

PRÆPARATA EX HYDRARGYRO.

PREPARATIONS OF MERCURY.

HYDRARGYRI NITRICO-OXYDUM. Lond. *Nitric Oxide of Mercury.*¹

"Take of purified mercury, *three pounds*; nitric acid (by weight) *a pound and a half*; distilled water, *two pints*. Mix them in a glass vessel, and boil until the mercury be dissolved, and a white mass remains after the evaporation of the water. Rub this into powder, and put it into another vessel very shallow; then expose it to a gentle heat, and gradually raise the fire until it cease to emit red vapours.

OXYDUM HYDRARGYRI RUBRUM PER ACIDUM NITRICUM. Edin. *Red Oxide of Mercury by nitric Acid.*

"Take of purified mercury, *three parts*; diluted nitrous acid, *four parts*. Dissolve the mercury, and evaporate the solution over a gentle fire to a white dry mass, which being rubbed to a powder, is to be put into a glass cucurbite, and covered with a thick plate of glass. Then adapt a capital to the vessel, and having placed it in a sand-bath, let the contained matter be roasted with a fire gradually raised until it pass into small very red scales."

OXYDUM HYDRARGYRI NITRICUM. Dub. *Nitric Oxide of Mercury.*

"Take of purified mercury, *ten ounces*; diluted nitrous acid, *ten fluid ounces*. Let them be mixed in a glass, and the mercury dissolved with a gradually raised heat; then increase the fire until the residuary matter in the bottom of the vessel be converted into red scales."

In this process the mercury is first oxidized at the expense of part of the acid employed, and the oxide, which is in a high state of oxidizement, combines with the undecomposed acid, so as to form a nitrate of mercury. By augmenting the heat, this nitrate is decomposed, the acid and water are nearly altogether expelled, and the oxide is left of a bright red colour, or rather the subnitrate, for it is combined with a small portion of acid. However simple the process may appear to be, yet it has been always found difficult to produce the bright red scaly

¹ Hydrargyrus nitratus ruber, P. L. 1787. Oxide mercure rouge par l'acide nitrique (F.) Rother præcipitat. (G.) Mercurio Precipitato Rosso (I.)

appearance, which the product should have when it is properly prepared. Much of the success of the process appears to depend on the purity of the acid; the proper regulation of the heat, which, at the utmost, should not be 600° ; and the scale on which it is formed, the heat being more steadily maintained, and acting with more uniformity, on a large than on a small quantity of materials. Hence the red precipitate prepared in Holland, where it is manufactured largely, has always been considered better than any prepared in this country. The proportions used by the Dutch chemists are 50 pounds of pure mercury, and 70 of pure nitrous acid of a specific gravity 1.3. The decomposition is conducted in very large flat vessels, the fire being raised when the gaseous nitrous acid ceases to be sensibly disengaged; and the test of its perfection is the inflammation of a match which has been just blown out, by introducing it into the vapour arising from the decomposing oxide.¹

Qualities.—When properly prepared, this subnitrate of mercury is in small scales of a bright red colour, very acrid and corrosive; insoluble in water, but totally soluble in nitric acid without effervescence. It is completely volatilized in a red heat, and at the same time decomposed. We have found the observation of Dr. Murray correct, that “if the preparation be boiled for a short time with five or six times its weight of water, the liquor, when filtered, has the styptic metallic taste, and gives a white precipitate with water of ammonia or carbonate of potash; a plain proof that it holds dissolved nitrate of mercury.”² According to Payssé, 100 parts contain 82 of mercury, and 18 of oxygen. It is sometimes adulterated with red oxide of lead, which may be detected by dissolving one part of the oxide in four of acetic acid; if lead be present, the solution has a sweetish taste; and when sulphureted water is dropped into it, a dirty dark precipitate is thrown down.

Medical properties and uses.—Nitric oxide of mercury is stimulant and escharotic. It is an external application only, being used, when rubbed into a fine powder, as a stimulant to old sores, and for destroying fungus. As a powder, in the proportion of gr. i. s to gr. iv. of sugar, it is blown into the eye to remove specks on the cornea; and formed into an ointment with lard, it is an useful application to ulcerations of the eyelids, and to chancres.

Official preparation. *Unguentum Hydrargyri Nitrico-oxidi.*
L. E. D.

¹ Higgins, *Essays*, i. 133.

M. Payssé, *Annales de Chimie*, li. 202.

System of Materia Medica, ii. 329. Dr. Murray suggests, that it should have been named *Subnitrates Hydrargyri ruber*.

ACETAS HYDRARGYRI. Edin.¹ *Acetate of Mercury.*

"Take of purified mercury, *three ounces*; diluted nitrous acid, *four ounces and a half, or a little more than may be required for dissolving the mercury*; acetate of potash, *three ounces*; boiling water, *eight pounds*. Mix the mercury with the acid; and, towards the cessation of the effervescence, digest, if necessary, until the mercury be completely dissolved. Then dissolve the acetate of potash in the boiling water; and immediately to this solution, still hot, add the former, and mix them together by agitation. Set the mixture aside to crystallize; then wash the crystals placed in a funnel with cold distilled water; and finally dry them with a very gentle heat.

"In preparing acetate of mercury, it is necessary that all the vessels, and the funnel, which are used, be of glass."

ACETAS HYDRARGYRI. Dub. *Acetate of Mercury.*

"Take of purified mercury, *three ounces*; diluted nitrous acid, *three fluid ounces*; acetate of kali, *three ounces*; boiling distilled water, *eight pints*. Add the acid to the mercury, and when the effervescence is over, digest upon hot sand, that the metal may be dissolved; mix this solution immediately with the boiling water in which the acetate of kali has been previously dissolved, and then let the mixture be passed as quickly as possible through a double linen cloth. Cool it, that crystals may form; wash these with cold distilled water, and dry them upon paper with a very gentle heat.

"In the whole of this process glass vessels must be used."

Acetic acid scarcely acts on mercury, but by either of the above processes the acetate may be formed. Nitrate of mercury is first obtained by the action of the nitric acid on the mercury; and this is decomposed by the acetate of potash, the alkali of which unites with the acid of the metallic salt, and forms nitrate of potash, which remains in solution; while the disengaged acetic acid combines with the oxide of mercury, and forms the acetate of mercury, which readily crystallizes, and is thus easily separated. By preparing the solution of the nitrate of mercury with a gentle heat, when there is an excess of acid, the portion of mild acetate of mercury produced is considerable; but if the quantity of acid be sufficient for the saturation only of the oxide, a sudden decomposition of the solution is effected by the hot water which contains the acetate of potash in solution, independent of the action of the acetate, and a subnitrate of mercury of a yellow colour is precipitated. Hence the propriety of the direction of the Edinburgh College to use more acid "than is required for dissolving the mercury." It is of much importance also that the degree of heat be low;

¹ Acetate de Mercure (F.) Essigsäure Quecksilber (G.) Acetato di Mercurio (I.)

for if a high temperature be employed, the metal is oxidized to a maximum, and the product of the subsequent part of the process is an oxyacetate, which is very acrid and soluble, instead of the salt intended to be produced. For the success of the process, which often fails, the solution of the acetate of potash should not be used immediately after it is made, but should be scarcely more than tepid when it is mixed with the solution of nitrate of mercury; and to the water employed for washing the salt, should be added about $\text{f}\text{ʒj}$. of distilled vinegar for every Oss of water; which prevents the partial decomposition of the acetate, and the consequent yellow colour of the crystals, that sometimes occur in the washing.

