pane, butane, etc., offer us a great world of possibilities. The newer methods of hydrogenation, condensation, sulfonations and a host of other chemical procedures, coupled with increasingly better tools and control instruments, definitely point to one thing in this large field and that is—continued, definite progress.

Truly—

"The old order changeth,
Yielding place to new."

REPORT OF THE SOAP ANALYSIS COMMITTEE 1937

A MEETING of the Committee was held October 13, 1937, at which the results of the current year's work were reviewed. This report covers the details of these studies including the recommendations and conclusions of the Committee.

During the year the Committee has been engaged in a further study of screen analysis and methods for the determination of combined potassium and sodium oxides in soap.

SCREEN DETERMINATIONS

Two tentative screen test methods have already been adopted by the Society, namely, the hand shake test and Ro-Tap method. Inasmuch as our previous collaborative studies on these methods only included ground soaps, it was decided to make further studies of the two methods as applied to blown or spray-dried soaps. The cooperative sample was a spray-dried soap powder which was tested by the two methods, namely, the tentative hand screening and Ro-Tap methods, the latter revised so that a 100 g. sample was used in the test instead of an 8 oz. sample as prescribed in the method. The A.O.C.S. tentative methods for Screen Determinations appear in the January 1936 issue of OIL AND SOAP. These modified to conform to the committee's present recommendations are given herewith:

HAND SCREENING METHOD

Screens Used:

U. S. Standard, as given in Federal Specifications RR-S-366, "Sieves, Standard, Testing"—8 in. screens being employed.

Procedure:

Nest the No. 12, No. 40 and No. 100 sieves (U. S. Standard or corresponding Tyler sieves) making sure that they are clean and dry and transfer 100 g. (± 0.1 g.) of the well-mixed sample, without previous drying, to the top sieve (No. 12). Shake the sieves simultaneously, occasionally tapping the edge of the bottom sieve on a large rubber stopper or a flat, thick piece of rubber. When the portion of soap passing through the bottom sieve is less than 0.1 g. per minute of shaking (this can be well judged by sifting into a large, dark colored pan), remove the top sieve separately over a clean, dark pan, to be certain that no more of the residue will pass through. Place any material passing through the No. 12 sieve, on the No. 40 sieve, using a small camel's hair brush to remove the material from the catch-pan. Follow the same procedure of sifting for the No. 40 and No. 100 sieves as used for the No. 12 sieves.

NOTE: At least duplicate determinations should be made and averages taken.

Calculations:

1—Calculate the weight of the residue on the No. 12 sieve to percentage retained.

2—Add the weight of the residue retained on the No. 12 sieve to the weight of the residue retained on the No. 40 sieve and calculate the sum to percentage retained on the No. 40 sieve.

3—Add the weight of the residues retained on the No. 12 and No. 40 sieves to the weight retained on the No. 100 sieve and calculate the sum to percentage retained on the No. 100 sieve.

RO-TAP METHOD

Screens Used:

U. S. Standard, as given in Federal Specifications RR-S-366—"Sieves, Standard, Testing"—8 in. screens being employed.

Procedure:

Nest the No. 12, No. 40 and No. 100 sieves, (U. S. Standard or corresponding Tyler Sieves) making sure that they are clean and dry, and transfer 100 g. (± 0.1 g.) of the well-mixed sample without previous drying, to the top sieve, No. 12. Place the nest of sieves in the Ro-Tap machine and run for ten minutes. Carefully weigh the portion held on the No. 12, No. 40 and No. 100 sieves; also, the portion passing through the No. 100 sieves.

NOTE: At least duplicate determinations should be made and averages taken.

TABULATION OF RESULTS

Hand Screening Method

(100 g. sample)

	On No. 12 Mesh	On No. 40 Mesh	On No. 100 Mesh
L. B. Hitchcock	0.0%	57.6%	90.3%
E. R. Luckow[1]	0.0	54.2	89.5
M. L. Sheely[1]	0.0	64.7	90.4
R. C. Newton	0.0	63.4*	90.8
	0.0	62.8**	90.1
H. E. Cutts***	...	69.3	94.4
J. E. Doherty	0.0	56.0	90.4
B. S. Van Zile	0.0	68.6	96.3
C. P. Long	0.0	69.1	90.3
Low	0.0%	54.2%	89.5%
High	0.0	69.3	96.3
Average	0.0	62.9	91.4

*Shaking until the amount passing through sieve is less than 0.1 g. per minute.

**Shaking until no perceptible powder passes through sieve.

***Used a 14 mesh screen instead of a No. 12, so no value used under No. 12 mesh column.

[1] These members used in addition to above named sieves, No. 20, No. 60 and No. 80 sieves.

