(11) J. C. A. St. James, *Bull. Pharm.*, 19 (1905), 342.
(12) H. C. Fueller, *Ibid.*, 21 (1907), 36.
(13) E. F. Cook, JOUR. A. PH. A., 9 (1920), 417.
(14) U. S. P. X Circ. Gen. Com., Vol. 5, Circ. 491, page 2454.

PURDUE UNIVERSITY SCHOOL OF PHARMACY,
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UNGUENTUM AQUÆ ROSÆ.*

BY J. LEON LASCOFF.

The chairman of Sub-Committee on Cerates and Ointments (of which I am a member) has designated me to prepare a report on Cold Cream, known officially in U. S. P. X as *Unguentum Aquæ Rosæ.*

My own observations on Unguentum Aquæ Rosæ are, that a change in the present formula is desirable, because of its tendency to rancidity and the tendency of borax in the present formula to interact with many substances with which the ointment is combined.

U. S. P. VIII devotes a paragraph to the latter; it reads: "When this Ointment is to be used as a vehicle for metallic salts, the Sodium Borate should be omitted."

Before entering into a discussion as to the merits or faults of the present formula, let us trace the history of this preparation. I find in "LaWall's 4000 Years of Pharmacy" the following:

"The most famous preparation handed down to us by Galen, and referred to in the medieval pharmacopœias as unguentum or ceratum refrigerans, Galeni, is the well-known Cold Cream or rose water ointment."

In "Quincy's Dispensatory," published in 1746, on page 300, I find a formula for *Unguentum Album* as follows:

"Take of oil of roses, 9 ounces; of ceruse, carefully washed in rose water and powdered, 3 ounces; of white wax, 2 ounces; when the wax is melted in the oil, sift in the ceruse, after it hath been well dried from its washing, first in common and then in rose water, so that together they may be made into an ointment, *s. a.*"

In U. S. P. I, published in 1820, on page 247, I find the following formula:

"Take of Oil of almonds	2 fluidounces
Spermaceti	½ ounce
White wax	1 drachm
Rose water	2 fluidounces"

and direction for preparation.

The same formula occurs in U. S. P. II and U. S. P. III. In U. S. P. IV there is a revision to the extent of proportions of the same ingredients.

In U. S. P. VIII, we have for the first time the introduction of Sodium Borate in the formula, with the alleged object of promoting saponification of the oils and waxes. The same reference is made in U. S. P. IX and in U. S. P. X.

* Section on Practical Pharmacy and Dispensing, A. PH. A., Toronto meeting, 1932.

In the foreign pharmacopœias the variation from our own formula, excepting in B. P., is distinguished by the absence of borax, and the slight modifications in the proportions of the other ingredients used.

The Italian Pharmacopœia 4th edition directs:

"Olio di mandorle dolci	80 parts
Cera bianca	10 parts
Cetina	10 parts."

The German Pharmacopœia 5th and 6th editions, direct:

"Weissen wachs	7 Teilen
Walrat	8 Teilen
Mandelöl	60 Teilen
Wasser	25 Teilen
Rosen öl	0.1 Teilen."

The French Codex directs:

"Cire blanche	100 Gm.
Huile d'amande	400 Gm.
Eau distilée de rose	250 Gm."

Omitting the carmine from their Ceratum Rosatum, I find the use of a paraffin and paraffin oil in substitution for the Almond Oil in the following formula:

"Cire blanche	100 Gm.
Vaseline officinale	100 Gm.
Huile de vaseline	4 Gm.
Essence de rose	gtts XX."

The Russian Pharmacopœia includes Unguentum Leniens:

"White wax	3 parts
Spermaceti	6 parts
Oil of sweet almond	24 parts
Glycerin	4 parts"

In the Danish, Norwegian and Swedish pharmacopœias this preparation is designated "Unguentum Cetacei," with various proportions by weight of spermaceti, white wax, rose water and almond oil. This concludes the history and the various official formulas of "Cold Cream."

