remarks upon this preparation, says, that there is no danger of iron being dissolved in excess, as the acid is capable of dissolving more than twice the quantity of iron ordered; and the solution thus obtained, though so nearly saturated as to excite little effervescence when added to the solution of carbonate of potass, answers perfectly well for making this preparation; but even when the proportions of the college are adopted, the quantity of alkali is too small, and it is necessary to use about one-twelfth more than is directed, in order to dissolve the oxide of iron, although more than requisite to saturate the acid, and to give a decided alkaline taste. Mr Phillips considers it as a solution of peroxide of iron in subcarbonate of potass. Hagen says, that the preparation does not succeed with caustic potass; and that the more the alkali is carbonated, the better.

Mr Phillips remarks, that if five parts of water be added to one of this preparation, in a few minutes the oxide of iron is almost entirely precipitated, frustrating the probable intentions of the preparation, that of exhibiting iron in solution with an alkali; which, however, may be effected by means of the solution of tartarized iron, which is not decomposed by subcarbonate of potass. Dr Powell, on the contrary, praises this preparation much. He considers it as affording a combination of iron distinct from any other, and often applicable to practice; and adds, "If I was to speak individually of its powers, I should consider them as more considerable than those of any other preparation of the metal in many cases attended with debility of stomach, and it has been also prepared in some large shops, and not unfrequently employed."

Chap. X.—MERCURY.

Hydrargyrum purificatum. *Dub.*
Purified Quicksilver.

Take of
Quicksilver, six pounds.
Draw off four pounds by slow distillation.

Lond.

Take of
Quicksilver, six pounds;
Iron filings, one pound.
Rub them together, and distil the quicksilver from an iron retort.

Edin.

Take of
Quicksilver, four parts;
Filings of iron, one part.
Rub them together, and distil from an iron vessel.

THE quicksilver of commerce is often adulterated with lead, tin, or other metals, which render it unfit for internal use, and for many preparations. It therefore becomes necessary to purify it, and, fortunately, its comparatively great volatility supplies us with an easy process. The Dublin college distil it simply without any addition; but, lest towards the end of the process the mercury should elevate any impurities along with it, they draw off but two-thirds. The principal objection to this process is the want of economy; for altho' the remaining third may be used for some purposes, its value is very much depreciated. As iron has a much stronger affinity for almost all the substances with which quicksilver may be adulterated, than quicksilver has, by adding iron-filings we may draw off the whole quicksilver by distillation, without any fear of the impurities rising along with it.

Glass retorts are inadmissible in this distillation; because, when the mercury begins to boil, the concussion is so great, that they would certainly be broken. Iron retorts are the best, although strong earthen ones may also be used. The receiver may be of the same materials, or of glass, if we wish to inspect the progress of the operation; but, in this case, we must interpose an adopter between the retort and receiver, and fill the receiver nearly full of water, that the mercury may not crack it, by falling hot into it. The retort employed should be so large, that the quicksilver should not fill above one-third of it.

ACETIS HYDRARGYRI. *Ed.*
Acetite of Quicksilver.

Take of
Purified Quicksilver, three ounces;
Diluted nitrous acid, four ounces and a half, or a little more than may be required for dissolving the mercury;
Acetite of potass, three ounces;
Boiling water, eight pounds.
Mix the quicksilver with the diluted nitrous acid; and after the effervescence has ceased, digest, if necessary, with a gentle heat, until the quicksilver be entirely dissolved. Then dissolve the acetite of potass in the boiling water, and immediately to this solution, still hot, add the former, and mix them by agitation. Then set the mixture aside to crystallize. Place the crystals in a funnel, and wash

them with cold distilled water; and, lastly, dry them with as gentle a heat as possible.

In preparing the acetate of quicksilver, the whole vessels and funnels used must be of glass.

ACETAS HYDRARGYRI. *Dub.*
Acetate of Quicksilver.

Take of
Purified quicksilver, three ounces, by weight;
Diluted nitrous acid, three ounces, by measure;
Acetate of kali, three ounces;
Boiling distilled water, eight pints.

Add the acid to the quicksilver; and, after the effervescence has ceased, digest upon hot sand, that the metal may be dissolved. Instantly mix the liquor with the boiling water, in which the acetate of kali has been previously dissolved, and filter, as quickly as possible, through double linen. Let it form crystals by cooling, which, after being washed in cold distilled water, are to be dried on paper, with a very gentle heat.

In the whole of this process glass vessels are to be used.

THESE processes are fundamentally the same. They differ chiefly in the proportions. Those of the Edinburgh college were ascertained by very careful experiment; and if its directions be accurately followed, the preparation succeeds perfectly. Nitrate of mercury is decomposed by acetate of potass; and the products are acetate of mercury and nitrate of potass. The nitrate of potass, being much more soluble than the acetate of mercury, remains in solution after the latter is separated by crystallization. Mercury is capable of forming different combinations with nitrous acid. When we employ a sufficient quantity of acid to dissolve the mercury without the assistance of heat, and to retain it in solution, there is always an excess of acid, and therefore it is a solution of supernitrate of mercury. If we evaporate this solution very gently, or, if we add an additional quantity of mercury, and assist the action of the acid by a gentle heat, until nitrous gas begin to escape, we obtain nitrate of mercury, crystallized in various forms. In these, the mercury is in a state of protoxide. But, if we promote the action of the acid by boiling, until nitrous gas ceases to escape, the mercury is converted into peroxide, and a larger quantity is dissolved. This solution is very apt to crystallize, both on cooling, and by the diminution of the quantity of acid during the process; and if we attempt to dilute the solution with water, a copious precipitate of subnitrate of mercury immediately takes place; and the solution contains supernitrate of mercury. If the dilution be made

with cold water, the subnitrate has a white colour, which, by a very slight application of heat, passes to a beautiful yellow, the colour which it has from the first, when separated by boiling water.

For making the acetate of mercury, the nitrate is prepared with a very gentle heat, and with excess of acid, that it may be retained in perfect solution, and that there may be no possibility of any admixture of subnitrate with the acetate formed. A larger proportion of acid is used by the Edinburgh college, than what was used by the London college; but, by accurate experiment, it was ascertained to be necessary for the success of the process. In mixing the solutions, we must be careful to pour the mercurial solution into that of the acetate of potass, because, by adopting the contrary procedure, the subnitrate of mercury will be precipitated undecomposed, if any peroxide be contained in the mercurial solution. For dissolving the acetate of potass, the London college only used as much water as was capable of retaining the nitrate of potass in solution; the acetate of mercury was therefore precipitated, and was purified by again dissolving it in boiling water, and crystallizing it. This part of the process is simplified by the Edinburgh and Dublin colleges, who use as much water for dissolving the acetate of potass as is capable of retaining, so long as it is hot, the acetate of mercury in solution, and of allowing it to crystallize as it cools. In this way, therefore, it is procured at once sufficiently pure. The exsiccation of the acetate of mercury is an operation of great delicacy; for it is so spongy, that it retains the moisture with great obstinacy; and it is decomposed so easily, that heat can scarcely be employed to dry it. It is best dried by compressing it between several folds of bibulous paper.

