
CLASS III.
CHEMICAL PREPARA-
TIONS OF MINERALS.

SECTION I.
PREPARATIONS OF SALTS.

Spiritus Salis.

Spirit of Salt.

TAKE of dry'd Sea-salt, a pound ; and three pounds of Brick-dust ; mix them together, and put them into an earthen retort, whereof they may fill but one half ; place the vessel in a reverberating Furnace, and fitting it with a capacious receiver, keep a slow fire at the first : Then throwing away the phlegm that comes over, and luting well the junctures, increase the heat till all the spirit shall, like clouds, be driven into the receiver.

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Spiritus Salis Glauberi.

Glauber's Spirit of Salt.

Take of Sea-salt dry'd and reduced to powder, two pounds; of Oil of Vitriol, a pound; and as much Spring-water as will serve to dissolve the Salt; put them into a glass retort, and distil them in a Sand-heat, till they become dry*.

Sal Mirabile Glauberi.

Glauber's wonderful Salt.

Take what remains behind in the distillation of *Glauber's Spirit of Salt*, and dissolve it in a sufficient quantity of Spring-water; filtre the solution, and evaporate it to a pellicle; then set it in a cold place for some days, that the crystals may shoot, which are to be separated from the corrosive liquor and dry'd: but if they prove too sharp, let them again be dissolved in water, and filtre the solution; observing to evaporate it with care, only so

* For the previous preparation of the Sea-Salt, used in these processes, with the methods of conducting them to the best advantage; the difference of the productions, &c. See *Boerhaave's Chemistry*, pag. 245 — 247.
PRACT.

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far

far as that the Salt may be reduced to crystals *.

Spiritus Salis dulcis.

Sweet Spirit of Salt.

Take one part of Spirit of Salt, and three parts of rectified Spirit of Wine †; digest them together for some days; then distil them according to art in a Sand-heat; taking care towards the end of the operation that the retort break not with a too violent fire. And repeat the distillation three or four times.

Sal Prunellæ.

Salt Prunella.

Take of purified Nitre reduced to powder, two pounds, fuse it in a crucible, and gradually sprinkle thereon an ounce of the Flowers of Sulphur; when the deflagration is

* *Glauber's* account of this Salt is truly wonderful; but its medicinal virtues are what deservedly gains it a place in this Dispensatory; being one of the quickest cathartics yet known, yet working kindly and without griping. The solution of it in any distill'd water may be very advantageously disguised by the addition of a red, a blue, or yellow Syrup. But for the cautions required in its exhibition, See *Boerhaave's Chemistry*, pag. 248.

† Some, as particularly Mr. *Lemery*, mix them in an equal proportion.

over,

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over, pour out the melted Salt upon a copper plate, first made clean, dry and hot, so as that the Salt may be formed into thin cakes.

Sal Polychrestum.

Salt of many Virtues.

Take of powder'd Nitre, and of the Flowers of Sulphur, each a like quantity; mix them well together, and by degrees throw them into an ignited crucible. After the deflagration ceases, keep the crucible in the fire for one hour; then purify the Salt, by dissolving it in hot Water, filtering the Solution and exhaling it till it becomes dry.

Spiritus Nitri.

Spirit of Nitre.

This is distill'd from Nitre in the same manner as Spirit of Salt.

Spiritus Nitri dulcis.

Dulcified Spirit of Nitre.

This is made with Spirit of Nitre in the same manner as sweet Spirit of Salt*.

* For particular directions relating to the four preceding processes, the reader may to advantage consult M. Lemery's and Boerhaave's *Chemistry*.

Aqua

Aqua Fortis simplex.

Single Aqua Fortis.

Take two parts of Vitriol calcined till it becomes white, and one part of powder'd Nitre; mix them well together, and put them into an earthen retort, whereof they may fill two thirds; then fitting a very large receiver thereto, distil as was order'd of Spirit of Salt*.

Aqua Fortis duplex.

Double Aqua fortis.

Take of green Vitriol calcined to whiteness, of powder'd Nitre, as also of Clay dry'd and reduc'd to powder, each a like quantity; mix them well together, put them into an earthen retort, whereof they may fill two thirds, and distil as in making single *Aqua Fortis* †.

* For the particular manner of conducting this process, see *Wilson's* Compleat Course of Chemistry; tho' he varies the proportions of the ingredients from that wherein they here stand.

† This receipt for double *Aqua fortis* is the same with that of *M. Lemery*; whose reasons for preparing it in this manner deserve to be read; tho' *Mr. Wilson* thinks it needless to add any clay; the vitriol containing in itself what is answerable thereto; as *Boerhaave* also judiciously remarks. *Chemistry*, pag. 229.

Aqua

Aqua Regia.