Further research among the unofficial sources offers a profusion of formulas for cold cream, that far exceeds the vast number of authorities consulted in this connection. The variations are mainly in the nature of proportions of ingredients used, as compared with the different official domestic and foreign pharmacopœias. Many use several different perfumes.

These can be readily discounted as purely an esthetic or sensuous refinement and, therefore, need not be considered in a work such as this committee is doing.

Others prefer omission of the spermaceti. I find in the "Extra Pharmacopœia" by Martindale and Westcott, Vol. 1, of their 17th Edition, printed in 1920, on page 600, the following comment:

E. W. Lucas finds it best to omit spermaceti from this ointment. His form is:

"White beeswax	18.0
Almond oil	61.0
Borax	1.0
Rose water	20.0
Otto of roses	0.1
	B.M.J. ii/13, 1013."

This has been adopted officially.

A number of formulas were found, directing the use of castor oil, cocoa butter, glycerin, lanolin, glyconine, tincture of benzoin or balsam peru. In each one of these instances the above ingredients represented a single departure by merely eliminating one of the ingredients of the various official pharmacopœias.

It becomes quite evident, that these substitutions represent merely individual personal preferences, or have suggested themselves for a specific use in the mind of the originator and, therefore, do not merit the serious consideration of this committee, always bearing in mind the scope of its activity.

I have personally conducted a number of experiments in this connection in my own laboratory. The conditions of these experiments included elimination of one or two ingredients, as indicated in U. S. P. X; several modifications of proportion of ingredients used, preparations made with an entirely new number of ingredients. The results of this experimentation, eliminating the unsuccessful preparations, are a matter of record with the chairman of this Committee.

I will briefly quote a few excerpts from our correspondence and shall then proceed to a résumé of my conclusions reached in this study.

In a report rendered to Dr. Leonard A. Seltzer on Dec. 1, 1931, I submitted four formulas for Unguentum Aquæ Rosæ as follows:

Formula A.		Formula B.	
Spermaceti	125 Gm.	Spermaceti	80 Gm.
White wax	120 Gm.	White wax	70 Gm.
Expressed oil of almond	560 Gm.	Expressed oil of almond	600 Gm.
Sodium borate, in fine powder	5 Gm.	Water	250 Gm.
Water	190 Gm.	Oil of rose	0.5 cc.
Oil of rose	0.5 cc.		
Formula C.		**Formula D.**	
Spermaceti	165 Gm.	Spermaceti	120 Gm.
White wax	85 Gm.	White wax	146 Gm.
Expressed oil of almond	640 Gm.	Liquid petrolatum	533 Gm.
Glycerin	110 Gm.	Water	190 Gm.
		Sodium borate, in fine powder	10 Gm.
		Oil of rose	0.5 cc.

Leonard A. Seltzer, in acknowledging receipt of these four formulas and sample submitted, raised an objection to the use in Formula C of glycerin. The basis of this objection, in which I concur is the sensitiveness of some skins to glycerin.

In Formula D there was a difference in opinion as to the consistency of this sample. To overcome this objection and determine the tendency to rancidity of Formula A, and again injecting into this discussion the desirability of omitting the sodium borate, as indicated in Formula B, this became the nucleus for further study of a suitable formula.

As reported to Dr. Seltzer on December 11th, I find that the substitution of Oil of Rose for Rose Water in Formula A increases the length of time this ointment will keep without becoming rancid.

Concerning Formula B—this would remove the objection of interaction with metallic salts, when cold cream is used as a vehicle.

Increasing the proportion of the spermaceti in Formula D, gives an ointment of a firmer consistency and removes the rancidity objection.

Further experimentation, as evidenced in a report made on December 18th, produced a formula that is in all respects the same as U. S. P. X except the use of Liquid Petrolatum in place of the Expressed Oil of Almond, and Oil of Rose superseding Rose Water. This would remove the complaint of rancidity.