The Prussian Dispensatory directs acetate of mercury to be prepared by dissolving two ounces of the red oxide of mercury in about seven ounces of concentrated acetic acid, and evaporating the solution to dryness; but this process affords a salt of a very different nature from those prepared according to the directions of the British colleges, the latter containing protoxide, and being crystallizable; and the former the peroxide, and not crystallizable.

Acetate of mercury is scarcely soluble in cold water, but dissolves readily in boiling water. It generally crystallizes in micaceous plates, like boracic acid, and is extremely easy of decomposition.

It is supposed to be a mild preparation of mercury, and was the active ingredient of the celebrated Keyser's pills. In solution, it has also been recommended externally, to remove freckles and cutaneous eruptions.

MURIAS HYDRARGYRI, olim MERCURIUS SUBLIMATUS CORROSIVUS. *Ed.*

Muriate of Quicksilver, formerly *Corrosive Sublimate.*

Take of
Purified quicksilver, two pounds;
Sulphuric acid, two pounds and a half;
Dried muriate of soda, four pounds.

Boil the quicksilver with the sulphuric acid, in a glass vessel, placed in a sand-bath, until the sulphate of quicksilver be dried, which is to be mixed, when cold, in a glass vessel, with the muriate of soda; then sublime in a glass cucurbit, with a heat gradually increased. Lastly, separate the sublimed matter from the scoriæ.

HYDRARGYRI OXYMURIAS. *Lond.*

Oxymuriate of Quicksilver.

Take of
Purified quicksilver, two pounds;
Sulphuric acid by weight, thirty ounces;
Dried muriate of soda, four pounds.

Boil the quicksilver with the sulphuric acid, in a glass vessel, until the sulphate of quicksilver be reduced to dryness; triturate this after it has cooled, in an earthen mortar, with the muriate of soda; then sublime it from a glass cucurbit, with a gradually increased heat.

MURIAS HYDRARGYRI CORROSIVUM. *Dub.*

Corrosive Muriate of Quicksilver.

Take of
Purified quicksilver, two pounds;
Sulphuric acid, three pounds;
Dried muriate of soda, two pounds and a half.

Dissolve the quicksilver in the acid, and gradually increase the heat, until the mass become perfectly dry; when cold, triturate it in an earthen mortar, with the muriate of soda; then sublime in a proper vessel, with a heat gradually increased.

By boiling the quicksilver to dryness with sulphuric acid, the metal is oxidized by the decomposition of part of the acid, and combines with the rest to form subsulphate of quicksilver. In the second part of the process, this subsulphate is decomposed by dried muriate of soda, muriate of quicksilver sublimes, and sulphate of soda remains behind. In Holland, it is manufactured by subjecting to sublimation a mixture of dried sulphate of iron, nitrate of potass, muriate of soda and

sulphate of iron. Bergman recommends the sublimation of subnitrate of mercury and muriate of soda; and Mr Murray seems inclined to prefer it to the new process. It is prepared also directly, by dissolving red oxide of mercury in muriatic acid.

Muriate of quicksilver crystallizes by sublimation, in prismatic needles, forming a white semi-transparent ponderous mass. Its taste is acrid, styptic, and durable. It is soluble in 20 parts of cold water, and in 2 at 211°. It is also soluble in 3.8 parts of alcohol, at 70°, and in almost an equal weight of boiling alcohol. It gives a green colour to syrup of violets. It is not altered by exposure to the air, and is sublimed unchanged by heat. It is not decomposed by any of the acids, but is soluble, without alteration, in the sulphuric, nitric, and muriatic acids. It is precipitated by all the alkalies and earths, of an orange-yellow colour, which gradually changes to a brick-red; and, by their carbonates, of a permanent yellow colour. Ammonia forms with it an insoluble, white, triple salt. It is also decomposed by several of the metals. It consists, according to Mr Chenevix, of 69.7 quicksilver, combined with 12.3 of oxygen, and 18 muriatic acid; and, according to Mr Zaboada, of 71.5 quicksilver, combined with 8.5 of oxygen, and 20 muriatic acid. Sir H. Davy has a very different opinion of the nature of this salt. He considers it as a compound of metallic mercury and chlorine, without any oxygen, in the proportion of one of mercury to two of chlorine, or 380 to 134, and in his nomenclature should be called *Mercurana*.

Medical use.—Muriate of mercury is one of the most violent poisons with which we are acquainted. Externally, it acts as an escharotic or a caustic; and in solution it is used for destroying fungous flesh, and for removing herpetic eruptions; but even externally it must be used with very great caution. It has, however, been recommended to be given internally by the respectable authorities of Boerhaave and Van Swieten; and it is the active ingredient of all the empirical antivenereal syrups. Were it really capable of curing the venereal disease, or equal in efficacy to the common modes of administering mercury, it would possess many advantages over them in other respects; but that it cannot be depended upon, is almost demonstrated by its use, as an antivenereal, being very much confined to the quacks, and by the testimony of the most experienced practitioners. Mr Pearson says, that it will sometimes cure the primary symptoms of syphilis, especially if it produce considerable soreness of the gums, and

the common effects of mercury; but that it will often fail in removing chancre, and where it has removed it, that the most steady perseverance will not secure the patient from a constitutional affection. It is, on some occasions, however, a useful auxiliary to a mercurial course, in quickly bringing the system under the influence of mercury, and in supporting its action after the use of frictions; and it is peculiarly efficacious in relieving venereal pains, in healing ulcers of the throat, and in promoting the desquamation of eruptions.

Liquor hydrargyri oxymuriatis. *Lond.*
Solution of Oxymuriate of Quicksilver.

Take of
Oxymuriate of quicksilver, eight grains;
Distilled water, fifteen fluidounces;
Rectified spirit, one fluidounce
Dissolve the oxymuriate of quicksilver in the water, and add to it the spirit.

