

a gallon of benzole and one gallon of paraffine oil, and melts in it twenty-four ounces of resin. To these materials, resin, oil and copal or mastic varnish may in some cases be added, and he lets it boil until it attains a moderate degree of consistency. This is composition No. 2. He first dips the article to be water-proofed into the composition No. 1, in a heated state, and afterward dries it; then he applies the second composition, in a cold state, with a brush, or in other convenient manner.

This recipe is very easily tested, and if it should prove reliable, it will prove of great value for many purposes. Applied to wall-paper in damp houses, it could hardly fail to be of service if it fulfills the inventor's description.—*Manufacturer and Builder.*

Photographic Seals.

A photographer in Freiberg has made seals and stamps with the portraits of his customers. A thin layer of gelatine sensitized with bi-chromate of potash, is exposed to the action of light under a photographic positive, by which the parts acted upon are rendered insoluble in water. The gelatine-film is immersed in water, and the parts not acted upon by light swell up, and we obtain a picture in relief, of which a plaster cast can be taken. A galvanoplastic copy being taken of the cast, we have a metallic fac-simile of the photograph, which can be employed as a seal. This is essentially an application to Woodbury's photographic process, and suggests an excellent method for obtaining perfect likenesses of persons in metallic clichés for the use of the printer, as well as an admirable way of illustrating scientific books.—*Manufacturer and Builder.*

Crystallized Digitalin.

M. C. A. Nativelle finds that crystallized digitalin often contains a notable quantity of another crystalline principle, which exists associated with it in the digitalis but is inert and devoid of any bitter taste. This substance is insoluble in chloroform, while pure digitalin freely dissolves in that menstruum. M. Nativelle recommends the following method for obtaining pure digitalin in crystals:—100 parts of powdered digitalis are mixed with a solution formed of 160 parts of water and 25 parts of crystallized acetate of lead; after twelve hours' maceration, this mixture is exhausted with water in a displacement apparatus. About 300 parts of liquid are thus collected, which may be set aside for the extraction of digitalin; the digitalin remaining entirely in the residue. This residue is dried, and exhausted by displacement with alcohol at 56° (sp. gr. 935). About 300 parts of alcoholic tincture are obtained, to which a solution of 4 parts of acetate of lead is added; the mixture is filtered, and the decolorized liquid mixed with a solution of 2 parts of phosphate of soda; the precipitate is again separated, and the liquid distilled in a water bath to recover the spirit. The residue of the distillation contains in suspension some small crystals and a pasty glutinous mass. These crystals are chiefly the inert substance already referred to, and the digitalin is in the glutinous mass. The whole is evaporated by the water bath to about ten parts, and the dense liquid separated from the deposit, which is then

washed with a little cold water and spread on filter paper. From 2 to 3 parts of this matter are obtained; it is dissolved by heat in twice its weight of alcohol of 60° (sp. gr. 914), and allowed to crystallize in a cold place. The inert substance deposits first, and after some days the digitalin separates out in yellowish radiating opaque crystals. The crystalline deposit is afterwards drained, washed slightly with weak spirit, redissolved in hot alcohol of 80° (sp. gr. 864), with a little animal charcoal, and again crystallized. These crystals are dried, powdered, and agitated with 20 parts of pure chloroform; the digitalin dissolves, leaving the inert substance insoluble. Upon distilling off the chloroform the crystallized digitalin remains, still however, possessing a yellow color. It is further purified by animal charcoal and re-crystallization from alcohol. One part of pure crystallized digitalin may be obtained from 1000 parts of digitalis which has been exhausted by water.

Crystallized digitalin is a neutral, non-nitrogenous, without odour, and of an intense bitter taste, especially perceivable in the taste of alcoholic solution. It dissolves in all proportions in cold chloroform; its purity may be recognized by this character. Rectified spirit dissolves about one-twelfth part in the cold, and one-half at the boiling-point. Absolute alcohol is a less perfect solvent. Ether, benzol, and water only take up traces. Sulphuric, nitric, and hydrochloric acids dissolve it with coloration.—*Pharmaceutical Journal (London).*

Yield of Extracts.

