

# ABSTRACTS

## Soaps

Edited by M. L. SHEELY

**Superfatted Soaps.** *Soap Gazette and Perfumer*, Vol. 36, No. 2, Page 7, February, 1933.—The superfatting agent in soaps should be as near like the natural coating of the skin as possible. Certain fats and waxes, mainly wool fat, rump gland fat, whale shot, whale shot oil, bottle-nose whale oil, beeswax, Chinese insect wax, psylla wax, were found to be similar to skin fat. These waxes consist mainly of an ester composed of an aliphatic, nearly-saturated alcohol having 16 to 26 atoms of carbon and bound to an acid having the same number of carbon atoms.

Lanolin, the superfatting agent from wool fat, has been used for some time. Only a very small quantity can be used alone in soap, however, as its presence renders the soap soft. A much larger quantity can be introduced into soap if Lanolin is combined with waxes. One suitable mixture which will bind as much as 27% of water consists of wool fat, 10 parts by weight; whale shot, 5 parts; and whale shot oil, and/or bottle-nose oil, 7 parts. It is also possible to employ vegetable waxes such as palm wax or curcas-wax.

**Evaluation of Lathering, Wetting, Washing and Cleansing Agents.** *Chemical Abstracts*, Vol. 27, No. 1, Page 203, January 10, 1933.—Hetzer. *Seifensieder Ztg.* 59, 637-9, 653-5, 669-71 (1932).—The most important determination in the evaluation of soaps, etc., is the percentage of fatty acids, but it is not a criterion for utility of the many new preparations in the textile industry; H. proposes the lathering power and the stability of the lather as a guide for evaluation. H. shakes a diluted soap solution (0.117% fatty acids) in a 100 cc. cylinder in a given way at 20°, 50° or 70° and takes a reading of the liquid level every minute up to 10 minutes. His experimental results with palm-kernel and hydrogenated oil soaps indicate constant values, but tallow soaps are very sensitive toward air, contact with which diminishes the lather in erratic ways.

**Anti-Oxygens in Fats and Soaps.** *Perfumery and Essential Oil Record*, Vol. 24, No. 1, Page 31, January, 1933.—Since our notes on this subject in February and March last year, a considerable number of new substances, chiefly organic, have been recommended and patented for incorporation in fats and soaps with the object of preventing or retarding oxidation and consequent developments of rancidity. Reference was also made in February last to the probable presence in natural oils and fats of certain substances which retard oxidation and may be described as natural "antioxygens," and further, to some preliminary work on this subject by Prof. Hilditch and J. J. Sleightholme at Liverpool University. Prof. Hilditch and another of his students have now published (*Journ. Soc. Chem. Ind.*, 1932, T. 411-4) the results of further work which, though it does not throw any additional light on the nature of natural antioxygens, is considered possibly to have technical as well as theoretical interest. It is shown that the natural antioxygens present in olive and linseed oils can be largely removed from the oils by boiling with water, being apparently decomposed or oxidized by the treatment, since the material recovered from the aqueous extracts has no value as an antioxygen. It is also found that an olive oil from which the natural antioxygen has been removed, can be brought to about the same state of resistance to oxidation by the addition of 0.03% of quinol.

Incidentally it has been found that an oil extracted from Plate linseed by light petroleum has much less resistance to oxidation than an expressed Plate linseed oil, though whether this has any significance with regard to method of producing the oil is not stated.

M. L. SHEELEY.

**New Observations in Laundrying.** *Chemical Abstracts*, Vol. 27, No. 3, Page 618, February 10, 1933.—M. MUNCH. *Seifensieder-Ztg.* 59, 733-7 (1932).—Chemical analysis of a washing compound is insufficient for its evaluation, because physical factors enter the problem: wetting ability as determined by the "drop number" for surface tension; emulsifying power, for which there is no quantitative method; absorption capacity linked with lather formation; preservation of the fiber as expressed by tensile strength, etc.; color as expressed by whiteness. The greatest cleansing occurs at pH 10.7 (0.01%  $\text{Na}_2\text{CO}_3$  = 10.2 and 0.1%  $\text{Na}_2\text{CO}_3$  = 10.8 pH) and is aided by  $\text{Na}_2\text{CO}_3$ ,  $\text{Na}_3\text{PO}_4$  and NaOH in the order named; stability toward metal salts and toward acids as exemplified by the stabilizing action of sulfonated fatty alcohols and "Igepone"-like substances. 0.03% "Neopol" in the suds prevents a flocculent precipitate even on boiling.

