
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

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

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 Tartarifatus.

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 *Homberg*; neither of whom wou'd have here used the word ferment; that being the property of vegetable substances only;
tho

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

tho 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. *Homburg*, 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 exhale 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 †.

The

* 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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