

The mother liquor was placed in a refrigerator and again solid material separated which partly liquefied when an attempt was made to collect it at room temperature. The solidifying point was determined and found to be 22.5°.

Myristic Aldehyde.	Found.	Recorded.
M. p.	22.5°	23° (12)
M. p. oxime	82.5–83.5°	82.5° (12)
M. p. semicarbazone	101.5°	100–101° (13) 106° (12)

This fraction corresponds to myristic aldehyde.

There are indications of other aldehydes present, especially those with a larger number of carbon atoms, but it was impossible to obtain derivatives pure enough to characterize the compounds.

CONCLUSION.

N-octylic, *n*-nonylic, *n*-decylic and *n*-myristic aldehydes have been isolated and identified and *n*-lauric aldehyde is indicated.

REFERENCES.

- (1) JOUR. A. PH. A., 18, 350 (1929).
- (2) *Bericht S. & Co.*, Oct. 1906, p. 64.
- (3) "Gildemeister und Hoffmann, Die ätherischen Öle, 3 Aufl. Bd. 1 (1928), p. 507.
- (4) Semmler, *Ber.*, 42, p. 1161 (1909).
- (5) *Bericht S. & Co.*, Apr. 1915, p. 48.
- (6) Wagner, "Die Aldehyde," p. 145 (1931).
- (7) Walbaum and Stephan, *Ber.*, 33, p. 2303 (1900); *Bericht S. & Co.*, Oct. 1900, p. 56.
- (8) *Bericht S. & Co.*, Oct. 1907, p. 154.
- (9) *Ibid.*, 1927, p. 178.
- (10) *Chem. and Drugg. Diary*, p. 261 (1925).
- (11) *Bericht S. & Co.*, 1904, p. 49.
- (12) Stephen, *J. Chem. Soc.*, 127, p. 1874 (1925).
- (13) *Bericht S. & Co.*, Apr. 1906, p. 71.

RUSSIAN ERGOT.

BY H. H. RUSBY.

No specific account of Russian ergot, cured as our Pharmacopœia directs, and preserved in its natural state, has come to my attention. All published information that I have seen has related to commercial supplies, which have been accurately described by Henning as "usually arriving in a damp and moldy condition."

More than a year ago, I entered into communication with the Russian department of agriculture for the procural of samples officially prepared and sent direct, so as to arrive in an unaltered state. I made it clear that my criticisms of Russian ergot had no relation to Russia or its products as such, but had been made wholly in the interest of improvement of the materia medica. Several years ago urged our food and drug authorities to secure, through our State Department operation with Russia in the investigation of this subject and in the case of the latter's product, but without result. The Committee of Revision took no steps, as a part of their research work, to ascertain the facts regarding this matter. Thus I, perforce, took it up myself.

In the spring of 1934 I received official assurance that during the coming harvest the desired samples would be prepared and sent to me, and in the Fall the following collections were received:

- No. 1. Collected at Verhovski, Central Russia District, Select Experiment Station, August 1934.
- No. 2. Collected at Gorkey Province, formerly Nijniy, Novgorod, Plant Protection Institute, August 14, 1934.
- No. 3. Collected at West Russia Minsk Agricultural Experiment Station, August 19, 1934.
- No. 4. Collected at West Russia (Belorussia), Minsk Agricultural Station, August 20, 1934.
- No. 5. Collected at Central Russia, Voronej Agricultural Experiment Station, August 1934.
- No. 6a. Collected at Ukraine, Kalirkov Province, from a barn in the survey District, August 1934.
- No. 6b. Obtained from a grain elevator in the same place.
- No. 0. Collected in Central Russia, Black Earth Province, Semilovski District, Moroneji Station for Plants, August 1934.

Later, a second shipment was received, containing the following samples:

- From East Siberia Select Center, Voronej District, September 8, 1934.
- From southeast Russia, Saratov Region.
- Two others, locality not specified.

The differences observed among these samples were of minor importance and insignificant, the important questions relating to their agreement with or disagreement from Spanish ergot, and the Russian ergot that has been known in the American market. The most important of these questions related to the color of the fractured surface. That of Spanish ergot is characteristically white. That required by our Pharmacopœia is "white, tinged with pink or gray" (see ergot monograph, published by the Revision Committee, September 1, 1934). The most careful examination of the official and authentic samples here considered fails to show any grains having a "pink" or any other than a white fracture! Since these samples represent all the important collecting districts of Russia, the conclusion is inevitable that normal Russian ergot exhibits only a white fracture.

This naturally raises a question as to why the Committee of Revision should have specified the pink fracture, irrespective of its source. This must be because the Committee has depended for its description on the color ordinarily presented by the Russian ergot that has been admitted to use in this country, and which has been pink or purplish. As a matter of fact, it is known to every one that practically all the Russian ergot that has been in use in the United States until recently has shown this purplish fracture and has therefore been at disagreement with the normal product, as now shown by the samples under consideration. This in turn must be due to the fact that these supplies have undergone a color change as a result of the "damp and moldy" conditions to which they have been subjected.

To verify this conclusion, I made a mixture of portions of all the samples, and threw them thoroughly in water and permitted them to lie in a warm place for a few days. When removed and examined, whereupon they were found to have the "pink" or purplish

We have, however, a somewhat more practical evidence of this fact. It is a fact that our food and drug officials, as a result of the famous ergot controversy of the past few years, have discontinued the admission of the damaged ergot with pink fracture referred to, so that, at the present time, we find the Russian ergot of our market of good quality and presenting the same white fracture and characteristic odor as that of the official samples here considered.