P. ESCHER.

**Cold Process of Soap Making.** *The Perfumery and Essential Oil Record*, Vol. XXIII, No. 11, Page 363, October 25, 1932.—One of the latest developments of the "cold process" of soap-making is that embodied in the patent of Schuck (U. S. P., 1,831,610). This patent aims at rapid saponification, and the elimination of any drying process, the soap, as made, being sufficiently dry to be milled for toilet purposes. In the process claimed, the fatty matter is heated to 100-150° F., according to its nature, the amount of caustic soda theoretically requisite for its saponification is determined, and sufficient water added to the fat to dissolve this amount of soda, the caustic soda: water ratio not being less than 1. The calculated quantity of soda is then added, and the mixture agitated until it begins to thicken, when it is run off into a tank in which spontaneous heating takes place, the temperature rising to 300-320° F. in about 8-10 minutes. After standing for 25-30 minutes, saponification is claimed to be complete, and the soap is run off on to cooling rollers to solidify, when it may be immediately milled and converted into toilet soap.

**Purifying Glycerine Solutions.** *Soap*, Vol. VIII, No. 11, Page 67, November, 1932.—Glycerine contains impurities including lower members of the fatty acid series, vegetable mucilage and albuminoids, sodium chloride, etc. Treatment with calcium or barium hydrate and aluminum sulphate removes fatty acids in the form of insoluble soap, and flocculates organic impurities.

The acid is first removed with the hydrate and then made alkaline. Aluminum sulphate is added until no further precipitation occurs. Final purification is accomplished by adding barium hydrate to remove the sulphates.

**Sperm Oil and Its Products as Soaps and Detergents.** *Perfumery and Essential Oil Record*, Vol. 24, No. 1, Page 30, January, 1933.—In British patent 19,912 (1931) claim was made for the production of soap from sperm oils by first completely hydrogenating them, and then saponifying the resultant oil with solid alkali—soda or potash—in a closed autoclave at 250-280° C. In this way the large amount of wax alcohols—about 40% in sperm oil—hitherto regarded as rendering the sperm oil quite unsuitable for soap-making, is eliminated by an ingenious use of the well-known Buisine analytical process, in which wax alcohols are converted into soap of the corresponding fatty acids.

There have also been placed on the market during the last year or two, as waxes, the alcohols (cetyl, oleyl, etc.), or hydrogenated alcohols, separated from sperm oils and, as detergents, the sulphonated alcohols. Now there has been published (British Patent 382,516) a patent which claims the use of the lower fatty acids ( $\text{C}_{12}$ - $\text{C}_{18}$ ) of the oleic series, which constitute about 33% of the fatty acids of sperm oil, and may be obtained therefrom by fractional distillation, for the production of potash soaps giving clear, stable aqueous solutions, and therefore specially suitable for the manufacture of liquid soaps.

## PATENTS

**Colorimetric determination of glycerol in glycerol soaps.** J. J. DINGEMANS. *Chem. Weekblad* 29, 696-8 (1932).—Glycerol can be colorimetrically titrated in soaps by means of the aldehyde reaction with Schiff's reagent. Sugars do not interfere. Dextrin and alc. should be eliminated, the former by pptn. with hot alc. and the latter by evapn. Honey and formaldehyde should be absent.

ALBERT L. HENNE.

**Soap composition.** George G. Frelinghuysen (to P. Ballantine & Sons). U. S. 1,882,279, Oct. 11. After sapon. of soap-forming materials, diastase is mixed with the product at a lower temp. (suitably below 60°) in order to produce a soap with starch-converting properties.

**Apparatus for making soapsuds [suitable for use in washing].** Philip C. Doyle (to Standard Oil Co. of Ohio). U. S. 1,882,786, Oct. 18. Structural features.