

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.

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## CHAP. XI.—LEAD.

ACETAS PLUMBI. *Dub.*

*Acetate of Lead.*

Take of

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

Digest in a glass vessel, until the vinegar become sweet. Having poured this off, add more vinegar, until it cease to become sweet. Filter the liquor, and crystallize by alternate slow evaporation and refrigeration. The crystals are to be dried in the shade.

ACETIS PLUMBI, olim SACCHARUM SATURNI. *Ed.*  
*Acetite of Lead, formerly Sugar of Lead.*

Take of

White oxide of lead, any quantity;  
Put it into a cucurbit, and pour upon it, of  
Distilled acetous acid, ten times its weight.

Let the mixture stand upon warm sand till the acid becomes sweet, which is then to be poured off, and fresh acid added until it cease to become sweet; then evaporate all the liquor, freed from impurities, in a glass vessel, to the consistence of thin honey, and set it aside in a cold place, that crystals may be formed, which are to be dried in the shade. The remaining liquor is again to be evaporated, that new crystals may be formed; and the evaporation is to be repeated until no more crystals concrete.

SUPERACETAS PLUMBI. *Lond.*  
*Superacetate of Lead.*

Take of

Carbonate of lead, one pound;  
Acetic acid, one gallon and a half.  
Boil the carbonate of lead with the acid, until this be saturated; then filter through paper, and, after evaporation, till a pellicle be formed, set it aside to crystallize. Pour off the liquid, and dry the crystals on blotting paper.

THE acetate of lead is seldom prepared by the apothecary, as he can procure it at an infinitely cheaper rate from those who manufacture it in large quantities, and render it perfectly fit for medicinal use, by solution and crystallization. The preparation of it, as directed by the colleges, is a case of simple solution. The process frequently fails, from the oxide of lead employed being adulterated with carbonate of lime, or some other earthy substance. The acetic acid employed should be as strong as can be procured; for with a weak acid the product of pure salt is small, and the quantity of mother-water is increased. The addition of a small quantity of alcohol to the solution, after it has been duly evaporated, is said to improve the beauty of the crystals. The mother-water (which probably is essentially the same with Goulard's extract of lead),

may also be made to furnish pure crystals, by adding to it a fresh portion of acetic acid; for, without that precaution, it furnishes only a very heavy, yellow, pulverulent mass.

The manufacture of acetate of lead is conducted more economically when the oxide is dissolved in the acid at the same time that it is prepared, which is done by alternately exposing plates of lead to the vapour of acetic acid, and immersing the plates, thus covered with oxide, into the acid itself.

Acetate of lead has a sweet styptic taste. It has a white colour, and crystallizes in flat parallelipeds, terminated by a wedge, or more commonly in shining needles. It is soluble in water and in alcohol; effloresces slightly in the air, and is decomposed by heat and light. It is decomposed by the alkalis, and most of the earths and acids.

*Medical use.*—The internal use of acetate of lead, notwithstanding the encomiums some have been rash enough to bestow upon it, is entirely to be rejected. It forms, however, a very valuable external application in superficial and phlegmonic inflammations, bruises, and diseases of the skin. It is always applied in solution, either simply, or by means of cloths soaked in it, or mixed with bread-crumbs. A drachm, with five ounces of any distilled water, forms a strong solution, and with ten ounces of water, a weak solution. If common water be used, the addition of about a drachm of acetous acid will be necessary to keep the lead in solution.

**LIQUOR SUBACETATIS LITHARGYRI. Dub.**

*Solution of Subacetate of Litharge.*

Take of

Litharge, one pound;

Distilled vinegar, eight pints.

Boil to six pints in a glass vessel, with continual agitation; pour off the liquor after the fæces have subsided, and strain it.

**LIQUOR PLUMBI SUBACETATIS. Lond.**

*Solution of Subacetate of Lead.*

Take of

Semivitrified oxide of lead, two pounds;

Acetic acid, one gallon.