Qualities.—This salt, when properly prepared, is in small flat crystals, of a silvery whiteness, acrid to the taste, soluble in hot water, but scarcely soluble in cold water; and having an acrid taste. It is insoluble in alcohol. The alkalies decompose it, and it is readily decomposed by heat. Light also has this effect, blackening the salt. The proportion of its constituents has not yet been ascertained.

Medical properties and uses.—Acetate of mercury is antisyphilitic and alterative; but it is scarcely ever used, unless as the active ingredient of Keyser's pills. As an external application, a solution of it, in the proportion of $\text{grs. ij. in f}\text{ʒij}$. of rose water, is used in some cutaneous affections. The internal dose is gr. j. night and morning.

HYDRARGYRI OXYDUM CINEREUM. Lond.

Grey Oxide of Mercury.

“Take of submuriate of mercury, *an ounce*; lime-water, *a gallon*. Boil the submuriate of mercury in the lime-water, stirring it assiduously, until the grey oxide of mercury subside. Wash this with distilled water, and then dry it.”

OXYDUM HYDRARGYRI CINEREUM. Edin. *Grey Oxide of Mercury.*

“Take of submuriate of mercury, *half an ounce*; lime-water *five pounds*. Boil the submuriate in the solution, for a quarter of an hour in a slightly covered vessel. Pour off the supernatant fluid, then wash the oxide with distilled water; and dry it.”

PULVIS HYDRARGYRI CINEREUS. Dub. *Grey Powder of Mercury.*

“Take of mercury, *two ounces*; diluted nitrous acid, *two fluid ounces*; dissolve the mercury in a slow heat, and dilute the solution with *eight fluid ounces* of cold water; then drop into it *one ounce* and a *half* of the water of carbonate of ammonia, or as much as may be sufficient for precipitating the

¹ Oxide gris de Mercure (F.) Schwarzes gesauertes Quecksilber (G.) Protossido cinereo di Mercurio (I.)

whole of the metal, which is to be washed with boiling distilled water, until the poured off fluid yield no sediment when water of sulphuret of ammonia is dropped into it. Finally, let the precipitate be dried."

The appellations given to these preparations would lead to the supposition that they were essentially the same, although the Dublin process differs from the other two; and scarcely any difference, indeed, exists between the products of the three processes, when they are properly conducted. In the London and Edinburgh processes, the lime-water decomposes the mercurial salt, its lime unites with the acid of the mild muriate, and the insoluble oxide, which is at a low state of oxidization, remains of a greyish colour, while the muriate of lime which is formed, being soluble, is easily separated by washing. In the Dublin process it is intended, first, to produce a nitrate of mercury with the metal, at a low state of oxidization; so that by the addition of the carbonate of ammonia a decomposition may be effected, and grey oxide of mercury, and muriate of ammonia formed, which are to be separated by the subsequent washings. But if the nitrate of mercury be formed, with the assistance of heat, as ordered by the Dublin College; or even if the solution be quickly made without heat, the metal becomes too highly oxidized, and the result is not the grey oxide, which the College intends should be produced, but is a mixture of the grey oxide, and a triple compound of oxide, mercury, ammonia, and nitric acid.¹ The directions of this formula are not sufficiently distinct to produce the effect intended; and, therefore, the following directions given by Hahneman for this preparation are absolutely necessary to be followed for obtaining the grey oxide in a purer form. Dilute the acid with two parts of water, and add the mercury in small quantities at a time, placing the vessel in cold water to moderate the rise of temperature during the solution, which thus proceeds very slowly. When the acid has taken up as much of the metal as will saturate it, dilute the solution with twenty parts of distilled water, and drop in solution of ammonia as long as any precipitate is produced. Wash the precipitate immediately in water, and dry it on bibulous paper before the fire.² The same effect is produced if subcarbonates of ammonia be used, the carbonic acid being disengaged.

Qualities.—Grey oxide of mercury, properly prepared, is in the form of an impalpable blackish grey-coloured powder, which becomes paler if exposed to air and light. It is inodorous, insipid, and insoluble in water. In the state in which it is usually found in the shops, it is of a light grey colour, almost

¹ *Green's Chemistry*, (translation.) ii. 230.

² *Murray's Chemistry*, 2d edit. iii. 178.

approaching to a white, in which state it contains the triple salt above mentioned. When prepared according to the London formula, it has been supposed¹, that the lime not being able to abstract the whole of the acid, the product is strictly a submuriate of mercury. We find, from experiment, that this is actually the case, and it is not improbable that a minute portion of the lime may also be precipitated in the state of carbonate. The constituents of the grey oxide are supposed to be 96 parts of mercury, and 4 of oxygen, in 100 parts.²

Medical properties and uses.—The grey oxide of mercury, when well prepared, may be used as a substitute for the oxide prepared by trituration; and as it is more likely to be always of an uniform strength, it may of course be more depended on than that preparation. It has been, however, objected to for forming ointment for the purposes of mercurial frictions; (see *Ung. Oxydi Hydrargyri cinerei*)—but perhaps the objections have originated from that form of the preparation having been used which contains the triple salt. We have seen it used with advantage for fumigation, both locally applied to assist the healing of venereal ulcers; and, generally, to bring the habit under the influence of mercury, when it could not be introduced by the ordinary mode. The dose of this oxide is from gr. i. to grs. iij. given in the form of pill twice a day.

Official preparation. *Unguentum Oxydi Hydrargyri cinerei*. E.
HYDRARGYRI OXYDUM RUBRUM. Lond.³ *Red Oxide of Mercury.*

“Take of purified mercury, a pound. Put the mercury into a glass vessel with a narrow mouth and broad at the bottom. Expose this vessel open to a heat of 600°, until the mercury be converted into red scales; then rub these to a fine powder.”

OXYDUM HYDRARGYRI. Dub. *Oxide of Mercury.*

“Take of purified mercury, any quantity. Put it into an open glass vessel with a narrow mouth and a broader bottom, and expose it to a heat of about 600°, until it be converted into red scales.”