Take an ounce of Sal-Ammoniac reduced to powder, put it into a large cucurbit, by degrees mix therewith four ounces of Spirit of Nitre or double *Aqua Fortis*; and let them stand together in a Sand-furnace till the Salt is totally dissolved*.

Vitriolum calcinatum.

Calcined Vitriol.

Take any quantity of green Vitriol reduced to powder; put it into an unglazed earthen vessel, and over a gentle fire bring it to appear white; but keep it continually stirring, to prevent its sticking to the sides of the vessel, and growing stony. If it be urged with a vehement fire, it changes into a very red substance, call'd *Colcothar of Vitriol*.

Gilla † Vitrioli.

Salt of Vitriol.

Take any quantity of white Vitriol, and dis-

* The cautions given by M. *Lemery* are very necessary to be observed in this preparation, in order to prevent the danger that might otherwise attend it; for unless the glass made use of be capacious, the rising fumes will be apt to burst it; and the like effect may follow if the vessel be not removed from the sand-heat, as soon as the dissolution begins, when any large quantity is prepared at once.

† The Word *Gilla*, of it self properly signifies a solution of vitriol, made spontaneously; tho' in the sense
it

dissolve it in a proper proportion of hot Spring-water; filtre the solution, and evaporate it till only one third remains behind; then set it in a cold place for three days, that the crystals may shoot to the sides of the vessel, which are afterwards to be dried in the Sun. In the mean time, exhale the remaining liquor again till no more crystals will shoot from it.

Spiritus & Oleum Vitrioli,
Spirits and Oil of Vitriol.

Take any quantity of green Vitriol, calcined till it becomes white, and afterwards reduced to powder; put it into an earthen retort, whereof it may fill one half, and place the vessel in a reverberatory furnace; then having fitted the retort with a very capacious receiver, proceed to distillation. The first thing that ascends is the phlegm, which is to be emptied; then having well luted the junctures, gradually increase the fire to its height, and continue it in that state so long as any vapours come over. Separate the Spirit from the Oil, in a retort placed in a Sand-heat, for the former will ascend with the second and third degree of fire, and leave the Oil behind. What remains in the retort after

it is here taken, it denotes an emetic Salt: but the *Gilla Theophrasti*, signifies a solution of white vitriol made in water, filtered, evaporated and dried again.

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the first distillation, is called by the name of *Colcothar* *.

Spiritus Vitrioli dulcis.
Sweet Spirit of Vitriol.

This is made with Spirit of Vitriol in the same manner as sweet Spirit of Salt.

Ens Veneris.
Flowers of Copper.

Take of *Colcothar* of blue Vitriol, first welledulcorated with Water, and dry'd; and of *Sal-Ammoniac*, each a like quantity; reduce them separately to powder, then mix them together, and put them into an earthen cucurbit, whereof they may possess two thirds; place the vessel, with a blind glass head, in a naked fire, using only a moderate heat at first, and increasing it, by degrees, as long as the flowers rise of a yellow colour inclined to red; which, when the vessel is cool'd, are to be carefully swept out with a feather †.

Lapis

* There are some particular cautions requisite to render this process safe; and an odd phenomenon attending it well worth any one's knowing; which the reader may find candidly delivered by the accurate *Boerhaave* in his *New Method of Chemistry*, pag. 299, 300. PRACT.

† Instead of the *colcothar* here ordered, there are those who employ iron, or the Salt of Steel; and think they better the medicine thereby, induced, I suppose, by considering

Lapis Medicamentosus.
Medicinal Stone.

Take of Colcothar of Vitriol, Roch-Alumi, Litharge of gold and Bole-Armeniac, each a like quantity; of the best Vinegar, as much as will float four inches above them; and digest them together, for two days, in a glazed pot; which being afterwards put over the fire, let all the moisture be evaporated, and calcine the remaining mass with an intense heat*.

Considering colcothar as a dry and useless *caput mortuum*; we may be assured however, that the Sal-ammoniac raises copper enough in the operation to give the production a colour, medicinal virtues, and the name of *Ens Veneris*. See *Boerhaave's Chemistry*, pag. 301, 302. *Wilson's Chemistry*, pag. 45. *Quincy's Dispensatory*, pag. 269. and *Lemery's Chemistry*, pag. 277.

* This medicine is calculated for a styptic and astringent, to be used, by way of lotion or injection; and seems at least as well contrived to answer the end, as any of the several other forms thereof given by pharmaceutical writers.



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SECTION II.

PREPARATIONS of *Sulphurous* BODIES.

Flores Sulphuris.
Flowers of Sulphur.

TAKE any quantity of yellow Sulphur, bruise it, put it into an earthen cucurbit, placed in a Sand-heat, then fix on a blind glass-head, or another earthen cucurbit, and sublime at first with a soft fire; and afterwards with a stronger; and brush out the flowers that are raised into the head*.

Oleum vel Spiritus Sulphuris per Campanam.
Oil or Spirit of Sulphur by the Bell.

