AMERICAN OIL CHEMISTS' SOCIETY

Notes and Correspondence

Standard Analytical Samples

By A. W. PUTLAND, *Pres., A. O. C. S.*

IN January *Soap,* there is inaugurated a new Section which will be the official source of information relating to the Soap and Soap By-Product Section of the *American Oil Chemists' Society,* which Section was organized at our recent fall meeting in New York. The organization of this Section resulted from demands from various sources for an organization of soap chemists. While the Section is very young, plans have already been laid under the able chairmanship of A. K. Church for a very ambitious program. Through the kindness of Procter & Gamble Company, and Lever Brothers Company, respectively, three hundred pounds of soap and a drum of crude glycerin have been donated, both of which will be distributed for cooperative check analyses. This in itself is a very creditable undertaking; should result in closer agreement between different laboratories and will be reflected in dealings between buyers and sellers.

It has been recommended by active members of the Soap Section that the Society certify laboratories making commercial analyses as to their integrity and capability, to analyze Soap, Glycerin, etc., in the same manner as we now certify laboratories in the analyses of oil, meal, seed, and other products. This recommendation is now being considered by the Referee Board. It is hoped that in the very near future a standard detergency test will be recommended for adoption by the committee now working on this problem. A standard test has been long needed by the industry for determining the relative detergency of Soaps.

In addition to the standard methods of analysis of Soaps and Soap Powders adopted by the Society some few years ago, it is my belief that in the near future the Soap Section will develop standard methods of analysis of Glycerin, Fatty Acids, Pitch and the other Soap by-products and intermediates. I have every reason to believe that what the American Oil Chemists' Society has been and is to the oil industry, the Soap Section will be to the soap industry. The Soap Section is not a closed corporation, and we cordially and earnestly invite those who are interested in the soap industry to become actively identified with the soap chemists and to cooperate in an effort to solve the many problems confronting the Section.

The Work of the Soap Section

By A. K. CHURCH, *Chairman*

A FEW words about the recently organized Soap Section of the American Oil Chemists' Society—look over the Soap Section Committee as thus far constituted: R. W. Bailey, Stillwell & Gladding, Inc.; A. K. Church, Chief Chemist, Lever Bros. Co., (Chairman, Soap Section); C. J. Gundle, Works Chemist, Fels & Co.; L. F. Hoyt, Mgr. Research Dept., Larkin Co., Inc.; M. H. Ittner, Chief Chemist, Colgate & Company; H. J. Morrison, Chem. Div., The Procter & Gamble Co.; W. A. Peterson, Chief Chemist, Kirkman & Son (Sec. Soap Section); W. D. Richardson, Chief Chemist, Swift & Company; M. L. Sheely, Chief Chemist, Armour Soap Works; H. P. Trevithick, Chief Chemist, N. Y. Produce Exchange, R. B. Trusler, Industrial Fellow, Mellon Institute.

Every one of these men has made a sacrifice in consenting to serve, for they are all fully occupied otherwise. Glance at the names of the companies represented. These concerns do not encourage their staffs to undertake outside work unless the benefit seems evident.

The work contemplated by the Soap Section Committee at this time is the preparation of a standard sample of soap and a standard sample of crude glycerin so that every chemist responsible for the analysis of soap and/or of glycerin may have available a standard sample, the analysis of which is definitely known. With such a sample for reference, each chemist will be able to check the accuracy of his own work—each laboratory will have a sounder basis for belief in its ability to check with other laboratories than is at present the case. Is there a single soap chemist, glycerin chemist, chemist in any commercial laboratory doing referee work in soap or glycerin, not interested? Or any executive employing chemists, who would not think it well worth while to be assured that his laboratory safely checks with other laboratories?

On behalf of the American Oil Chemists' Society, its Soap Section invites all soap and glycerin chemists and/or their companies to participate in the work we shall undertake in connection with the soap and glycerin samples. Application blanks for membership in the A. O. C. S. may be obtained from Mr. J. C. P. Helm, Sec. A. O. C. S., 705 Tchoupitoulas St, New Orleans, La.; or from W. A. Peterson, Sec. Soap Section, A. O. C. S., c/o Kirkman & Son, Bridge and Water Sts., Brooklyn, N. Y.