In this process the mercury is brought nearly to the boiling point⁴, so as to be volatilized, in which state it decomposes atmospherical air attracting its oxygen, and is converted into a red oxide. A small quantity of mercury requires several weeks to be thus oxidized; and therefore as much only is introduced into the vessel as can cover the bottom of it; and

¹ Murray's *System of Materia Medica*, ii. 326.

² Fourcroy.

³ Hydrargyrus calcinatus, P. L. 1787. Oxide de Mercure rouge par le feu (F.)
Rothes Quecksilberoxyd (G.) Perossido rosso di Mercurio (I.)

⁴ Irvine makes the boiling point of mercury to be 672°; Crichton, 655°; and Dalton, 660°.

both on this account, and in order to prevent the dissipation of the volatilized metal, the shape of the vessel is of some importance. It should have a wide bottom and a long neck, the extremity of which is extended almost to a point; and it should be heated in a sand-bath, the sand not rising higher round the vessel than the mercury stands within it. By keeping up a steady heat, a constant circulation of the mercurial vapour is kept up in the upper part of the matrass, and as it combines with oxygen, a dull film first forms on the surface of the mercury, which is next converted into a black powder, and then into red shining scales. A part of the mercury is always lost; and as the process requires much attention, and so long a time for its completion, the preparation is necessarily expensive.

Qualities.—*Red oxide of mercury* is obtained in the form of minute, crystalline, very brilliant, sparkling, deep red scales, inodorous, but acrid and caustic, although less so than the former preparation. It is soluble in several of the acids without decomposition. It is soluble in water also, and the solution changes to green the syrup of violets. When rubbed with running mercury, both are changed into black oxide; and when heated to ignition in a glass retort, it is decomposed; very pure oxygen being obtained, and the metal again returns to the state of running mercury. According to Lavoisier, 100 parts of this oxide contain 7 of oxygen; Fourcroy makes the proportion of oxygen 8; and Chenevix, 15 parts. The light partially decomposes the red oxide, hence it should be kept in opaque bottles.

Medical properties and uses.—This is a very active preparation of mercury, and has been employed by some very celebrated practitioners¹ as an internal remedy in syphilis. It is, however, very apt to vomit, purge, and otherwise violently affect the stomach and bowels; consequently it is now scarcely ever exhibited internally, or employed as an antisyphilitic. The dose may be gr. j. combined with gr. ss. of opium, in the form of pill, night and morning. It is chiefly used as an external stimulant, and escharotic in the same cases as the nitric oxide; being previously rubbed to a fine powder, and either sprinkled over the ulcers; or united with lard, and applied as an ointment.

HYDRARGYRI OXYMURIAS. Lond.² *Oxymuriate of Mercury.*

“Take of purified mercury, *two pounds*; sulphuric acid, *thirty ounces* (by weight); dried muriate of soda, *four pounds*. Boil the mercury with the sulphuric acid in a glass vessel, until the sulphate of mercury becomes dry: rub this, when it is cold,

¹ John Hunter.

² *Syn.* Muriate de Mercure corrosif (F.) Azzendes alsaures Quecksilber (G.) Mercurio sublimato corrosivo (L.)

with the muriate of soda in an earthen-ware mortar; then sublime it in a glass cucurbit with a gradually raised heat."

MURIAS HYDRARGYRI CORROSIVUS. Edin. *Corrosive Muriate of Mercury.*

"Take of purified mercury, *two pounds*; sulphuric acid, *two pounds and a half*; dried muriate of soda, *four pounds*. Boil the mercury with the sulphuric acid in a glass vessel placed in a sand-bath, until the matter becomes dry. Mix this, when it is cold, in a glass vessel, with the muriate of soda; then sublime in a glass cucurbit with a gradually raised heat. Separate the sublimed matter from the scorix."

MURIAS HYDRARGYRI CORROSIVUM. Dub. *Corrosive Muriate of Mercury.*

"Take of purified mercury *two pounds*; sulphuric acid, *three pounds*; dried muriate of soda, *two pounds and a half*. Dissolve the mercury in the acid, and gradually increase the heat until the matter become almost dry; let this, when it is cold, be rubbed with the muriate of soda in an earthen-ware mortar; and then sublime it in a proper vessel with a gradually raised heat."

Sulphuric acid does not act upon mercury at a low temperature; but when three parts of this acid are boiled upon two of mercury, the metal decomposes the acid, and is oxidized, sulphurous gas being emitted with effervescence; and there remains a dry mass of a fine white colour, which is an oxysulphate of mercury combined with an excess of acid. By triturating this salt with dried muriate of soda, and exposing the mixture to heat, a double decomposition is effected; the muriatic acid leaves the soda, and combines with the oxide of mercury of the oxysulphate, while the sulphuric acid unites with the soda, thus forming muriate of mercury and sulphate of soda, the former of which, being easily volatilized, is separated from the latter by sublimation. This process was first proposed by Kunkel, but no salt has been prepared by a greater variety of methods; and as it is now generally manufactured on the large scale, the proportions of the ingredients ordered by the Colleges are perhaps but seldom adopted. Of the three formulæ of the British Colleges, however, that of the Dublin College is to be preferred, as by the larger proportion of sulphuric acid, and the smaller of muriate of soda, a more complete decomposition of the muriate of soda is effected; and consequently a greater quantity of muriatic acid being evolved, a larger proportion of the oxide of mercury must necessarily be converted into muriate. Sixteen ounces of mercury should yield about 3xx. of corrosive muriate. The most simple pro-

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cess, and perhaps the best, is the direct solution of the red oxide of mercury in muriatic acid, by which the salt is obtained by spontaneous crystallization¹; but it is too expensive for general purposes.

Qualities.—Corrosive muriate of mercury² is obtained by the above processes in the form of a white, shining, semi-transparent, easily pulverized mass, made up of small acicular crystals. When the process is very carefully and slowly conducted, the crystals are separate, regular, tetrahedrous, compressed and pointed. On exposure to the air the mass effloresces on the surface. Its specific gravity is 5.1398. It is inodorous, and has a very acrid, disagreeable metallic taste; changes to green several of the vegetable colours; is soluble in 11 parts of water at 60°, two parts at 212°, and in 4 parts of alcohol at 60°. It is soluble also in the sulphuric, nitric, and muriatic acids, and may be again obtained unaltered by evaporating the solutions. The fixed alkalies and alkaline earths decompose it, precipitating it from its solution of an orange-yellow colour, which becomes brick-red. It is also partially decomposed by exposure to light, and by some metals; and changed into calomel.³ The carbonates of the fixed alkalies precipitate it of a fixed yellow hue, and ammonia forms with it a white triple insoluble compound, containing muriate of ammonia and oxide of mercury. When triturated with olive oil, the oil is whitened; and when boiled with it, a small portion of calomel is thrown down; and the same is the case when it is boiled with sugar. The volatile oils reduce it. It is also decomposed by solutions of tartrate of potash and antimony; nitrate of silver and superacetate of lead; and forms precipitates in infusions and decoctions of the following vegetable substances; chamomile flowers, horse-radish root, columba root, catechu, cinchona bark, rhubarb root, senna leaves, simaruba bark, oak bark, tea, and in the almond mixture: consequently, it is incompatible in extemporaneous formulæ with these substances. Mr. Chenevix made the first correct analysis of this salt: according to him, 100 grains of it consist of 18 parts of muriatic acid, and 82 of an oxide of mercury composed of 12.3 of oxygen and 69.7 of mercury⁴; but a more

¹ *Annales de Chimie*, xxviii. 12.

