ABSORPTION BASES

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INTRODUCTION

During the past few years great interest has been shown in absorption bases, so-called because as ointment or cream bases they are capable of absorbing a large quantity of water. The writer has collected references to this class of preparations appearing in literature over a period of the last ten years. These references are so numerous and are found under so many headings that the bibliography is by no means complete. It is however useful as a reference list, and as work is progressing rapidly in this field it will need continuous revision to be kept up to date.

In searching through the literature the following partial list of titles were found, illustrating the various headings under which it was necessary to look: absorption bases, ointments, ointment bases, salves, cosmetic creams, cold balms, cleansing creams, bases, emulsifiers, skin creams, water-combining bases, wool fat, or as Lewkowitsch[1] prefers to call it, wool-wax. The latter leads the field in the matter of times and amount used.

It perhaps would be well to give a brief history of the ointment bases used through the centuries.[2] Up to the middle

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1 J. Lewkowitsch, Chemical Technology and Analysis of Oils, Fats and Waxes. 5th ed., (1914).
2 E. Unna, The Druggist Circular 56:399.

of the nineteenth century fats of animals and plants were used for the preparation of ointments. Lard was preferred. In the middle of the seventeenth century two mineral bases were placed on the market - petrolatum and paraffin - but it was not until the latter part of the nineteenth century that they found their way into medicine. In 1885 lanolin was placed on the market and it was the first step toward the goal of getting an ointment base which would be miscible with water - an absorption base. The chemical composition of wool-wax is not fully known.[3] "Wool wax evidently consists of a very complex misture of esters and free alcohols: amongst the alcohols, cholesteral and isocholesteral occur to a large extent." Lifschuetz found that the water absorbing property of wool fat was due to a group of free alcohols - iso- and oxycholesterin which are present to about 0.5% in wool fat. With this water absorbing property of the iso- and oxycholesterin group in mind, eucerin wax was prepared which consists of 5% of iso- and oxycholesterin and 95% of petrolatum.[4] During the past few years many bases similar in composition have been placed on the market.

The author has found by reading and also to a certain extent by experimentation that cetyl alcohol is the most

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3 Lewkowitsch,
4 Unna, 56:399.

satisfactory base when a large quantity of water is to be incorporated. The use of cetyl alcohol has been known for many years, in 1899 a German authority claimed useful results on the skin from its use, but not until recently has it become so popular.[5] Cetyl alcohol, $C_{16}H_{33}OH$ is a tasteless, odorless, waxy, scaly powder, melting over a range of from 30°C to 50°C. It is obtained from spermaceti. It is more often prepared commercially from hydorgenated vegetable oils, principally coconut oil. Clinical tests show that it is valuable for chapped skin, eczematous skin, and other skin troubles. It produces on the skin a peculiar soft velvety feeling.

Cetyl alcohol is official in the Pharmacopoea Helvetica Quinta, with cetanolum as a synonym. It enters into the preparation of eight official ointments, one directly and seven indirectly.

Unguentum cetylicum[6]

Cetyl alcohol	4T
Adeps Lanae	10T
White Petrolatum	86T

This ointment enters into seven official ointments:

Unguentum Cetylicum Cum Aqua	60%
Unguentum Argenti Colloidalis	70%
Unquentum Hydrargyri Album	40%
Unquentum Hydrargyri Oxydati Flavi	20%
Unquentum Hydrargyri Plumbi Subacetici	70%
Unquentum Hydrargyri Plumbi Tannici	85%
Unquentum Hydrargyri Refrigerans	50%

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5 M. J. De Navarre, American Perfumer 28:295.
6 Pharmacopoea Helvetica Quinta ed. (1933).

Another base which is enjoying wide popularity and which in the author's opinion ranks second to cetyl alcohol is ceresine. It is a mineral wax obtained from Ozokerite that has been bleached without distillation.

Other substances used in absorption bases include cholesterin, isocholesterin, oxycholesterin, lecithin and triethanolamine.