Take any quantity of powder'd Sulphur, and put it into a little earthen dish placed up-

* For the caution required in this operation, with its nature and uses, see *Boerhaave's Chemistry*, pag. 252.
PRACT.

on an inverted crucible; and set both together in the bottom of a larger vessel of glazed earth; then with a red-hot iron set fire to the Sulphur, in a moist place that is skreen'd from the wind, and hang a glass bell at such a distance above, as that the flame may not reach it. Then the vapor being condensed in the Bell by the cold, will trickle down the sides like water, into the vessel placed underneath to receive it *.

Hepar Sulphuris.

Liver of Sulphur.

Take of the Flowers of Sulphur four ounces, and of Salt of Tartar an ounce and half; grind the Salt and mix the flowers well therewith; then melt them together in a little earthen dish under a chimney, continually stirring the mass with a spatula till it becomes red; taking due care to prevent its firing †.

* This process, which is not without its difficulties, is here so well described, as not to fail the expectation of the operator, if but carefully attended to. If fuller instructions be required, consult *Boerhaave's Chemistry*, pag. 253, 254. PRACT.

† This is no contemptible process, if sulphur has any medicinal virtues, since it opens the body of the mineral so as to render it soluble in aqueous liquors. For the farther uses of it, consult *Boerhaave's Chemistry*, pag. 254, 255. PRACT.

Bal-

Balsamum Sulphuris Terebinthinatum.

Balsam of Sulphur with Oil of Turpentine.

Take of the Flowers of Sulphur, two ounces; of Oil of Turpentine, ten ounces; and digest them together for some hours in a circulating vessel, placed in a Sand-heat, till the Oil appears of a red colour: then suffering the vessel to cool, separate the Balsam from the Sulphur that remains undissolved.

Balsamum Sulphuris Anisatum.

Balsam of Sulphur with Oil of Aniseed.

Balsamum Sulphuris Juniperatum.

Balsam of Sulphur with Oil of Juniper.

Balsamum Sulphuris Succinatum, &c.

Balsam of Sulphur with Oil of Amber, &c.

are all prepared in the same manner with the respective chemical Oils.

Balsamum Sulphuris crassum.

Thick Balsam of Sulphur.

Take of Linseed-Oil, or Oil-Olive, a pound; of Flowers of Sulphur, four ounces; and boil them together over a soft fire to the

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consistence of a Balsam; keeping the matter continually stirring*.

Sal Volatile & Oleum Succini.

Volatile Salt and Oil of Amber.

Take of bruised white Amber, a pound; of clean Sand, two pounds; and put them into a coated glass retort, whereof they may possess two thirds; then having fitted it with a large receiver, distil in a Sand-heat, by degrees of fire; with the first of which will come over the acid phlegm, and a little yellow Oil; with the second, a yellow Oil and a little Salt, and with the third more Salt and a reddish Oil. Pour the liquor out of the receiver, and wash off the Salt with hot-water; afterwards by the filtre separate the Oil from the phlegm and spirit; and rectify it either by distilling it *per se*, or with Sea-salt; lastly, evaporate all the Spirit in a † cucurbit, till it begins to rise acid, then

* If farther directions are required for the preparation of these several Balsams, consult *Boerhaave's Chemistry*, pag. 258, 259; where you will also find their respective virtues and uses, with the physical doctrine they tend to establish.

† Whether the preparation of Amber, as a Sulphur, or sulphurous body, be here properly placed in the Section of *Sulphureorum Preparationes*, I will not take upon me to determine: tho we seem to be now

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then sublime it from Sea-salt, till the white Salt sticks to the head.

at length possess'd of *Data* enow, to ascertain of what kingdom Amber really is. See *Boerhaave's Chemistry*, pag. 173, 174. ПРАКТ. The direction of the process, as it stands here, shews a masterly knowledge, not to be acquired without some degree of application, and some time spent in the *methodus operandi*.



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SECTION III.

PREPARATIONS of METALS.

Cauticum Lunare, feu Lapis Infernalis.

Lunar Caustic, or Infernal Stone.

TAKE any quantity of well-cupell'd silver, and dissolve it in a vial placed in a Sand-heat, with thrice its own weight of Spirit of Nitre; evaporate the solution to two thirds; then in a large crucible set in a moderate heat, exhale the remaining moisture, and gradually increase the fire till the mass flow like oil, and cease to emit any smoke; then pour it into a heated iron tube, greased with tallow and made for the purpose; lastly, dry the stone and keep it in a well-stop'd glass*.

* The Lunar Caustic is generally directed to be made with the Crystals of silver; which, when they are ready at hand, greatly shortens the operation. See *Boerhaave's Chemistry*, pag. 281. PRACT. and *Wilson's Compleat Course*, pag. 18.