² This appellation, which is that of the Edinburgh and Dublin Colleges, is certainly preferable to that of the London College. But as the name *oxy muriate* is improper in a strictly chemical sense, perhaps the name *deuto muriate of mercury*, which most justly designates its chemical character, would be less exceptionable than any other. The old names were, *Hydrargyri muriatus*, *Mercurius sublimatus corrosivus*.

³ Mr. Chenevix found, "that if a bit of copper be put into a solution of corrosive sublimate, a white powder shortly falls to the bottom, and that powder is calomel. When washed, it does not contain an atom of copper, nor of corrosive sublimate."

⁴ *Phil. Trans.* 1802, part i. 157.

recent analysis of Zaboada makes the proportions 19.5 of acid, and 80.5 of oxide consisting of 8.5 of oxygen and 71.5 of mercury.¹ It should be preserved in opaque bottles.

Medical properties and uses.—This salt has been long known to chemists.² It is a powerful stimulant and alterative; and in large doses is one of the most violent of the metallic poisons. As an antisyphilitic it was early much extolled, and is the active ingredient of many a celebrated empirical nostrum; but modern practice has fixed its real merits much lower than they were formerly placed. When taken in over-doses, either by mistake, or designedly as a poison, the best antidote is white of egg diluted with water, and given in large frequently repeated doses. The albumen decomposes the corrosive muriate, reducing it to the state of the mild muriate, while the compound which it forms with it exerts no deleterious effect on the stomach.³ The presence of corrosive sublimate in any solution suspected to contain it may be detected by putting into the fluid a small piece of clean polished copper, which, if the poison be present, will be covered with a white coating, or white streaks that acquire a metallic lustre when rubbed. It sometimes succeeds in curing the primary symptoms of syphilis, but as often fails; and although it checks the progress of the secondary symptoms, relieving venereal pains, and healing ulcers of the throat, “yet even in these cases,” says Mr. Pearson, “it never confers permanent benefit; for new symptoms will appear during the use of it; and on many occasions, it will fail of affording the least advantage to the patient from first to last.”⁴ It is given with more advantage in some other affections, as old ulcers, chronic rheumatism, and in cutaneous diseases, particularly lepra, in which Willan says it is the only useful preparation of mercury, “its operation being promoted by giving at the same time an antimonial⁵,” and the decoction of the woods. Its sensible operation is by urine; but sometimes it occasions the most violent nausea, griping, and purging, in which cases it should be combined with opium; and it is always necessary to take, during its use, some mucilaginous fluid, to moderate the irritation it is apt to induce. It is also used as an external application. (See the following article.) The dose is from gr. $\frac{1}{4}$ th to gr. $\frac{1}{2}$ th, twice a day, made into a pill with crumb of bread or extract of poppies.

¹ *Journal de Physique*, lx. 383.

² The preparation is said to have been long known to the Chinese, and it is mentioned by Rhazis and Avicenna. Bergman, iv. 281.

³ Orfila. *Traité des Poisons*, t. i. part. i. p. 101.

⁴ Pearson on Remedies for Lues Venerea, &c. 116.

⁵ Willan on Cutaneous Diseases, 140.

Official preparations. *Liquor Hydrargyri Oxymuriatis*. L. *Hydrargyri Submurias*. L. E. D. *Hydrargyri Precipitatus albus*. L. **HYDRARGYRI SUBMURIAS.**¹ Lond. *Submuriate of Mercury*.

Take of oxymuriate of mercury, *a pound*; purified mercury, *nine ounces*. Rub them together until the globules disappear; then sublime; afterwards take out the sublimed matter, reduce it to powder, and again sublime it twice. Finally, reduce it to a very subtile powder, in the same manner which has been directed for the preparation of chalk."

SUBMURIAS HYDRARGYRI MITIS, sive CALOMELAS. Edin. *Mild Submuriate of Mercury, or Calomel*.

"Take of muriate of mercury, *four parts*; purified mercury, *three parts*. Rub the muriate in a glass mortar with a little water, in order to prevent the acrid powder from rising, then add the mercury, and again triturate until it be extinguished; put the dried mass into an oblong phial, one-third of which only it shall fill, and sublime it in a sand-bath. Again triturate the sublimate powder, and sublime it, then reduce it to a fine powder, which is lastly, to be well washed with boiling distilled water."

SUBMURIAS HYDRARGYRI SUBLIMATUM, sive CALOMELAS. Dub. *Sublimed Submuriate of Mercury, or Calomel*.

"Take of corrosive muriate of mercury, *a pound*; purified mercury, *nine ounces*. Rub them together until the globules disappear, and sublime with a sufficient degree of heat. Let the sublimed matter be rubbed to powder, and again sublimed. Pulverize it, and wash it with frequent affusions of distilled water, until the poured off solution no longer lets any sediment fall on the addition of a few drops of carbonate of kali. Finally, dry it."

This very important preparation is a muriate of mercury, with the metal at a minimum of oxidizement.² By triturating the metallic mercury with the corrosive muriate, it is oxidized at the expence of the oxide of this salt, and the whole mass assumes a grey colour. The sublimations render the combi-

¹ Old names, *Aquila alba*, *Aquila mitigata*, *Manna Metallorum*, *Panchymagogum minerale*, *Panchymagogus quercetanus*, *Sublimatum dulce*, *Mercurius dulcis sublimatus*, *Calomelas*. Syn. Muriate de Mercure doux (F.) Mildes Salzsäures Quecksilber (G.) Mercurio dulce sublimato (L.)

