate of ammonia.

Decomposition.—*Vide* page 18, under the article *ammoniæ sesquicarbonas*. Hydrochlorate of ammonia and carbonate of potassa are dissolved in a mixture of spirit and water. The chlorine combines with the potassium to form chloride of potassium; the hydrogen of the hydrochloric acid, with the oxygen of the potassa, forms water; and the ammonia with the carbonic acid forms a neutral carbonate.

SPIRITUS AMMONIÆ AROMATICUS.

Aromatic Spirit of Ammonia.

Spiritus Salis Volatilis oleosus, P. L. 1720.

Spiritus Volatilis Aromaticus, P. L. 1745.

Spiritus Ammoniæ compositus, P. L. 1788.

Spiritus Ammoniæ Aromaticus, P. L. 1809, P. L. 1824.

Composition and Decomposition.—The same as those of spirit of ammonia.

SPIRITUS AMMONIÆ FÆTIDUS.

Fetid Spirit of Ammonia.

Spiritus Volatilis fætidus, P. L. 1745.

Spiritus Ammoniæ fætidus, P. L. 1788 to P. L. 1824.

Composition and Decomposition.—The same as those of spirit of ammonia.

SPIRITUS ANISI.

Spirit of Aniseed.

Spiritus Anisi, P. L. 1809, P. L. 1824.

Note.—The compound spirit of P. L. 1745 was prepared from equal weights of aniseed and angelica seed.

SPIRITUS ARMORACIÆ COMPOSITUS.

Compound Spirit of Horseradish.

Aqua Raphani composita, P. L. 1720, P. L. 1745.

Spiritus Raphani compositus, P. L. 1788.

Spiritus Armoraciæ compositus, P. L. 1809, P. L. 1824.

SPIRITUS CARUI.

Spirit of Carraway.

Aqua Seminum Carui, P. L. 1745.

Spiritus Carui, P. L. 1788, P. L. 1809, P. L. 1824.

SPIRITUS CINNAMOMI.

Spirit of Cinnamon.

Aqua Cinnamomi fortis, P. L. 1720.

Aqua Cinnamomi spirituosæ, P. L. 1745.

Spiritus Cinnamomi, P. L. 1788, P. L. 1809, P. L. 1824.

SPIRITUS JUNIPERI COMPOSITUS.

Compound Spirit of Juniper.

Aqua Juniperi composita, P. L. 1745.

Spiritus Juniperi compositus, P. L. 1788, P. L. 1809, P. L. 1824.

SPIRITUS LAVANDULÆ.

Spirit of Lavender.

Spiritus Lavendulæ simplex, P. L. 1745.

Spiritus Lavendulæ, P. L. 1788.

Spiritus Lavandulæ, P. L. 1809, P. L. 1824.

SPIRITUS MENTHÆ PIPERITÆ.

Spirit of Peppermint.

Aqua Menthæ piperitidis spirituosæ, P. L. 1745.

Spiritus Menthæ piperitidis, P. L. 1788.

Spiritus Menthæ piperitæ, P. L. 1809, P. L. 1824.

SPIRITUS MENTHÆ VIRIDIS.

Spirit of Spearmint.

Aqua Menthæ vulgaris spirituosæ, P. L. 1745.

Spiritus Menthæ sativæ, P. L. 1788.

Spiritus Menthæ viridis, P. L. 1809, P. L. 1824.

SPIRITUS MENTHÆ PULEGII.

Spirit of Pennyroyal.

Aqua Pulegii spirituosæ, P. L. 1745.

Spiritus Pulegii, P. L. 1788, P. L. 1809, P. L. 1824.

SPIRITUS MYRISTICÆ.

Spirit of Nutmeg.

Aqua Nucis Moschatæ, P. L. 1745.

Spiritus Myristicæ, P. L. 1788, P. L. 1809, P. L. 1824.

SPIRITUS PIMENTÆ.

Spirit of Pimenta.

Spiritus Pimento, P. L. 1788.

Spiritus Pimentæ, P. L. 1809, P. L. 1824.

SPIRITUS ROSMARINI.

Spirit of Rosemary.

Spiritus Rorismarini, P. L. 1745, P. L. 1788.

Spiritus Rosmarini, P. L. 1809, P. L. 1824.

SYRUP I.

Syrups.

SYRUPUS.

Syrup.

Syrupus simplex, P. L. 1745.

Syrupus, P. L. 1788, P. L. 1809.

Syrupus simplex, P. L. 1824.

SYRUPUS ALTHÆÆ.

Syrup of Marshmallow.

Syrupus de Althæâ, P. L. 1720.

Syrupus ex Althæâ, P. L. 1745.

Syrupus Althææ, P. L. 1788, P. L. 1809, P. L. 1824.

SYRUPUS AURANTII.

Syrup of Orange [Peel].

Syrupus de cortice Aurantiorum, P. L. 1720.

Syrupus è corticibus Aurantiorum, P. L. 1745.

Syrupus corticis Aurantii, P. L. 1788.

Syrupus Aurantii, P. L. 1809.

Syrupus Aurantiorum, P. L. 1824.

SYRUPUS CROCI.

Syrup of Saffron.

Syrupus Croci, P. L. 1720, P. L. 1745, P. L. 1788, P. L. 1809,
P. L. 1824.

SYRUPUS LIMONUM.

Syrup of Lemons.

Syrupus è succo Citriorum, P. L. 1720.
Syrupus è succo Limonum, P. L. 1745.
Syrupus succi Limonum, P. L. 1788.
Syrupus Limonis, P. L. 1809.
Syrupus Limonum, P. L. 1824.

SYRUPUS MORI.

Syrup of Mulberry.

Syrupus Mororum, P. L. 1745.
Syrupus Mori, P. L. 1788, P. L. 1809, P. L. 1824.

SYRUPUS PAPAVERIS.

Syrup of Poppy.

Syrupus de Meconio sive Diacodium, P. L. 1720.
Syrupus de Meconio, P. L. 1745.
Syrupus Papaveris albi, P. L. 1788.
Syrupus Papaveris, P. L. 1809, P. L. 1824.

Mr. Bass has an excellent preparation, which he recommends as a substitute for the above. It is universally observed by the merest tyro of the shop, that the common syrup will not keep. A low temperature may retard, but does not prevent, fermentation. The mechanical inconvenience is certainly considerable;

but the deterioration in remedial power is a still greater defect. Mr. Bass observes, that the uncertainty in the strength of the recent syrup arises from the defective manner in which it is prepared, and the imperfect solution of the extractive matter. "I have lately (says this gentleman) brought forward a preparation for making syrup of poppy extemporaneously, which I think will entirely obviate the above inconveniences. My plan is to treat the bruised capsules with successive portions of boiling water, till the colouring matter is no longer given out. These solutions afterwards concentrated to a certain point, and combined with a small portion of alcohol, form a pure, permanent, and uniform preparation; one part of which, combined with four parts of simple syrup, will form syrup of poppy of great purity and of unvarying strength. As the simple syrup of the Pharmacopœia contains one-fifth part more sugar than the syrup of poppy, it follows that upon this plan the same proportions will continue to exist."

Neither this preparation, nor the syrup formed with it, are at all disposed to fermentation,—a quality which, with its uniformity of strength, render it, I think, well worthy the attention of medical practitioners.

An extemporaneous syrup of poppies may also be made by rubbing up a scruple of the Extractum Papaveris with one ounce of simple syrup; but the practice of making the Syrupus Sarsæ, and other syrups, in this way, is inexcusable.

SYRUPUS RHAMNI.

Syrup of Buckthorn.

Syrupus de Spinâ Cervinâ, P. L. 1720.

Syrupus è Spinâ Cervinâ, P. L. 1745.

Syrupus Spinæ Cervinæ, P. L. 1788.

Syrupus Rhamni, P. L. 1809, P. L. 1824.

SYRUPUS RHÆADOS.

Syrup of Red Poppy.

Syrupus de Papavere erratico, P. L. 1720.

Syrupus Papaveris erratici, P. L. 1745, P. L. 1788.

Syrupus Rhæados, P. L. 1809, P. L. 1824.

SYRUPUS ROSÆ.

Syrup of Rose.

Syrupus è Rosis siccis, P. L. 1720.

Syrupus Rosarum solutivus, P. L. 1745.

Syrupus Rosæ, P. L. 1788, P. L. 1809, P. L. 1824.

SYRUPUS SARZÆ.

Syrup of Sarsaparilla.

Syrupus Sarsaparillæ, P. L. 1824.

SYRUPUS SENNÆ.

Syrup of Senna.

Syrupus Sennæ, P. L. 1809, P. L. 1824.

SYRUPUS TOLUTANUS.

Syrup of Tolu.

Syrupus Balsamicus, P. L. 1720, P. L. 1745.*Syrupus Tolutanus*, P. L. 1788, P. L. 1809, P. L. 1824.

SYRUPUS ZINGIBERIS.

Syrup of Ginger.

Syrupus Zingiberis, P. L. 1745, P. L. 1788, P. L. 1809,
P. L. 1824.

TINCTURÆ.

Tinctures.

TINCTURA ALOËS.

Tincture of Aloes.

Tinctura Aloës, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA ALOËS COMPOSITA.

Compound Tincture of Aloes.

Elixir Proprietatis, P. L. 1720.

Elixir Aloës, P. L. 1745.

Tinctura Aloës composita, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA AMMONIÆ COMPOSITA.

Compound Tincture of Ammonia.

Spiritus Ammoniæ Succinatus, P. L. 1788, P. L. 1809, P. L. 1824.

Commentary.—This is a *tinctura non tincta*. It seems to have been named after the well-known figure of expression, *lucus à non lucendo*.

TINCTURA ASSAFÆTIDÆ.

Tincture of Assafoetida.

Tinctura Fætida, P. L. 1745.

Tinctura Asæ fætidæ, P. L. 1788.

Tinctura Assafætidæ, P. L. 1809, P. L. 1824.

TINCTURA AURANTII.

Tincture of Orange [Peel].

Tinctura corticis Aurantii, P. L. 1788.

Tinctura Aurantii, P. L. 1809, P. L. 1824.

TINCTURA BALSAMI TOLUTANI.

Tincture of Balsam of Tolu.

TINCTURA BENZÖINI COMPOSITA.

Compound Tincture of Benzoin.

Balsamum Traumaticum, P. L. 1745.

Tinctura Benzöes composita, P. L. 1788.

Tinctura Benzöini composita, P. L. 1809, P. L. 1824.

TINCTURA CALUMBÆ.

Tincture of Calumba.

Tinctura Colombæ, P. L. 1788.

Tinctura Calumbæ, P. L. 1809, P. L. 1824.

TINCTURA CAMPHORÆ.

Tincture of Camphor.

Spiritus Vini Camphoratus, P. L. 1720.

Spiritus vinosus Camphoratus, P. L. 1745.

Spiritus Camphoratus, P. L. 1788.

Spiritus Camphoræ, P. L. 1809, P. L. 1824.

TINCTURA CAMPHORÆ COMPOSITA.

Compound Tincture of Camphor.

Elixir Paregoricum, P. L. 1745.

Tinctura Opii Camphorata, P. L. 1788.

Tinctura Camphoræ composita, P. L. 1809, P. L. 1824.

TINCTURA CANTHARIDIS.

Tincture of Cantharides.

Tinctura Cantharidum, P. L. 1720, P. L. 1745.

Tinctura Cantharidis, P. L. 1788.

Tinctura Lyttæ, P. L. 1809.

Tinctura Cantharidis, P. L. 1824.

TINCTURA CAPSICI.

Tincture of Capsicum.

Tinctura Capsici, P. L. 1809, P. L. 1824.

TINCTURA CARDAMOMI.

Tincture of Cardamom.

Tinctura Cardamomi, P. L. 1745, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA CARDAMOMI COMPOSITA.

Compound Tincture of Cardamom.

Tinctura Stomachica, P. L. 1745.

Tinctura Cardamomi composita, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA CASCARILLÆ.

Tincture of Cascarilla.

Tinctura Cascarillæ, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA CASTOREI.

Tincture of Castor.

Tinctura Castorei, P. L. 1720, P. L. 1745, P. L. 1788, P. L. 1809,
P. L. 1824.

TINCTURA CATECHU.

Tincture of Catechu.

Tinctura Japonica, P. L. 1745.*Tinctura Catechu*, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA CINCHONÆ.

Tincture of Cinchona [Yellow].

Tinctura Corticis Peruviani simplex, P. L. 1745.*Tinctura Cinchonæ*, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA CINCHONÆ COMPOSITA.

Compound Tincture of Cinchona [Pale].

Tinctura Cinchonæ composita, P. L. 1788, P. L. 1809,
P. L. 1824.

TINCTURA CINNAMOMI.

Tincture of Cinnamom.

Tinctura Cinnamomi, P. L. 1745, P. L. 1788, P. L. 1809,
P. L. 1824.

TINCTURA CINNAMOMI COMPOSITA.

Compound Tincture of Cinnamom.

Tinctura Aromatica, P. L. 1745.
Tinctura Cinnamomi composita, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA COLCHICI.

Tincture of Meadow Saffron.

TINCTURA COLCHICI COMPOSITA.
Compound Tincture of Meadow Saffron.
Spiritus Colchici Ammoniatus, P. L. 1824.

TINCTURA CONII.

Tincture of Hemlock.

TINCTURA CUBEBAE.

Tincture of Cubebs.

TINCTURA DIGITALIS.

Tincture of Foxglove.

Tinctura Digitalis, P. L. 1809, P. L. 1824.

TINCTURA GALLÆ.

Tincture of Gall.

TINCTURA GENTIANÆ COMPOSITA.

Compound Tincture of Gentian.

Tinctura Amara, P. L. 1745.*Tinctura Gentianæ composita*, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA GUAIACI.

Tincture of Guaiacum.

Tinctura Guaiaci, P. L. 1809, P. L. 1824.

TINCTURA GUAIACI COMPOSITA.

Compound Tincture of Guaiacum.

Tinctura Guaiacina volatilis, P. L. 1745.*Tinctura Guaiaci Ammoniata*, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA HELLEBORI [NIGRI].

Tincture of Hellebore.

Tinctura Hellebori, P. L. 1720.*Tinctura Melampodii*, P. L. 1745.*Tinctura Hellebori nigri*, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA HYOSCYAMI.

Tincture of Henbane.

Tinctura Hyoscyami, P. L. 1809, P. L. 1824.

TINCTURA JALAPÆ.

Tincture of Jalap.

Tinctura Jalapii, P. L. 1745, P. L. 1788.*Tinctura Jalapæ*, P. L. 1809, P. L. 1824.

TINCTURA IODINII COMPOSITA.

Compound Tincture of Iodine.

TINCTURA KINO.

Tincture of Kino.

Tinctura Kino, P. L. 1809, P. L. 1824.

TINCTURA LAVANDULÆ COMPOSITA.

Compound Tincture of Lavender.

Spiritus Lavendulæ compositus Matthiæ, P. L. 1720.*Spiritus Lavendulæ compositus*, P. L. 1745.*Tinctura Lavendulæ compositus*, P. L. 1788.*Spiritus Lavandulæ compositus*, P. L. 1809, P. L. 1824.