This solution contains in each fluidounce, half a grain of the oxymuriate of quicksilver. The spirit is added to preserve the solution from spoiling.

Submurias hydrargyri, sive Calomelas. *Ed.*
Submuriate of Quicksilver, or *Calomel.*

Take of
Muriate of quicksilver, ground to powder in a glass mortar, four ounces;
Purified quicksilver, three ounces.
Rub them together in a glass mortar, with a little water, to prevent the acrid powder from rising, until the mercury be extinguished; and having put the powder, after being dried, into an oblong phial, of which it fills only one-third, sublime from warm sand. After the sublimation is finished, having broken the phial, throw away both the red matter found near the bottom of the phial, and the white matter near its neck, and sublime the rest of the mass a second time. Grind this into a very minute powder, which is, lastly, to be washed with boiling distilled water.

Submurias hydrargyri sublimatum, sive Calomelas. *Dub.*
Sublimed Submuriate of Quicksilver, or *Calomel.*

Take of
Corrosive muriate of mercury, one pound;
Purified quicksilver, nine ounces.

Rub them together, until the globules disappear, and sublime with a sufficiently strong heat. Triturate the sublimed matter, and repeat the sublimation. Powder it, and wash with frequent affusions of distilled water, until the liquor poured off is not affected by some drops of water of carbonate of kali. Then dry.

HYDRARGYRI SUBMURIAS. *Lond.*
Submuriate of Quicksilver.

Take of
Oxymuriate of quicksilver, one pound;
Purified quicksilver, nine ounces, by weight.
Rub them together until the globules disappear; then sublime. Take out the sublimed matter, and powder and sublime it a second and a third time. Afterwards triturate the matter into a very subtile powder, as directed for the preparation of chalk.

WHEN quicksilver is triturated with muriate of quicksilver, it abstracts from the oxidized quicksilver of the muriate a part of its oxygen, and the whole mass assumes a blackish-grey colour. When this is exposed to a degree of heat sufficient to convert it into vapour, the action of the different portions of quicksilver upon each other, and upon the muriatic acid, is much more complete; and the whole is converted into a solid white mass, consisting of mercury in a state of less oxidizement, and combined with less acid, than in the muriate, or of about twice the quantity of mercury, with the same quantity of oxygen and acid. According to Sir H. Davy's theory, in the first part of the process, the additional mercury is merely mechanically divided, and by the sublimation twice the quantity of mercury is combined with the same quantity of chlorine.

The trituration of the muriate of mercury is a very noxious operation, as it is almost impossible to prevent the finer particles from rising and affecting the operator's eyes and nostrils. To lessen this evil, the Edinburgh college direct the addition of a little water. In the second part of the process, when the heat is applied, a small portion of quicksilver and undecomposed muriate first arise, and condense themselves in the highest part or neck of the phial; then the submuriate rises, and, being less volatile, condenses in the upper half of the body, while a small quantity of quicksilver, in a state of considerable oxidizement, remains fixed, or near the bottom. The Edinburgh college separates the submuriate from the

other matters, and sublimes it again. The London and Dublin colleges triturate the whole together again, and resublime it twice. As in the first sublimation, a portion of the quicksilver and of the muriate of quicksilver always arise undecomposed, a second sublimation is necessary, especially if we triturate the whole products of the first sublimation together: but any farther repetition of the process is perfectly useless. Lest any portion of muriate should have escaped decomposition, the submuriate must be edulcorated with boiling distilled water, until the water which comes off forms no precipitate with alkalis.

Submuriate of mercury is generally obtained in the form of a white solid mass, but is capable of crystallizing in tetrahedral prisms terminated by pyramids. It has no taste, and is scarcely soluble in water or in alcohol. It is less volatile than muriate of mercury. It is blackened by light, and becomes brown or black when triturated with lime water or the alkalies. It is converted by oxymuriatic acid into muriate of quicksilver. According to Mr Chenevix, it consists of 79 quicksilver, with 9.5 oxygen, and 11.5 muriatic acid; and according to Mr Zaboada, of 85 quicksilver, with 4.4 oxygen, and 10.6 muriatic acid.

From Mr Chenevix's analysis, we should conclude that 54 parts of quicksilver were sufficient to convert 100 of the muriate into submuriate; but, according to Zaboada's, 75 are necessary, which is exactly the proportion directed by the colleges, and is also more conformable to Sir H. Davy's view of their composition; for he considers the muriate, *mercurana*, as consisting of one proportion of mercury 380, and two of chlorine 134, and the submuriate, *mercurane*, of one of mercury 380, and one of chlorine 67; which gives us 73.9 as the quantity of mercury necessary to convert 100 of muriate into submuriate.

Medical use.—The submuriate of quicksilver is one of the best mercurials we possess. By proper management it may be made to increase, in a remarkable manner, almost any of the secretions or excretions. One grain mixed with sugar, and snuffed up the nostrils, is recommended as a powerful errhine in amaurosis. The same mixture is blown into the eye, to remove specks from the cornea. Given in doses of one grain morning and evening, or in larger doses combined with opium, to prevent it from acting as a purgative, it excites ptyalism. In larger doses of five grains and upwards, it is an excellent purgative. Combined with diuretics, it proves diuretic, and with sudorifics, sudorific.

It is one of the preparations of mercury which is capable of curing syphilis in every form. It also produces very powerful and salutary effects in obstructions and chronic inflammations of the viscera, especially of the liver; and, in general, it is applicable to every case in which mercurials are indicated.

SUBMURIAS HYDRARGYRI PRÆCIPITATUS. *Ed.*
Precipitated Submuriate of Quicksilver.

Take of
Diluted nitrous acid,
Purified quicksilver, each eight ounces;
Muriate of soda, four ounces and a half;
Boiling water, eight pounds.

Mix the quicksilver with the diluted nitrous acid, and, towards the end of the effervescence, digest with a gentle heat, frequently shaking the vessel in the meantime. But it is necessary to have added more quicksilver to the acid than it is capable of dissolving, that a perfectly saturated solution may be obtained.

Dissolve at the same time the muriate of soda in the boiling water, and into this solution pour the other while still hot, and mix them quickly by agitation; pour off the saline liquor after the precipitate has subsided, and wash the Submuriate of quicksilver by repeated affusions of boiling water, which is to be poured off each time after the deposition of the submuriate, until the water comes off tasteless.

SUBMURIAS HYDRARGYRI PRÆCIPITATUM. *Dub.*
Precipitated Submuriate of Quicksilver.

Take of
Purified quicksilver, seven ounces, by weight;
Diluted nitrous acid, five ounces, by measure.

