

loss of phenol in the ointment made by the modified method was only 1.80 per cent.

While possible error in weighing, and improper mixing may also contribute to the loss of phenol, volatilization appears to be the outstanding factor responsible for so great a loss of phenol during the manufacture of the ointment.

Phenol (4), as described in the French Pharmacopœia, is slightly hygroscopic, slowly volatilized at room temperature and very rapidly volatilized at 100° C. As the United States Pharmacopœia directs that the yellow wax (5), which has a melting point of 62° C. to 65° C., and the phenol be melted on a water-bath, evidently the heat is great enough to volatilize some of the phenol before the remainder of the base is finally added.

CONCLUSIONS

1. Ointments manufactured in accordance with the United States Pharmacopœia directions lose phenol rapidly during preparation and the strength may fall to as low as 1.59 per cent.

2. Ointments of phenol when made according to a modified procedure show much less loss of phenol during the preparation. All samples of this series fell within the pharmacopœial limits of the active constituent.

REFERENCES

- (1) Page, G. R., *Quart. J. Pharm. and Pharmacol.*, XI (1938), 373.
- (2) U. S. P. XI, page 423.
- (3) *Ibid.*, pages 423 and 285.
- (4) French Pharmacopœia, II (1937), 645.
- (5) U. S. P. XI, page 423.

Notes on the Preparation of Lotio Flava, N. F. VI*

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In a course dealing with the pharmacy of inorganic substances and preparations the writer has assigned, among other official

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preparations involving chemical reactions, Lotio Flava to be made by the students in the laboratory. It has been observed over a period of several years that a goodly number of the individual products handed in for grading showed, instead of the expectant yellow precipitate, a reddish brown one. This has occurred with such frequency that it could not be explained entirely on the basis of faulty technique by the individual worker and it was decided to attempt an explanation of this variation in the appearance of the product.

It was at first thought that the variation might be due to an inferior or impure mercuric chloride used in the formula. However, products from different manufacturers purchased at various times yielded similar results in the final product. One writer states that the reddish or brownish precipitate may be a basic compound which forms because the lime water was deficient in calcium hydroxide (hence too much HgCl₂) or too much mercuric chloride has been used (1). He further states that there is very little difference in the composition of the two oxides (?) formed. The yellow oxide is more finely divided and reflects the yellow rays of light and the red form is crystalline (hence of large size) and reflects the red rays of light (2).

EXPERIMENTAL

The following experiments were performed:

- (1) The N. F. formula and procedure were followed using freshly prepared lime water decanted from the excess of calcium hydroxide.
- (2) Repeat (1) using freshly prepared lime water filtered.
- (3) Repeat (1) using freshly prepared lime water shaken.
- (4) The N. F. procedure was employed using freshly prepared and filtered Liquor Calcis and 3.25 Gm. mercuric chloride per 1000 cc. (0.25 Gm. more than the N. F. formula).
- (5) Same as (4) using 2.75 Gm. HgCl₂ per 1000 cc. (0.25 Gm. less than the N. F. formula).
- (6) Same as (1) but using lime water that had been exposed to the air for several days, then filtered.
- (7) Same as (2) after bubbling carbon dioxide through the lime water for a time.
- (8) Same as (2) adding 0.1% sodium bicarbonate.
- (9) Same as (2) using 0.3% sodium bicarbonate.

(10) Same as (2) introducing 0.5% sodium bicarbonate.

The results of these experiments are shown in the following table:

Table.—Nature of Precipitate in Loto Flava

Experi- ment Num- ber	Pre- cipitate	Precipitate after Two Months
1	S	Coarse; settles quickly
2	S	Coarse; settles quickly
3	S	Finer; settles more slowly
4	S	Coarse; settles quickly
5	S	Finer; settles somewhat slower
6	RB	Fine; settles slowly
7	RB	Fine; settles slowly
8	S	Fine; settles slowly
9	S	Coarse; settles quickly
10	RB	Fine; settles slowly

Legend: S = satisfactory; RB = reddish brown.

CONCLUSIONS

An examination of the results shown in the above table and the various procedures would indicate that the preparation is sensitive to the *carbonate ion* and that the reddish brown precipitate appears when the lime water has been exposed to the air or when this ion (CO_3^{--}) has been introduced into the lime water by other means. This would indicate that a portion of the precipitate formed might be a basic carbonate or in other words, a mixture of the oxide and this compound. Our observations seem to refute the statement that the reddish brown precipitate is formed because of too much mercuric chloride or the use of lime water deficient in calcium hydroxide. It would seem fitting, however, to recommend that the National Formulary direct the use of freshly prepared lime water in the preparation of Loto Flava.

REFERENCES

(1) Snow, C. M., "Essentials of Pharmacy," C. V. Mosby Company, St. Louis, 3rd Edition (1927), page 218.

(2) *Ibid.*, page 367.

NOTICE

Papers to be presented at the next Annual Convention in Richmond, Va., May 5th–12th, should be sent to the respective Section Secretaries promptly.

M.-E. Chevreul. The Fiftieth Anniversary of His Death

By *Mary Elvira Weeks** and *Lyle O. Amberg*

On April 9, 1889, the life of the great French chemist Michel-Eugène Chevreul came to a peaceful close shortly before his one hundred and third birthday. For nearly eighty years he had contributed article after article to the scientific journals. Both his parents had lived past the age of ninety years (1), (2), and one of his works was dedicated "to the memory of Michel Chevreul and of Etinnette-Madeleine Bachelier, respectful homage from their son in recognition of the moral sense and good health they transmitted to him" (1).

Chevreul was born at Angers on August 31, 1786, and at the age of seven years he looked through the window, with childlike curiosity, to watch the guilotining of two young girls. In later life, however, his bright outlook was not marred by the dark scenes of his childhood (2). He received his early training at the Central School in Angers. At the age of seventeen years he went to Paris to study under the great pharmacist and chemist Nicolas-Louis Vauquelin, assistant to A.-F. de Fourcroy at the Collège de France, and three years later he took charge of the laboratory. His first scientific memoir (3), a chemical examination of some fossil bones, was published in 1806, and in the same year he assisted Vauquelin in analyzing some human hair (4).

Since Vauquelin was greatly interested in the purple vapor evolved when indigo is heated, he asked Chevreul to investigate it (5). Chevreul found that indigo purified by successive treatments with water, alcohol and hydrochloric acid gave off "a vapor of a superb purple, much more intense than that produced by an equal quantity of the same indigo when not purified; from which it follows that this phenomenon is produced by the indigo and not by foreign bodies to which it is united." He showed that this vapor is the indigo itself, most of which volatilizes without decomposition; that indigo can be purified by sublimation or by recrystallization; that pure indigo is purple and not blue; and that the intensity of the color increases as the molecules are brought closer together. He also demonstrated the presence of indigo in its white, reduced form in pastel, or woad. Four years later he published a paper on the preparation of natural indigo (5). He also examined Brazilwood and logwood (6) and discovered brazilin and hæmatoxylin.

In 1823 he published the results of eleven years of research on the hardness of soaps (7). He found that the sodium soap of a given fat is harder (less soluble in cold water) than the corresponding potassium soap but that the fat as well as the alkali

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