A very remarkable situation is thus presented. The Committee of Revision, basing its action on a knowledge of the adulterated article formerly common in our market, specifies the pink fracture of that product, but the food and drug officials correct their former practice, excluding the adulterated article, and by doing so, directly violate the present Pharmacopœia requirement! What can be done to harmonize the existing contradiction? Two alternatives are presented. The Pharmacopœia Committee may correct its description, or the food and drug officials may resume their former custom, in order to conform with the Pharmacopœia. The only other possible course would be to subject all sound Russian ergot to a process of soaking and fermentation, in order to develop the required pink color.

An interesting question is how the Russian ergot of commerce came to be changed from its natural state so as to acquire the purplish color. At present, this can only be conjectured, but it is my personal opinion that somewhere on its way from production to importation, it has been moistened in order to increase its weight, the resulting decomposition having then occurred.

Aside from the matter of fracture-color and odor, this official ergot shows little difference from the well-known sound product of Spain and Portugal. Indeed, there is no good reason why this difference in fracture-color should exist between individuals of the same plant species as grown in two countries. The grains have the same clear, bright outer surface and characteristic odor as the Spanish article. Externally, the color is not such a dark chocolate as that of the Spanish. It might, perhaps, be better described as of a dull black, ranging toward gray-black, and with a slightly reddish tinge when viewed in a strong light. Number 6 is almost black; Nos. 1 and 4 almost equally so; Nos. 2 and 3 almost as dark, and both show a little more of the reddish tinge mentioned. Numbers 5 and 0 show the grayish tinge mentioned.

In form, the grains do not differ greatly from the Spanish, although in general a little more slender and smaller. The following table shows the sizes:

No.	Average Length.	Thickness.
1	1.6 cm.	3 to 5 mm.
2	1.3 cm.	2 to 4 mm.
3	1.6 cm.	2.5 to 6 mm.
4	1.6 cm.	3 to 5 mm.
5	1.3 cm.	2 to 3 mm.
6	1.4 cm.	2.5 to 4 mm.
0	1.1 cm.	1.5 to 3 mm.

NOTE: Harry Taub, Assistant Professor in my Department, in collaboration with ham Taub, Assistant Professor in the Department of Chemistry, performed a series of assays on the fluidextracts of Russian ergot and Spanish ergot referred to in this article that there is practically no difference between the two ergots when the fluidextract a good quality crude drug. Their assays showed an average of 0.64 mg. of ergot-phonate per 100 cc. of fluidextract of Russian ergot and 0.65 mg. per 100 cc. of Spanish ergot.—H. H. R.

A very striking difference is found between the Spanish and normal Russian ergots after being powdered, the Russian powder being blackish, the Spanish light brown and with a strong pinkish tinge.

The following conclusions are clearly established by the evidence here given:

1. The normal fracture color of all ergot is white.
2. The purple fracture color that has been commonly seen in Russian ergot is the result of decomposition caused by exposure to dampness and resulting putridity.
3. The specification by the U. S. P. Revision Committee of pink color in the fracture of ergot is the result of the former prevalence in our drug market of such decomposed ergot.
4. At the present time, the Russian ergot in the American market is in general of sound quality and exhibits a white fracture color.
5. All reference to pink fracture should be eliminated from the U. S. P. description of ergot.
6. Whatever method of bio-assay may be adopted should be based on tests made with ergot of white fracture. Tests that have been made with the deteriorated ergot of pink fracture should be scrapped.

All the specimens of Russian ergot herein referred to are preserved in the museum of the New York College of Pharmacy, where they may be seen.

That portion of the same samples that has been caused to develop the purple fracture color by decomposition is also preserved at the same place.

A sample of Russian ergot, such as is now being sold in the New York market, of sound quality and exhibiting a white fracture, will also be found there.

Portions of all the above samples have been submitted and deposited with this paper.

To anyone who still retains enough interest in the cockscomb test to apply the same, samples of the fluidextract made from these sound Russian ergots and from similar sound Spanish ergot, will be supplied upon request.



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Note des Médicaments fournis à M^{lle} Duplessis

<i>M^{lle} M^{lle}</i>	<i>17</i>	<i>1 B^{te} Eau de Sedlitz</i>	<i>1</i>	<i>20</i>
	<i>20</i>	<i>Pomade aux courambes</i>	<i>"</i>	<i>60</i>
	<i>22</i>	<i>Syrup de Gommier 1 l.</i>	<i>1</i>	<i>20</i>
	<i>"</i>	<i>Mixt de Narbonne</i>	<i>"</i>	<i>70</i>
	<i>24</i>	<i>Sulfamide de Potassium</i>	<i>1</i>	<i>20</i>
<i>juillet</i>	<i>25</i>	<i>une B^{te} Eau de Boréges p^o boire</i>	<i>1</i>	<i>20</i>
<i>Oct</i>	<i>26</i>	<i>Cer. Sulfur</i>	<i>"</i>	<i>20</i>
	<i>28</i>	<i>une B^{te} Eau de Sedlitz</i>	<i>1</i>	<i>20</i>
	<i>"</i>	<i>Gommier Analogue</i>	<i>"</i>	<i>20</i>
<i>Jan</i>	<i>16</i>	<i>Alum. de Boréges</i>	<i>2</i>	<i>10</i>

A bill rendered by the Pharmacy of J. B. Caventou for "La Dame aux Camelias." Without giving the titles, we are assuming the items to be: A bottle of "Sedlitz water," Cucumber Pomade, Syrup of Acacia, Narbonne Mixture, Potassium Sulphate solution, a bottle of Sulphur Water (Boréges), Sulphur Cerate, a bottle of Sedlitz Water, Acacia, Spermaceti.