² It is very remarkable that all the Colleges have erred in naming this preparation, which in no point of view can be regarded as a *submuriate*, but is as much a *muriate* as the corrosive sublimate; the sole difference depending on the degree of oxidizement of the metal, which in this preparation is at a minimum. In a medical point of view, we are of opinion that the name *calomel*, however absurd, ought to have been retained, as the syllables *oxy* and *sub* are scarcely sufficient to distinguish the two salts to blundering assistants and apprentices, by whom the most dangerous mistakes may be committed.

nation of the new oxide with the acid complete; but this is not the case in the first sublimation; for both metallic mercury and corrosive muriate are found unchanged in the sublimed mass; and hence the necessity of the second trituration and the subsequent sublimations. By repeating, however, the sublimations too often the product is injured, as corrosive muriate is formed in each sublimation, owing to the attraction of oxygen from the air of the apparatus. The final trituration and levigation are intended to separate any corrosive muriate that may have been formed, and the test of the Dublin Pharmacopœia ought always to be had recourse to for ascertaining this point. In performing the process, the addition of a little water during the trituration of the ingredients, in the first instance, is very necessary; as otherwise, the operator is apt to suffer extremely from the acrid powder of the corrosive muriate which is elevated. Mr. Howard has lately proposed the following improvement in the mode of conducting the sublimation, by which the difficulty which attends the grinding and levigation of the mass sublimed in the usual mode is altogether avoided. Instead of subliming so as to obtain the calomel in a concrete form, the vapour, as it rises, is thrown into a vessel containing water, where it instantly condenses in the form of a fine white impalpable powder. It is not, however, certain that the preparation does not suffer some change of composition, as it is lighter than the levigated calomel in the proportion of 3 to 5. It is undoubtedly more free from any combination of corrosive muriate.

Qualities. — Calomel is obtained by the above processes in the form of a dull semitransparent mass, composed, when the sublimation has been slowly conducted, of short prismatic crystals, the specific gravity of which is 7.1758.¹ It is inodorous, insipid, and has a light yellow or ivory colour, which deepens by long exposure to the light. It is regarded as insoluble, one part requiring 1152 of water at 212° for its solution.² Nitric acid converts it into corrosive muriate, much nitrous gas being evolved; and the same change is effected by oxymuriatic acid. Lime-water and the alkalies, when triturated with it, instantly render it black, a circumstance which supplies us with a test of its purity, for if it contain any corrosive muriate, a yellow tint is mingled with the black on the addition of lime water. According to Chenevix, 100 parts of it contain, 11.5 of muriatic acid, and 88.5 oxide of mercury,

¹ *Annales de Chimie*, xxviii. 12.

² Rouelle.

consisting of 79 of mercury and 9.5 of oxygen¹; but according to Zaboada, the proportions are, 10.6 of acid, and 89.4 of oxide, consisting of 85 of mercury and 4.4 of oxygen.²

Medical properties and uses.— This is the most useful of the preparations of mercury, and is more generally employed than almost any other remedy in the whole range of the *materia medica*. It is antisyphilitic, antispasmodic, alterative, deobstruent, purgative, and errhine. As a remedy in syphilis, it can be fully confided in, when its disposition to run off by the bowels is counteracted by opium; and in the same state of combination it is also found efficacious in several convulsive affections, as epilepsy, trismus, and tetanus: and in that species of spasmodic stricture which occurs in virulent gonorrhœa. As an alterative and deobstruent, it is employed with advantage in cutaneous eruptions, as lepra, and scabies, in which cases it is combined with antimonials and guaiacum; and in hepatitis, and glandular obstructions: in dropsies it assists the action of squill and fox-glove; and as a purgative it may be employed with safety in almost every form of disease not attended with visceral inflammation, or where there is not great irritability and delicacy of habit. Calomel, however, does not act with certainty as a purgative even in large doses, and hence it is generally combined with scammony, jalap, or some other active cathartic. The usual dose to affect the habit and produce ptyalism is from gr. j. to grs. ij. in a pill with opium, given night and morning; and from grs. iij. to grs. viij. act in general as a purgative: but in some complaints, as yellow fever and croup for example, in which it is supposed to exert a specific effect, this dose has been repeated every two or three hours, until upwards of 100 grains have been taken in a very short space of time.

On account of its insolubility and great specific gravity, it can be given only in the form of pills.

¹ Comparative Table of the components of Calomel and Corrosive Sublimate.

CALOMEL.				CORROSIVE SUBLIMATE.			
The oxide of mercury in calomel is composed of				The oxide of mercury in corrosive sublimate is composed of			
Mercury	-	-	89.3	Mercury	-	-	85
Oxygen	-	-	10.7	Oxygen	-	-	15
100.0				100			
And calomel is composed of				And corrosive sublimate is composed			
Mercury 79	{ Oxide of }	{ Mercury }	88.5	Mercury 69.7	{ Oxide of }	{ mercury }	82
Oxygen 9.5				Oxygen 12.3			
Muriatic acid	-	-	11.5	Muriatic acid	-	-	18
100.0				100			

² *Journal de Physique.*

Chenevix, *Phil. Trans.* 1802, 157.

SUBMURIAS HYDRARGYRI PRÆCIPITATUS.

Edin. *Precipitated Submuriate of Mercury.*

“Take of diluted nitrous acid, purified mercury, each *eight ounces*; muriate of soda, *four ounces and a half*; boiling water, *eight pounds*. Mix the mercury with the diluted nitrous acid, and towards the termination of the effervescence digest with a gentle heat, frequently shaking the vessel. It is requisite, however, that more mercury be mixed with the acid than it can dissolve, so that a completely saturated solution be obtained.

“Dissolve at the same time the muriate of soda in the boiling water; then to this add the other solution while it is yet warm, and mix them very quickly together. After the precipitate has subsided, pour off the saline fluid, and wash the submuriate of mercury by frequent affusions of warm water, which are to be poured off each time after the precipitate subsides, until the water comes off tasteless.”

Dub. *Precipitated Submuriate of Mercury.*

“Take of purified mercury, *seven ounces*; diluted nitrous acid, *five fluid ounces*. Pour the acid upon the mercury in a glass vessel, and when the effervescence has ceased, digest with a gentle heat for six hours, with frequent agitation. Then raise the heat, that the solution may boil a little, which is to be poured off from the residual mercury, and quickly mixed with *ten pounds* of boiling water, in which *four ounces* of muriate of soda have been previously dissolved; wash the powder that subsides with warm distilled water, as long as the fluid poured off from it yields a precipitate on the addition of a few drops of the solution of (sub) carbonate of kali; lastly, let it be dried.”

These processes are framed on the process originally suggested by Scheele, and the error into which he was led by reasoning from a false analogy has not been corrected by the Colleges; the product of the above process being a mild muriate of mercury mixed with subnitrate of mercury which modifies its powers, a smaller proportion also of mild muriate being obtained than should follow from the quantity of mercury employed. The cause of this effect is, that by dissolving mercury in nitric acid with the assistance of heat, the metal contained in the acid solution is oxidized to a maximum, and when water is added to it, a subnitrate is precipitated, while a supernitrate remains in solution. Hence, on the addition of the watery solution of muriate of soda, the water occasions the subnitrate to be precipitated, before the decomposition which takes place is effected, at the same time part of the oxide com-

bines with the acid of the muriate of soda, and forms a portion of corrosive muriate which is held in solution with the newly formed nitrate of soda, while the mild muriate is precipitated in combination with insoluble subnitrate of mercury.