TINCTURA LUPULI.

Tincture of Hop.

Tinctura Humuli, P. L. 1809, P. L. 1824.

TINCTURA MYRRHÆ.

Tincture of Myrrh.

Tinctura Myrrhæ simplex, P. L. 1720.

Tinctura Myrrhæ, P. L. 1745, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA OPII.

Tincture of Opium.

Tinctura Opii, P. L. 1788, P. L. 1809, P. L. 1824.

Properties.—Colour, deep brown red, approaching to black; odour and taste of the opium. It strongly affects litmus paper; as also does Battley's sedative liquor, and Squire's solution of bimeconate of morphia. Ten minims of each of these preparations, separately diluted with an ounce of distilled water, were tested by the addition of a drop or two of tincture of iodine. The laudanum and the sedative liquor yielded a deep brickdust-precipitate; and a resinous pellicle, shewing the prismatic colours, was immediately found on the surface. The absence of the pellicle on the surface of Squire's solution would indicate that the resin is detached in his process of purification; the colour struck by the iodine was nearly the same in all three.

Commentary.—Proof-spirit is the best solvent of opium. There are many persons who still scarcely believe that the substitution of the rectified spirit was the error of the College, since no notice is taken of it in the (by permission) Collegiate Translation. It is almost impossible to bring such a work out without errors; but the practice of passing them over with "silent dignity" is inexcusable; nay, it is dishonest to the public.

TINCTURA RHEI COMPOSITA.

Compound Tincture of Rhubarb.

Tinctura Rhabarbari composita, P. L. 1788.

Tinctura Rhei composita, P. L. 1809, P. L. 1824.

TINCTURA SCILLÆ.

Tincture of Squill.

Tinctura Scillæ, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA SENNÆ COMPOSITA.

Compound Tincture of Senna.

Elixir Salutis, P. L. 1720.

Tinctura Sennæ, P. L. 1745, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA SERPENTARIÆ.

Tincture of Serpentary.

Tinctura Serpentariæ Virginianæ, P. L. 1720.

Tinctura Serpentariæ, P. L. 1745, P. L. 1788, P. L. 1809,
P. L. 1824.

TINCTURA VALERIANÆ.

Tincture of Valerian.

Tinctura Valerianæ simplex, P. L. 1745.

Tinctura Valerinæ, P. L. 1788, P. L. 1809, P. L. 1824.

TINCTURA VALERIANÆ COMPOSITA.

Compound Tincture of Valerian.

Tinctura Valerianæ volatilis, P. L. 1745.

Tinctura Valerianæ Ammoniata, P. L. 1788, P. L. 1809.

Tinctura Valerianæ Ammoniata, P. L. 1824.

TINCTURA ZINGIBERIS.

Tincture of Ginger.

Tinctura Zingiberis, P. L. 1788, P. L. 1809, P. L. 1824.

VINA.

Wines.

VINUM ALOËS.

Wine of Aloes.

Tinctura Hieræ, P. L. 1720.

Tinctura Sacra, P. L. 1745.

Vinum Aloës, P. L. 1788, P. L. 1809, P. L. 1824.

VINUM COLCHICI.

Wine of Meadow Saffron.

Vinum Colchici, P. L. 1824.

VINUM IPECACUANHÆ.

Wine of Ipecacuanha.

Vinum Ipecacoanhæ, P. L. 1745.

Vinum Ipecacuanhæ, P. L. 1788, P. L. 1809, P. L. 1824.

VINUM OPII.

Wine of Opium.

Laudanum liquidum Sydenhami, P. L. 1720.

Tinctura Thebaica, P. L. 1745.

Vinum Opii, P. L. 1809, P. L. 1824.

Commentary.—This aromatic vinous tincture is supposed to be of about the same strength as laudanum.

VINUM VERATRI.

Wine of White Hellebore.

Vinum Veratri, P. L. 1824.

U N G U E N T A.

Ointments.

UNGUENTUM ANTIMONII POTASSIO-TARTRATIS.

Ointment of Potassio-tartrate of Antimony.

UNGUENTUM CANTHARIDIS.

Ointment of Cantharides.

Unguentum Cantharidis, P. L. 1824.

UNGUENTUM CETACEI.

Ointment of Spermaceti.

Linimentum album, P. L. 1745.*Unguentum Spermaceti*, P. L. 1788.*Unguentum Cetacei*, P. L. 1809, P. L. 1824.

UNGUENTUM CREASOTI.

Ointment of Creasote.

Creasote, so called from *κρεας* flesh, and *σωζω*, I preserve, from its antiseptic action on meat, was discovered by Reichenbach. It is procured by submitting wood tar to distillation, till the residue acquires the consistency of pitch. The peculiar odour and flavour of pyroligneous acid depends on the presence of this substance. This liquid is colourless, transparent, and somewhat oily in its consistence. It has a penetrating strong odour like that of smoked meat, and a burning acrid taste. Its sp. gr. is 1.037 at 65°; it boils at 397° and retains its fluidity at -17°. It is remarkable for its great refractive power, and a non-

conductor of electricity. It burns with a sooty flame. When mixed with water, two solutions result, the one consisting of 1·25 creasote + 100 water; the other of 10 creasote + 100 water. The aqueous solution is neither acid nor alkaline. It is miscible also in all proportions with alcohol, æther, and naptha, but its most perfect solvent is acetic acid; in which form (properly diluted) it is an efficacious wash for milder cases of *tania capitis*. Three or four drops added to a pint of ink, prevent its becoming mouldy. It exerts a powerful action on the animal system, and when applied externally undiluted, it destroys the epidermis. It combines with ammonia, lime, and baryta, and with certain of the elementary bodies, as chlorine, iodine, sulphur, phosphorus, &c.

It consists of (according to Ettling)—

Carbon	77·42
Hydrogen	8·12
Oxygen	14·46
	100

Commentary.—In addition to its having been used in various cutaneous diseases, it has been employed as a palliative in toothach; also to restrain vomiting, which, however, it frequently augments. It is a powerful stimulant to old ulcers, but its curative effects in cancer and other deep-seated organic diseases, are quite problematical. It should be kept in a close-stopped glass vessel, as it penetrates through cork, and imparts its peculiar odour to an entire apartment.

U N G U E N T U M E L E M I.

Ointment of Elemi.

Unguentum è gummi Elemi sive Linimentum Arcæi, P. L. 1720.

Unguentum è gummi Elemi, P. L. 1745.

Unguentum Elemi compositum, P. L. 1788, P. L. 1809, P. L. 1824.

U N G U E N T U M G A L L Æ C O M P O S I T U M.

Compound Ointment of Galls.

U N G U E N T U M H Y D R A R G Y R I F O R T I U S.

Stronger Ointment of Mercury.

Unguentum Cæruleum fortius, P. L. 1745.

Unguentum Hydrargyri fortius, P. L. 1788, P. L. 1809, P. L. 1824.

Process.—Under the process of rubbing, the mercury is partially oxidized, and the non-oxidized portion is intimately mixed with the lead. The College

tell us, in their Translation, that the mercury is probably reduced to the same state as that in which it exists in the *pilulæ hydrargyri*; but under that head they tell us the mercury is probably not reduced at all: so that, according to their explanation, the mercury is probably reduced to the same state in this preparation to which it is not reduced in another! This is a passage well worthy of the critical acumen of their old acquaintance of 1814. *Absit invidia!* He has been very useful, both to them and to the public.

UNGUENTUM HYDRARGYRI MITIUS.

Milder Ointment of Mercury.

Unguentum Cæruleum mitius, P. L. 1745.

Unguentum Hydrargyri mitius, P. L. 1788, P. L. 1809, P. L. 1824.

UNGUENTUM HYDRARGYRI NITRATIS.

Ointment of Nitrate of Mercury.

Unguentum Hydrargyri Nitrati, P. L. 1788, P. L. 1809.

Unguentum Hydrargyri Nitratis, P. L. 1824.

Decomposition.—Mercury is dissolved in undiluted nitric acid; part of the acid is decomposed, and transferring 2 equivalents of oxygen to the mercury, converts it into a binoxide, with the escape of nitric-oxide gas; while the remaining acid uniting with this binoxide, forms a nitrate of binoxide of mercury.

UNGUENTUM HYDRARGYRI NITRICO-OXYDI.

Ointment of Nitric-oxide of Mercury.

Unguentum Hydrargyri Nitrico-Oxydi, P. L. 1809, P. L. 1824.

UNGUENTUM HYDRARGYRI IODIDI.

Ointment of Iodide of Mercury.

UNGUENTUM HYDRARGYRI BINIODIDI.

Ointment of Biniodide of Mercury.

UNGUENTUM HYDRARGYRI AMMONIO-CHLORIDI.

Ointment of Ammonio-chloride of Mercury.

Unguentum è Mercurio præcipitato albo, P. L. 1745.*Unguentum calcis Hydrargyri albæ*, P. L. 1788.*Unguentum Hydrargyri præcipitati albi*, P. L. 1809, P. L. 1824.

UNGUENTUM IODINII COMPOSITUM.

Compound Ointment of Iodine.

UNGUENTUM PICIS LIQUIDÆ.

Ointment of Liquid Pitch [Tar].

Unguentum è Pice, P. L. 1745.*Unguentum Picis*, P. L. 1788.*Unguentum Picis Liquidæ*, P. L. 1809, P. L. 1824.

UNGUENTUM PICIS NIGRÆ.

Ointment of Black Pitch.

Unguentum Basilicum nigrum, vel Tetrapharmacum, P. L. 1745.*Unguentum Picis Aridæ*, P. L. 1809.*Unguentum Picis nigræ*, P. L. 1824.

UNGUENTUM PLUMBI COMPOSITUM.

Compound Ointment of Lead.

UNGUENTUM PLUMBI IODIDI.

Ointment of Iodide of Lead.

UNGUENTUM SAMBUCI.

Ointment of Elder.

Unguentum Sambucinum, P. L. 1720, P. L. 1745.

Unguentum Sambuci, P. L. 1788, P. L. 1809, P. L. 1824.

UNGUENTUM SULPHURIS.

Ointment of Sulphur.

Unguentum è Sulphure, P. L. 1745.

Unguentum Sulphuris, P. L. 1788, P. L. 1809, P. L. 1824

UNGUENTUM SULPHURIS COMPOSITUM.

Compound Ointment of Sulphur.

Unguentum Sulphuris Compositum, P. L. 1809, P. L. 1824.

UNGUENTUM VERATRI.

Ointment of White Hellebore.

Unguentum Hellebori albi, P. L. 1788.

Unguentum Veratri, P. L. 1809, P. L. 1824.

UNGUENTUM ZINCI.

Ointment of Zinc.

Unguentum Zinci, P. L. 1809, P. L. 1824.

A TABLE
OF
ATOMIC OR EQUIVALENT WEIGHTS AND SYMBOLS
OF
SIMPLE OR ELEMENTARY SUBSTANCES.

<i>Atomic or Eq. W.</i>	<i>Symbol.</i>	<i>Atomic or Eq. W.</i>	<i>Symbol.</i>
Aluminium .. 10	Al. or A.	Molybdenum 48	Mo.
Antimony .. 65	Sb. [Stibium.]	Nickel 28	Ni.
Arsenic 38	As.	Nitrogen or } 14	N.
Barium 68	Ba.	Azote } 14	N.
Bismuth 72	Bi.	Osmium 100	Os.
Boron 20	B.	Oxygen 8	O.
Bromine 78	Br.	Palladium .. 54	Pd.
Cadmium .. 56	Cd.	Phosphorus.. 16	P.
Calcium 20	Ca.	Platinum.... 98	Pt.
Carbon 6	C.	Potassium .. 40	K. [Kalium.]
Cerium 48	Ce.	Rhodium .. 52	R.
Chlorine 36	Cl.	Selenium .. 40	Se.
Chromium .. 28	Cr.	Silicium or } 8	Si.
Cobalt..... 30	Co. or Cb.	Silicon } 8	Si.
	Co. }	Silver 108	Ag. [Argentum.]
Columbium.. 185	or } [Tantalum.]	Sodium 24	Na. [Natrium.]
	Ta. }	Strontium .. 44	Sr.
Copper 32	Cu. [Cuprum.]	Sulphur 16	S.
Fluorine 18	F.	Tellurium .. 32	Te.
Glucinum .. 18	G.	Thorium 60	Th.
Gold 200	Au. [Aurum.]	Tin 58	Sn. [Stannum.]
Hydrogen .. 1	H.	Titanium .. 24	Ti.
Iodine..... 126	I.		Tu. }
Iridium 98	Ir.		or } [Wolfram.]
Iron 28	Fe. [Ferrum.]		W. }
Lead 104	Pb. [Plumbum.]	Uranium.... 217	U.
Lithium 8	L.	Vanadium .. 68	V.
Magnesium.. 12	Mg.	Yttrium 32	Y.
Manganese .. 28	Mn.	Zinc 32	Zn.
		Zirconium .. 22	Zr.
Mercury 202	Hg. { [Hydrar- gyrum.]		

A SECOND TABLE
OF
ATOMIC OR EQUIVALENT WEIGHTS AND SYMBOLS
OF
ELEMENTARY SUBSTANCES.

ARRANGED IN THE ORDER OF THEIR RELATIVE WEIGHTS, FOR ASSISTING
THE MEMORY OF THE STUDENT.

<i>Atomic or Eq. W.</i>	<i>Symbol.</i>	<i>Atomic or Eq. W.</i>	<i>Symbol.</i>
Hydrogen .. 1	H.	Selenium .. 40	Se.
Carbon 6	C.	Strontium .. 44	Sr.
Lithium 8	L.	Cerium 48	Ce.
Oxygen 8	O.	Molybdenum 48	Mo.
Silicium or } Silicon }	8 Si.	Rhodium .. 52	R.
Aluminium .. 10	Al. or A.	Palladium .. 54	Pd.
Magnesium .. 12	Mg.	Cadmium .. 56	Cd.
Nitrogen or } Azote }	14 N.	Tin 58	Sn. [Stannum.]
Sulphur 16	S.	Thorium 60	Th.
Phosphorus .. 16	P.	Antimony .. 65	Sb. [Stibium.]
Fluorine 18	F.	Barium 68	Ba.
Glucinum .. 18	G.	Vanadium .. 68	V.
Calcium 20	Ca.	Bismuth 72	Bi.
Boron 20	B.	Bromine 78	Br.
Zirconium .. 22	Zr.	Platinum 98	Pt.
Sodium 24	Na. [Natrium.]	Iridium 98	Ir.
Nickel 28	Ni.	Osmium 100	Os.
Cobalt 30	Co. or Cb.		Tu. }
Titanium .. 24	Ti.	Tungsten .. 100	or } [Wolfram.]
Iron 28	Fe. [Ferrum.]		W. }
Manganese .. 28	Mn.	Lead 104	Pl. [Plumbum.]
Chromium .. 28	Cr.	Silver 108	Ag. [Argentum.]
Tellurium .. 32	Te.	Iodine 126	I.
Zinc 32	Zn.		Co. }
Copper 32	Cu. [Cuprum.]	Columbium 185	or } [Tantalum.]
Chlorine 36	Cl.		Ta. }
Yttrium 32	Y.	Mercury .. 202	Hg. { [Hydrar- gyrum.]
Arsenic 38	As.	Gold 200	Au. [Aurum.]
Potassium .. 40	K. [Kalium.]	Uranium 217	U.