Calx

Calx Jovis.

Calx of Tin.

Take any quantity of Tin, melt it in an unglazed earthen vessel*, and keep it continually stirring with an iron Spatula till it turns to a Calx †.

Sal Jovis.

Salt of Tin.

Take any quantity of the Calx of Tin, and as much *Aqua regia*, diluted with six times its own weight of Spring-water, as will float some inches above it; make a slow solution in a Sand-heat; filtre the liquor, and evaporate it to a pellicle; then set it in a cold place, for three or four days, till it shoots into crystals; which are to be dry'd, when the liquor is poured away from them ||.

Separate the Calx remaining after the solution, and by mixing it with the liquor pour'd

* The vessel is directed after M. *Lemery*; who chuses it an unglazed pan, for fear the lead of which the glazing consists, shou'd mix with the Tin, and debase it; tho' Mr. *Wilson* uses an iron dripping-pan, as he calls it, for that purpose.

† This calx is used in the preparation of the Salt of Tin, as in the following article.

|| Instead of the diluted *Aqua regia* here order'd, most chemists, particularly *Boerhaave*, *Lemery* and *Wilson*, chuse distill'd Vinegar; but the preparation being design'd for external use, the menstruum here prescribed may perhaps deserve the preference.

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off from the crystals, new crystals will be thereby obtain'd.

Amalgama Jovis,
Amalgam of Tin.

Take any quantity of Tin, and melt it in a crucible; and into another crucible put an equal weight of Quick-silver, and permit it to remain in the fire, till the Quick-silver begins to fume; then immediately pour it upon the melted Tin, and stir the mass with an iron Spatula till it grows cold*.

Aurum Mosaicum.

Take of the Amalgam of Tin, six ounces; of Sal-*Ammoniac* and Flowers of Sulphur, each three ounces; grind and mix them well together, in a marble Mortar; then put them into a cucurbit, and leisurely raise your fire thro all the degrees: at length breaking the vessel, at the bottom thereof you will find the *Aurum Mosaicum*, freed from the Scoria, which is sublimed †.

Minium.

* This shews the general method of making amalgamations; but the proportion of the mercury to the metal is various, according to the design of the artist; thus if the amalgam of Tin were desired brittle, or reducible to powder, Mr. *Wilson* tells us one part of quick-silver will be sufficient for two of that metal.

† To use the amalgam of Tin, instead of crude Mercury and that metal; at once opens the body thereof,
and

Minium.

Red-Lead.

Take any quantity of Lead, melt it in an unglazed earthen vessel, and keep it stirring with an Iron Spatula till it changes first into a blackish powder, then into a yellow, and lastly into an exceeding red one, which is called *Red-Lead*: but if it be urged with a still stronger fire, it will vitrify*.

Cerussa.

White-Lead.

Take any quantity of very thin plates of Lead, and suspend them in an earthen vessel, at the bottom whereof is lodged a sufficient quantity of Vinegar; so as the fumes arising from the liquor may surround the plates; then digest in Horse-dung for three Weeks; during which, if the plates be not entirely calcined †, scrape off the white powder, and

and at the same time facilitates the operation. If particular directions be required for the management of the fire in this nice process, on which the success thereof principally depends, the reader may consult Mr. *Wilson* in his *Compleat Course of Chemistry*, pag. 30 & 32.

* For the remarkable phenomena of this process, see *Boerhaave's Chemistry*, pag. 274.

† Let none object to the word *calcined*, as it is here used, since ceruse is a real calx of lead. See *Boerhaave's New Method of Chemistry*, pag. 272. PRACT.

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again expose them to the fumes of Vinegar till they wholly turn into powder.

Saccharum Saturni.

Sugar of Lead.

Take any quantity either of White-Lead, Red-Lead, or Litharge, reduced to powder; put it into a cucurbit, and pour thereon as much Vinegar as will float four inches above it; digest, for some days, in a Sand-heat, till the Vinegar becomes sweet; which is then to be separated, or poured off clear after it is subsided, and new put on, till the Vinegar shall be found to have no sweetness at all; then let all the liquors, first clarified by standing, be evaporated, in a glass vessel, to the consistence of this honey, so as that in a cold place they may shoot into crystals, which are to be dried in the shade. Exhale away the remainder also, to a pellicle, and set it in the cold that it may shoot; and repeat the evaporation till no more crystals appear*.

Mars Solubilis, seu Chalybs Tartarificatus.

Soluble Iron, or Tartarized Steel.

Take of the crude Filings of Iron, and of the Crystals of Tartar, each a like quantity;

* If the reader wou'd see this process carried to its utmost perfection, he may consult the book so often already quoted, *Boerhaave's New Method of Chemistry*, pag. 276. PRACT.

and

and with a sufficient proportion of Spring-water, to bring them into a mass, make it into balls, to be baked in an Oven: grind these balls to powder, and again, with a requisite quantity of water, form it into balls, and bake them in the Oven, as before: and repeat the operation till the powder become impalpable *.