Pour the acid upon the quicksilver in a glass vessel; and when the mixture has ceased to effervesce, digest in a moderate heat, with occasional agitation, for six hours. Then increase the heat, until the liquor boil a little, which is to be poured off from the quicksilver which remains, and quickly mixed with a boiling solution already prepared, of
Muriate of soda, four ounces;
Water, ten pounds.

Wash the powder which subsides with warm distilled water, as long as the liquor decanted from it is precipitated by some drops of the liquor of water of carbonate of kali; then dry it.

IN the first part of this process, a perfectly saturated solu-

tion of nitrate of quicksilver is formed. In the second, there is a mutual decomposition of this nitrate, and of the muriate of soda; nitrate of soda is formed, and muriate of quicksilver with excess of oxide: or, according to Sir H. Davy, the chlorine of the sodane combines with the mercury of the nitrate, forming mercurane, while the hydrogen of the muriatic acid and the oxygen of the mercurial oxide combine to form water, nitric acid, and soda. In this preparation, our object is to obtain the insoluble compound which results from the combination of the protoxide of mercury with muriatic acid. In this view, the application of heat, in dissolving the mercury in the nitrous acid, is improper; for a portion at least of the mercury is converted into its peroxide, which occasions, in the first place, the formation of a little subnitrate of mercury, when poured into the saline solution; and, secondly, the formation of a proportion of muriate of mercury (corrosive sublimate), which must be washed away. Accordingly, Mr Murray has found, that more of mild, and less of corrosive muriate of mercury are formed, when the solution is made slowly and in the cold, than when the directions of the colleges are complied with.

In Sir H. Davy's view of the subject, according to which calomel and corrosive sublimates are compounds of metallic mercury, with different proportions of chlorine, the object in this preparation is to get the largest quantity of mercury dissolved in the nitrous acid, so that in decomposing muriate of soda, the smallest qnantity of chlorine may be set at liberty; and as the peroxide contains twice as much oxygen as the protoxide, and acids seem to combine with a certain quantity of oxygen in oxides, whatever be the quantity of metal united with them, the nitrate of the protoxide of mercury will contain twice as much mercury as the nitrate of the peroxide, and will of course give a double proportion of mercury to the chlorine set at liberty by the acid and oxygen.

When properly prepared, the submuriate obtained by precipitation scarcely differs from that obtained by sublimation. Göttling found no other difference than that the precipitated submuriate becomes grey, when triturated with lime-water, whereas the sublimed submuriate becomes black. But he exposed to heat half an ounce of the precipitated submuriate in a subliming apparatus; scarcely a grain of a reddish matter remained fixed; and the sublimed matter now became black when triturated with lime water and differed in no respect from submuriate prepared in the ordinary way by sublimation. It therefore would seem to be an improve-

ment in the process, to sublime the submuriate after it is precipitated; especially as by that operation it would be most effectually separated from any subnitrate which might be mixed with it.

There is still another way of preparing the submuriate of mercury, which must be noticed. It was contrived by Hermbstædt, and is recommended by Moench, with the confidence derived from experience, as the very best process for preparing the submuriate of quicksilver.

Take of
Pure quicksilver, seven ounces and a half:
Sulphuric acid, four ounces;
Dried muriate of soda, five ounces and a half.
Distil in a glass retort the sulphuric acid, with four ounces of the quicksilver, until they be converted into a dry white mass. Triturate the sulphate of mercury thus formed, with the remaining three ounces and a half of quicksilver, until the globules disappear; then add the muriate of soda; mix them, and sublime. As the product of the first sublimation still contains unoxidized quicksilver, it is to be again triturated and sublimed. The sublimate being washed, is now pure submuriate of quicksilver, and weighs about six ounces.

The theory of this process is the same with that of the formation of the muriate of quicksilver. The difference between the two products arises from the proportion of quicksilver being greater, and that of the muriate of soda employed being less. We are not prepared to state the comparative economy of these three processes described for preparing submuriate of quicksilver; but of the last process, we may observe, that according to Mr Chenevix's analysis, seven ounces and a half of quicksilver should furnish nine ounces and a half of submuriate of quicksilver; and, according to M. Zaboada's, nearly nine: so that there is evidently a considerable loss, which must be owing either to the formation of muriate of quicksilver, or of oxide of quicksilver.

Submurias hydrargyri ammoniatum. *Dub.*
Ammoniated Submuriate of Quicksilver.

Add to the liquor decanted from the precipitated submuriate of quicksilver, as much water of caustic ammonia as is sufficient to precipitate the whole metallic salt. Wash the precipitate with cold distilled water, and dry it on blotting paper.

HYDRARGYRUM PRÆCIPITATUM ALBUM. *Lond.*
White Precipitated Quicksilver.

Take of
Oxymuriate of quicksilver, half a pound;
Muriate of ammonia, four ounces.
Solution of subcarbonate of potass, half a pint;
Distilled water, four pints.

Dissolve first the muriate of ammonia, and afterwards the oxymuriate of quicksilver, in the distilled water, and add to these the solution of subcarbonate of potass. Wash the precipitate until it become insipid, and then dry it.

MURIATE of quicksilver is about thirty times more soluble in a solution of muriate of ammonia than in pure water; and, during the solution, there takes place a considerable increase of temperature Now, as these facts sufficiently prove a reciprocal action of the two salts, and as there is no decomposition, it is evident that they must have combined to form a triple salt; especially as they cannot be again separated either by sublimation or crystallization. This compound may therefore, with propriety, be termed Muriate of Mercury and Ammonia. It is the Sal Alembroth of the alchemists. It is very soluble in water, and is sublimed by heat without decomposition. When to a solution of this salt we add a solution of an alkaline carbonate, either of potass, as directed by the London college, or of soda, as by that of Berlin, there occurs a partial decomposition. The alkali combines with a portion of the muriatic acid, and reduces the muriate of mercury and ammonia to the state of a submuriate, which being insoluble, falls to the bottom of the solution. The proportion of muriate of ammonia has been reduced in edition 1815 to one-half, probably in consequence of a remark of Mr Phillips.

The process of the Dublin college is new and well contrived, as it converts to use the washings of the precipitated submuriate, and thus partly obviates the objection of want of economy in the directions given by the college for preparing it. By the simple addition of ammonia, the whole muriate of mercury contained in the washings is precipitated, in the form of submuriate of mercury and ammonia.