To obtain, therefore, the greatest proportion of pure mild muriate of mercury by precipitation, the nitrate must be prepared slowly, and without the aid of heat, which should not be employed in any part of the process. Dr. Murray ascertained, that "the quantity of mild muriate obtained from a solution of 3j. of mercurin diluted nitric acid in the cold, is a little more than 3j.; while from the same quantity dissolved with the application of heat, the precipitate did not exceed 3fs, while the liquor held dissolved much more corrosive muriate than the other."

Qualities.—Precipitated mild muriate of mercury, when properly prepared, is inodorous and insipid. It is whiter, smoother, and lighter, than the sublimed preparation, but otherwise agrees with it, both in its chemical qualities, and medicinal effects. As prepared, however, according to the directions of the pharmacopœias, subnitrate of mercury, which it contains, may have some effect in altering its powers in a small degree.

Medical properties and uses.—It is said to be more liable to run off by the bowels than common calomel; but as its properties are essentially the same, it may be regarded as a superfluous preparation.

HYDRARGYRI SULPHURETUM NIGRUM.¹ Lond.
Black Sulphuret of Mercury.

"Take of purified mercury, *one pound*; sublimed sulphur, *a pound*. Triturate them together until the globules disappear."

SULPHURETUM HYDRARGYRI NIGRUM. Edin.
Dub. Black Sulphuret of Mercury.

"Take of purified mercury, sublimed sulphur, of each *equal weights*. Rub them together in a glass mortar with a glass pestle, until the globules of mercury altogether disappear. It may be made with double the quantity also of mercury."

During the trituration of the mercury with the sulphur, Fourcroy supposes that the metal is imperfectly oxidized by attracting oxygen from the atmosphere; but this opinion has been disproved by the experiments of Proust²; and although a chemical combination be effected between the mercury and the sulphur, yet the real nature of the preparation is not understood.

¹ *System of Materia Medica*, &c. ii. 319.

² *Hydrargyrus e Sulphure*, P. L. 1787. *Sulphure de Mercure noir* (F.) Schwarzes Schwefelquecksilber (G.) Solfuro di Mercurio nero (I.)

³ *Journal de Physique*, liii. 92.

Qualities. — Black sulphuret of mercury is in the form of a very black, impalpable, inodorous, insipid powder. When heated in an open vessel it emits sulphurous acid gas; becomes first of a deep violet hue, and afterwards sublimes of a brilliant red colour. It is insoluble in nitric acid, but is totally dissolved by a solution of pure potash, from which the acids precipitate it unchanged. It is often ill prepared, which may be known by rubbing a portion of it on gold; to which, if it be good, no whiteness will be communicated. It is, also, sometimes adulterated with ivory-black, which may be detected in it by throwing a little of the suspected sulphuret on a red-hot iron; if ivory-black be present, some ashes will be left after the volatilization, which will not be the case, when it is good, the pure sulphuret being completely dissipated.

Medical properties and uses. — This mercurial preparation is alterative and anthelmintic. It is chiefly employed against scrophulous swellings, and in cutaneous affections; and has been found useful in ascarides. But it is on the whole a very uncertain preparation, and requires to be long used to produce any sensible effects. The dose is from grs. v. to 3fs, given twice or three times a day.

HYDRARGYRI SULPHURETUM RUBRUM.
Lond. *Red Sulphuret of Mercury.*

“Take of purified mercury, *forty ounces*; sublimed sulphur, *eight ounces*. Having melted the sulphur over the fire, mix in the mercury, and, immediately the mass swells, remove the vessel from the fire, and cover it with force to prevent it from catching fire; then rub it into powder and sublime.”

SULPHURATUM HYDRARGYRI RUBRUM. Dub. *Red Sulphuret of Mercury.*

“Take of purified mercury, *forty ounces*; sublimed sulphur, *eight ounces*. Mix the mercury with the melted sulphur; and if the mixture take fire, extinguish it by covering the vessel; then rub the mass to powder, and sublime it.”

By these processes the mercury and sulphur are more intimately combined, and a more complete sulphuret produced than in the former preparation. The inflammation which is apt to happen after the mixture of the mercury with the melted sulphur, when the mass swells and explodes, as frequently occurs, is similar to the combustion during the union of sulphur by heat with some other metals, independent of the presence of air: hence, covering the vessel, without removing it from the fire, does not check the combustion,

¹ Cinnabaris factitia, P. L. 1745. Hydrargyrus sulphuratus ruber, P. L. 1787. Sulphure de Mercure rouge (F.) Zinnober (G.) Solfuro di Mercurio rosso (I.) Sheen-gerf (H.)

although, by excluding the air, a real inflammation of the materials may be prevented. In the second part of the process great caution is necessary to prevent the neck of the vessel in which it is sublimed from being choaked up by the sublimed sulphuret; as by the occurrence of such an accident the vessel would be burst by the confined vapours. To avoid this, a wide-necked vessel should be used.

The cinnabar of commerce, which is chiefly used as a pigment, is manufactured in Holland, on a very extensive scale¹; and the following method has been proposed by Mr. Kirchoff, for obtaining it in the humid way. First, form ethiops mineral, by triturating, in a porcelain cup with a glass pestle, 300 grains of mercury, and 68 of sulphur, moistened with a few drops of solution of potash, and then add to it 160 grains of potash, dissolved in an equal weight of water. Heat the vessel with the ingredients over the flame of a candle, continuing the trituration, and adding, as the fluid evaporates, pure water from time to time, so as to keep the ingredients covered to the depth of an inch. At the end of two hours, if the trituration has been continued, the colour of the mixture changes from black to brown, and then to red; after which no more water should be added, but the trituration must be uninterruptedly continued until the mass have acquired the consistence of a jelly, and the red colour attained considerable brightness and beauty: the heat must be then immediately withdrawn, otherwise the red soon changes to a dirty brown.²

Qualities. — Red sulphuret of mercury sublimes in the form of a vivid red crystalline cake, and yields, by trituration, a powder of a very bright red colour, which is indorous, insipid, and insoluble in water, alcohol, and the acids. It is decomposed, however, by nitro-muriatic acid, which combines with the mercury, and disengages the sulphur; but is not altered by solutions of the alkalies, even when boiled with them; although potash, soda, and most of the metals decompose it when melted with it. Vauquelin supposed that it contains the metal in a state of high oxidizement; a supposition which the experiments of Proust and Seguin have completely disproved. According to Proust, 100 parts of the sulphuret consist of 85 of unoxidized mercury, and 15 of sulphur; but according to the latter experiments of Guibourt³, the proportions are 86.1803 of mercury and 13.8197 of sulphur. This preparation is sometimes adulterated with red-lead, dragon's blood, and chalk; the first is discovered by the same process

¹ See a description of the method, *Annales de Chimie*, li. 196.

² Nicholson's *Journal*, 4to. ii. 1.

