

of copper with a mordant of the prussiate of potash (ferrocyanide of potassium); and titanium, uranium, and molybdenum, judged by their chemical behavior, would give rise to similar results. The "golden-yellow color," so much in fashion of late, is produced by a solution of arsenic with a mordant of the hydrosulphate of ammonia. And cadmium would probably give rise to a similar result. In the case of dyeing the lighter tints, however, it becomes necessary to submit the hair to a process of bleaching, which is commonly effected by a solution of one or other of the alkalies, by chlorine, by the chloride of soda or lime, or by sulphurous acid, bi-sulphate of magnesia or lime, or peroxide of hydrogen. In general, the dyes requiring mordants do not stain the epidermis. —*British Medical Journal*.

### Note on the Adulteration of Precipitated Sulphur.

BY PROFESSOR ATTFIELD.

Why is precipitated sulphur still usually adulterated to a scandalous extent with what may be termed plaster of Paris,—hydrous sulphate of calcium ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ )? Nearly every book on chemistry and materia medica states that instead of being made by mixing hydrochloric acid and polysulphide of calcium, it is often prepared by the reaction of sulphuric acid and the sulphur salt, the result being precipitated sulphur (identical, so far, with the official article—*Sulphur precipitatum* B. P.), but mixed with more than an equal weight of the calcareous mineral compound, which when well dried constitutes plaster of Paris. Every chemist and druggist therefore, knows, or ought to know, that precipitated sulphur is more likely to be impure than pure, and yet the employment of the adulterated variety seems on the increase. From the following table it will be seen that out of eight samples which I recently purchased (for quite another purpose) within an area of a mile, only one was pure, one contained nearly half its weight of calcareous matter, and each of the others was actually two-thirds impurity and only one-third precipitated sulphur. In explanation of this condition of things, the statement is commonly made that the public has become so accustomed to the satiny appearance of the impure article (due to the scientific character of the adulterant) as to regard the pure with suspicion, often refusing to purchase it. I cannot believe in the general application of this explanation. The public, surely, places too much confidence in a pharmacist's knowledge of drugs to persist in refusing a pure in favor of an impure chemical. Therapeutists cannot hope to arrive at a rational system of medicine unless the followers of pharmacy combine to crush the practice of adulteration. Precipitated sulphur is, doubtless, an exception to the general rule that drugs are less adulterated now than formerly, but clearly there is room for much improvement.

No.	Impurity in 100 parts of the "Sulphur."
1.....	66½
2.....	43½
3.....	66½
4.....	66½
5.....	66½
6.....	64½
7.....	pure
8.....	64½

Chemists and druggists, their customers, and medical practitioners, should refuse to purchase any precipitated sulphur which leaves a white ash when a little is burnt off on the end of a table-knife or spatula. (The sulphur does no more damage to the steel than a rub on a knifeboard will remove.)—*Pharmaceutical Journal* (England).

### Note on Aromatic Sulphuric Acid.

BY PROFESSOR ATTFIELD.

A short time ago I was asked whether or not the official \* aromatic sulphuric acid contained sulphovinic acid. Aromatic sulphuric acid is made by mixing gradually 3 volumes of sulphuric acid with 40 of rectified spirit, and then adding certain aromatics (cinnamon and ginger). Sulphovinic acid is also made by mixing sulphuric acid and spirit, but the volumes should be equal, the alcohol as nearly absolute as convenient, a temperature considerably above that of boiling water applied to the mixture, and the material allowed to digest together for twenty-four hours: even then the whole of the alcohol is not converted into sulphovinic acid. From these facts we should infer that sulphovinic acid is not formed to any considerable extent in making aromatic sulphuric acid. Still there is some rise of temperature in mixing 3 volumes of sulphuric acid with 40 of rectified spirit, hence the production of a small quantity of sulphovinic acid might be considered possible. To ascertain whether or not this were so, a portion of the diluted spirit was treated with carbonate of barium; the sulphate of barium separated by filtration, washed with water and acid, dried and weighed. The filtrate, which would contain sulphovinate of barium, if sulphovinic acid had originally been present, was evaporated to a small bulk over a water-bath. The weight of the sulphate of barium corresponded with that of the sulphuric acid whence it was obtained; indeed, it was apparently somewhat greater—a result due, probably, to loss of alcohol during manipulation, and a corresponding increase of strength of the diluted acid. The filtrate from the sulphate of barium finally dried up without giving any sulphovinate of barium. These experiments were repeated, after the mixture of sulphuric acid and spirit had been set aside for fourteen days, with the same result; indicating that sulphovinic acid is not formed after a time. They were also repeated after due maceration with the aromatics, but, again, no sulphovinic acid was obtained. We are, therefore, now in a position to state that aromatic sulphuric acid, when made according to the Pharmacopœia, contains no sulphovinic acid.—*Pharmaceutical Journal* (England).