Mars Sulphuratus.

Iron prepar'd with Sulphur.

Take any quantity of crude Filings of Steel, and twice their weight of Sulphur, reduced to powder; and with a sufficient quantity of Spring-water, make them into a paste, and suffer it to ferment † for six hours; then
put

* That is, till by trituration the entire body of the Iron will pass a fine sieve: The usual method of preparing soluble Iron, or *Mars cum Tartaro*, as we generally call it, is, by the crucible placed in a strong heat so as to make the matters red-hot; then cooling, beating and sifting the same, and repeating the operation till all the metal passes the searce. One wou'd not perhaps expect that the preparation shou'd deserve the title of soluble Iron; but if when thus made it be not kept from the air, 'twill run like fix'd alkali, by the moisture thereof.

† That most just and accurate notion of the learned *Boerhaave*, which he has espoused and established in his *New Method of Chemistry*, is scarce attended to by any other author, unless it be the judicious *Homburg*; neither of whom wou'd have here used the word ferment; that being the property of vegetable substances only;
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then put it into a crucible, and deflagrate it, keeping it continually stirring with an iron Spatula, that it may become a very black powder*. If farther urged with the fire, it grows red, and then called,

Crocus Martis aperiens.
Opening Saffron of Iron.

which does not at all differ from *Chalybs preparatus*, or prepared Iron, gently calcined in a crucible till it appear of a red Colour.

Crocus Martis astringens.
Astringent Saffron of Iron.

This is made of *Crocus Martis aperiens*, reverberated a long time in a very vehement fire.

Vitriolum Martis, seu Sal Chalybis.
Vitriol of Iron, or Salt of Steel.

Take of the crude Filings of Iron, three

the some of our most eminent philosophers miserably confound fermentation with effervescence, ebullition, intestine motion, spontaneous heat; explosion, putrefaction, &c. all which are widely different. M. *Homborg*, has a curious *Memoir* upon this subject; but with regard to fermentation, his hints are finely improved by *Boerhaave*.

* This preparation has a kind of established reputation; but if we take *Boerhaave's* word for it, or the word of men not less versed in practise than he; crude iron is preferable thereto as a medicine.

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ounces; of Oil of Vitriol, four ounces; and of Spring-Water, ten ounces; digest them in a cucurbit for twelve hours, so as to make a solution; which being filtred hot, is to be evaporated to a pellicle, and set in a cold place that the Vitriol may shoot at the bottom of the vessel. Then also let the liquor which floats above the Salt, be exhald to a pellicle, and again exposed to the cold. Lastly, having collected all the crystals, dry them upon paper*.

Flores Martis.
Flowers of Iron.

Take of the crude Filings of Iron, and of Sal-Ammoniac reduced to powder, each a like quantity; grind and mix them well together for some time; set them in a moist place, and afterwards sublime them in an earthen cucurbit with a glass-head. The Spirit of the Sal-Ammoniac will rise first, and is to be caught in a receiver; then white flowers will ascend, which are to be thrown away as useles, and at length the red flowers inclining to yellow, which are to be swept, with a feather, out of the head †.

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* The water and oil of vitriol are to be mix'd with caution, and by slow degrees, to prevent their conceiving a considerable heat, and breaking the vessel; but for fuller directions, see *Boerhaave's Chemistry*, pag. 264.
PRACT.

† In the same manner may any other metal be sublimed; with the assistance of Sal-Ammoniac. See *Boerhaave's*

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The *Tinctura Martis*, or Tincture of Iron, may be prepared from the *Caput mortuum*; as also from the Flowers,

Boerhaave's Chemistry, pag. 201, PRACT. The preparation may prove a good substitute for the *Ens Veneris*; which, as commonly made and sold, is no other than the Flowers of Iron sublimed with Sal-Ammoniac.



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SECTION IV.

PREPARATIONS of METALLINE MINERALS.

Mercurij Solutio.

Solution of Quick-silver.

TAke of clean Quick-silver, and double *Aqua fortis*, each a like quantity; and digest them in a vial, placed in a sand-heat, so that there may be made a limpid solution of the Quick-silver*.

Mercurij Calx.

Calx of Quick-silver.

Take any quantity of the Solution of Quick-

* The vial is properly ordered to be placed in a Sand-heat, for if it were cold, the putting of the Mercury and *Aqua fortis* together, might easily break it; but if the menstruum prove too weak, or as it is probable, according to this direction, too small in quantity, more must be added, till a perfect Solution is made; taking care to avoid the noxious fumes.

silver,

silver, and with a soft fire evaporate it to a white and dry mass*.

Mercurius Præcipitatus albus.

White Precipitate of Mercury.