³ *Journ. de Pharmacie*, Aout. 1816. p. 371.

as was described for discovering it in the red oxide; spirit of wine detects the second by extracting the colouring matter; and the last is discovered by an effervescence being excited by muriatic acid; and the production of sulphate of lime on adding sulphuric acid.

Medical properties and uses. — Red sulphuret of mercury is alterative and deobstruent. It was formerly much used in cutaneous diseases, gouty and rheumatic affections, and in worms. It is now, however, scarcely ever prescribed. It has been recommended for fumigations in syphilis; but on account of the sulphurous vapours it is less fit for this purpose than the grey oxide. The dose for internal use is from grs. x. to 3℥s. made into an electuary or bolus.

SUB-SULPHAS HYDRARGYRI FLAVUS.* Edin.

Yellow Sub-Sulphate of Mercury.

“Take of purified mercury, *two parts*; sulphuric acid, *three parts*. Put them into a glass cucurbit, placed in a sand-bath, and boil them to dryness. Pulverize the white mass which is left at the bottom of the vessel, and throw it into boiling water. It will immediately be converted into a yellow powder, which is to be washed with frequent affusions of warm water.”

OXYDUM HYDRARGYRI SULPHURICUM. Dub. *Sulphuric Oxide of Mercury.*

“Take of purified mercury, *a pound*; sulphuric acid, *a pound and a half*. Dissolve in a glass vessel, with a sufficiently strong heat, and gradually raise the fire until the mass be completely dried. This, by the affusion of a large quantity of hot water, will immediately become yellow and fall into powder, which is to be well triturated with the water in an earthen-ware mortar.

“After pouring off the supernatant fluid, let the powder be washed with repeated affusions of hot distilled water, as long as any precipitate is produced in the decanted liquor on the addition of a few drops of water of subcarbonate of kali; and, lastly, dry it.”

Sulphuric acid scarcely acts on mercury unless aided by a high temperature. When it is boiled on it, as directed in these processes, the acid is partially decomposed by the metal which is oxidized, while sulphurous gas is evolved; and the oxide thus formed uniting with the remaining acid, the whole becomes a supersulphate of mercury. By continuing the application of heat, at a higher temperature, a consider-

* *Hydrargyrus vitriolatus*, P. L. 1787. Subsulphate de Mercure (F.) Gelbes Schwefelsaures Quecksilberoxyd (G.) Turpeto Minerale Mercuriale (I.)

able portion of the acid is expelled, and partly decomposed, by which the metal is still more highly oxidized, and the resulting dry mass is a subsulphate of mercury. When boiling water is poured on this salt, the fluid, acting by its powerful affinity for sulphuric acid, decomposes it, abstracts the acid, and precipitates the oxide; but as the acid still holds combined with it a small portion of oxide, and the precipitated oxide retains some acid, the result of this part of the process is a supersulphate of mercury held in solution by the water, and a sub-sulphate precipitated in the form of a yellow powder. To obtain this effect completely, the saline mass must be made entirely dry before pouring over it the hot water; for if the vessel be sooner taken from the fire, the precipitation is partial only, the greater part of the salt being dissolved without being decomposed. Perhaps the best mode is to continue the exsiccation until a little of the white mass dissolved in cold water does not redden litmus paper. The proportions for obtaining the largest quantity of product are two parts of acid, and one of mercury: hence, while the quantity ordered by the Dublin College is rather too small, the proportions of the Edinburgh formula are productive of a very unnecessary waste of acid.

Qualities. — Subsulphate of mercury is inodorous, and acrid to the taste. It is obtained in the form of a beautiful bright yellow powder, of a specific gravity of 6.444, and nearly insoluble in water, requiring 2000 parts at 60°, and 600 at 212°, for its solution, which is colourless. By trituration with mercury it is changed into the black oxide; and at a red heat is decomposed, the oxygen being given out and the metal reduced. According to the analysis of Braumcamp and Segueira, its constituents are 84.7 parts of oxide of mercury, 15 of sulphuric acid, and three of water¹; while Fourcroy makes them 87 of oxide, 10 of acid, and three of water.

Medical properties and uses. — This preparation is emetic, discutient, alterative, and errhine; but from the violence of its action it is seldom administered as an internal remedy. As an errhine, however, it has been found extremely useful in chronic ophthalmia, and diseases of the head; but even for this purpose its acrimony requires to be sheathed with some bland powder, as starch, or liquorice root powder, in the proportion of grs. v. to gr. j. of the subsulphate. In doses of gr. v. it operates as a very powerful emetic.

HYDRARGYRUM CUM CRETA. Lond. *Mercury with Chalk.*²

¹ *Annales de Chimie*, liv. 123.

² *Mercurius alkalizatus*, P. L. 1745.

“Take of purified mercury, *three ounces*; prepared chalk, *five ounces*. Rub them together until the globules disappear.”

HYDRARGYRUM CUM CRETA. Dub. *Mercury with Chalk.*

“It is prepared in the same manner as the mercury with magnesia, only instead of magnesia employing precipitated chalk.”

In these processes the mercury is slightly oxidized during the trituration, and is in the state of the black oxide, 100 parts of which, according to Fourcroy, contain, when well prepared, about 4 of oxygen.

Medical properties and uses. — It is alterative, and is occasionally prescribed in tinea capitis, and other cutaneous affections; but it merits attention as a mild alterative for children. The dose may be from grs. v. to ʒss. given twice a day, mixed in any viscid substance.

HYDRARGYRUM CUM MAGNESIA. Dub. *Mercury with Magnesia.*

“Take of mercury, manna, of each *an ounce*; magnesia, *half an ounce*. Triturate the mercury with the manna in an earthen mortar, adding as many drops of water as will give to the mixture the thickness of syrup, and continue the rubbing until the metallic globules completely disappear; then add, still tritulating, *a drachm* of magnesia; and after the whole is well mixed together, add *a pint* of hot water, and agitate the mixture. Allow the mixture to remain for some time at rest, in order that the sediment may subside, from which the fluid is to be decanted. Repeat the washing a second and a third time, that the whole of the manna may be removed; and add the remainder of the magnesia to the sediment while it is still moist. Finally, dry the powder upon bibulous paper.”

The addition of the manna in this process, and in the former preparation with chalk of the Dublin College, is intended only to facilitate the oxidizement of the mercury; and therefore it is afterwards removed by the subsequent washings, so that the product remains a grey or black oxide of mercury, mixed with magnesia. It is a preparation which might well be rejected.

HYDRARGYRUM PRÆCIPITATUM¹ ALBUM. Lond. *White Precipitated Mercury.*²

“Take of oxymuriate of mercury, *half a pound*; muriate of ammonia, *four ounces*; solution of subcarbonate of potash, *half a pint*; distilled water, *four pints*. Dissolve first the muriate

¹ This name is completely at variance with the principles on which the reformed nomenclature is founded; and the reasons which might have excused the adoption of *calomel*, and some other equally barbarous terms, cannot be advanced in justification in this instance.