### Sulphur in Louisiana.

It is well known to the public that for some time past the work of boring for oil has been prosecuted in Calcasieu Parish, near Lake Charles, by an association under the title of "The Louisiana Petroleum and Oil Company." Recently, after reaching to a depth

\* The Pharmacopœia and all in it is official (office, Fr. from *L. officium*, an office). There are many things which in pharmacy are official (Fr. from *L. officina*, a shop) but not official. To restrict the word *official*, first to the contents of a pharmacist's shop, and, second, to that portion of the contents which is Pharmacopœial, is radically wrong, and in future should be avoided.—J. A.

of 442 feet the labors of the company were rewarded by finding a strata of crystallized sulphur some two feet thick and very pure in quality. In boring further, it was found that for a distance of 90 feet the auger passed through lime rock which yielded about fifty per cent of sulphur, with occasional strata of 6 to 8 feet in thickness of pure sulphur. The treasurer of the company says that the boring has now reached to a depth of 600 feet. It is a great misfortune that the depth of these deposits of sulphur are so far below the surface of the earth, as the cost of mining will be so much enhanced in consequence.—We learn, however, that it is the intention of the company soon to commence the working of these mines, trusting that the wealth to be realized from the sale of a commodity in such general demand and of so great a market value, will amply compensate for all outlays. *New Orleans Price Current*.

### Test for Illuminating Petroleum.

The Corry (Pa.) Kerosene Oil Works recommend the following as a simple manner of determining the fire test of kerosene oil: "Take a cup or tumbler, fill it nearly full of water (previously tested by the thermometer to be 110° or 111° Fah.), then take a table-spoonful of the oil, of which it is desirable to test the igniting point, immerse it in the water, and stir for a moment or two to permit the oil to reach the equal temperature of the water, pass a lighted match very closely over the surface of the oil once, which always floats on the water. If it does not ignite, it can be safely used, but if it does ignite, discard it, however low the price may be; this is a fair and sure test as far as safety is concerned. The other so desirable a point—does the oil burn brilliantly and without charring the wick?—the experience of every family will soon detect. Something depends upon the wick, and something upon the lamp; but properly manufactured oil is the main thing needed."

### The Effect of Cold on Tin.

It is stated in a recent number of the *Comptes Rendus* that, according to Herr Fritsche, tin exposed at St. Petersburg last winter to a temperature of forty degrees below zero was converted into a semi-crystalline mass containing cavities like basalt. In masses of tin weighing from 55 to 65 pounds, these cavities in some cases had a volume amounting to nearly 24 cubic inches. According to M. Dumas, facts of this kind are not new in Russia; for instance, in one case the pipes of a church organ were so altered by the cold as to be no longer sonorous.—*Journal of Mining*.

### Quicksilver.

It is asserted that the increased production of the California quicksilver mines has stimulated the workings of the old Almaden mines in Spain, and the Austrian mines in Idria, and that the price of this metal has fallen in consequence in London, where it is fifteen per cent. lower than it was four or five years ago. California now sends quicksilver to various places in the following order of their importance—the first mentioned taking the smallest quantity; British Columbia, Australia, South America, Great Britain, New York, Mexico, and, during the past year, China, which was the best customer.