TABLE III.

OF THE

DISCOVERY OF THE SIMPLE SUBSTANCES OR ELEMENTS,

WITH THE SYMBOLS PREFIXED.

<i>Element.</i>	<i>Discoverer.</i>	<i>Year.</i>
S. Sulphur	Known to the Ancients.	
C. Carbon		
Au. Gold		
Ag. Silver		
Cu. Copper		
Fe. Iron		
Sn. Tin		
Pb. Lead		
Hg. Mercury	Basil Valentine, at the end of the 15th century.	
Sb. Antimony		
Zn. Zinc		
Bi. Bismuth	{ Described by Agricola in 1529; first mentioned by Paracelsus.	
	{ Traces of, in B. Valentine; first described by Agricola, in 1529.	
P. Phosphorus }	Brandt.....	{ 1669
As. Arsenic }		{ 1733
Co. Cobalt }		
Pt. Platinum	Wood	1741
Ni. Nickel	Cronstedt	1751
H. Hydrogen	Cavendish	1766
F. Fluorine	Scheele	1771
N. Nitrogen or Azote	Rutherford	1772
O. Oxygen	Priestley	1774
Cl. Chlorine	Scheele	1774
Mn. Manganese	Gahn and Scheele	1774
W. Tungsten	D'Elhuyart.....	1781
Mo. Molybdenum	Hielm	1782
Te. Tellurium	Müller	1782
U. Uranium	Klaproth.....	1789
Zr. Zirconium	Berzelius.....	1824
Ti. Titanium	Gregor.....	1791
Cr. Chromium	Vauquelin	1797
Y. Yttrium	Wöhler	1828
Ta. Columbium	Hatchett.....	1802
Pd. Palladium }	Wollaston	1803
R. Rhodium }		
Ir. Iridium	Descotils and Tennant	1803
Os. Osmium	Tennant	1803
Ce. Cerium	Hisinger and Berzelius.....	1804
B. Boron	Davy	1807
K. Potassium }	Davy	1807
Na. Sodium }		
Ba. Barium }		
Sr. Strontium }		
C. Calcium		
I. Iodine	Courtois	1811
Cd. Cadmium	Stromeyer	1818
Se. Selenium	Berzelius.....	1818
Li. Lithium	Arfvedson.....	1818
Si. Silicium or Silicon	Berzelius.....	1824
Br. Bromine	Balaret	1826
G. Glucinium	Wöhler	1828
Th. Thorium	Berzelius.....	1828
Al. Aluminium	Wöhler	1828
Mg. Magnesium	Bussy	1829
V. Vanadium	Sefström	1830

A TABLE
 REPRESENTING
 THE COMPOSITION AND EQUIVALENTS
 OF
 COMPOUND SUBSTANCES.

ACID, Acetic (dry)	{ 3 Hydrogen	= 3	} 51
	4 Carbon	= 24	
	3 Oxygen	= 24	
—, Glacial	1 Aq.		
—, Antimonious	{ 1 Antimony	= 65	} 81
	2 Oxygen	= 16	
—, Antimonic	{ 1 Antimony	= 65	} 85
	2½ Oxygen	= 20	
—, Arsenic	{ 1 Arsenic	= 38	} 58
	2½ Oxygen	= 20	
—, Arsenious	{ 1 Arsenic	= 38	} 50
	1½ Oxygen	= 12	
—, Benzoic	{ 5 Hydrogen	= 5	} 113
	14 Carbon	= 84	
	3 Oxygen	= 24	
—, Benzoic (in crystals) ..	{ 1 Dry Acid	= 113	} 122
	1 Aq.	= 9	
—, Boracic (dry)	{ 1 Boron	= 20	} 68
	6 Oxygen	= 48	
—, Boracic (in crystals) ..	{ 1 Dry Acid	= 68	} 122
	6 Aq.	= 54	
—, Bromic	{ 1 Bromine	= 78	} 118
	5 Oxygen	= 40	
—, Carbonic	{ 1 Carbon	= 6	} 22
	2 Oxygen	= 16	
—, Chloric	{ 1 Chlorine	= 36	} 76
	5 Oxygen	= 40	
—, Chromic	{ 1 Chromium	= 28	} 52
	3 Oxygen	= 24	
—, Citric (dry)	{ 2 Hydrogen	= 2	} 58
	4 Carbon	= 24	
	4 Oxygen	= 32	
—, Citric (in crystals) ..	{ 1 Dry Acid	= 58	} 70
	1½ Aq.	= 12	
—, Fluoric-hydro?	{ 1 Fluorine	= 18	} 19
	1 Hydrogen	= 1	

Acid, Gallic (dry)	3 Hydrogen	=	3	85
	7 Carbon	=	42	
	5 Oxygen	=	40	
—, Gallic (in crystals) ..	1 Dry Acid	=	85	94
	1 Aq.	=	9	
—, Hydriodic	1 Iodine	=	126	127
	1 Hydrogen	=	1	
—, Hydro-bromic	1 Bromine	=	78	79
	1 Hydrogen	=	1	
—, Hydro-chloric (dry) ..	1 Chlorine	=	36	37
	1 Hydrogen	=	1	
—, Hydro-cyanic (dry) ..	1 Cyanogen	=	26	27
	1 Hydrogen	=	1	
—, Hydro-sulphuric (gas)	1 Sulphur	=	16	17
	1 Hydrogen	=	1	
—, Hyponitrous	1 Azote	=	14	38
	3 Oxygen	=	24	
—, Hypo-phosphorous ..	2 Phosphorus	=	32	40
	1 Oxygen	=	8	
—, Hypo-sulphuric	2 Sulphur	=	32	72
	5 Oxygen	=	40	
—, Hypo-sulphurous	2 Sulphur	=	32	48
	2 Oxygen	=	16	
—, Meconic	2 Hydrogen	=	2	100
	7 Carbon	=	42	
	7 Oxygen	=	56	
—, Muriatic (<i>Vide</i> Acid Hydrochloric).				
—, Nitric (dry)	1 Azote	=	14	54
	5 Oxygen	=	40	
—, Nitric, sp.gr. 1.5 (liquid P. L.)	1 Dry Acid	=	54	67.5
	1½ Aq.	=	13.5	
—, Nitrous	1 Azote	=	14	46
	4 Oxygen	=	32	
—, Oxalic (dry)	2 Carbon	=	12	36
	3 Oxygen	=	24	
—, Oxalic (in crystals) ..	1 Dry Acid	=	36	63
	3 Aq.	=	27	
—, Oxichloric [<i>Perchloric</i>]	1 Chlorine	=	36	92
	7 Oxygen	=	56	
—, Phosphoric and Pyrophosphoric	1 Phosphorus	=	16	36
	2½ Oxygen	=	20	
—, Phosphorus	1 Phosphorus	=	16	28
	1½ Oxygen	=	12	
—, Selenious	1 Selenium	=	40	56
	2 Oxygen	=	16	
—, Selenic Acid	1 Selenium	=	40	64
	3 Oxygen	=	24	
—, Succinic (dry)	2 Hydrogen	=	2	50
	4 Carbon	=	24	
	3 Oxygen	=	24	
—, Succinic (in crystals) ..	1 Dry Acid	=	50	59
	1 Aq.	=	9	
—, Sulpho-vinic	2 Sulphuric Acid	=	80	126
	2 Alcohol	=	46	

Acid, Sulphuric (dry).....	{ 1 Sulphur = 16 }	40
—, Sulphuric (liquid), sp. gr. 1.845	{ 3 Oxygen = 24 }	
	{ 1 Dry Acid = 40 }	49
—, Sulphurous	{ 1 Aq. = 9 }	
	{ 1 Sulphur = 16 }	32
	{ 2 Oxygen = 16 }	
—, Tartaric (dry)	{ 2 Hydrogen = 2 }	
	{ 4 Carbon = 24 }	66
	{ 5 Oxygen = 40 }	
—, — (in crystals) ..	{ 1 Dry Acid = 66 }	75
	{ 1 Aq. = 9 }	
Æther (hyponitrous)	{ 1 Hyponitrous Acid = 38 }	75
	{ 1 Æther = 37 }	
—, Sulphuric	{ 5 Hydrogen = 5 }	
	{ 4 Carbon = 24 }	37
	{ 1 Oxygen = 8 }	
Æthereal Oil	{ 1 Sulphuric Acid = 40 }	77
	{ 1 Æther = 37 }	
Alcohol	{ 3 Hydrogen = 3 }	
	{ 2 Carbon = 12 }	23
	{ 1 Oxygen = 8 }	
Alum (P. L.) (Aluminæ and Potassæ Sulphas) ..	{ 3 Sulphate of Alumina = 174 }	487
	{ 1 Sulphate of Potassa = 88 }	
	{ 25 Aq. = 225 }	
Alumina	{ 1 Aluminium = 10 }	18
	{ 1 Oxygen = 8 }	
—, Sulphate of	{ 1 Alumina = 18 }	58
	{ 1 Sulphuric Acid = 40 }	
Ammonia.....	{ 1 Azote = 14 }	17
	{ 3 Hydrogen = 3 }	
—, Acetate of	{ 1 Acetic Acid = 51 }	68
	{ 1 Ammonia = 17 }	
—, Hydrated Bicarbonate of	{ 2 Carbonic Acid = 44 }	79
	{ 1 Ammonia = 17 }	
	{ 2 Aq. = 18 }	
—, Carbonate of	{ 1 Carbonic Acid = 22 }	39
	{ Ammonia = 17 }	
—, Hydrated Sesquicarbonate of	{ 1½ Carbonic Acid = 33 }	59
	{ 1 Ammonia = 17 }	
	{ 1 Aq. = 9 }	
—, Hydrochlorate or Muriate	{ 1 Ammonia = 17 }	54
	{ 1 Hydrochloric Acid = 37 }	
	{ 1 Ammonia = 17 }	
—, Nitrate of	{ 1 Nitric Acid = 54 }	80
	{ 1 Aq. = 9 }	
	{ 1 Ammonia = 17 }	
—, Oxalate of	{ 1 Oxalic Acid = 36 }	71
	{ 2 Aq. = 18 }	
	{ 1 Ammonia = 17 }	
—, Phosphate of	{ 1 Phosphoric Acid = 36 }	71
	{ 2 Aq. = 18 }	
	{ 1 Ammonia = 17 }	
—, Sulphate of	{ 1 Sulphuric Acid = 40 }	75
	{ 2 Aq. = 18 }	

Antimony, Oxysulphuret of	{ 1 Sesquioxide of Antimony = 77	
	{ 5 Sesquisulphuret of Antimony = 445	594
	{ 8 Aq. = 72	
——, Potassio-tartrate of	{ 1 Tartrate of Potassa = 114	
	{ 1 Ditartrate of Antimony = 220	361
	{ 3 Aq. = 27	
——, Sesquioxide of ..	{ 1 Antimony = 65	
	{ 1½ Oxygen = 12	77
——, Sesquisulphuret of	{ 1 Antimony = 65	
	{ 1½ Sulphur = 24	89
Azote, Protoxide of.....	{ 1 Azote = 14	
	{ 1 Oxygen = 8	22
——, Bin- or Deutoxide of..	{ 1 Azote = 14	
	{ 2 Oxygen = 16	30
——, 3 Oxide of (<i>Vide</i> Acid Hyponitrous).		
——, 4 Oxide of (<i>Vide</i> Acid Nitrous).		
——, 5 Oxide of (<i>Vide</i> Acid Nitric).		
——, Bicarburet of (Cya- nogen).....	{ 2 Carbon = 12	
	{ 1 Azote = 14	26
——, Chloride of.....	{ 1 Nitrogen = 14	
	{ 4 Chlorine = 144	158
Barium, Chloride of (in crys- tals)	{ 1 Barium = 68	
	{ 1 Chlorine = 36	122
	{ 2 Aq..... = 18	
Barytes	{ 1 Barium = 68	
	{ 1 Oxygen. = 8	76
——, Carbonate of	{ 1 Barytes = 76	
	{ 1 Carbonic Acid ... = 22	98
——, Nitrate of	{ 1 Barytes = 76	
	{ 1 Nitric Acid = 54	130
——, Sulphate of	{ 1 Barytes = 76	
	{ 1 Sulphuric Acid.... = 40	116
Bismuth, Oxide of	{ 1 Bismuth = 72	
	{ 1 Oxygen..... = 8	80
——, Trismitrate of.....	{ 3 Oxide of Bismuth..... = 240	
	{ 1 Nitric Acid = 54	294
Calcium, Chloride of	{ 1 Calcium = 20	
	{ 1 Chlorine = 36	56
——, Oxide of (Lime) ..	{ 1 Calcium = 20	
	{ 1 Oxygen = 8	28
Carbon, Oxide of (Carbonic Oxide)	{ 1 Carbon = 6	
	{ 1 Oxygen..... = 8	14
Cinchonia.....	{ C 20 Carbon = 120	
	{ H 12 Hydrogen = 12	
	{ A 1 Azote = 14	154
	{ O 1 Oxygen..... = 8	
Copper, Acetate of (in crys- tals)	{ 1 Oxide of Copper = 40	
	{ 1 Acetic Acid = 51	100
	{ 1 Aq. = 9	
——, Diacetate of (in crys- tals)	{ 2 Oxide of Copper = 80	
	{ 1 Acetic Acid = 51	185
	{ 6 Aq. = 54	
——, Dioxide of	{ 2 Copper = 64	
	{ 1 Oxygen..... = 8	72

