

The residue left by the boyzine was incinerated in a platinum crucible, yielding 0.5 gr. of light fawn colored ash.

The result from 100 grains, therefore, is as follows:—

Morphia.....	15.75
Narcotina, impure.....	2.00
Meconic acid.....	5.25
Caoutchouc, fatty matter and resin.....	17.00
Insoluble residue (including 0.5 of ash).....	22.00
Matter soluble in water other than salts of morphia and narcotina, as gum extractive, etc.,*.....	38.50
Water.....	5.00

Messrs. Rosengarten & Sons meanwhile made an examination of this opium for morphia, for their own satisfaction, and obtained about 15 per cent., which corroborates this result for that ingredient, the discrepancy in amount being due to more careful manipulation in this assay.

No examinations was made of the gum or extractive ingredients. On the whole it may be inferred that the opium obtained by Mr. Robbins is pure and of extraordinary strength, indicating it to be the inspissated juice of the capsule of the poppy, unadmixed with either organic or inorganic adulteration, and it is to be hoped that the producer will, in the coming season, give his earnest attention to another and more extended experiment, particularly in relation to the extraction of the juice so as to avoid loss. The quantity of soil under culture in this instance was about one-tenth of an acre, and the product was worth at the market rate per single pound (\$14. — $\frac{11}{16}$ = \$9.62) worth nearly \$10 or about \$100 per acre. If, as Mr Robbins says, he obtained only half of the juice, this result may be doubled. Too much stress cannot be laid on the importance of keeping the product unadmixed with impurities, and especially extractive matter as an adulteration, as in Mr. Wilson's so-called opium, which is almost wholly an extract of the leaves of poppies.

On Zinc Sulpho-Phenate.†

BY DR. HAGER,

The preparation of this salt presents no difficulties if pure crystallized phenol and pure monohydrate of sulphuric acid are operated on. Equal weight parts of both are digested at about 125° F. for two or three days. When the phenol is pure a clear, yellowish, thick liquid is obtained, which on cooling deposits conglomerations of crystals (probably uncombined phenol), but which soon congeals to a white crystallized mass. Although all conditions are present to combine all the sulphuric acid with the phenol, yet there remains always, and no matter how long the digestion may be continued, a surplus of about 10 per cent. sulphuric acid. For this reason it is advisable to mix 120 parts of sulphuric acid to every 100 parts of phenol. After two or three days the combination is accomplished, and the mixture is then diluted with ten times its bulk of water. Now twice as much as the quantity of sul-

phuric acid operated upon, or better, a little more, of dry barium carbonate, is gradually added (to 120 parts in s, 245 parts in c). The latter had better be triturated with some water before it is added to the acid. Under evolution of carbonic acid barium sulpho-phenate is formed, a salt soluble in water and in alcohol. At the same time any excess of free sulphuric acid is neutralized and transformed into barium sulphate. The whole is allowed to stand in a warm place for some hours, and is then filtered through a damp filter; the remainder on the filter is washed with some warm water. The filtered solution of barium sulpho-phenate may be evaporated to dryness, whereby it remains behind as a white salt deprived of its water of crystallization. This is soluble in two parts of water. A small quantity of this barium salt is retained, the balance is dissolved in water in the proportion of 10 parts of the first to 30–40 parts of the latter. To this filtered solution a solution of 6 parts crystallized zinc-sulphate in about 18 parts of water is added. Of this zinc solution a small quantity is also retained. Now, after leaving the mixture in the water bath for several hours, about 10 drops of the supernatant solution are diluted in a test tube with about 100 drops of water; this being divided in two parts, the one is examined with some drops of the retained zinc-sulphate solution, the other with the barium sulpho-phenate solution. If any reaction ensues in either case, the one or other of the retained solutions has carefully to be added to the bulk of the solution, in order to accomplish the exact decomposition. A slight excess of zinc-sulphate should, however, prevail, so that the barium may be completely precipitated.

Finally, the filtered solution of zinc sulpho-phenate is evaporated under continual stirring until a drop, when allowed to fall on a cold glass plate, congeals to a solid mass. The liquid is then allowed to cool under frequent stirring, and the resulting salt mass is dried in a warm place. When completely dry it forms a white salt.