The submuriate of mercury and ammonia thus precipitated, has at first an earthy, and afterwards a metallic taste. It is not soluble in water. It is decomposed by heat, furnishing water, ammonia, and nitrogen gas, while 0.86 of submuriate of mercury remain behind. Sulphuric and nitric acids partially decompose it, and convert it into muriate of mercury,

and triple salts of mercury and ammonia. Muriatic acid dissolves it, and converts it into muriate of quicksilver and ammonia. According to Fourcroy's analysis, it consists of

81 oxide of mercury,
16 muriatic acid,
3 ammonia.

100

It is only used for ointments; and its principal recommendation is its white colour.

OXIDUM HYDRARGYRI CINEREUM. *Ed.*
Ash-coloured Oxide of Quicksilver.

Take of
Purified quicksilver, four parts;
Diluted nitrous acid, five parts;
Distilled water, fifteen parts;
Water of carbonate of ammonia, a sufficient quantity.
Dissolve the mercury in the nitrous acid; then gradually add the distilled water, and pour into the mixture as much water of the carbonate of ammonia as shall be sufficient to precipitate the whole of the oxide of mercury, which is then to be washed with pure water, and dried.

Lond.

Take of
Submuriate of quicksilver, one ounce;
Lime-water, one gallon.
Boil the submuriate of quicksilver in the lime-water, with constant stirring, until the grey oxide subside; wash this with distilled water, and then dry.

PULVIS HYDRARGYRI CINEREUS. *Dub.*
Ash-coloured Powder of Quicksilver.

Take of
Quicksilver, two ounces, by weight;
Diluted nitrous acid, two ounces, by measure.
Dissolve the quicksilver with a low heat, and dilute the liquor with eight ounces, by measure, of cold distilled water; then drop it into an ounce and a half, by measure, of the water of carbonate of ammonia, or as much as may be sufficient to precipitate the metal, which is to be washed with warm distilled water, until the decanted liquor is not precipitated by some drops of water of sulphuret of ammonia; and afterwards dry it.

These processes, which are essentially the same, are intended to furnish a substitute for the black oxide of quicksilver, on which the efficacy of the mercurials most frequently employed, and most certainly useful, depends. In these, the mercury is oxidized by trituration, in contact with the atmosphere; but the operation is both so tedious and troublesome, that it is often imperfectly performed, or assisted by improper means.

In the processes we are now explaining, it was supposed, that, as ammonia has a stronger affinity for nitric acid than oxide of mercury has, it would separate oxide of mercury from its solution in nitric acid; and, therefore, that the precipitate obtained was oxide of mercury, similar to that formed by trituration. But, since the nature of the triple metallic salts has been better understood, this has been discovered to be an error. The grey precipitate which is formed may, generally speaking, be called a subnitrate of mercury and ammonia; for it consists of oxide of mercury and ammonia, not saturated with nitric acid; but, even to ocular inspection, it does not seem to be homogeneous; and, when it is digested in acetic acid, it is partially dissolved, and the residuum acquires a very pale, or almost white colour. The portion dissolved seems to be black oxide, and the white residuum to be pure subnitrate of mercury and ammonia, which, according to Fourcroy, crystallizes in brilliant polyhedral crystals, without smell, of an extremely styptic taste, scarcely soluble in water; is decomposed by heat, by the sulphuric and muriatic acids, and by lime, potass and soda; and consists of 68.20 oxide of mercury, 16 of ammonia, and 15.80 of nitric acid. According to these observations, this preparation ought not to be called the grey oxide of mercury, and is not identical with the black oxide of mercury prepared by trituration. If, however, it answered the same purposes, the identity would be of little consequence; but, from its never having been introduced into general use, although so much more easily prepared, we may presume that it is not equal in point of efficacy.

Black oxide of mercury may, however, be obtained, according to the direction of Saunders, now adopted by the London college, by triturating with lime-water, and subsequent edulcoration, the sublimed submuriate of mercury, or rather the precipitated submuriate, as proposed by Göttling; and that the decomposition may be more easy and complete, I may suggest, that for this preparation the latter submuriate should not be dried, but should be triturated with the lime-water as soon as it is edulcorated. This simple black oxide certainly merits a fair trial.

This oxide is said, however, by M. Braamcamp and Sigueira Oliva, to be prepared in the greatest purity, by boiling the ash-coloured oxide of the Edinburgh college, long and violently in water, until the triple salt be dissolved or decomposed. The proportion of oxygen, which protoxide of mercury contains, has been very differently estimated by different chemists. Mr Chenevix makes 100 parts of mercury unite with no less than 12 of oxygen, the Portuguese chemists with 8.1, M. Fourcroy with 4.16, M. Sefstrom and Sir H. Davy with 3.95, which last, besides the remarkable coincidence, is the most probable from other reasons.

The Prussian college direct a black oxide of mercury to be prepared, by mixing four ounces of mercury with six ounces of nitrous acid, diluted with two ounces of distilled water, and occasionally agitating them, without heat, until the acid be saturated. The solution is then to be diluted with distilled water, and water of caustic ammonia to be dropt into it, as long as the precipitate formed is black.

Hydrargyrum cum magnesia. *Dub.*
Quicksilver with Magnesia.

Take of
Quicksilver,
Manna, each one ounce;
Magnesia, half an ounce.

Triturate the quicksilver with the manna, in an earthen-ware mortar, adding some drops of water, to give the mixture the consistence of a syrup, until the metallic globules become no longer visible. Then add, with constant trituration, a drachm of the magnesia. After they are thoroughly mixed, add a pint of warm water, and shake the mixture: then let the liquor rest, and decant the fluid from the sediment as soon as it subsides. Repeat this washing twice, that the manna may be totally washed away, and with the sediment still moist, mix the remainder of the magnesia. Lastly, dry the powder on blotting paper.

Hydrargyrum cum creta. *Dub.*
Quicksilver with Chalk,

Is to be prepared in the same manner, only employing precipitated chalk instead of the magnesia.

Lond.

Take of
Purified quicksilver, by weight, three ounces;
Prepared chalk, five ounces.

Triturate them together until the globules disappear.

Quicksilver has a strong affinity for oxygen, and absorbs it slowly from the atmosphere. But the combination may be considerably accelerated by agitation, and still more by triturating quicksilver with any substance which promotes its mechanical division, and thus increases its surface. With this view, quicksilver is triturated with viscid substances, as fats, honey, syrup, &c. or with pulverulent substances, as the chalk in the process of the London college.

The black oxide is the mildest, but, at the same time, the most efficacious, of the preparations of mercury. Combined with magnesia or chalk, it is not in general use; but in the form of the common mercurial pill and ointment, it is more employed than any other preparation of the same metal except calomel.