Copper, Protoxide	{ 1 Copper	= 32	} 40
	{ 1 Oxygen	= 8	
——, Sulphate of (in crystals)	{ 1 Protoxide of Copper	= 40	} 125
	{ 1 Sulphuric Acid	= 40	
	{ 5 Aq.	= 45	
Cyanogen	{ 1 Azote	= 14	} 26
	{ 2 Carbon	= 12	
Ethereum, or Ethule	{ 5 Hydrogen	= 5	} 29
	{ 4 Carbon	= 24	
Hydrogen, Arseniuretted ..	{ 1 Arsenic	= 38	} 39.5
	{ 1½ Hydrogen	= 1.5	
——, Carburetted (light bihydroguret of)	{ 1 Carbon	= 6	} 8
	{ 2 Hydrogen	= 2	
——, Bicarburetted (heavy (bihydrocarbon olefiant gas))	{ 2 Carbon	= 12	} 14
	{ 2 Hydrogen	= 2	
——, Bicarburet of (Faraday's)	{ 6 Carbon	= 36	} 39
	{ 3 Hydrogen	= 3	
——, Quadrihydrocarburet (Etherine)	{ 4 Carbon	= 24	} 28
	{ 4 Hydrogen	= 4	
——, Sexto-carburetted (Naphtha)	{ 6 Carbon	= 36	} 42
	{ 6 Hydrogen, or 5	= 6	
——, 10 to 4 Carburetted or Naphthaline	{ 10 Carbon	= 60	} 64
	{ 4 Hydrogen	= 4	
——, Oxide of, (or water) Aq.	{ 1 Oxygen	= 8	} 9
	{ 1 Hydrogen	= 1	
——, Peroxide of	{ 1 Hydrogen	= 1	} 17
	{ 2 Oxygen	= 16	
——, Phosphuretted ..	{ 1 Phosphorus	= 16	} 17.5
	{ 1½ Hydrogen	= 1.5	
——, Seleniuretted	{ 1 Selenium	= 40	} 41
	{ 1 Hydrogen	= 1	
——, Sulphuretted (<i>Vide</i> Acid Hydrosulphuric).			
——, Bisulphuretted, or Bisulphuret of	{ 2 Sulphur	= 32	} 33
	{ 1 Hydrogen	= 1	
Iron, Bromide of	{ 1 Iron	= 28	} 106
	{ 1 Bromine	= 78	
——, Iodide of	{ 1 Iron	= 28	} 199
	{ 1 Iodine	= 126	
	{ 5 Water	= 45	
——, Percyanide of (Prussian Blue)	{ 7 Iron	= 196	} 430
	{ 9 Cyanogen	= 234	
——, Potassio-tartrate of ..	{ 1 Tartrate of Potassa	= 114	} 220
	{ 1 Tartrate of Sesquioxide of Iron ..	= 106	
——, Chloride (Prot.) of	{ 1 Iron	= 28	} 64
	{ 1 Chlorine	= 36	
——, Sesquichloride of	{ 1 Iron	= 28	} 82
	{ 1½ Chlorine	= 54	
——, Oxide (Prot.) of	{ 1 Iron	= 28	} 36
	{ 1 Oxygen	= 8	
——, Sesquioxide of	{ 1 Iron	= 28	} 40
	{ 1½ Oxygen	= 12	
——, Sulphate of (in crystals)	{ 1 Protoxide of Iron	= 36	} 139
	{ 1 Sulphuric Acid	= 40	
	{ 7 Aq.	= 63	

Lead, Acetate of	{	1 Protoxide of Lead	= 112	190
		1 Acetic Acid	= 51	
		3 Aq.	= 27	
—, Carbonate of	{	1 Protoxide of Lead	= 112	134
		1 Carbonic Acid	= 22	
—, Chloride of	{	1 Lead	= 104	140
		1 Chlorine	= 36	
—, Oxide (Prot.) of, or Massicot	{	1 Lead	= 104	112
		1 Oxygen	= 8	
—, Deutoxide of (Red Lead)	{	3 Lead	= 312	344
		4 Oxygen	= 32	
—, Peroxide, Brown Bin- oxide	{	1 Lead	= 104	120
		2 Oxygen	= 16	
—, Dioxide, or Suboxide	{	2 Lead	= 208	216
		1 Oxygen	= 8	
Lime (<i>Vide</i> Calcium, Oxide of).				
—, Acetate of	{	1 Lime	= 28	79
		1 Acetic Acid	= 51	
—, Carbonate of	{	1 Lime	= 28	50
		1 Carbonic Acid	= 22	
—, Chlorinated	{	2 Lime	= 56	110
		1 Chlorine	= 36	
		2 Aq.	= 18	
—, Citrate of	{	1 Lime	= 28	95
		1 Citric Acid	= 58	
—, Hydrate of	{	1 Aq.	= 9	37
		1 Lime	= 28	
—, Phosphate of	{	1 Lime	= 28	64
		1 Phosphoric Acid	= 36	
—, Subsesquiphosphate (Bone Earth)	{	1½ Lime	= 42	78
		1 Phosphoric Acid	= 36	
—, Sulphate of	{	1 Lime	= 28	68
		1 Sulphuric Acid	= 40	
— Sulphate (in crystals)	{	1 Sulphate of Lime	= 68	86
		2 Aq.	= 18	
—, Tartrate of	{	1 Lime	= 28	130
		1 Tartaric Acid	= 66	
		4 Water	= 36	
Magnesia	{	1 Magnesium	= 12	20
		1 Oxygen	= 8	
—, Carbonate of	{	1 Magnesia	= 20	42
		1 Carbonic Acid	= 22	
—, Carbonate of (P.L.) Hydrated	{	5 Magnesia	= 100	242
		4 Carbonic Acid	= 88	
		6 Aq.	= 54	
—, Sulphate of (crystals)	{	1 Magnesia	= 20	123
		1 Sulphuric Acid	= 40	
		7 Aq.	= 63	
Magnesium, Chloride of	{	1 Magnesium	= 12	48
		1 Chlorine	= 36	
Manganese, Chloride of	{	1 Manganese	= 28	64
		1 Chlorine	= 36	
—, Oxide of (Prot.)	{	1 Manganese	= 28	36
		1 Oxygen	= 8	

Manganese, Binoxide of	{ 1 Manganese = 28 }	44
(Per.)	{ 2 Oxygen = 16 }	
————, Sesquioxide,	{ 1 Manganese = 28 }	40
(Deut.)	{ 1½ Oxygen = 12 }	
Mercury, Chloride of (Prot.)	{ 1 Mercury = 202 }	238
————, Bichloride of (Per.	{ 1 Chlorine = 36 }	
or Deuto)	{ 1 Mercury = 202 }	274
————, Ammonio - Chlo-	{ 2 Chlorine = 72 }	
ride of.....	Disputed.	
————, Bicyanide of	{ 1 Mercury = 202 }	254
————, Iodide of (Prot.)..	{ 2 Cyanogen = 52 }	
————, Biniodide of (Per.)	{ 1 Mercury = 202 }	328
————, Oxide of (Prot.)	{ 1 Iodine = 126 }	
————, Binoxide of (Per.)	{ 1 Mercury = 202 }	454
————, Nitrate of	{ 2 Iodine = 252 }	
————, Bipernitrate of ..	{ 1 Mercury = 202 }	210
————, Sulphate of	{ 1 Oxygen = 8 }	
————, Bipersulphate of	{ 1 Mercury = 202 }	218
————, Sulphuret of	{ 2 Oxygen = 16 }	
————, Bisulphuret of ..	{ 1 Oxide of Mercury = 210 }	264
Molybdenum, Oxide of (Prot.)	{ 1 Nitric Acid = 54 }	
————, Binoxide of ..	{ 1 Binoxide of Mercury = 218 }	326
————, Peroxide (Mo-	{ 2 Nitric Acid = 108 }	
lyb. Acid.)	{ 1 Oxide of Mercury = 210 }	250
————, (in crystals)	{ 1 Sulphuric Acid = 40 }	
————, Acetate of.....	{ 1 Binoxide of Mercury = 218 }	298
————, Hydrochlorate of	{ 2 Sulphuric Acid = 80 }	
(Muriate).....	{ 1 Mercury = 202 }	218
Potassa (Potash) dry (Hy-	{ 1 Sulphur = 16 }	
drate of, 1 Aq.)..	{ 1 Mercury = 202 }	234
————, Acetate of	{ 2 Sulphur = 32 }	
————, Arsenite of	{ 1 Molybdenum = 48 }	56
	{ 1 Oxygen = 8 }	
	{ 1 Molybdenum = 48 }	64
	{ 2 Oxygen = 16 }	
	{ 1 Molybdenum = 48 }	72
	{ 3 Oxygen = 24 }	
	{ 34 Carbon..... 6 × 34 = 204 }	284
	{ 18 Hydrogen 1 × 18 = 18 }	
	{ 1 Azote = 14 }	302
	{ 6 Oxygen 8 × 6 = 48 }	
	{ 1 Dry Morphia = 284 }	335
	{ 2 Aq..... = 18 }	
	{ 1 Morphia = 284 }	374
	{ 1 Acetic Acid = 51 }	
	{ 1 Morphia = 284 }	48
	{ 1 Hydrochloric Acid = 36 }	
	{ 6 Aq..... = 54 }	99
	{ 1 Potassium = 40 }	
	{ 1 Oxygen = 8 }	98
	{ 1 Potassa = 48 }	
	{ 1 Acetic Acid = 51 }	
	{ 1 Potassa = 48 }	
	{ 1 Arsenious Acid = 50 }	

Potassa, Arseniate of	1 Potassa	= 48	106
	1 Arsenic Acid	= 58	
——, Binarseniate of	1 Potassa	= 48	164
	2 Arsenic Acid	= 116	
——, Carbonate of (dry) ..	1 Potassa	= 48	70
	1 Carbonic Acid	= 22	
——, Carbonate (P.L.) ..	1 Potassa	= 48	83.5
	1 Carbonic Acid	= 22	
	1½ Aq.	= 13.5	101
——, Bicarbonate of (crystals)	1 Potassa	= 48	
	2 Carbonic Acid	= 44	124
	1 Aq.	= 9	
——, Chlorate of	1 Potassa	= 48	100
	1 Chloric Acid	= 76	
——, Chromate of	1 Potassa	= 48	106
	1 Chromic Acid	= 52	
——, Citrate of (dry)	1 Potassa	= 48	102
	1 Citric Acid	= 58	
——, Nitrate of (Nitre) ..	1 Potassa	= 48	93
	1 Nitric Acid	= 54	
——, Oxalate of (crystals) ..	1 Potassa	= 48	88
	1 Oxalic Acid	= 36	
	1 Aq.	= 9	146
——, Sulphate of	1 Potassa	= 48	
	1 Sulphuric Acid	= 40	114
——, Bisulphate of	1 Potassa	= 48	
	2 Sulphuric Acid	= 80	189
	2 Aq.	= 18	
——, Tartrate of (crystals, 1 Aq.)	1 Potassa	= 48	118
	1 Tartaric Acid	= 66	
——, Bitartrate of	1 Potassa	= 48	76
	2 Tartaric Acid	= 132	
	1 Aq.	= 9	213
Potassium, Bromide of	1 Potassium	= 40	
	1 Bromine	= 78	166
——, Chloride of	1 Potassium	= 40	
	1 Chlorine	= 36	64
——, Ferrocyanide of (crystals)	1 Cyanide of Iron	= 54	
	2 Cyanide of Potassa	= 132	56
	3 Aq.	= 27	
——, Iodide	1 Potassium	= 40	162
	1 Iodine	= 126	
——, Oxide of (<i>Vide</i> Potassa, dry).			274
——, Peroxide of	1 Potassium	= 40	
	3 Oxygen	= 24	120
——, Sulphuret of	1 Potassium	= 40	
	1 Sulphur	= 16	162
Quina	20 Carbon	= 120	
	12 Hydrogen	= 12	274
	1 Azote	= 14	
	2 Oxygen	= 16	162
——, Sulphate of	1 Quina	= 162	
	1 Sulphuric Acid	= 40	274
	8 Water	= 72	

Quina, Disulphate of	2 Quina	= 324	} 436
	1 Sulphuric Acid	= 40	
	8 Water	= 72	
Rhodium, Oxide (Prot.) of	Not yet insulated.		
———— Binoxide.....	2 Rhodium	= 104	} 128
	3 Oxygen	= 24	
Silica	1 Silicium	= 8	} 16
	1 Oxygen	= 8	
Silver, Chloride of	1 Silver	= 108	} 144
	1 Chlorine	= 36	
——, Cyanide of	1 Silver	= 108	} 134
	1 Cyanogen	= 26	
——, Iodide of	1 Silver	= 108	} 234
	1 Iodine	= 126	
——, Oxide of	1 Silver	= 108	} 116
	1 Oxygen	= 8	
——, Nitrate of	1 Oxide of Silver	= 116	} 170
	1 Nitric Acid.....	= 54	
Soda.....	1 Sodium	= 24	} 32
	1 Oxygen	= 8	
——, Acetate of.....	1 Soda	= 32	} 137
	1 Acetic Acid	= 51	
——, Borate of (cryst. 10 Aq.).....	6 Aq.	= 54	} 100
	1 Soda	= 32	
	1 Boracic Acid	= 68	
——, Carbonate of (dry) ..	1 Soda	= 32	} 54
	1 Carbonic Acid	= 22	
——, Bicarbonate of	1 Soda	= 32	} 85
	2 Carbonic Acid	= 44	
——, Sesquicarbonate of....	1 Aq.	= 9	} 83
	1 Soda	= 32	
	1½ Carbonic Acid	= 33	
——, Citrate (dry).....	2 Water	= 18	} 90
	1 Soda	= 32	
	1 Citric Acid.....	= 58	
——, Hydrate of.....	1 Soda	= 32	} 41
	1 Aq.....	= 9	
——, Phosphate of (cryst. 12 Aq.).....	1 Soda	= 32	} 68
	1 Phosphoric Acid	= 36	
——, Potassio-tartrate of (Rochelle Salt) ..	1 Tartrate of Potassa	= 114	} 284
	1 Tartrate of Soda.....	= 98	
	8 Aq.....	= 72	
——, Sulphate of (crystal. 10 Aq.)	1 Soda	= 32	} 72
	1 Sulphuric Acid	= 40	
——, Tartrate of.....	1 Soda	= 32	} 98
	1 Tartaric Acid.....	= 66	
Sodium, Chloride of.....	1 Sodium	= 24	} 60
	1 Chlorine	= 36	
——, Iodide of.....	1 Sodium	= 24	} 150
	1 Iodine	= 126	
——, Oxide of (<i>Vide</i> Soda).			
——, Peroxide of	2 Sodium	= 48	} 72
	3 Oxygen	= 24	
Strontia	1 Strontium	= 44	} 52
	1 Oxygen	= 8	

Strychnia.....	{ 30 Carbon	$6 \times 30 = 180$	} 234
	{ 16 Hydrogen	$1 \times 16 = 16$	
	{ 1 Azote	$= 14$	
	{ 3 Oxygen	$8 \times 3 = 24$	
Veratria	{ 34 Carbon	$6 \times 34 = 204$	} 288
	{ 22 Hydrogen	$1 \times 22 = 22$	
	{ 1 Azote	$= 14$	
	{ 6 Oxygen	$8 \times 6 = 48$	
Water	{ 1 Hydrogen	$= 1$	} 9
	{ 1 Oxygen	$= 8$	
Zinc, Chloride of.....	{ 1 Zinc	$= 32$	} 68
	{ 1 Chlorine	$= 36$	
	{ 1 Oxide of Zinc.....	$= 40$	
—, Carbonate of.....	{ 1 Carbonic Acid	$= 22$	} 71
	{ 1 Aq.	$= 9$	
—, Oxide of.....	{ 1 Zinc	$= 32$	} 40
	{ 1 Oxygen	$= 8$	
—, Sulphate of (crys. 7 Aq.)	{ 1 Oxide of Zinc.....	$= 40$	} 80
	{ 1 Sulphuric Acid	$= 40$	
Zirconia	{ 1 Zirconium	$= 22$	} 30
	{ 1 Oxygen	$= 8$	

SYMBOLS.