Kohlmann gives in *Apoth. Ztg.* the following table, but remarks that various circumstances—locality of growth, relative dryness of the drugs, and manipulation, may considerably influence the results. The spirituous extracts were prepared according to the *Pharm. Germ.*, and if that contains no formula, according to the Prussian or Saxon Pharmacopœias.

Extr.	Per cent.
absinthii.....	18-00
aconiti tuber.....	28-33
arnice flor.....	28-00
aurantii.....	27-33
calami.....	25-00
cannabis indic.....	13-33
chamomille (matricar.).....	25-00
china (cinch.).....	18-21
colocynthis.....	9-82
columbo.....	9-97
fol. jugland.....	23-61
guaiaci.....	14-00
hellebori vir.....	15-79
lupuli plv. sic.....	13-20
millefolii.....	27-44
pimpinelle.....	23-33
polygala.....	39-16
rhei.....	51-72
sabine.....	22-22
sarsaparill.....	8-61
scille.....	66-66
seal. corn.....	11-60
strychni (nuc. vom.) mas. pil.....	11-33
strychni pulv.....	9-5

—*Ann. Jour. of Pharmacy.*

Valerianic Acid.

C. Stalman has again examined the natural and artificial valerianic acid with the view of determining their asserted difference. He

found the salts of strontia, zinc and quinia (the latter contains 1 equiv. acid, 1 of base, and one of water) of both acids precisely alike; but while the baryta salt of the true acid would be readily obtained in large laminæ when the solution was evaporated in vacuo over sulphuric acid, the salt from the artificial acid would yield only a thick syrup; he therefore regards the two acids as isomeric but not as identical.—*Archiv d. Pharm., 1869, March, 285. From Ann. d. Ch. und Pharm. 1868, Aug. 129—134.*

Zettschr. f. Anal. Chem.

Reduction of Chloride of Silver.

According to Grager, an ammoniacal solution of chloride of silver is very completely reduced by placing therein tolerably large lumps of zinc; the solution is best placed in a wide-mouthed glass-stoppered bottle, and this requires to be shaken frequently; there should be zinc in excess. When the fluid, on a drop thereof being tested, no longer yields a precipitate with hydrochloric acid, the operation is finished; the silver is then separated by pouring the fluid off from the spongy mass, and washing by decantation; the pieces of zinc having been removed, the spongy silver is washed with pure strong hydrochloric acid, and next with water. The silver thus obtained is, according to the author, chemically pure.—*Chemical News.*

Testing Opium.

Professor Schneider has proposed in the 6th revised edition of the *Pharmacopœia Austriaca*, the following method for testing the goodness of opium. Ten grammes of previously dried and powdered opium is treated with a mixture of 150 grammes of distilled water, to which 20 grammes of pure hydrochloric acid, sp. gr. 1.12, is added; the residue, after extraction, should not exceed 4.5 grammes weight; to the acid fluid 20 grammes of common salt are added, and the precipitate thereby caused is collected after 24 hours, on a filter, and the latter with a solution of common salt; to the filtrate, ammonia is added, and the fluid left standing again for 24 hours; the crystals which have separated are collected, re-dissolved in acetic acid, and precipitated with ammonia; the precipitate so obtained is washed, dried, and weighed; its weight should not be less than one gramme.

Fluorine in the Brain.

Professor Horsford, of Harvard College has tried to detect fluorine in the human brain, he was induced to do so by the fact that fluorine so frequently accompanies phosphoric acid in the mineral kingdom, and also on account of the large proportion of phosphoric acid found in the brain and nerves by Von Bibra and others. After having very carefully ascertained that the reagents he was about to apply were quite free from fluorine, the learned professor operated upon a human brain which had been long kept in spirits of wine, but which in consequence of neglect, had by the evaporation of the liquor, become wrinkled up and dry. A series of carefully made experiments proved undoubtedly the existence of fluorine in the brain.—*Chemical News.*