Oxydum hydrargyri. *Dub.*
Oxyde of Quicksilver.

Take of
Purified quicksilver, any quantity.
Put it into an open glass vessel, with a narrow mouth and wide bottom. Expose this to about the six-hundredth degree of heat, until the metal be converted into red scales.

Hydrargyri oxydum rubrum. *Lond.*
Red Oxyde of Quicksilver.

Take of
Purified quicksilver, by weight, one pound.
Put it into a glass vesel, with a narrow mouth and a broad bottom. Expose this vessel with its mouth open to the six hundredth degree of heat, until the quicksilver be converted into red scales. Then grind them into a very fine powder.

This is an extremely tedious, and therefore expensive, operation, because mercury is incapable of absorbing from the atmosphere the quantity of oxygen necessary to convert it into the red oxide, except when in the state of vapour. But as the form of a vessel which will prevent the dissipation and loss of the mercurial vapour, will, at the same time, hinder the free access and frequent renewal of the air, the operation can only proceed slowly. The vessel most advantageously employed is a wide flat-bottomed matrass, with a very narrow and almost capillary neck. Only so much mercury is introduced into it as will cover the bottom of the matrass; and the vessel is not inserted in the sand deeper than the mercury stands within it. A degree of heat is then applied, sufficient to cause a gentle ebullition in the mercury, which is thus alternately converted

into vapour, and condensed again in the upper part of the vessel. While in the state of vapour, it absorbs the oxygen of the air contained in the vessel, by which means it is gradually changed into a black, and then into a red powder; but a complete conversion into the latter state is not effected in less than several months.

Red oxide of quicksilver, thus prepared, consists of small crystalline grains, of a deep red colour, and very brilliant sparkling appearance. By heat, it may be sublimed in the form of a beautiful ruby-coloured vitrified substance. At a red heat it is decomposed, giving out oxygen gas, while the metal is revived, and is immediately volatilized. It is soluble in several of the acids; and during its solution, it does not decompose them or water. It is easily disoxydized. It consists, according to Chenevix, of 100 of mercury and 17.65 oxygen; Zaboada, 11.11; Fourcroy, 8.69; and M. Sefstrom and Sir H. Davy, 7.9; which last I consider to be the most probable estimate.

Medical use.—It is not only an acrid substance, violently purgative and emetic, but even caustic and poisonous. Its internal use is proscribed; but it is applied externally as an escharotic, being previously triturated to a very fine powder; or it is formed into a stimulating ointment with unctuous substances.

OXIDUM HYDRARGYRI RUBRUM per ACIDUM NITRICUM, olim MERCURIUS PRÆCIPITATUS RUBER. *Ed.*

Red Oxyde of Quicksilver by Nitric Acid, formerly *Red Precipitated Mercury.*

Take of

Purified quicksilver, one pound;
Diluted nitrous acid, sixteen ounces.

Dissolve the quicksilver, and evaporate the solution, with a gentle heat, to a dry white mass; which, after being ground into powder, is to be put into a glass cucurbit, and to have a thick glass plate laid upon its surface. Then, having adapted a capital, and placed the vessel in a sand bath, apply a gradually increased heat, until the matter be converted into very red scales.

HYDRARGYRI NITRICO-OXIDUM. *Lond.*

Nitric Oxide of Quicksilver.

Take of

Purified quicksilver, three pounds by weight;
Nitric acid, one pound and a half by weight;
Distilled water, two pints.

Mix in a glass vessel, and boil until the quicksilver be dissolved, and after the evaporation of the water, a white mass remains. Rub this to powder, and put it into another vessel which must be very shallow; then apply a very gentle heat, and gradually increase it, until red vapours cease to be emitted.

Oxydum hydrargyri nitricum. *Dub.*
Nitric Oxide of Quicksilver.

Take of
Purified quicksilver, ten ounces, by weight;
Diluted nitrous acid, ten ounces, by measure.
Mix them in a glass vessel, and dissolve the quicksilver, with a heat gradually increased; then augment the fire until the matter remaining in the bottom of the vessel be converted into red scales.

In the first part of these processes, a fully saturated nitrate of mercury is formed. In the second part the metal is oxidized to the maximum by the decomposition of the acid. When a sufficient heat is applied, the nitrate of mercury first melts, then exhales nitrous oxide gas, and changes its colour successively to yellow, orange, and brilliant purple red. If well prepared, it should have a crystalline scaly appearance, sublime entirely at a red heat, and be soluble, without any residuum, in nitrous acid. According to Fourcroy, it contains no nitrous acid, unless a sufficient heat has not been applied; but, according to most other chemists, it contains some nitrous acid; and differs from the red oxide prepared by the action of heat alone, in always being more acrid.

This is an extremely difficult operation, and skilful operators not unfrequently fail to obtain it of that brilliant crystalline appearance which is esteemed. M. Paysse, who paid great attention to this preparation in Holland, where it is manufactured in large quantities, gives the following directions:—Dissolve 100 pounds of pure mercury in 140 of pure nitrous acid, of sp. gr. 1.3 to 1.37, promoting their action by a sand bath; evaporate by distillation, and, when the formation of nitrous gas indicates the decomposition of the nitrate of mercury, remove the receiver, and apply a steady and moderate heat for about eight hours, until a match, which has been just blown out, inflames, on being introduced into the matrass, which is a proof that the operation is finished. To its success it is necessary, 1. That the nitrous acid be not mixed with muriatic; 2. That it be sufficiently strong; 3. That the evaporation be conducted with a moderate heat;

4. That the vessel be sufficiently large and flat, so that a large surface be exposed, and the whole equally heated; 5. That the heat be gradually augmented; and, lastly, That it be steadily maintained the whole time. Turf is the fittest fuel.

Medical use.—It is only used as an escharotic, and care must be taken that it is finely levigated, otherwise it only irritates, without destroying the parts to which it is applied. It is a very common application in chancres.

SUBSULPHAS HYDRARGYRI FLAVUS, olim TURPETHUM MINERALE. *Ed.*

Yellow Subsulphate of Quicksilver, formerly *Turpeth Mineral.*

Take of

Purified quicksilver, four ounces;
Sulphuric acid, six ounces.

Put them into a glass cucurbit, and boil them in a sand-bath to dryness. Throw into boiling water the white matter which is left in the bottom, after having reduced it to powder. A yellow powder will immediately be produced, which must be frequently washed with warm water.