THE symbols* for the simple elements have already been given. As they are in general use, and as they are rendered almost indispensable by the multiplication of the minute facts of chemistry (which, by the exertions of the chemists of successive generations, bid fair to swell out beyond the grasp of human memory), it is to be regretted that, for the sake of uniformity, writers do not adopt some universal code for formulæ, as they are called. It is our present business to give a few examples of their use.

Primary Use.—Looking to the symbols of the 54 elements, the student will see that the letters O, C, Hg, stand for 1 equivalent of Oxygen, 1 equivalent of Carbon, 1 equivalent of Mercury. Figures prefixed will represent two or more equivalents of these elements; as, for example, 2 O, 2 C, or 2 equivalents of Oxygen, 2 equivalents of Carbon. The Algebraic sign + intervening between the symbols denotes their union, as Hg + O for a single equivalent of oxide of Mercury, K + O for a single equivalent of potassa, and so on.

Secondary or Compound Use.—To indicate Nitrate of Potassa, the formula which first presents itself would be K + N + 6 O; or 1 Potassa, 1 Azote, 6 Oxygen. But this would be imperfect, since it would fail to shew that of the 6 equivalents of Oxygen, 5 are in the Nitric Acid and 1 in the Potassa. This is remedied by placing the symbols thus (K + O) + (N + 5 O), the symbols of those elements which are inferred to be united being contained in brackets.

Further Compound Use.—By placing any number on the outside of a bracket, the compound within it is multiplied. For example, (K + O) + 2 (S + 3 O) indicates bisulphate of potassa.

These figures are often raised to the right hand of the symbol, as N O⁵ for Nitric Acid, *i. e.* Quintoxide of Nitrogen or Azote; N H³ for Ammonia; N C² for Cyanogen, &c., in which Berzelius dispenses with the sign +, and writes combined elements side by side, the sign of addition being understood though not expressed. So again the same author indicates degrees of oxidization, by dots placed over the symbol, writing $\overset{\cdot}{K}$ for Potassa, $\overset{\cdot\cdot}{C}$ for Carbonic Acid, $\overset{\cdot}{N}$ for Protoxide of Azote; instead of K + O, C + 2 O, N + O. When the ratio is that of 2 to 3, he employs a dash placed below, as the symbol for two equivalents; thus $\overset{\cdot\cdot}{\text{Fe}}_{-}$ is used instead of 2 Fe + 3 O.

These are examples of the most familiar and direct use of symbols; and for the varieties in the mode adopted in their application (suggested by Berzelius and others) the reader is referred to Turner's "Chemistry," page 238, edition 1837.

* In the Second Table of the Elements, Titanium is misplaced; it ought to stand between Sodium and Nickel.

OF
POISONS:
THEIR
EFFECTS, ANTIDOTES, AND TESTS.

ARSENIC, White Oxide of, or Arsenious Acid.—The properties of this virulent poison have already been described at page 68.

Symptoms.—About half an hour after it has been swallowed—although sometimes, but rarely, after a few minutes; and sometimes, but still more rarely, after a few hours—the effects become manifest by a sense of sickness and burning pain in the region of the stomach, augmented by pressure. To these accede violent vomiting or dry retching, with ineffectual efforts to vomit; and at this time a sense of heat and tightness in the throat are first experienced, together with insatiable thirst. Hoarseness and difficulty of speech are consequent upon the violent vomiting, and in fact arise from it. The material vomited, next after the contents of the stomach, is a greenish-yellow matter, sometimes streaked with blood, although this last appearance is by no means a characteristic, and is to be ascribed to long-continued vomiting, as in sickness from natural causes. As the symptoms progress, the burning in the stomach increases, and has occasionally been likened to the stinging of nettles, and sometimes described by the sufferer to be like liquid fire, diffusing itself from the stomach over the whole abdomen, which is more generally, but not always, tense, and extremely tender under pressure. Diarrhœa, tenesmus, irritation and excoriation at the extremities of the mucous passages, namely, at the corners of the mouth, at the anus, in the urethra, and in the labia of the female, next ensue: the anxiety increases; the breathing is short and hurried, the patient being afraid to breathe from the abdomen, on account of its extreme tenderness: tremors and twitchings gradually introduce convulsions; the pulse, from the first attack of vomiting, becomes small, rapid, and feeble; and this feebleness of circulation is necessarily attended with coldness, clammy sweats, and lividity of the surface. These signs strongly mark the condition of collapse, and gradually introduce faintings or stupor, the patient either sinking calmly, or being hurried off by convulsions. The swollen, protruded, and blood-shot condition of the eyes, is not inflammatory, but merely the mechanical effect of excessive retching, as in the habitual vomiting of drunkards.

Antidotes.—Magnesia, charcoal, liver of sulphur, and, more recently, the hydrated peroxide of iron, have been proposed; but their effects are at best but doubtful. I recently attended a case with Mr. Betts, of Hammersmith, in which two drachms of the white oxide of arsenic had been swallowed. After the use of the stomach-pump, charcoal had been freely exhibited; and the vomiting, by means of dilution, was kept up for twelve hours. Six hours after ingestion (the patient then having been vomiting nearly the whole of that time), the greenish yellow fluid still yielded the appearances of arsenic to the usual tests. Large dilution

was kept up for other six hours, until the material vomited no longer yielded traces of the poison. This patient perfectly recovered within thirty-six hours. Christison, however, objects to large dilution. Sydenham has a case where the patient recovered by mere dilution (to the extent of gallons), after taking an ounce of white arsenic.

Tests.—In supplying the outlines of the necessary inquiries into the mode of testing this and certain other more virulent poisons, it is convenient to premise that it is not within the plan of this work to comprehend the many substances which exert a fatal operation on the human frame. The most common will therefore be selected; and it will be found more useful to select a few of the most distinguishing characteristics, in order that the practitioner or retail chemist may be supplied with the means of detection: for although, in doubtful cases, recourse is very properly had to the more subtle analysis of the experienced chemist, it is chiefly in the power of the ordinary attendants to supply the ground-work for future investigation. The four tests chiefly approved for the detection of arsenic are ammoniacal nitrate of silver, ammoniacal sulphate of copper, hydrosulphuric acid gas, and reduction of the suspected compound to the state of metallic arsenic. Presuming that the operator has saved the material discharged by vomiting, or some remains of the suspected article of food or drink; or, if it be medicine, of the material from the packet or phial; and that, in a case of autopsy, he has carefully tied both ends of the stomach, or other part of the alimentary canal which it may be proper to remove, with a view to obtain the contents; after a due solution, elutriation, or infiltration, as the case may be, he proceeds to the following tests:—

No. 1. *Ammoniacal Nitrate of Silver.*—A solution of this compound must first be prepared by dropping liquor of ammonia into a strong solution of nitrate of silver, till the oxide of silver, which is first thrown down, is *nearly, but not entirely, dissolved*. Dropped into a fluid containing arsenic, it throws down an arsenite of oxide of silver of a bright queen's yellow, and nitrate of ammonia is left in solution.

No. 2. *Ammoniacal Sulphate of Copper.*—A solution of this compound is, in like manner, to be prepared by adding liquor of ammonia to a solution of sulphate of copper, until the oxide of copper first thrown down is nearly all redissolved. From certain fluids containing arsenic, this solution throws down the well-known pigment called *Scheele's green*, or arsenite of oxide of copper. The operator should, however, bear in mind, that Christison has proved that this ammoniacal sulphate produces a greenish precipitate in some animal and vegetable infusions not containing arsenic; whereas in other mixed fluids, such as tea and porter, to which arsenic has been previously added in a small proportion, it occasions none at all.

No. 3. *Hydrosulphuric Acid Gas, or Sulphuretted Hydrogen.*—The fluid to be examined must be first slightly acidulated with acetic or hydrochloric acid, in order to place it under favourable circumstances for this test; or if any unknown acid be present, it should be neutralized by potassa. Through the fluid thus prepared, Dr. Christison directs a current of hydrosulphuric acid gas to be conducted for ten or fifteen minutes. The first portions of the gas turn an arsenical solution of a bright lemon-yellow colour, and the subsequent portions throw down a sulphur-yellow precipitate.

No. 4. *Reduction to the Metallic State.*—The suspected powder, or either of the above precipitates, is to be put into a small test-tube with a little black flux,* or if the material be in a very minute proportion, it will be better to use freshly ignited charcoal; if charcoal, it will be proper first to let the powder fall entirely to the bottom of a small tube, $\frac{1}{8}$ of an inch in diameter, and to

* Black flux is best prepared by deflagrating one part of nitre with two parts and a half of cream of tartar; or from two parts of ignited carbonate of soda, and one of charcoal.

cover it with a pinch of charcoal, and care should be taken that no particles adhere to the side of the tube, which should be quite clean. On applying the heat of a spirit-lamp the arsenic is sublimed, and forms a crust on the upper part of the side of the tube. The surface next the tube closely resembles polished steel; the inner surface is either brilliantly crystalline to the naked eye, like the fracture of cast iron, or has a dull grayish white colour.—*Christison*. As a further test, the crust may be chased up and down the tube until it is all oxidated, and octahedral crystals are formed, on which triangular facettes may be distinguished.—*Turner*. A still more delicate mode of effecting reduction, even from an arsenical solution, has lately been invented by Mr. Marsh (*"Edin. New Phil. Journal,"* 1836). It depends on the fact, that whenever hydrogen in the nascent state is brought into contact with any compound of arsenic and oxygen, such compound is decomposed, and a gaseous compound of arsenic and hydrogen is generated. This gas is inflamed as it escapes through a fine tube, and if a piece of window-glass or porcelain be held in the flame, it is instantly covered with a thin coating of metallic arsenic; or if the flame be made to burn in the centre of a glass tube, open at both extremities, the inner surface of the latter is covered in half a minute with arsenious acid. The hydrogen is generated by adding to the suspected fluid dilute sulphuric acid, and suspending a fragment of zinc in it. The cylindrical glass vessel and capped bell-jar, furnished with a stop-cock and small gas-burner, may be procured at Palmer's, in Newgate Street.

Post-mortem Appearances.—If no inflammation ensues, and the arsenic destroys by a powerful impression on some vital organ—as, for example, upon the heart—the autopsy may disclose no marks of the ravages of this poison. More generally, however, the following are the appearances:—Traces of inflammatory redness of the fauces, œsophagus, and stomach. Softening of the villous coat, patches of extravasation and ulceration of the same organ. Sometimes red patches are seen, with streaks or lines of red running from them; effusion of lymph. Also, similar appearances in the duodenum, and the remaining portion of the alimentary canal.

Mercury, Bichloride of; Corrosive Sublimate.—The properties have been described at page 89.

Symptoms.—Vomiting, accruing immediately, or within a few minutes after the poison has been taken; increased by any thing taken into the stomach; violent pain in the epigastrium, diffused over the entire belly; violent and bloody purging, and nearly all the symptoms usually induced by arsenic. Taste, strongly metallic and corrosive; burning and tightness in the throat; countenance flushed and swollen; frequent and painful micturition; ptyalism.

Antidote.—When a solution of corrosive sublimate is mixed with the white of egg, a flocculent precipitate subsides, which is inert, and appears to be a compound of calomel and albumen.—*Orfila*. Hence the proper antidote for corrosive sublimate is a solution of the white of eggs.

Tests.—The suspected liquid should be strained, concentrated, and digested with an excess of pure potassa. The red oxide thus precipitated is afterwards to be sublimed in a small glass tube, by the aid of a spirit-lamp, and the mercury may be thus obtained in its characteristic condition of metallic globules. *Christison's* mode is preferable when the poison is mixed with organic matter. He recommends that the liquid, without previous filtration, be agitated with a fourth of its volume of æther, which separates the poison from the aqueous part, and rises to the surface. The ethereal solution is afterwards to be evaporated on a watch-glass, the dry residue to be dissolved in hot water, and the mercury to be precipitated in the metallic state. *Sylvester's* test answers very well for any solution not considerably diluted. Place a drop of the suspected liquid on a polished surface of gold, and touch the moistened surface with a piece of iron wire

or the point of a penknife. The part touched instantly becomes white, owing to the formation of an amalgam of gold. The merit of having simplified this test is due to Dr. Paris.

Post-mortem Appearances.—Traces of inflammatory redness in the fauces and gullet extending throughout the canal; shrivelling of the tongue and enlargement of its papillæ; corrosion or ulceration of the villous coat of the same. The redness deeper, and more general, than in poisoning by arsenic.

Copper, Salts of; as Verdigris, Blue Vitriol, various Copper Pigments, &c.—*Symptoms.*—The symptoms are rapidly developed; violent headach, followed by vomiting; cutting pains of the bowels; diarrhoea, cramps in the legs and thighs; taste, strongly of copper, producing shuddering or rigors as the poison from time to time passes over the tongue, in the act of vomiting; occasionally jaundice, and amaurosis. When the symptoms prove fatal, convulsion, palsy, and insensibility, are the forerunners of dissolution.

Antidotes.—A yellowish-white compound is thrown down from a solution of the salts of copper, by the addition of white of egg, which M. Orfila has proved to be inert. The antidote, therefore, is albumen in water. The white of six eggs completely neutralizes the activity of about 30 grains of verdigris. The same author rejects the notion of the antidotal powers of sugar, which, however, have recently been again vindicated by M. Postel; and he partly founds his notion on the observation that sugar decomposes the cupreous salts at the natural temperature of the human body, and throws down oxide of copper. This remark is not original: Dr. Ure hazarded a conjecture nearly to the same effect in his Chemical Dictionary, sixteen years ago; with this difference, that he thought the resulting precipitate would be a carbonate.

Tests.—The best test for copper supposed to exist in mixed fluids is hydro-sulphurous acid, more commonly called sulphuretted hydrogen. The sulphuret of copper thus precipitated is to be carefully collected, and to be heated to redness to char all organic matter. It should then be placed on a piece of porcelain, or on a watch-glass, and be digested in a few drops of nitric acid. Sulphate of protoxide of copper is formed, which, when evaporated to dryness, strikes the usual blue tint on the addition of ammonia.

Post-mortem Appearances.—The characteristic marks of inflammation in the gullet, stomach, duodenum, and jejunum and one or more of these parts; of an unusual green colour. Gangrenous patches near the pylorus and cardia, and sometimes ulceration. The skin sometimes of an ochre yellow; the lungs gorged with thick blood.