The evaporation of the solution of the barium sulpho-phenate, its re-solution and the filtration, are only required when a phenol has been operated on which was not palpably pure. When this, however, is the case, the solution of barium sulpho-phenate may be decomposed, without any further operation, by the zinc-sulphate solution, with the precaution to retain some of the first solution in order to meet an accidental excess of the zinc solution. For every 100 parts of phenol operated upon, 152 parts of crystallized zinc sulphate may be added, of which only one-twelfth may be retained for further addition if required.

The preparation of zinc sulpho-phenate may be facilitated by the use of perfectly pure reagents. When they have been mixed and combined in the above stated proportions and process, the warm solution, after having been diluted with twice its bulk of water, is gradually neutralized with zinc-oxide (free of oxide of iron). When no more oxide is dissolved the warm solution is allowed to cool, and is then filtered; the filtrate is evaporated to nearly half its original bulk, and is then mixed and shaken with ten times its volume of alcohol (90–92 per cent.), and the mixture is allowed to stand in a cool place for several days. The zinc sulphate separates as a powder; the supernatant

alcoholic solution of zinc sulpho-phenate may either be directly evaporated to dryness or the alcohol may first be restored by distillation, and the evaporation may then be accomplished. The residue is white zinc sulpho-phenate of a purity that it yields with barium chloride but a slight reaction.

One equivalent phenol, or phenyl-alcohol, forms, with two equivalent monohydrate of sulphuric acid, a compound ether sulpho-phenic acid ($C_{12}H_{10}O, SO_3 + HO, SO_3$). This, when combined with barium oxide, forms $C_{12}H_9O, SO_3, + BaO, SO_3$,* and, with zinc oxide, the corresponding zinc salt. The barium salt, when crystallized from its aqueous solution, forms rhombic crystals, with three equivalents water of crystallization, the zinc salt, when crystallized, forms bright lamellas, with seven equivalents crystallization water. The official salt derived by exsiccation is deprived of the water of crystallization; it dissolves in two parts water of medium temperature, and in five parts alcohol of 90 per cent.

The preparation of zinc sulpho-phenate from a not quite pure phenol yields different results. The sulpho-phenic acid is then dark colored, and the solutions of the sales therewith prepared have a pink color. The zinc sulpho-phenate when crystallized has a pink color; when desiccated, a reddish tint. This coloration, however, does not at all impair their medicinal value and their therapeutic action.

These more or less colored solutions of the zinc sulpho-phenate, when near the end of their evaporation, emanate a remarkably fine odor, resembling that of pelargonium. This observation may likely trace to a new source a fine perfume. Some of our most brilliant colors are derived from a similar origin.

Zinc sulpho-phenate combines the therapeutic virtues of zinc sulphate and of phenol. Its solution for injections is obtained by dissolving 1 part of the salt in 150 to 200 parts water.

Light Sulphate of Quinine—A Fraud.†

BY LOUIS STREHL.

A small lot of quinine was recently purchased in this city, bearing the following label: "Light Sulphate of Quinine; Manufactured by Lord Bros., Ludgat. Hill, London." The manufacturer being unknown, the "quinine" was submitted to the ordinary tests for its purity.

A casual glance at the article excited no suspicion, but upon a closer scrutiny, the crystals were found to be colorless rhombic prisms, about a line in length, distinct and not interlaced to such an extent as we see them in sulphate of quinia. The taste was bitter, resembling that of the latter alkaloid. The crystalline shape could be readily distinguished by the naked eye.

The crystals were entirely soluble in cold water, and this solution, when treated with chlorine water and ammonia, gave no characteristic indication of quinia. Chlorine water added to a solution of the salt, followed by ferrocyanide of potassium and afterwards by a few drops of water of ammonia, gave no indication of quinia.

The above results show the entire absence

* No attempt was made to isolate either codeia, narceia, meconia or other well defined principles of opium existing in small quantities

† Translated from Dr. Hager's Pharmaceutischer Centralhalle, No. 1, 1870 (January 6, 1870), by Dr. F. Hoffmann in the American Journal of Pharmacy, March, 1870.

* Nomenclature and notation are that of Dr. Hager.

† From the Pharmacist, March.