OXYDUM HYDRARGYRI SULPHURICUM. *Dub.*

Sulphuric Oxyde of Quicksilver.

Take of

Purified quicksilver, one pound;
Sulphuric acid, a pound and a half.

Dissolve in a glass vessel, with a sufficient heat, which is to be gradually increased until the matter be entirely dried. This, upon pouring on it a very large quantity of warm water, will immediately become yellow, and fall into powder, which is to be well triturated with this water, in an earthenware mortar.

After pouring off the supernatant liquor, wash the powder with warm distilled water, as often as the decanted liquor forms a precipitate, on the addition of some drops of the water of subcarbonate of kali; and, lastly, dry it.

The action of sulphuric acid on mercury has been examined with considerable attention by Fourcroy. In the cold, they have no action on each other; but on the application of heat, the sulphuric acid begins to be decomposed, sulphureous acid gas is extricated, and the metal is oxidized, and combines with the undecomposed acid, forming with it a white saline mass, covered with a colourless fluid. In this state it reddens vegetable blues, is acrid and corrosive, does not become yellow by the contact of the air, and is not decomposed

by water either warm or cold. It is therefore supersulphate of quicksilver, and the proportion of the acid in excess is variable.

By washing the saline mass repeatedly with small quantities of water, it is at last rendered perfectly neutral. It no longer reddens vegetable blues. It is white; it crystallizes in plates, or fine prismatic needles; it is not very acrid; it is not decomposed either by cold or boiling water, but is soluble in 500 parts of the former, and in about 250 of the latter. It is much more soluble in water, acidulated with sulphuric acid. The following estimates of its composition have been made:

	Fourcroy.	Braamcamp and Sigueira.
Quicksilver,	75.	57.42
Oxygen,	8.	6.38
Sulphuric acid,	12.	31.8
Water,	5.	4.4
	100.	100.

But if, instead of removing the excess of acid from the supersulphate of quicksilver, by washing it with water, we continue the action of the heat according to the directions of the colleges, there is a copious evolution of sulphureous acid gas, and the saline residuum is converted into a white mass, which therefore evidently contains both a larger proportion of mercury, and in a state of greater oxidizement, than the salt from which it was formed. But this white saline mass is farther analysed by the affusion of hot water; for one portion of it is dissolved, while the remainder assumes the form of a beautiful yellow powder. The portion dissolved is said to contain excess of acid. The yellow powder is, on the contrary, a subsulphate.

The subsulphate of quicksilver has a bright yellow colour, a considerably acrid taste, is soluble in 2000 parts of cold water, is also soluble in sulphuric acid, slightly diluted, is decomposed by the nitric acid, and forms muriate of quicksilver with the muriatic acid, while the neutral sulphate forms submuriate. It oxidizes quicksilver, and is converted by trituration with it into a black powder. At a red heat it gives out oxygen gas, and the metal is revived. It consists of

	Fourcroy.	Braamcamp and Sigueira.
Quicksilver,	76.	73.23
Oxygen,	11.	8.47
Sulphuric acid,	10.	15.
Water.	3.	.3
	100.	100.

Medical use.—It is a strong emetic, and with this intention operates the most powerfully of all the mercurials that can be safely given internally. Its action, however, is not confined to the primæ viæ; it will sometimes excite salivation, if a purgative be not taken soon after it. It is used in virulent gonorrhœas and other venereal cases, where there is a great flux of humours to the parts. But its chief use, at present, is in swellings of the testicles from a venereal affection; and it seems not only to act as a mercurial, but also, by the severe vomiting it occasions, to perform the office of a discutient, by accelerating the motion of the blood in the parts affected. It is said likewise to have been employed with success, in robust constitutions, against leprous disorders, and obstinate glandular obstructions: the dose is from two grains to six or eight. It may be given in doses of a grain or two as an alterative and diaphoretic. Dr Hope senior found, that in doses of one grain, with a little powder of liquorice root, it forms a very convenient errhine.

This medicine has been recommended as the most effectual preservative against hydrophobia.

On the whole, however, we consider it as a superfluous preparation, whose place may be more safely supplied by other mercurials or emetics.

Hydrargyri sulphuretum nigrum. *Lond.*
Black Sulphuret of Quicksilver.

Take of

Purified quicksilver, one pound, by weight;
Sublimed sulphur, one pound.

Triturate them together until the globules disappear.

Sulphuretum hydrargyri nigrum. *Ed. Dub.*
Black Sulphuret of Quicksilver, formerly *Æthiops Mineral.*

Take of

Purified quicksilver,
Sublimed sulphur, each equal weights.

Grind them together in a glass mortar (an earthen mortar, *Dub.*) with a glass pestle, till the mercurial globules totally disappear.

(It is also prepared with twice the quantity of quicksilver, *Ed.*)

This process, simple as it appears, is not, even in the present advanced state of chemistry, perfectly understood. It was formerly imagined, that the quicksilver was merely mechanically divided, and intimately mixed with the sulphur.

But that they are really chemically united is indisputably proved by the insolubility of the compound in nitrous acid. Fourcroy is of opinion, that during the trituration, the mercury absorbs oxygen, and is converted into the black oxide, and that in this state it is slightly combined with the sulphur. The editors of Gren also suppose it to be in the state of black oxide, but that it is combined with hydroguretted sulphur; and they direct a little water to be added during the trituration, that by its decomposition it may facilitate the process.

The black sulphuret of quicksilver, thus prepared by trituration, has a pulverulent form, is insoluble in nitric acid, is totally soluble in solution of potass, and is precipitated unchanged from this solution by acids. It is not altered by exposure to the air; and when heated in an open vessel, it emits sulphureous acid gas, acquires a dark violet colour, and, lastly, sublimes in a brilliant red mass, composed of crystalline needles.

The combination of quicksilver with sulphur may be much more speedily effected by the assistance of heat, by pouring the mercury, previously heated, upon the sulphur in a state of fusion, and stirring them until they cool, and form a consistent mass, which may be afterwards powdered. The sulphuret prepared by fusion differs, however, from that prepared by trituration; for it is not soluble in a solution of potass, but is converted by long ebullition in it into the red sulphuret, and it also reddens spontaneously, in course of time, from the action of the air.

Black sulphuret of mercury may be also prepared in the humid way, as it is called, by precipitation, or even by direct solution. According to Berthollet, mercury agitated with sulphuretted hydroguret of ammonia forms a black sulphuret exactly resembling that prepared by trituration; but if hydroguretted sulphuret of ammonia be used, the black precipitate formed gradually assumes a red colour, and the solution contains sulphuretted hydroguret of ammonia. The same phenomena take place with all the mercurial salts.