Lead, Oxides and Salts of; as Litharge, Red Lead, Ceruse or White Lead, Sugar of Lead, &c.—*Symptoms.*—The soluble salts of lead act locally as an irritant, although less powerfully than the other metallic poisons. Goulard's extract undiluted (for example) has produced violent ophthalmia and phymosis in two cases within my own experience, where it had been used by mistake for Goulard's lotion; and it therefore surprises me that its locally irritant effects have been disputed. The symptoms are mixed of the inflammatory, spasmodic, and nervous. I am enabled to sketch them from several cases attended by my own pupils. Sugar of lead in any dose, from about a drachm to an ounce, first irritates the mucous membrane of the gullet and stomach, as manifested by a pricking, hot, shooting pain in the throat and epigastrium, with a copious muco-purulent secretion. These symptoms are soon followed by colic pains, drawing in of the belly, diminished temperature, great prostration, slow pulse, and a sense of numbness in the limbs. The poison, however, rarely proves fatal in its immediate effects. The symptoms gradually abate, and a new train appears resembling those produced by lead gradually and insidiously taken into the body. Symptoms of colic recurring in

paroxysm, anorexy, sickness, cramps of the stomach and limbs, obstinate costiveness. Sallowiness of complexion and partial paralysis, not unfrequently followed by epilepsy, or by fatal convulsions. Limited as is the scheme of this short notice of poisons, I cannot refrain from entering my protest against the received opinion lately formed by the most eminent toxicologists of the comparative innocence of acetate of lead, and of its perfect harmlessness when given with acetic acid. That the acid diminishes the tendency to mischief, is very probable; but this I take to be the law with regard to the effects of the oxide on salts of lead. On the majority of persons, lead introduced in small quantities produces no effects; and even when introduced in large quantities, they escape after severe symptoms. On a few (probably not more than one in fifty), by idiosyncrasy, lead is as fatal in its effects, although those effects are slower, as arsenic itself. I have met with a case of violent spasm in the muscles of the throat, almost inducing suffocation, with protrusion of the eye-balls and a bloated livid face, as from a ligature round the neck, recurring in paroxysms, and entirely to be ascribed to breathing on the well-known fashionable glazed lead card, in the process of printing.

Antidote.—Emetic of sulphate of zinc. The alkaline and earthy sulphates in solution, as Epsom salts, Glauber's salts. The secondary symptoms being those of colica pictonum, require the usual treatment for that disease.

Tests.—Precipitate by hydrosulphuric acid; collect and wash the precipitate; digest it in nitric acid, diluted with twice its weight of water, until its dark colour disappears. Dry on a watch-glass to expel the nitric acid, and redissolve the residue in a little cold water. On the addition of a small particle of iodide of potassium, yellow iodide of lead will instantly appear.

Post-mortem Appearances.—The upper part of the alimentary canal, *i. e.* the gullet, stomach, duodenum, and part of the jejunum inflamed. Villous coat softened. The stomach is extremely retentive of lead: it has been detected in a case where the patient had survived three days. The appearances produced by the secondary symptoms are those seen after colica pictonum.

Antimony, Oxide and Soluble Salts of; as Emetic Tartar, &c.—Symptoms. The irritant effects of antimonials, when employed in poisonous doses, have been partly set forth in my "Pharmacopœia," at page 131. Nausea; prostration, soon followed by vomiting and purging; burning at the pit of the stomach; sense of tightness in the throat; deglutition difficult, and sometimes impossible; violent cramps; universal relaxation, and utter helplessness of the limbs.

Antidote.—Warm water, if vomiting has not yet commenced; afterwards, the powder of yellow bark (*cinchona cordifolia*) may be given, diffused in water, that no time may be lost while a decoction of the same is prepared. If the pump is employed, care should be taken lest, the suction being too forcible, it may injure the stomach.

Tests.—If the suspected fluid be of a mixed nature, acidulate it with a little hydrochloric or tartaric acid, which will coagulate part of the organic matters, and completely dissolve any oxide of antimony. Then precipitate a sesquisulphuret of antimony, by transmitting through the solution a stream of sulphuretted hydrogen gas. Collect the orange-red sesquisulphuret, dry it, and having placed it in a glass tube, transmit through it a current of hydrogen gas, and when the atmospheric air is entirely displaced, heat it by the flame of a spirit-lamp. The sulphur passes off as sulphurous acid gas; and metallic antimony, recognisable by its lustre, remains.—*Turner.*

Post-mortem Appearances.—Stomach and duodenum inflamed, thickened, and covered with a tough adherent mucus; intestines empty.

Acids, Mineral, Sulphuric, Hydrochloric, Nitric.—Symptoms.—These poisons act directly upon the part to which they are applied, and by nervous sympathy the

irritating impression is conveyed over the whole system. The signs are those of violent gastritis; but the prostration is more sudden, and the pains severer. High fever; burning and excruciating pain in the epigastrium, especially increased by drinking fluids, which are immediately rejected; great anxiety; eructations. The corners of the mouth and its inner surface are commonly excoriated, shrivelled, or more deeply ulcerated. The lips are at first white; then, after sulphuric acid, brown; after nitric, yellow. Deglutition difficult, sometimes impossible. If the patient vomit on a handful of chalk or whitening thrown into the basin, carbonic acid is copiously evolved. Long tubular portions or shreds of the gullet are sometimes thrown up with the material. The anxiety increases, and with it the embarrassment of breathing. The bowels are usually costive, and the urine scanty; but sometimes the irritation is propagated to the rectum, and induces severe tenesmus.

Antidotes.—Magnesia or its carbonate, chalk, whitening, powdered marble, or the scrapings from the plaster of the ceiling mixed into a paste with a little water, exhibited with the least possible delay. Milk, or any bland drink, may be freely exhibited to dilute the acid, while the antidote is in preparation.

Tests.—Their action on litmus paper, and their well-known properties of corroding animal matter, woollen and linen, &c., are their distinguishing characteristics. 1. Concentrated oil of vitriol is recognised by the properties enumerated at page 12. When diluted, it may be detected by adding first a little nitric acid, and then a few drops of a solution of nitrate of baryta. Sulphate of baryta is precipitated. 2. Undiluted hydrochloric (muriatic) acid is readily known by the opaque white vapours given off from it; an appearance arising from the great attraction of hydrochloric gas for the water of the atmosphere. In diluted fluids, it is best tested by means of nitrate of silver, with which it throws down a chloride of silver. 3. Undiluted nitric acid is most readily tested by the action of copper filings; effervescence ensues, and the nitric oxide which escapes forms (nitrous acid) orange-coloured vapours in the atmosphere. This action has been repeatedly explained in the course of the work. Nitric acid, largely diluted, is detected with difficulty. Having ascertained that the fluid is acid, as a foundation for your experiment, neutralize with potassa, evaporate to dryness; and if nitrous fumes be evolved by the addition of sulphuric acid, the presence of nitric acid is clearly indicated. Dr. O. Shaughnessy (*vide* "Lancet," 1829, 30, xi. 840), neutralizes and evaporates to dryness, puts the residue in a small tube, and heats it for a second or two with a drop of sulphuric acid. He then drops in a crystal of morphia, gently moving it at the edge of the mass, and if any nitric acid is present, the morphia quickly acquires an orange colour.

Post-mortem Appearances.—Marks of the corrosive effects of the acid on the skin, lips, fingers; brownish or yellowish-brown patches, likened to the appearance of old parchment; but if from sulphuric acid, more like the dry eschar of a burn. Mouth and fauces disorganized, whitish or yellowish, and generally hardened. The same marks of destruction throughout the gullet and stomach, with extensive corrosion, and occasionally with perforations in that organ. The external surface of the abdominal viscera, unusually vascular, presenting the fibrinous effusion, with adhesions like those arising from peritoneal inflammation: the same appearance sometimes in the serous lining of the chest and surface of the diaphragm. The pylorus contracted; and, in lingering cases, strictures and contractions in the intestines. When the pylorus has allowed the acid to pass, the duodenum exhibits the same marks.

Acid Hydrocyanic, or Prussic; Cherry-Laurel Water; Essence of Almonds, &c.—*Symptoms.*—The effects of a poisonous dose are immediate. Sometimes it is fatal in a few seconds. If the patient survive forty minutes, he usually recovers. Immediately after the taking of the poison, if standing, he staggers a few steps

and falls, to all appearance, dead. The pulse is lost, and the breathing imperceptible; but before death, three or four forcible expirations, at intervals of half a minute or more, seem to draw the ribs almost to the spine. The extremities become cold, the eyes projecting, glistening, and insensible; and, by a last convulsive expiration, the tragedy is finished within a few minutes. It need not be swallowed in order to destroy life. I have met with a case of a lady who saturated a piece of the wadding of her muff with this acid, and tried to swallow it; it stuck in her throat, but killed her in a few minutes.

Antidotes.—1. Cold affusion. 2. Inhalation of the stronger liquor ammoniæ, diluted with 12 parts of water. 3. Inhalation of water, impregnated with a fourth part of its volume of chlorine. The first should be used instantly; and the second or third, or both, as soon as they can be procured. The employment of the stomach-pump would be mere loss of time, unless (which is improbable) the patient be not as yet insensible. One person should dash cold water over the patient; a second should hold to the mouth a large sponge, soaked in the liquor ammoniæ diluted as above; a third should clyster with the same diluted liquor; while a fourth procures the solution of chlorine, always to be kept ready by every practitioner. But, with the most scientific and prompt treatment, the case is all but hopeless.

Tests.—The odour of the acid; to be determined, however, by more than one person. From the suspected fluid, rendered alkaline by the addition of potassa, a greenish precipitate is thrown down, which becomes nearly white by the addition of a little hydrochloric acid. From the suspected fluid, rendered alkaline as before, sulphate of iron throws down a grayish-green precipitate, which becomes of a deep Prussian blue colour by the addition of a little sulphuric acid. Nitrate of silver precipitates a white cyanide of silver. *Vide* "Notes" in the Pharmacopœia. In testing mixed fluids, the colouring matter must first be destroyed by animal charcoal, or a slip of bibulous (filter) paper may be moistened with pure potassa, then dipped into the suspected fluid, and afterwards touched with a strong solution of the tests; or, lastly, the mixed fluid may be distilled.

Post-mortem Appearances.—The cavities, and even the blood, exhaling the odour of bitter almonds. The blood usually fluid and black; the brain gorged; the eye retaining a peculiar glistening and staring expression, long after death. The inner surface of the stomach and intestines reddish; the spleen and liver gorged. In the celebrated trial of Capt. Donnellan, charged with the murder of Sir Theodosius Boughton, the judge strongly insisted upon that part of the evidence of the medical men which embodied a unanimous and positive opinion that rapid putrefaction was the necessary consequence of death by prussic acid. In our time, it is contended that its presence *retards* putrefaction! *Vide* Coullon, "*Recherches sur l'Acide Hydrocyanique*." A medical practitioner ought to enter a witness-box with as much singleness of heart and pure humility as though he were about to take the sacrament.

Acid, Oxalic.—Symptoms.—Half an ounce of this acid is sufficient to destroy life. If a strong solution has been taken, the primary and immediate symptoms are burning pain in the stomach and gullet, followed in a few minutes by violent vomiting, and usually continuing till near the death of the patient. The circulation becomes much depressed; the countenance is pallid; the pulse feeble, or altogether imperceptible; the skin, cold and clammy. Convulsions sometimes occur a short period before death. The poison more usually destroys in a few hours.

Antidotes.—The remedies must be immediate, or they become ineffectual. If vomiting has not already occurred, an emetic may be exhibited. But the chief antidote is magnesia, or chalk, or the powdered plaster of the ceiling rubbed up with, or suspended in water, either of which form with the acid an insoluble

compound; thus at once depriving it of its corrosive power on the coats of the stomach, and preventing its absorption into the blood. The stomach-pump may be employed in this and the preceding cases; but it is no adequate substitute for the proper antidotes.

Tests.—The crystals are six-sided prisms, flattened, transparent, colourless, inodorous, extremely sour, permanent in the air, strongly affecting litmus paper, and not easily distinguished from Epsom salts, except by the taste. From its concentrated solution, radiated crystallization is produced by the addition of ammonia; a white precipitate, by the hydrochlorate of lime, which is re-dissolved by adding a drop or two of nitric acid; a faint bluish-white precipitate is caused by sulphate of copper, not re-dissolved by the addition of hydrochloric acid; a white precipitate (oxalate of silver), by the addition of nitrate of silver. N.B.—No person ought to trust to a label, but should first taste his Epsom salt before he swallows it.

Post-mortem Appearances.—Marks of inflammation, corrosion, and occasionally perforations in the stomach. The mucous coat of the throat and gullet appears as if it had been scalded, and it is easily scratched off. The inner lining of the intestines has the same marks of inflammation as the stomach, but in a less degree. The inner surface of the wind-pipe is also inflamed. When death occurs, in an hour or two after death these appearances are not to be expected. The charred and black state of the blood has been attributed to the chemical changes effected by the acid after death.

Opium, and all its Preparations.—Symptoms.—Occasionally the effects are immediate, but more commonly they ensue after about half an hour; giddiness, stupor, irresistible drowsiness, soon passing to a state of insensibility; respiration slow and laboured; and in persons of a full habit, accompanied with stertor; pupils of the eyes contracted; the face, which is at first flushed, gradually, under the advanced action of the poison, becomes pale and ghastly. Simultaneously with this appearance, and not before, the pulse begins to fail, the skin is generally lax and moist, and the sweating has been observed to be most copious in fatal cases, the sheets being completely soaked by it. Vomiting after taking the poison is comparatively less frequent, and of course favours the recovery of the patient. Several cases of this kind have been recently recorded. Sometimes, where convulsions have preceded death, the features are found distorted, and the fingers contracted, but this is by no means common. The shortest period within which the poison has been known to be fatal, is three hours; the ordinary duration is from seven to twelve hours, but it is more rarely fatal after a much longer period. The minimum fatal dose for an adult is four grains; but that quantity would not poison one person in ten. Very great difference exists in constitution and susceptibility, both in infants and adults. An infant under a month, took two drops and a half of laudanum with impunity; another sank under a teaspoonful of syrup of poppies. Both cases came under my own immediate notice. Most persons recover if they survive twelve hours. I have seen at least twenty cases, several of which I will notice below.

Antidote.—The stomach-pump is in this case of paramount importance, but must not be allowed to supersede the use of emetics. In the next place, an emetic of zinc (℥ij.) should be exhibited, dissolved in two ounces of distilled water. Twenty years ago I attended a young lady (æt. 19) in Norfolk Street, and I exhibited four ten-grain doses before vomiting was induced. The dashing of cold water, or irritation by cowhage, promotes the action of the emetic. Dr. Christison says, the best method of keeping the patient roused is to drag him up and down between two men. I attended a case in Jermyn Street, in which Mr. Read, the celebrated machinist, removed the poison under my direction. After the action of an emetic I freely scattered the cowhage (which I had first proposed in 1820)

over the naked neck and shoulders; and that gentleman, as well as the apothecary (Mr. Salter), had an opportunity of witnessing the fury excited by these means. Dragging a patient up and down is succeeded by languor; for the patient under the action of cowhage there is no rest. Some of my pupils will recollect my treatment of an infant (of about six months) at Turnham Green. To this child about six drops of laudanum had been administered in the middle of the preceding night. It was brought to me in the mother's arms at 10 o'clock the following morning, totally insensible, features pale and ghastly, respiration with difficulty to be distinguished. Under five-grain doses of sulphate of zinc and the dashing of cold water the child vomited. Respiration became forcible by successive sluicings with cold water; but the infant again and again relapsed into insensibility. I collected a bunch of nettles from my own garden, and beat the epigastric region until it was covered with vesicles. The child was roused, and cried for some minutes, and then again relapsed. The operation was again and again repeated with the nettles, and strong green tea was exhibited. I was obliged to leave the case to my pupils; and at three o'clock (about fifteen hours after the exhibition of the laudanum), the infant was permanently aroused, and is now alive. In adults of a full plethoric habit, if the face is flushed and the pulse hard, full, and slow, and the breathing stertorous, venesection is decidedly beneficial. Mr. ———, then and now practising in Great Surrey Street, was attended by the late Dr. Blegborough, Mr. Pollard, and myself, in 1820, for a condition which we all supposed to be apoplexy. Mr. ——— had hastily taken three five-grain pills of extract of opium, which had been sent from his druggists by mistake for extract of bark. We bled him to 20 ounces, and two hours had elapsed before we were apprized of our error, our attention being directed to the gallipot by the servant, who had seen him take the extract. We then gave a powerful emetic, and injected a strong purgative glyster, and afterwards Mocha coffee and strong green tea. Towards evening he perfectly recovered.