Take any quantity of the Solution of Quick-silver, and gradually pour upon it exceedingly strong Brine, till all the Quick-silver be precipitated into a white powder; which is to be washed with hot water in the filtre, till it communicates no more sharpness thereto: afterwards the Powder is to be dried between folded paper †, with a very gentle heat.

Mercurius Præcipitatus fuscus, vulgò *Wurtzy.*

Brown Precipitate of Mercury.

Take any quantity of the Solution of Quick-silver, and gradually drop into it a due proportion of Oil of Tartar *per deliquium*; that is, so much as will put a stop to the effervescence, and cause the Powder to fall to the

* The Solution and Calx of Quicksilver are very properly placed at the beginning of this section; as being used in almost every subsequent mercurial preparation; whereby the trouble in the several operations will be considerably lessened; provided those be constantly kept in readiness.

† The folded paper is prudently directed to drink up the superfluous moisture, otherwise the Precipitate dries but slowly.

bottom; and this also is to be edulcorated with Water, like the white Precipitate*.

Mercurius Præcipitatus ruber.

Red Precipitate of Mercury.

Take any quantity of the Calx of Quick-silver; gradually reverberate it in a crucible, and it will first change from white to brown, then to a yellow, and, at length, upon increasing the fire, become an exceeding red Powder, which is to be well washed with Water, and edulcorated ||.

Mercurius Præcipitatus viridis.

Green Precipitate of Mercury.

Take of Copper, half an ounce; of double *Aqua fortis*, an ounce; and make a Solution, according to art; to which add eight ounces of the Solution of Quick-silver: mix them together, evaporate them to dryness, and pour upon the Powder as much distill'd Vinegar as will float some inches above it: digest them in a sand-heat, for two days; then pour off the Tincture, put on new Vine-

* From which it differs only as to the precipitant; which being a fix'd alkali, directs the use and exhibition of the precipitate.

|| The word precipitate is improperly applied to this preparation, as being no more than an acuated red calx of Mercury, obtained without any precipitation.

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gar, and extract afresh; afterwards mix the Tinctures together, filtre them, and evaporate them till they become dry*.

Mercurius Præcipitatus flavus, seu Turpethum Minerale.

Yellow Precipitate of Mercury, or Turbith Mineral.

Take of crude Quick-silver, very well purified, four ounces; and of rectified Oil of Vitriol, sixteen ounces; make a Solution thereof in a retort, placed in a sand-heat; and afterwards, by application of a strong fire, evaporate it to dryness. Grind the white Calx left at bottom †, and throw it into warm Water, and it will immediately turn yellow: then, by repeated ablutions, free it from all its acrimony, and dry it||.

Mercurius sublimatus corrosivus.

Corrosive Mercury-sublimate.

Take of the Calx of Quick-silver, and of decrepitated Sea-salt, each a like quantity; re-

* This is an extraordinary preparation of mercury, and of great efficacy in stubborn chronical cases; especially the *lues venerea*, when highly virulent, or grown inveterate.

† But grind it not in a metalline mortar.

|| This is acknowledged one of the most effectual emetics and purgatives in obstinate chronical, but especially venereal, cases.

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duce them to Powder, mix them, and put them into a vial, whereof they may possess near a half, and in a sand-furnace, first with a soft fire; then gradually increasing it, a white, crystalline mass will sublime to the top part of the glass, and every way adhere thereto; which is afterwards to be separated from the red *scorie*; and to be purified, if there be occasion, by repeated sublimation*.

Mercurius sublimatus dulcis.

Sweet Mercury sublimate.

Take of Corrosive Mercury-sublimate, ground in a glass mortar, four ounces; and of clean Quicksilver, three ounces; mix them well in the mortar till the globules of Quicksilver disappear: then put the powder into an oblong vial †, whereof it may possess only one third; and bury it half way in a Sand-heat; then with successive degrees of fire, nearly the whole quantity of Mercury will sublime, and stick all around to the upper part of the glass; which being broke, and the red powder about the bottom, and the white about the neck clear'd away, the white mercury is again to be twice or thrice sublimed.

* This is a very concise and elegant way of making mercury-sublimate; and perhaps as good as any.

† A *Florence* Flask does very well for this purpose.

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If the operation be six times repeated, the preparation is call'd *Calomel*, or *Aquila alba* *.

Panacæa Mercurij.

Panacæa of Mercury.

Take any quantity of levigated *Calomel*, and digest it in a Sand-heat, for twenty days, with four times its own weight of Spirit of Wine; observing frequently to shake the containing vessel; then pour off the Spirit, and dry the Powder *.

Ethiops Mineralis.

Ethiops Mineral.

Take of *Quicksilver*, and *Flowers of Sulphur*, each a like quantity; and grind them

* Fewer repetitions are generally made to serve the turn; and will some times answer the end as well; but to be certain of this, requires a good degree of skill in the operator: 'tis therefore safer for the patient, tho more tedious for the labourer, to follow the directions here given.