As a medicine, black sulphuret of quicksilver possesses no very evident effects. It is principally used as an alterative in glandular affections, and in cutaneous diseases. It has been commonly given in doses of from 5 to 10 grains; but even in doses of several drachms, and continued for a considerable length of time, it has scarcely produced any sensible effect.

SULPHURETUM HYDRARGYRI RUBRUM. *Dub.*
Red Sulphuret of Quicksilver.

Take of
Quicksilver, purified, forty ounces;
Sublimed sulphur, eight ounces.
Mix the quicksilver with the melted sulphur; and if the mixture take fire, extinguish it by covering the vessel; afterwards reduce the mass to powder, and sublime it.

Lond.

Take of
Purified quicksilver, forty ounces;
Sublimed sulphur, eight ounces.
Mix the quicksilver over the fire with the melted sulphur; and as soon as the mass swells up, remove the vessel from the fire, and cover it strongly, to prevent it from catching fire: then powder it and sublime.

As soon as the mercury and sulphur begin to unite, a considerable explosion frequently happens, and the mixture is very apt to take fire, especially if the process be somewhat hastily conducted. This accident the operator will have previous notice of, from the matter swelling up, and growing suddenly consistent; as soon as this happens, the vessel must be immediately close covered.

During the sublimation, care must be had that the matter do not rise into the neck of the vessel, so as to block it up and cause it to burst. To prevent this, a wide-necked bolt-head, or rather an oval earthen jar, coated, should be chosen for the subliming vessel. If the former be employed, it will be convenient to introduce at times an iron-wire, somewhat heated, in order to be the better assured that the passage is not blocking up; the danger of which may be prevented by cautiously raising the vessel higher from the fire.

If the ingredients be pure, there is no residuum. In such cases, the sublimation may be known to be over, by introducing a wire as before, and feeling with it the bottom of the vessel, which will then be perfectly smooth: if any roughness or inequalities be perceived, either the mixture was impure, or the sublimation is not completed; if the latter be the case, the wire will soon be covered over with the rising cinnabar.

M. M. Tuckert and Paysse have described, from actual observation, the process followed in the manufactory of M. Brand at Amsterdam, where 48,000 pounds of cinnabar are annually prepared. 150 pounds of sulphur are mixed with 1080 pounds of mercury, and exposed to a moderate heat in

a bright iron-kettle, one foot deep, and two and a half in diameter. The black sulphuret of mercury, thus produced, is reduced to powder, and put up in earthen pots capable of containing about a quart of water. The subliming apparatus consists of three large coated crucibles, bound with iron, and surmounted with domes of iron, through the top of which the black sulphuret is introduced. These are built into a furnace, in such a manner that two-thirds of each apparatus is exposed to the action of the flame, which circulates freely around them. The fuel made use of is turf, which is found preferable to all others, probably from its affording a steady and moderate heat. The fire is kindled in the evening; and when the crucibles have become red, the pots containing the black sulphuret are emptied into them successively, at first one into each, and afterwards two, three or more, at a time, according to the violence of the inflammation which succeeds. Sometimes the flame rises four, or even six feet above the domes; when its violence is a little abated, the aperture is covered closely up with a lid of iron. In this manner the whole quantity is introduced into the three crucibles in about thirty-four hours. The fire is steadily supported in a proper degree for thirty-six hours, and the sublimation assisted by stirring the matter every quarter of an hour with a triangle of iron, until the whole is sublimed, when the fire is allowed to expire. The colour of the flame changes during the process from a dazzling white to a yellow white, orange yellow, blue and yellow, green, violet, and blue and green. When it acquires a fine sky-blue, or indigo colour, and rises only an inch or two above the aperture, the aperture is closed hermetically, and luted with clay and sand. After the apparatus has cooled, 400 pounds of sublimed red sulphuret of mercury are found in each, so that there is a loss of 30 pounds on the 1230 of materials employed. The process by which cinnabar is converted into vermilion is kept a secret by the Dutch; but M. Paysse discovered, that by keeping some levigated cinnabar in the dark, covered with water, and stirred frequently for a month, it acquires the brilliant colour of Chinese vermilion.

When taken out of the subliming vessels, the red sulphuret of quicksilver is a brilliant crystalline mass, and first acquires its very rich colour when reduced to the form of a fine powder by trituration. It has neither smell nor taste, and is insoluble in water and in alcohol. In close vessels it sublimes entirely unchanged, but requires for this purpose a considerable degree of heat. It is not soluble in any acid, and is only decomposed by the nitro-muriatic, which dissolves the

quicksilver, and separates the sulphur. It is not decomposed by boiling it with solutions of the alkalis, but is decomposed by melting it with potass, soda, lime, iron, lead, copper, antimony, and several other metals. Proust has proved that it consists of 85 quicksilver, and 14 or 14½ sulphur, and that the quicksilver is not oxidized to a maximum, as had been falsely supposed, but is in its metallic state. His analysis is confirmed by the other methods by which cinnabar may be prepared. Thus, the black sulphuret of quicksilver, by fusion, is converted into the red sulphuret, by boiling it in a solution of potass, which can only act by dissolving the sulphuretted hydrogen and superfluous sulphur. Submuriate, or subsulphate of mercury, sublimed with sulphur, furnish red sulphuret of mercury, and muriate or sulphate of mercury.

Medical use.—Red sulphuret of quicksilver is sometimes used in fumigations against venereal ulcers in the nose, mouth, and throat. By inhaling the fumes produced by throwing half a drachm of it on red-hot iron, a violent salivation has been produced. This effect is by no means owing to the medicine as a sulphuret; for, when set on fire, it is no longer such, but mercury resolved into vapour, and blended with the sulphureous acid gas; in which circumstances, this mineral has very powerful effects.

Mr Pearson, from his experiments on mercurial fumigation, concludes, that where checking the progress of the disease suddenly is an object of great moment, and where the body is covered with ulcers, or large and numerous eruptions, and, in general, to ulcers, fungi, and excrescences, the vapour of mercury is an application of great efficacy and utility; but that it is apt to induce ptyalism rapidly, and great consequent debility; and that, for the purpose of securing the constitution against a relapse, as great a quantity of mercury must be introduced into the system by inunction, as if no fumigation had been employed.

Chap. XI.—LEAD.

Acetas plumbi. *Dub.*
Acetate of Lead.

Take of

Subacetate of lead, called ceruse, any quantity;
Distilled vinegar, ten times its weight.