Tests.—Having filtered the mixed fluid, and discharged the colouring matter, add a small quantity of iodic acid; it produces a reddish brown colour, and the odour of iodine is perceptible. A concentrated alcoholic solution of iodine produces the same precipitate, and a pellicle reflecting the prismatic colours instantly forms on the surface of the liquid. The other test consists in detecting the morphia (*vide* Morphia, page 38, in the Pharmacopœia), and striking a yellow by the addition of nitric acid.

Post-mortem Appearances.—The brain and its sinuses gorged with blood; serous effusions in the ventricles; the lungs distended, and gorged with blood; some redness in the villous coat of the stomach and upper bowels; lividity of the skin is always present in a greater or less degree; the blood is generally found in a fluid state; the body rapidly putrefies; traces of the opium are sometimes found in the stomach. I lately discovered the poison in the stomach, in an autopsy which I performed with Mr. Sewell, of Milner Terrace, Lambeth.

Hyoscyamus niger: Henbane.—*Symptoms.*—When I recorded my opinion of the medicinal character of this plant, I thought I stood alone in my condemnation of it. M. Fourquier, in the "Archives Générales de Médecine," i. 297, "infers from his experiments, that in remedial doses it never causes sleep, but always head-ach, delirium, nausea, vomiting, and feverishness." In poisonous doses, the condition of coma, or insensibility induced by it, cannot be called sleep; for it is attended with low muttering delirium, and the foul tongue of typhomania. The first symptoms are usually stupor; dilated pupils; depraved vision; loss of speech, followed by coma, and delirium, sometimes of the furious kind. As the stupor abates, the delirium becomes more extravagant and unmanageable; and not somnolency, but protracted watching, is the prevailing condition.

Conium maculatum: *Hemlock*.—*Symptoms*.—Giddiness, headach, soon followed by insensibility, failure of the pulse, coldness of the surface, convulsions; and if the dose is not sufficient to prove fatal, frantic delirium, or paralysis, intervenes, before the recovery.

Aconitum: *Monkshood*.—The species seem to be confounded by our botanists. Within my knowledge, certain operators have sent to Germany for the root of *A. paniculatum*. More than half the aconites of our private gardens, and even the plant labelled "*Aconitum napellus*," at Kew, are nearer to the *cammarums*, of which the *A. paniculatum* is merely a variety; and either of them may become more or less panicled, according to soil or situation. How such an error should have been committed, and persisted in for fourscore years, is a matter of wonder. The College tell us they operated on the *A. paniculatum*, in preparing "*Aconitina*." Their operator tells us he put every new process to the test of his own experience. Did he, too, send to Germany for the root of this variety? If so, why were both his employers and himself so reserved as not to tell the public where they also might procure it? The true *napellus* has but three ovaries, rarely more; the *cammarums*, from three to five, and sometimes more on the same stem; and their flowers are larger, of a deeper blue, and more panicled: whence the name of Stoerk's variety. *Vide De Candolle*. In fact, then, the larger aconite of our own gardens is the plant from which the *aconitina* has been prepared in London, and is the same which Haller described as the aconite extolled by Stoerk; and the panicled monkshood is only a variety of the same genus. The whole error has arisen from confounding it with the *A. napellus*. I was at the trouble of going through the aconites with the botanical gardener at Kew (a meagre collection, by the way), and that gentleman was satisfied that he had not a *napellus* in his garden, and that the one so designated is nearer to the *cammarum*. The doubtfully wild aconites of Devonshire and of Hereford also yield the *aconitina*, and have been used for that purpose. This is the "*Aconitum napellus*," as I infer from the description of our British botanists.

Symptoms.—As it passes over the tongue, whether in the solid or liquid state, it first gives a sweet impression, with a sense of tightness; then, shortly afterwards, it tastes bitter, and produces a feeling of constriction in the muscles of the jaws; the head feels giddy, especially in the act of rising; a burning pain extends through the gullet to the stomach; a gnawing is felt at the cardiac orifice of this organ; oppression at the chest; colic pains; flatulency; the head becomes heavy; the patient has convulsive movements of the temporal muscles, and those of the face and neck; the eyes, also, are convulsed and blood-shot, and pour out tears; vomiting intervenes, and if the symptoms are not relieved, the tremors and shaking, like that of paralysis agitans, become general, to which succeed fainting, stupor, and death.

Atropa Belladonna: *Deadly Nightshade*.—*Symptoms*.—Dryness of the throat, extravagant delirium, with dilated pupils; afterwards, stupor. The symptoms of irritation are marked by difficult deglutition; subsultus tendinum; and, occasionally, by lock-jaw.

Nicotiana Tabacum: *Tobacco*.—*Symptoms*.—Nausea; giddiness, stupor, prostration of muscular power, and relaxation of all the fibres of the body; fainting; weak pulse; pallor; coldness of surface, followed by vomiting. In fatal cases lethargy supervenes, sometimes with stertor, before death.

Other Narcotics and Acro-narcotics.—The symptoms, more or less, resemble those produced by one or other of the above narcotics. Selections have been made, as fair examples, of both classes.

Antidotes.—Same as for opium. The symptoms of gastric irritation require the same treatment as those ordinarily employed for inflammation. It must be remarked, that either the narcotic effects or those of irritation are always predominant, and can scarcely co-exist. Hence our views must be directed to the relief of one or other class of symptoms, according to circumstances.

Tests.—The present state of the chemical analysis does not as yet supply us with satisfactory evidence of the presence of narcotics; for their chemical properties are either not sufficiently characteristic, or are not sufficiently known for the purposes of legal research.

Post-mortem Appearances.—These will be modified by circumstances. If the patients have sunk under the narcosis, congestion in the brain, sinuses, and lungs, and livid patches on the body, are most frequent. If the irritation has been predominant, the alimentary canal will bear the usual traces of inflammation. For a further and more particular account, I refer my readers to Dr. Christison's work on Poisons.

Vegetable and other Acrids.—Those commonly attendant upon inflammation of the mucous coat of the stomach and bowels. The treatment will consist in promoting the rejection of the acrid matter by bland diluents, and subsequently relieving the symptoms of irritation or depression, as the case may be.

Alkalies.—Symptoms.—An acrid burning taste, with rapid destruction of the mouth; same effects on the fauces, gullet, and stomach; difficult deglutition; violent bloody vomiting; symptoms of acute gastritis, with great tenderness of the belly; in the sequel, cold sweats, universal prostration, hiccup, long-continued violent pains, excessive purging, and fatal exhaustion.

Antidotes.—Weak acids, as vinegar, lemon-juice, or oil. Some prefer the latter.

Tests.—*Vide* the Alkalies in the Pharmacopœia, and the same in the "Notes."

Post-mortem Appearances.—Same as in inflammation, but with greater destruction of parts, and more extensive effusion of lymph.

Poisonous Gases.—Their effects are chiefly exerted on the respiratory organs, and it will suffice to suggest that a free access to the air, dashing of cold water, and the relieving of congestion by small bleedings, or cuppings at the nape of the neck, have been found most successful; friction and artificial respiration are not to be neglected.

TRADE CHEMICALS

FOR WHICH NO PROCESS IS FOUND IN THE PHARMACOPŒIA.

ACETATE of Soda is largely supplied by the manufacturers of pyroligneous acid, by saturating the impure acid with chalk, so as to form an acetate of lime, and decomposing the acetate by sulphate of soda, thereby producing a soluble acetate of soda and an insoluble sulphate of lime: the solution is readily crystallized. It consists of 1 equivalent of acetic acid, 1 equivalent of soda, and 6 equivalents of water.

Ærugo: Cupri Diacetat impura.—This article has been sufficiently noticed at page 57 of this work.

Amylum: Starch.—The best starch is made almost exclusively from wheat meal; but it may also be prepared from rye or other grain, from potatoes, and other farinaceous roots. The process consists in disengaging the fecula, and other parts of the grain, from the gluten, by fermentation and repeated washings. Many of the retail chemists in the crowded districts, and near the markets of London, prepare a sort of starch from potatoes, and supply it to the public as the finest Indian or Bermuda arrow roots. Sago, cassava, tapioca, are also so many kinds of starch. Sago is prepared from the *Sagus genuina* (Rumphii), and the *S. farinifera* (Lamarck); tapioca and cassava from the *Jatropha manihot*. The root of the *Maranta arundinacea* supplies the kind of starch called arrow root. It yields 26 per cent.

Baryta, Carbonate of.—Native carbonate of baryta has been found in Wales, and various parts of England; but it may be prepared artificially, by precipitating the soluble salts of baryta by means of the alkaline carbonates. It is highly poisonous; nearly insoluble; water at 60° only takes up $\frac{1}{4300}$ part, and boiling water only $\frac{1}{2300}$ part. Saturated with carbonic acid, water takes up $\frac{1}{830}$ part.

It consists of 1 equivalent of Baryta.....	= 77
1 Carbonic Acid.....	= 22
	99

Borax: Soda Biborate of, P. L.—According to Brande, this salt is a borate and a biborate. It is imported from India in an impure state, more commonly under the name of tincal; and after purification it gains the name of borax. Latterly it has also been manufactured by combining soda with native boracic acid, imported from the south of Italy. Its crystals are in irregular hexaëdral prisms, very slightly efflorescent. It was formerly called subborate of soda, from its alkaline reaction on vegetable colours. Its use as a blow-pipe flux is very common. I presume the term biborate is retained in the columns of the *Materia Medica* of P. L. by error, or oversight.

Remedial Use.—*Vide* Mel Boracis, page 126 of the Pharmacopœia.

Creasote, or Kreasote.—If wood-tar is subjected to distillation till the residue has the consistency of pitch, an oil and acid water pass over. If the former is separated from the sour water, two products are again obtained—an oil and sour water; but the oil is now much heavier than before. The acid water is again rejected. This heavy oil, freed from acetic acid by carbonate of potassa, and by repeated distillations with liquor potassæ, ultimately by the addition of diluted sulphuric acid, yields creasote when submitted to a further distillation.

Cupri Sulphas: Blue Vitriol.—The purest in the market is formed by dissolving peroxide of copper in diluted sulphuric acid, and is also obtained as a refuse in the process for refining gold and silver. A rougher and less pure sort is prepared by exposing roasted copper pyrites (*sulphuret of copper*) to the combined effects of air and moisture, just as common green vitriol is made by exposing roasted iron pyrites to the same agencies. The metal becomes oxidized; and the sulphur, gradually converted into sulphuric acid, unites with the oxide to form a sulphate.

Remedial Use.—Tonic, antispasmodic, emetic, and externally escharotic. It has been much used within the last few years for long-standing dysentery and diarrhœa. Dose, from gr. ss. to gr. ij. combined with opium.

Epsom Salts.—This salt is largely obtained from the bittern which remains after obtaining common salt from sea-water. This residue contains sulphate of magnesia and chloride of magnesium, and the latter is decomposed by the addition of sulphuric acid. Epsom salt is likewise largely obtained from magnesian limestone by the action of the same acid, and it is yielded in the process adopted by some manufacturers in the preparing of alum. That produced in alum works is usually found to contain traces of iron. I have known the credit of a retail chemist considerably compromised by having been supplied with a quantity of this last kind, which many of his best customers sent back, not without alarm. If this impure salt is drunk off immediately after solution, its impurity is not noticed; but when (as is the habit with some patients) the crystals are dissolved the over-night, the solution by the morning acquires the tint of rust of iron, and is usually sent back with dissatisfaction. This sulphate is occasionally adulterated with sulphate of soda. To detect the fraud, dissolve 100 grains of the crystals, and precipitate by adding carbonate of potassa. When dried at 212° the precipitate should weigh 40 grains: an inferior weight of precipitate indicates this sort of adulteration.

Glass of Antimony.—When the native sulphuret of antimony is exposed under a muffle to a dull red heat, it gradually loses sulphur and absorbs oxygen. It is thus converted into a mixture of protoxide of antimony and sulphuret, in the form of a grayish powder; but if the heat be increased, it fuses into a transparent substance like stained glass, of a yellow or brown colour, called glass of antimony, consisting usually of 85 parts of protoxide, and 15 parts of sulphuret of antimony.

Magnetic Oxide of Iron.—This medicine is likely to become a matter of general interest, from the high celebrity of the physician (Dr. Jephson) who has introduced it to notice. We therefore subjoin the formulæ:—

Take $21\frac{1}{2}$ oz. of crystallized sulphate of iron in coarse powder: put it into an earthen vessel, holding about two quarts; add to it two pints of water, and four fluidounces of strong nitric acid: let it be kept at about 180 degrees of temperature, and frequently stirred till the iron is fully oxidized. This point may be ascertained by testing a drop of it with a solution of per-prussiate of potash, on a white plate. As long as any protoxide of iron remains, a blue precipitate will be occasioned. If the nitric acid is not sufficient to peroxidize the iron, add a little more, and continue the digestion. When the iron is fully peroxidized, let the

solution cool. Dissolve $10\frac{3}{4}$ ounces of crystallized sulphate of iron in 3 pints of water; add this suddenly to the solution of peroxide. Put into an iron pan (holding about 6 quarts) 40 ounces of crystallized subcarbonate of soda. Add 3 pints of water, and apply heat till the soda is dissolved. Into this solution pour gradually the mixed solution of iron, stirring them well together. Set the pan over a fire, and boil the contents briskly for half an hour; take it off; let the precipitate subside, and pour off the clear liquid. Add fresh water, about three quarts, and boil again for an hour. Let the precipitate settle, and wash it three or four times (without boiling), with fresh water, to separate the neutral salts. Pour the precipitate on a piece of strong muslin, and let it drain till the bulk is equal to one pint by measure, but do not allow it to become dry. This precipitate should be mixed with 31 pints of water, or 31 times its bulk, and of this mixture the dose may be from 2 to 4 drachms, and of the powder from 10 to 30 grains, three times a day. One fluidounce of the diluted mixture will contain the oxide of iron from 27·3 grains of sulphate of iron; two-thirds of this being in a state of peroxide, and one-third protoxide. The precipitate is nearly black, and does not absorb oxygen when exposed to the air; when dry, it is nearly as much affected by the magnet as iron filings.