† The menstruum is here designed to deprive the mercury of part of its saline matter, and so to render it more safe and mild; consequently the spirit should not be rectified; and after all, perhaps a common ablu-tion in water might answer the end as well; but if the calomel be entirely robbed of its salt, how does it differ from a white indolent earth?

toge-

together, in a glass mortar with a glass pestle, till the globules of mercury become utterly indiscernible *.

Crocus Metallorum.

Saffron of Metals.

Take of Antimony and Nitre, each a like quantity; grind them separately, then mix them well together, and gradually throw them into a red-hot crucible: after the detonation is over, and the crucible cooled and broke, separate the reddish metalline matter from the white crust, and edulcorate it with water †.

Antimonium Diaphoreticum.

Diaphoretic Antimony.

Take of Antimony, half a pound; of Nitre, a pound and half; pulverize them separately, then mix them together, and throw them, by a spoonful at a time, into an ignited crucible: after the detonation, let the white mass be detained for half an hour in the fire; then powdered, and thrown into water: digest them for a night, and afterwards pour off the

* More virtues, I fear, are attributed to this preparation, than it is really possess'd of: but there appears little reason to doubt of its safety.

† Mr. *Wilson* uses a proportion of common Salt in this preparation, but there seems to be no great occasion for it.

S 2

water

water and add fresh, so that the powder may be well wash'd five or six times*.

Regulus Antimonij.

Regulus of Antimony.

Take of Antimony, Nitre, and crude Tartar, each a like quantity; reduce them to powder separately, mix them together, and at several times put the whole into an ignited crucible; when the detonation is over, build up a large fire, so as to make the matter flow like water; then pour it out into a melting cone, first heated and greased with tallow, and keep it shaking, that the *Regulus* may separate, and fall to the bottom: when all is cold, free the *Regulus* from the *scoria* at top †.

* Among the different opinions relating to the virtues of this remedy, it is very hard to determine any thing certain; but what Mr. *Wilson* says of it, is very extraordinary, viz. that whereas "its usual dose is from five grains to twenty five, I have known it given with good success, by half an ounce at a dose, and repeated two or three times in a day, and that for several days successively." *Wilson's Chemistry*, pag. 98. Which procedure must, according to *Boerhaave's* notion, plaister over the inside of the intestines with a hard crust, or metalline calx. See *Boerhaave's Chemistry*, pag. 312. PRACT. But the fault, according to him, lies wholly upon edulcorating or working the medicine; otherwise he thinks it possess'd of the same virtues with *Sal polychrestum*. See also pag. 311. *ubi supra*.

† For the due conducting of this process and the following, with many curious particulars relating thereto; see *Boerhaave's Chemistry*, pag: 305—308. PRACT.

Regu-

Regulus Antimonii Martialis.

Regulus of Antimony with Iron.

Take of Antimony, Nitre and crude Tartar, each a pound; of pieces of Iron, half a pound: make the Iron red-hot, in a crucible; and gradually add the other ingredients to it, having first ground and mix'd them together; and proceed entirely after the same manner, as in making the Regulus of Antimony.

If the Regulus of Antimony with Iron, be thus several times fused with Nitre and Tartar, it will at length become the *Regulus Antimonii stellatus*, or starry Regulus of Antimony*.

Sulphur Auratum Antimonii.

Golden Sulphur of Antimony.

Take any quantity of the *Scoriae* of Regulus of Antimony, grind them to powder, whilst they are yet hot, and boil them, for a considerable time, in thrice their weight of Spring-water; filtre the solution, (which appears of a colour between a yellow and a red,) through Cap-paper; then by dropping into it a due proportion of distill'd Vinegar, the powder will precipitate; which is to be wash'd with

* This is no other than matter of fact; tho it is generally look'd upon as a lucky hit, rather than any thing else, to make the starry regulus. See *Boerhaave's Chemistry*, pag. 306—308. PRACT.

S 3

water,

water, so as to edulcorate and free it from its ill scent *.

Butyrum Antimonij.

Butter of Antimony.

Take of Antimony and Corrosive Mercury-sublimate, each a like quantity; first grind them to powder apart; then mix them thoroughly, with the utmost caution, to avoid the fumes: Put them into a coated glass retort, having a wide and short neck, so as to possess only one half; then fitting on a receiver, place it in a Sand-heat, giving a gentle fire at first, that the dew only may come over; then increasing the fire, there will arise an oily liquor, that sticks like ice, to the neck of the retort; and is therefore to be cautiously melted down into the receiver, by holding a live coal near it. Afterwards let this oily liquor be rectified in a glass retort, till it appears of a very white colour †.

Cinnabaris Antimonii.

Cinnabar of Antimony.