Making use of the Drug and Cosmetic catalogue as a directory for supplies of raw materials as well as compounded preparations used in absorption bases, various manufacturing companies were written to and asked for samples, prices and formulas. Below is a tabulation of the replies to these letters:

Product	Company	Address	Price	Formula
Almecerin	Alcefa Laboratories	115 Broad St. New York, N.Y.	$ .90 lb.	+
Almerine	Norda	601 W. 26th St. New York, N.Y.	16.00 lb.	-
Beeswax	Will & Bauer Candle Co., Inc.	Syracuse, N.Y.	.31 lb.	-
Boerocerin	R.W. Greef & Co., Inc.	10 E 40th St. New York, N.Y.	7.00 lb.	-
	Alcefa Laboratories	115 Broad St. New York, N.Y.	-	-

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7 E. N. Allott, Richters Organic Chemistry, 3rd ed. (1934).

Product	Company	Address	Price	Formula
Carnauba Was (Yellow)	Will & Bauer Candle Co., Inc.	Syracuse, N.Y.	$ .48 lb.	-
(Brown)	" " "	" "	.41 lb.	-
Casein	Land O'Lakes	Minneapolis, Minn.	.15 lb.	-
Cefatin	Alcefa Laboratories	115 Broad St. New York, N.Y.	.90 lb.	*
Ceresine Wax	Will & Bauer Candle Co.,Inc.	Syracuse, N.Y.	.36 lb.	-
	Smith & Nichols	121 Marden Lane New York, N.Y. (white imported)	.29 lb.	-
		(yellow ")	.28 lb.	-
		(white domestic)	.13½ lb.	-
		(yellow ")	.12½ lb.	-
	Walter H. Jelly & Co., Inc.	412-420 N. Western Ave. Chicago, Ill.	(Domestic) .12½ lb.	-
	Orbis Products Corp.	215 Pearl St. New York, N.Y.	-	-
Cetyl Alcohol	R.F. Revson Co.	91-7th Ave. New York, N.Y. (pure)	2.15 lb.	-
		(technical)	1.25 lb.	-
	Delawanna Inc.	80-5th Ave. New York, N.Y.	2.15 lb.	-
	The Werner & Smith Co.	2191 W. 110th St. Cleveland, Ohio	[illegible] lb.	-
	Glogan & Co.	538 S. Clark St. Chicago, Ill.	3.00 lb.	-
	Alcefa Laboratories	115 Broad St. New York, N.Y.	-	-

Product	Company	Address	Price	Formula
Cholesterin	The Wilson Laboratories	4221 S. Western Ave., Blvd. Chicago, Ill.	$11.00 lb.	-
Cholesterine	Alcefa Laboratories	115 Broad St. New York, N.Y.	14.00 lb.	-
Cholesterol	Pfanstiehl Chemical Co.	Waukegan, Ill.	1.00-10 grams	-
Cremolin	General Drug. Co.	170 Varick St. New York, N.Y.	1.35 lb.	+
Emulsifier (157)	Goldschmidt Corp.	70 Pine St. New York, N.Y.	.70-11 lb.	+
Falba	Pfaltz & Bauer, Inc.	300 Pearl St. New York, N.Y.	1.50 lb.	+
Isco-Aquaphil	Innis, Sperden & Co.	117 Liberty St. New York, N.Y.	-	+
Iso-Beeswax	Harrison Refining Co., Inc.	350 Madison Ave. New York, N.Y.	.27 lb.	+
Iso-Cholesterol	Alcefa Laboratories	115 Broad St. New York, N.Y.	1.00 lb.	+
Lanum	Merck & Co.	161 - 6th St. New York, N.Y.	-	-
Lecithin	Difco Laboratories	Detroit, Mich.	16.00 lb.	-
	Pfanstiehl Chemical Co.	Waukegan, Ill.	.025 Gm.	-
	The Wilson Laboratories	4221 S. Western Ave., Boulevard	6.50 lb.	-
Palmal	Du Pont	Wilmington, Del.	-	-
Protegin	Goldschmidt Corp.	70 Pine St. New York, N.Y.	.12 lb.	-

Product	Company	Address	Price	Formula
Spermaceti	Will & Bauer Candle Co., Inc.	Syracuse, N.Y.	$ .23 lb.	-
Tegacid	Goldschmidt Corp.	70 Pine St. New York, N.Y.	.08 lb.	*
Tegin	Goldschmidt Corp.	70 Pine St. New York, N.Y.	.06 lb.	-
Xerol	Fries Brothers	92 Reade St. New York, N.Y.	.60 lb.	*

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