Nitre.—It is produced abundantly by the lixiviation of certain soils in the East Indies, from whence it is imported. It is brought chiefly in the rough state, and is purified by solution, infiltration, and re-crystallization, under which process a considerable diminution of weight is necessarily incurred. This loss is technically termed the refraction. In Germany and France, since the time of Fourcroy, it has been artificially produced in nitre-beds made of old plaster rubbish, wood-ash, animal manure, &c.

Remedial Uses.—I know of no refrigerant diuretic more certain in effect than nitre. Let any person, even in health, take ʒj of nitre per diem in divided doses, and chilliness is sure to ensue, so that in two or three days the medicine becomes insupportable.

Dose, gr. x. to ʒss.

Oxalic Acid.—It exists in the sorrels, and in all the varieties of rhubarb, but it is commonly prepared by the action of four parts of nitric acid diluted with two of water upon one part of sugar. Nitric oxide gas is copiously evolved; and about one-third of the acid having been distilled over, the contents of the retort are emptied into a shallow vessel to favour crystallization. Several cups of crystals are thus produced by further evaporation, and by repeated solution and crystallization the oxalic acid is obtained in a pure state.

Prussian Blue; Percyanide of Iron, P. L.; Ferrosesquicyanuret of Iron of Brande's "Manual."—Discovered by Diesbach in 1710. It is prepared in various ways; more commonly, however, by precipitating solutions of peroxide of iron by the ferrocyanuret of potassium, more generally called prussiate of potassa.

According to Berzelius, Prussian blue consists of—

4 equivalents of Sesquicyanuret of Iron	= 268
3 ——— Cyanuret of Iron	= 162
	430

Prussiate of Potassa; Ferrocyanide of Potassium, P. L.; Ferrocyanuret of Potassium of Brande's "Manual."—It is procured most pure by heating powdered Prussian blue with diluted sulphuric acid, composed of one part of acid and five of water, and adding it to a solution of potassa as long as its colour is destroyed. For the use of calico-printers as a dye, it is largely manufactured by projecting pearl-ash in an iron pot upon offal animal matter, as hoofs, horns, &c., and stirring

the mixture with a flat iron paddle. The crystals are of a lemon-yellow colour; sp. gr. 1.83; more soluble in hot than in cold water, and not readily soluble unless previously triturated. Water at 60° takes up about one-third, and at 212° its own weight of this salt. The toughness of the large crystals impedes solution. Its proximate composition is as yet doubtful. Mr. Porrett supposes it to consist of—

1 equivalent of Hydrocyanite of Iron.....	=	63
1 ——— Hydrocyanate of Potassa	=	150
		213

Sal-Ammoniac; Ammoniae Hydrochloras.—This salt in former times was imported from Egypt, where it was obtained by the incineration of camels' dung. It is now procured by various chemical processes, according to the convenience of the manufacturers, from certain residues left after the manufacture of other chemicals. The ammoniacal liquor of gas-works, or the impure carbonate of ammonia, formed by the distillation of bones, hoofs, offal, and other refuse animal matter, are the most common sources. Such liquors, saturated with diluted sulphuric acid, yield sulphate of ammonia; and, by the addition of common salt, the products will be muriate (hydrochlorate) of ammonia, and sulphate of soda.

Remedial Use.—It has been used as a refrigerant and discutient externally. The inconsistency of these two operations has often forcibly struck me. It discusses by its stimulating operation; and if used in a concentrated form, it will produce a pustular eruption: but how or why it should refrigerate, except by the absorption of caloric during solution and gradual evaporation, I cannot imagine. If used for this last purpose, it should be allowed to dissolve gradually in a bladder. For its use internally, *vide* Pharmacopœia, page 145.

Sodæ Phosphas: Tasteless Purging Salt.—This is another salt of soda, to which a place is assigned in the columns of the *Materia Medica*, without further notice in the *Pharmacopœia*. It is the neutral or rhombic phosphate, called by the late Dr. Turner *Triphosphate of Soda and Basic Water*. It is prepared from the impure phosphoric acid, obtained by the action of sulphuric acid on bones, by saturating it with carbonate of soda. This salt is always alkaline to test-paper, and requires four times its weight of cold, and twice its weight of boiling water, for solution. The crystals effloresce by exposure.

Remedial Use.—Mild purgative, sometimes administered in broth. Dose, $\bar{3}$ ss. to $\bar{3}$ j.

Weights and Measures used in compounding Medicines in England and France.

ENGLISH TROY WEIGHT.

Pound	.....	℔	=	12 ounces.
Ounce	.....	℥	=	8 drachms.
Drachm	.....	ʒ	=	3 scruples.
Scruple	.....	ʒ	=	20 grains.
Grain	.....	gr.	=	1 grain.

ENGLISH MEASURE.

Gallon, <i>congius</i>	=	8 pints.
Pint, <i>octavius</i>	O =	20 fluidounces.
Fluidounce	f. ℥ =	8 fluidrachms.
Fluidrachm	f. ʒ =	60 minims.
Minim	℥ =	1 minim.

FRENCH WEIGHT.

Kilogramme	=	1000	grammes	=	2 metrical pounds.
Livre	....	℔	=	500	 = 16 ounces.
Once	....	℥	=	31.25	 = 8 gros.
Gros	....	ʒ	=	3.90	 = 3 scruples.
Scruple	ʒ	=	1.30	 =	24 grains.
Grain	..	gr.	=	0.05	 = 1 grain.

FRENCH MEASURE.

Litre, or decimetre cube	.....	=	2 ℔s
Chopine, or $\frac{1}{2}$ litre	.....	=	1 ℔
Setier, or $\frac{1}{4}$ litre	.....	=	8 $\frac{3}{4}$
Verre, or $\frac{1}{2}$ setier (glass)	.....	=	4 $\frac{3}{4}$
Cuillerée à bouche (tablespoonful)	.....	=	4 $\frac{3}{4}$
Cuillerée à café (teaspoonful)	.....	=	1 $\frac{3}{4}$
Goutte (drop)	.....	=	1 gr.

COMPARISON BETWEEN ENGLISH AND FRENCH WEIGHTS.

English.	Grammes.	Onces.	French.		
			Gros.	Scrup.	Gr.
℔j.	= 372.96	= 12	1	1	13.77
℥j.	= 31.08	= 1	0	0	9.14
ʒj.	= 3.88	= 0	1	0	1.13
ʒj.	= 1.29	= 0	0	0	0.37
Gr.	= 0.06	= 0	0	0	1.21

COMPARISON BETWEEN ENGLISH AND FRENCH MEASURES.

English.	French.	
	Litre.	
Cong.j.	=	3.7851
O.j.	=	0.4799
f. $\frac{3}{4}$ j.	=	0.0295
f. $\frac{3}{4}$ j.	=	0.0039
℥j.	=	0.0006

The imperial gallon, now substituted for all other measures, is one-fifth more than the old wine gallon (30 imperial = 36 wine), and one-sixtieth less than the old ale gallon (30.5 imperial = 30 ale). It contains 10 pounds of water, of 7000 grains each (avoirdupois pounds) = 70,000 grains = 277.273 cubic inches of water at 62°.

A Table of the Weights of the principal European and American Pharmacopœia, converted into American Apothecaries' Grains and French Grammes.

UNITED STATES AND FOREIGN PHARMACOPŒIÆ.		Apothecaries' Grains.	French Grammes.
<i>London, Edinburgh, Dublin, and the United States Pharmacopœia.</i>			
℔j. .. pound.....	12 ounces.....	5760	372.96
℥j. .. ounce.....	8 drachms	480	31.08
ʒj. .. drachm	3 scruples	60	3.88
ʒj. .. scruple	20 grains	20	1.29
Gr.j. .. grain	1 grain	1	.065
<i>French Codex.</i>			
℔j. .. pound.....	16 ounces.....	7722	500
℥j. .. ounce.....	8 drachms	482.5	32
ʒj. .. drachm	3 scruples	63	4
ʒj. .. scruple	20 grains	21	1.3
Gr.j. .. grain	1 grain	0.878	0.05
<i>Italian Pharmacopœia.</i>			
The Italian pound consists of twelve French ounces, and is subdivided as the French pound.			
<i>Batavian Pharmacopœia.</i>			
℔j. .. pound.....	12 ounces.....	5701	396.12
℥j. .. ounce.....	8 drachms	475	30.76
ʒj. .. drachm	3 scruples	59	3.84
ʒj. .. scruple	20 grains	19.66	1.28
Gr.j. .. grain	1 grain	0.983	0.064
<i>Austrian Pharmacopœia.</i>			
℔j. .. pound.....	12 ounces.....	6592	420.36
℥j. .. ounce.....	8 drachms	549	35.03
ʒj. .. drachm	3 scruples	69	4.38
ʒj. .. scruple	20 grains	23	1.46
Gr.j. .. grain	1 grain	1.15	0.072
<i>Danish and Swedish Pharmacopœia.</i>			
℔j. .. pound.....	12 ounces.....	5501	356.22
℥j. .. ounce.....	8 drachms	456	29.68
ʒj. .. drachm	3 scruples	57	3.71
ʒj. .. scruple	20 grains	19	1.23
Gr.j. .. grain	1 grain	0.94	0.061
<i>Pharmacopœia of Prussia, Russia, Finland, Poland, and of several German States.</i>			
℔j. .. pound.....	12 ounces.....	5524	357.66
℥j. .. ounce.....	8 drachms	460	29.80
ʒj. .. drachm	3 scruples	58	3.72
ʒj. .. scruple	20 grains	19.50	1.24
Gr.j. .. grain	1 grain	0.97	0.062

MEASURES OF CAPACITY.				Apothecaries' Grains.	French Grammes.
<i>London, Edinburgh, and Dublin Pharmacopœia.</i>					
C. Congius	Gallon	8 pints		70000	4540·8
O. Octans	Pint	20 fluidounces		8750	567·6
f. $\frac{3}{4}$ fluiduncia	fluidounce	8 fluidrachms		437·5	35·61
f. $\frac{3}{4}$ fluidrachma	fluidrachm	60 minims		54·68	4·45
℥. minimum	minim	1 fluidgrain		·911	·073
<i>French Codex.</i>					
One litre, or pinte	℔ij.	2 French pounds.		15444	1000
Half litre, or chopine	℔j.	1 do. pound .		7722	500
Quarter of a litre, or setier	$\frac{3}{4}$ viij.	8 do. ounces ..		3861	250
One-eighth of a litre, or } half setier	$\frac{3}{4}$ iv.	4 do. do.		1930	125
Cyath. or tumblerful	$\frac{3}{4}$ v.	5 do. do.		2412	156·25
Cochl. maj. or tablespoonful	$\frac{3}{4}$ v.	5 do. drachms..		315	19·5
Cochl. min. or coffeespoon	$\frac{3}{4}$ j.	1 do. do.		63	3·9
Gut. drop	gr. j.	1 do. grain		0·878	0·055
<i>The Swedish Kanne, Cantharus, contains 88 Swedish } ounces</i>				40128	2622
<i>The Berlin Measure contains 36 Nuremberg ounces ..</i>				16560	1082·8

A TABLE,

SHEWING IN WHAT RATIO OPIUM AND CERTAIN PREPARATIONS FROM OPIUM, ANTIMONY, ARSENIC, MERCURY, AND OTHER ACTIVE PRINCIPLES, ARE CONTAINED IN CERTAIN COMPOUND MEDICINES.

Opium.

TINCTURE of Opium (Laudanum) holds in solution one grain of Opium *in* nineteen minims.

Wine of Opium holds in solution one grain of Opium *in* twenty-three minims.

Confection of Opium contains a grain of Opium *in* about thirty-six grains, supposing the syrup therein contained to weigh twenty ounces.

The Compound Powder of Chalk with Opium contains one grain of Opium *in* two scruples.

The Compound Powder of Ipecacuanha contains one grain of Opium *in* ten grains.

The Compound Powder of Kino contains one grain of Opium *in* a scruple.

Liniment of Opium contains one drachm of Tincture of Opium, or three grains of solid Opium, *in* four fluidrachms.

Compound Pills of Styrax contain one grain of Opium *in* five grains.

The Pills of Soap with Opium contain one grain of Opium *in* five grains.

Mercury.

Liniment of Mercury contains one drachm of Mercury *in* a little less than six drachms.

Liquor of Bichloride of Mercury contains one grain of Bichloride of Mercury *in* two fluidounces.

The Pills of Mercury contain one grain of Mercury *in* three grains.

The Compound Pills of Chloride of Mercury contain one grain of Chloride of Mercury *in* about four grains.

The Strong Mercurial Ointment contains one drachm of Mercury *in* two drachms.

The Mild Mercurial Ointment contains one drachm of Mercury *in* six drachms.

The Ointment of Nitrico-Oxide of Mercury,

The Ointment of Iodide of Mercury, and

The Ointment of Biniodide of Mercury, severally contain one grain of the mercurial which determines their name, *in* nine grains of the mass.

The Ointment of Nitrate of Mercury contains one grain *in* about twelve.

Emetic Tartar.

Liquor of Potassio-tartrate of Antimony contains one grain of Potassio-tartrate of Antimony *in* four fluidrachms.

Arsenic, Oxide of.

The Liquor Potassæ Arsenitis contains one grain of Oxide of Arsenic *in* two fluidrachms.

Iodine.

Compound Tincture of Iodine contains $\frac{1}{2}$ a grain of Iodine, and one grain of Iodide of Potassium *in* twenty minims.

Compound Liquor of Iodide of Potassium contains $\frac{1}{4}$ of a grain of Iodine and $\frac{1}{2}$ a grain of Iodide of Potassium *in* each fluidounce.

Compound Ointment of Iodine contains about two grains of Iodine, and four grains of Iodide of Potassium *in* one drachm of the mass.

Colchicum.

The Wine of Colchicum contains four grains of the corm *to* twenty minims of Sherry Wine.

The Compound Tincture of Colchicum contains two grains and a half of Colchicum seeds *to* twenty minims of the Aromatic Spirit of Ammonia.

Acetum Colchici contains three grains of the corm *to* one drachm of the menstruum.

Digitalis.

Tincture of Digitalis contains one grain *to* ten minims.

Infusion of Foxglove *now* contains about three grains *to* the ounce of fluid.

Squills.

Tincture of Squills contains two grains and a half of Squill-Root *to* twenty minims.

Vinegar of Squills contains two grains of Squill-Root *to* twenty minims.

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From P. L. 1720 to P. L. 1824.

N.B. For the Pharmacopœial Index of the modern names, the reader must refer to page 263 of the body of the Pharmacopœia, or to page 188 of the Supplementary portion.

[An Alphabetical List of the older names traced through the last century, to enable the dispenser at once to refer to any ingredient of old family prescriptions, and to find its modern synonym. For this purpose the Index is paged to the Supplement, and on referring to the Supplement the modern name will at once be apparent.]

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