² *Mercurius præcipitatus albus*, P. L. 1745. *Calx hydrargyri alba*, P. L. 1787. *Muriate de mercure précipité* (F.) *Salzsäures Quecksilber präzipitat* (G.) *Precipitato bianco di mercurio* (I.)

of ammonia, then the oxymuriate of mercury, in the distilled water, and add to the mixed solution the solution of subcarbonate of potash. Wash the precipitated powder until it become tasteless, and then dry it."

SUBMURIAS HYDRARGYRI AMMONIATUM. Dub. *Ammoniated Submuriate of Mercury.*

"Add to the fluid which has been poured off from the precipitated submuriate of mercury a quantity of water of caustic ammonia sufficient to precipitate the whole of the metallic salt. Wash the precipitate with cold distilled water, and dry it upon bibulous paper."

As the products of these two processes are precisely the same, that of the Dublin College is to be preferred, both on account of its economy, and its greater simplicity. The fluid it orders to be used, is that which is decanted from the precipitated mild muriate of mercury, prepared by heat; and which, as we have already observed, holds the corrosive muriate in solution; so that the oxide of this salt is precipitated by the ammonia, combined with a portion of acid and also of ammonia, forming a ternary compound, or a submuriate of mercury and ammonia. In the London process, the muriate of ammonia, and the oxymuriate of mercury, when dissolved in the water, combine together, and form a solution of a ternary compound of muriatic acid, ammonia, and oxide of mercury, or a soluble supermuriate of mercury and ammonia. By the addition of the subcarbonate of potash, a great part of the acid, both of the muriate of ammonia, and of the mercurial salt, is abstracted, and the same triple insoluble compound is precipitated as in the former process; and the fluid retains in solution muriate of potash, the carbonic acid having been dissipated in the gaseous form. It is to be regretted, that the quantity ordered is inadequate to the effect intended.

Qualities. — This muriate of mercury and ammonia is inodorous and insipid; of a snowy whiteness, smooth, and insoluble in water, and does not become black when triturated with lime water. It is decomposed by the sulphuric and nitric acids, the former of which converts it into oxymuriate of mercury and sulphate of mercury and ammonia, and the latter into the oxymuriate also, and nitrate of ammonia and mercury. Muriatic acid restores it to the state of soluble supermuriate, the *sal alemroth* of the old chemists. According to Fourcroy's analysis, its constituents are, 81 parts of oxide of mercury, 16 of muriatic acid, and 3 of ammonia. It is sometimes adulterated with white lead; to discover which, digest one part of it in four parts of acetic acid, and add to the solution a small quantity of sulphuret of ammonia; a black precipitate insoluble

in sulphuric acid indicates the presence of lead. Chalk and starch are also sometimes mixed with it; and may be detected by heating the preparation in an iron spoon: if pure, it is completely volatilized; but if adulterated with starch, a black coal is left; or, if with chalk, a white powder, at the bottom of the spoon.

Medical properties and uses. — This preparation is only used, in combination with lard, as an ointment for the cure of itch, and some other cutaneous eruptions.

Official preparation. *Unguentum Hydrargyri præcipitati albi.* L. D.

HYDRARGYRUM PURIFICATUM. Lond. *Purified Mercury.*¹

“Take of mercury, *six pounds*; filings of iron, *a pound*. Rub them together, and distil the mercury from an iron retort.”

HYDRARGYRUS PURIFICATUS. *Purified Mercury.* Edinburgh.

“Take of mercury, *six parts*; filings of iron, *one part*. Rub them together, and distil from an iron retort.”

HYDRARGYRUM PURIFICATUM. Dub. *Purified Mercury.*

“Take of mercury, *six pounds*. Distil off slowly four pounds.”

By this mode of treating mercury it is certainly obtained more bright and mobile; but although it is generally supposed that the iron operates by exerting a superior affinity for the foreign metals with which the mercury of commerce is supposed to be alloyed, yet this is altogether hypothetical, and the necessity of the process may be well questioned.

LIQUOR HYDRARGYRI OXYMURIATIS. Lond. *Solution of Oxymuriate of Mercury.*

“Take of oxymuriate of mercury, *eight grains*; distilled water, *fifteen fluid ounces*; rectified spirit, *a fluid ounce*. Dissolve the oxymuriate of mercury in the water, and add to it the spirit.”

This solution is intended to facilitate the administration of minute doses of oxymuriate of mercury, each fluid ounce of the solution containing half a grain of the salt. It ought not to be long kept or exposed to a clear light, as the oxymuriate is gradually decomposed, and calomel precipitated. It is, however, the most safe and convenient form of administering this active salt; and may be given as an antisyphilitic in doses of from fʒss. to fʒij. in fʒij. of linseed infusion, or water and syrup, and in more minute doses when its alterative effects

¹ Argentum vivum purificatum, P. L. 1745. Mercure (F.) Quecksilber (G.) Mercurio (I.) Azogue (S.)

only are required. As a local application, this solution, diluted with two parts of water forms a useful gargle in venereal sore throat; and without dilution we have found it serviceable as a gargle for breaking the abscess in cynanche tonsillaris, when suppuration takes place. Diluted with an equal quantity of water, it is employed as a wash against tetter and scabies; and very largely diluted, it may be used as an injection in gonorrhœa: or given in the form of enema, when the stomach will not receive it.

In concluding the account of the preparations of mercury, it may not be improper to observe that the exhibition of any of them in certain states of the habit, and at the time under exposure to cold, is apt to excite an erythematic eruption of the skin, accompanied with much fever. This disease does not at all depend on the use of any particular preparation of the remedy; but, as far as I have been able to observe, it is liable to show itself in such an irritable state of the habit as produces hysteria in females, when the body is very suddenly exposed to a current of cold air, or to a cold moist atmosphere, while under the influence of mercury. When it occurs, the mercurials must be immediately discontinued, bark, opium, and purgatives internally administered, and the affected surface sprinkled with dry flour, or covered with the *linimentum aquæ calcis* of the Edinburgh and Dublin pharmacopœias; while at the same time the warm bath is to be used at least twice a day. Under this treatment the disease generally disappears, and the use of the mercurial may be renewed; but sometimes the morbid symptoms increase under every mode of treatment, and a fatal termination of the disease ensues.

PRÆPARATA E STANNO.

PREPARATIONS OF TIN.

PULVIS STANNI. Dub.* *Powder of Tin.*

“Take of tin, *any quantity*. Melt it over the fire in an iron mortar, and stir it while it is cooling, until it becomes a powder, which, when cold, is to be passed through a sieve.”

* Poudre d'Étain (F.) Zinn (G.) Stagno in polvere (I.)