The Bureau of Standards has issued as Research Paper No. 31, a reprint from Bureau of Standards Journal of Research, Nov., 1928, a paper entitled "Effect of Temperature Change on the Color of Red and Yellow Lovibond Glasses" by Dean B. Judd, Associate Scientist, Bureau of Standards. The author's abstract follows:—"The spectral transmission at 12 wave lengths in the visible spectrum of two Lovibond glasses (35Y and 7.2R) has been carefully determined at 15°C. and at 40°C. From these spectral transmission data the color changes corresponding to temperature interval of 25°C. have been computed. It was found, both for 35Y alone and for the 35Y 7.2R combination, that an increase of 25°C. is the practical colorimetric equivalent of adding 0.2 in Lovibond red units. This difference is almost negligible in the color grading of cottonseed oil. Preliminary work on two samples of cottonseed oil indicates that the oil changes in color with change in temperature even less than the glasses do. If all oils behave like these two samples, only extreme variations (more than 15°C.) in temperature need be taken into account in color grading cottonseed oil with Lovibond glasses."

This paper may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. The price is five cents.

Determining Fish-Oils Unsaponifiable

By WALLACE H. DICKHART

Recently the writer was required to analyze a number of fish oil samples for unsaponifiable matter employing the U. S. P.* The first few samples formed an emulsion which was difficult to break. In one instance it was necessary to discard the emulsified sample and repeat the test.

This led to an investigation of the source of the trouble. After some study it was decided to be due to faulty technique and the emulsion could be avoided, if a certain routine was followed which routine the writer would like to suggest to those who are interested in determining the unsaponifiable matter in fish oils such as cod liver, shark, whale, menhaden, etc.

Method: Weight 5 grams of fish oil into a 100cc flask, add 5cc of a 50 percent KOH (potassium hydrate) solution and then 50cc of 95 percent alcohol, boil under a reflux condenser for one hour or until the oil is completely saponified. Remove the reflux condenser and allow the alcohol to evaporate until the soap is dry. Care must be taken not to burn the soap. Dissolve the soap in 50cc of hot distilled water making sure there are no lumps present and the soap is a perfectly clear solution. Transfer the clear soap solution with 50cc of boiling distilled water into a 250cc glass stoppered tower which has had about 5cc of hot water previously placed in it, so that the soap solution does not stick to the bottom. The flask is then washed out with two portions of 5cc of 95 percent alcohol and the alcohol added to the soap in the tower. Mix the soap solution by slowly rotating the tower and cool by placing the tower either in ice water or under the cold water tap. When the soap solution is perfectly cold add 50cc of ether, shake very lightly and allow to stand. At this time 40cc of ether might settle out instead of 50cc. If there is not a break add 10cc of 95 percent alcohol. Do not shake. Siphon over the ether solution into a separatory funnel, add another 50cc of ether shake vigorously and allow to stand. If there is not a break add 1cc of cold distilled water, slowly rotate the tower and let it stand for a few minutes. Then add 2cc of 95 percent alcohol; do not shake. Siphon over the ether and again add two separate portions of 25cc each of ether to the soap solution, shake and permit to settle, repeating the process. Wash the ether solution in the separatory funnel with about 50cc of cold distilled water by rotating the mixture slowly so as not to form an emulsion. Continue the washing seven or eight times, then wash until the water shows no red color with phenolphthalein. Transfer the ether solution to a weighted beaker, allow the ether to evaporate to dryness on a steam bath, dry in an oven at 105° C for 15 minutes, cool and weigh, repeating until weight is constant.

*Tenth revision of the United States Pharmacopoeia.

The Norwegian whaling industry, which produced only 51,400 barrels of oil, valued at 3,100,000 crowns, in 1906, reached a total production of 704,000 barrels, worth 60,000,000 crowns, in 1927.