A series of personal consultations with several eminent dermatologists brought out the fact that at times they prefer a cold cream with a mineral oil base, with prescriptions No. 1 and No. 2 as examples taken from our files as follows:

℞ 827,137.	
Acid boric	3.0
Unguentum Aquæ Rosæ (Mineralis) *q. s. ad*	100.0
Sig.: Use as cold cream.	

℞ 805,127.	
Phenol	0.6
Resorcin	0.2
Glycerin	10.0
Cold cream (Daggett & Ramsdell)	50.0
Sig.: Apply night and morning.	

The chairman of this Committee advises, in view of the fact that in order to change to a mineral oil base the precedent already established, it would require us to submit the formula to the American Dermatological Association, and further, in view of the previous decision on this question, it might be well to limit our discussions on vegetable oils. This, in my opinion, should lead us to the adoption of Formula A.

UNGUENTUM AQUÆ ROSÆ.

Formula (A).

Spermaceti	125 Gm.
White wax	120 Gm.
Expressed oil of almond	560 Gm.
Sodium borate, in fine powder	5 Gm.
Water	190 Gm.
Oil of rose	0.5 cc.

Reduce the spermaceti and the white wax to fine pieces and melt them on a water-bath; add the expressed oil of almond, and stir, continuing the heat until the mixture is uniformly melted. Dissolve the sodium borate in the water, warmed to the temperature of the melted wax and fat, and add the warm solution gradually to the melted mixture, stirring it rapidly and continuously until it congeals and becomes of uniform consistence. *Lastly, incorporate the oil of rose.*

The substitution of Oil of Rose for Rose Water and Distilled Water removes some of its tendency to rancidity and prevents the evaporation of the rose odor.

Referring to my series of consultations with the dermatologists previously mentioned it would be well for us to take an example from the "French Codex" and *also* have a formula for a cold cream with a paraffin oil base, as follows:

Spermaceti	120.0 Gm.
White wax	146.0 Gm.
Liquid petrolatum	533.0 Gm.
Water	190.0 Gm.
Sodium borate, in fine powder	10.0 Gm.
Oil of rose	0.5 cc.

To distinguish it from the vegetable oil cold cream, name it "Unguentum Leniens Petrolati."

ASSESSING COSTS AGAINST THE PRESCRIPTION DEPARTMENT.*

BY WROE ALDERSON.[1]

The research into the costs of distribution undertaken by the Department of Commerce is based on the principle that prices should be set to include costs and a normal profit on every product. Recent months have given many examples of the evils of price competition. These conditions have been as pronounced in the drug trade as in any other. Remedies have been sought in a number of directions and the retail drug trade has been in the forefront of the general movement for price stabilization. Whatever machinery a trade may adopt for banning destructive price policies the necessity for developing a scientific basis for prices will remain. In other words, cost research must always go hand in hand with any great action concerning unfair price practices.

The single purpose of the National Drug Store Survey is to determine how much it costs the retailer to handle each product he sells. Commodities behave differently in the retail store. Some move through the establishment very quickly releasing space and invested funds to be used again. Others lie on the shelves for months at a time and tie up capital investment. Some commodities sell almost automatically since the customer calls for them by name and accepts them without sales talk concerning their qualities or uses. Other commodities appearing upon the market for the first time, being presented to the customer without the benefit of a well-known name, or presenting a wide range of color, style or design for customer selection, require several minutes for each sale.

In the field work of the drug store survey all of these essential differences in the behavior of commodities were measured and the data will be used in arriving at operating costs for each product. These costs may be very readily calculated on all package commodities. The case is somewhat different when it comes to determining the cost of filling the several types of prescriptions filled by the pharmacist. A number of differences appear in this department which are happily absent from the consideration of the cost of merchandising packaged products. Pharmacists, however, have always been conscious of the pricing problem in the prescription department. There has never been a suggested resale price as a convenient guide for use in this department. The very fact that the pharmacist has been forced to do his own pricing in this field has made him do some thinking on the subject.

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* Section on Commercial Interests, A. PH. A., Toronto meeting, 1932.

[1] Director, National Drug Store Survey.