As soon as ever the red fumes begin to rise in the preceding operation, let the receiver be changed, without luting the junctures; and

* For the particular phenomena and rationale of this process, see *Boerhaave*, pag. 308, 309. *ubi supra*.

† For fuller information and the necessary cautions relating to this process, see *Boerhaave's Chemistry*, pag. 314, 315. PRACT.

increase the Fire till the retort becomes red-hot, upon which, in the space of an hour or two, all the black powder will be sublimed into a red one. Then break the retort, and in the neck thereof will be found the Cinnabar, which is carefully to be separated from the black *scoria* *.

Mercurius Vitæ.

Take any quantity of rectified Butter of Antimony, and pour thereto a due proportion of Spring-water, that a very white Powder may be precipitated ; which is first to beedulcorated by repeated infusions of warm Water, and afterwards dried, with a soft fire †.

Bezoardicum Minerale.

Bezoar Mineral.

Take any quantity of newly rectified Butter of Antimony, and gradually pour to it a due proportion of Spirit of Nitre ; that is, so much as will stop the effervescence: then draw off the floating Liquor in a glass vessel, placed in a Sand-heat, till the powder is left dry ; upon which, again pour a little Spirit of Nitre, and dry it a second time. Repeat the operation a third time ; then put the powder into a crucible, and commit it to the naked fire, till it be-

* See *Boerhaave* ubi supra, pag. 319.

† See *Boerhaave* ubi supra, pag. 317. and *Quincy's Dispensatory*, pag. 292.

comes almost red hot; in which state let it be detained for half an hour *.

Bezoardicum Joviale.

Bezoar of Tin.

Take of Regulus of Antimony, three ounces; melt it in a crucible, and add to it two ounces of very pure Tin, so as to make a new Regulus thereof; which being leyigated, mix therewith five ounces of corrosive Mercury-sublimate; distil it in a retort, and fix the Butter thence distilled, by three repeated distillations, with thrice its weight of Spirit of Nitre; afterwards calcine it, and whilst ignited, quench it in a sufficient quantity of Spirit of Wine; and lastly dry the Powder †.

* If this preparation be really possessed of no medicinal virtue, as in the opinion of *Boerhaave* it has none at all; it ill deserves a place in this otherwise admirable collection of useful remedies. See *Boerhaave's Chemistry*, p. 318. PRACT. But *Dr. Quincy* gives it a considerable character, prefers it to *Antimonium Diaphoreticum*, declares it will eradicate even Leprosies, and the most obstinate cases of that kind, if rightly managed." See *Quincy's Dispensat.* p. 293.

† This preparation is little more than *Bezoar Mineral*, at bottom; being, like that, only butter of Antimony (made indeed with the addition of Tin) fix'd by the spirit of nitre: for corrosive sublimate, and antimony, are the ingredients of butter of Antimony, which, as the Butter here, is fix'd by Spirit of Nitre, in the making of *Bezoar Mineral*.

Anti-

Antihecticum Poterij.

Poterius's *Antihectic.*

Take of the Regulus of Antimony, made with Iron, six ounces; of the best Tin, three ounces: melt these together in a crucible, and pour them into a mortar, first heated, and greas'd with Tallow; and when the mass is cold, reduce it to powder: then add thereto thrice its weight of very pure Nitre; and throw the whole into an ignited crucible, by a spoonful at a time; where it will make a detonation, and calcine for an hour: then grind the mass again to very fine powder, and pour thereto a due proportion of hot Spring-water, and stir them about with a pestle till the Water grows milky; which being thus saturated with the fine Flower, is to be poured off, and fresh hot Water again added to the remaining Powder; and this to be repeated till nothing is left at the bottom but a dirty matter that will not dissolve. Then let all the milky Liquors stand at rest together, that the fine Powder may be precipitated; which is afterwards to be several times washed in warm Water, and then dried*.

* The medicine doubtless will be the better for this kind of ablution and precipitation; but few there are that bestow so much time and pains upon it: tho' to clear it well of its salt, is to make it the remedy here intended.

Tar-

Tartarus Emeticus.

Emetic Tartar.

Take of Crystals of Tartar, four ounces; of *Crocus Metallorum* reduced to Powder, an ounce; and boil them together, in four times their own weight of Spring-water, for ten hours, keeping them frequently stirring with a Spatula, and adding more Water as there shall be occasion: then filtre the hot Solution, and evaporate it to dryness, or to a pellicle, that the crystals may shoot*.

* Which crystals being gently dried are the medicine required.

The reader has here, under the Head of Chemical Medicines, a regular and well digested Compendium, or short Course of Chemistry; extracted, with good judgment, from the most approved authors; and which being well mastered and practised, will give the Operator a sufficient Insight into the Art, and furnish the Shops with a Set of excellent and approved Preparations.

F I N I S.