Mix and boil to six pints, constantly stirring, then set it aside, until the fæces have subsided, and strain.

MR PHILLIPS thinks, that too much litharge is employed by the London college in this preparation, as a gallon of distilled vinegar, sp. gr. 1.007, will dissolve only ten of the twenty-four ounces ordered, and the residuum having its bulk

much increased by the action of the acid, retains much of the solution. When properly prepared, it is of a straw colour, with a slight admixture of green, and has a sp. gr. of 1.22, and it is not, as said by Dr Powell, "a dense solution of a deep brown colour," unless the acid which remains after the distillation of vinegar be employed instead of the distilled vinegar.

Notwithstanding Scheele shewed that a solution of sugar of lead was converted into Goulard, by allowing it to act for a day on a plate of lead, yet, until the experiments of Dr Bostock, it was generally believed that these preparations did not differ, except in the accidental variations of strength to which the latter was subject. By his analysis, however, it appears that the constituents in the saturated solution of the sugar of lead, and of the water of acetated litharge, are respectively,

	Former.	Latter.
Oxide of lead, -	16.8	23.1
Acetic acid, -	7.5	5.
Water, -	75.7	71.9
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	100.	100.

Thenard obtained the salt in crystallized plates, by boiling 150 parts of litharge in a solution of 100 parts of sugar of lead, and on analysing it, found it to consist of 17 acid, 76 oxide, and 5 water. These experiments, the coincidence of which confirm their accuracy, shew, that in the sugar of lead, 100 parts of acid are combined with 224 of oxide of lead, and in Goulard's extract, with 450 or 460, or somewhat more than twice the quantity of oxide. Now, according to the doctrine of definite proportions, any acid always combines with the same proportion of oxygen in oxides, whatever the proportion of metal may be; it is therefore evident, that the oxygen in the oxide of lead, contained in Goulard's extract, is combined with twice as much lead as it is in the oxide in the sugar of lead; or Goulard's extract is the acetate of the protoxide of lead, and sugar of lead the acetate of the peroxide of lead.

LIQUOR SUBACETATIS LITHARGYRI COMPOSITUS. *Dub.*

*Compound Solution of Subacetate of Litharge.*

Take of

- Liquor of acetated litharge, two drachms by weight;
  - Distilled water, two pints;
  - Weaker spirit of wine, two drachms by measure;
- Mix the spirit and liquor of acetated litharge, then add the Distilled water.

LIGUOR PLUMBI ACETATIS DILUTUS. *Lond.*  
*Diluted Solution of Acetate of Lead.*

Take of

Solution of subacetate of lead, one fluidrachm;  
 Distilled water, one pint;  
 Proof spirit, one fluidrachm.

Mix.

CHAP. XII.—TIN.

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

Take of

Tin, any quantity.

Having melted it over the fire in an iron mortar, agitate it until it be reduced to powder, which is to be passed, when cold, through a sieve.

THE college of Edinburgh do not give this preparation, inserting *Limatura et Pulvis Stanni* in their list of the materia medica.

*Med. use.*—It is often employed as a remedy against worms, particularly the tænia. The general dose is from a scruple to a drachm; some confine it to a few grains; but Dr Alston assures us, that its success chiefly depends on its being given in much larger quantities. He directs an ounce of the powder to be taken on an empty stomach, mixed with four ounces of molasses; next day, half an ounce; and the day following, half an ounce more; after which a cathartic is administered. He says, the worms are usually voided during the operation of the purge, but that pains of the stomach occasioned by them are removed almost immediately upon taking the first dose of the tin. This practice is sometimes successful in the expulsion of tæniæ, but by no means so frequently as Dr Alston's observations would lead us to hope.

CHAP. XIII.—ZINC.

OXIDUM ZINCI. *Ed.*  
*Oxide of Zinc.*

Let a large crucible be placed in a furnace filled with live coals, so as to be somewhat inclined towards its mouth; and when