Ro-Tap Method

(100 g. sample)

	On No. 12 Mesh	On No. 40 Mesh	On No. 100 Mesh
E. R. Luckow[1]	0.0%	63.7%	89.2%
M. L. Sheely[1]	0.0	58.9	90.5
R. C. Newton	0.0	67.6	91.4
J. E. Doherty	0.0	59.6	92.8
B. S. Van Zile	0.0	68.6	96.3
C. P. Long	0.0	60.4	87.1
Low	0.0%	58.9%	89.2%
High	0.0	68.6	96.3
Average	0.0	63.1	91.2

[1] These members used in addition to above named sieves, No. 20, No. 60 and No. 80 sieves.

Calculations:

1—Calculate the weight of the residue on the No. 12 sieve to percentage retained.
2—Add the weight of the residue retained on the No. 12 sieve to the weight of the residue on the No. 40 sieve and calculate the sum to percentage retained on the No. 40 sieve.
3—Add the weight of the residue retained on the No. 12 and No. 40 sieves to the weight retained on the No. 100 sieve and calculate the sum to percentage of residue retained on the No. 100 sieve.

COMMENTS OF COLLABORATORS

Mr. E. R. Luckow

"It makes little difference whether or not three or six screens are used in either method, except that when six screens are used a much more accurate idea of the fineness is obtained.

"There is a considerable difference in results between the two methods (hand and Ro-Tap) on the No. 20, No. 40 and No. 60 mesh. This, I believe, could be overcome by lengthening the screening time, perhaps to 20 or more minutes instead of 10."

Mr. M. L. Sheely

"Our results obtained by the two screen test procedures are very close and in our opinion both methods are satisfactory. We would recommend 100 g. sample as being satisfactory for blown or spray-dried products."

Mr. R. C. Newton

"In running the hand screen test, we were in considerable doubt about the phrase 'when the portion of the soap passing through the bottom of the sieve appears to be negligible.' In order to arrive at what we thought was a negligible quantity passing through the screens, we found that it was necessary to shake for a considerable length of time. We felt, therefore, that some difference in screen tests might result as the result of differences in definition at this point. We believe it would be desirable to change this statement to define the 'negligible' quantity as less than 0.1 gram passage per minute of shaking. You will note from the tables that we have tried both methods, the results being nearly the same. Even though the results are the same, we believe the change still advisable since it would probably eliminate long shaking."

Mr. J. E. Doherty

"We believe that the true analysis is represented by the Ro-Tap tests of 5 and 10 minutes' duration, using 100 gram samples."

Mr. B. S. Van Zile

" . . . using so large a sample (500 g.) does not give good reproducibility. Reproducibility is better using the smaller sample (100 g.). I do not believe that there is any point to using a 500 g. sample, but if it is used it must be shaken for a much longer time. I have not determined what length of time would be required to get all of the material through."

Conclusions and Recommendations

Considering the fact that it is practically impossible to sample a powder of this type uniformly and also the possibility that more or less break-down may have occurred in the sample during transit, the results obtained by both hand test and Ro-Tap methods are in fair agreement. It is recommended that:

1—The Ro-Tap method be changed to read 100 g. (± 0.1 g.) instead of 8 ounces.
2—A slight modification of the wording of the hand test is recommended to define "negligible" quantity passing through the bottom sieve. The committee defines this as "less than 0.1 g. per minute of shaking."
3—Change present methods both hand screen and Ro-Tap to read "clean and dry" instead of "dry."
4—Insert the following note after procedure in both methods: "At least duplicate determinations shall be made and averages taken."
5—In view of the above changes the Committee recommends that both screen tests be retained as tentative methods for another year.

DETERMINATION OF COMBINED SODIUM AND POTASSIUM OXIDES IN SOAPS

Inasmuch as the Soap Analysis Committee has never standardized a method for the determination of soda and potash in soaps, it was decided that cooperative work should be conducted using methods most commonly employed for this determination. A search of standard texts on this subject indicated that two methods are in common use, namely, the Lindo-Gladding, which precipitates potash as K_2PtCl_6 and the Perchloric acid method which determines potash as $KClO_4$. In addition to these two methods Mr. J. T. R. Andrews suggested a procedure using the combined chlorides as determined from a titration of the ash and the weight of ash in simultaneous equations and solving for potash and soda. This method was also included in the collaborative studies.

Since no available standard methods are known for determining the sodium ion, it was decided to determine this by difference, the total combined alkali present in the soap being determined by the standard A.O.C.S. procedure of titrating the fatty acids from a weighed sample of soap.

A moisture determination using the official A.O.C.S. distillation procedure was also requested of each collaborator and all results were calculated to a 50 per cent moisture basis.

Below is the detailed procedure for each of the methods used, the Lindo-Gladding method modified somewhat to conform to the present recommendations of the Committee.

Method I—Lindo-Gladding Method (Tentative)

I. Reagents

a—*Ammonium Chloride Solution*

Dissolve 100 g. of NH_4Cl in 500 ml. of distilled water, add 5-10 g. of pulverized K_2PtCl_6, and shake at intervals for 6 to 8 hours. Allow the mixture to settle overnight and filter. (The residue may be used for the preparation of a fresh supply.)

b—*Platinum Solution*

A Pt solution containing the equivalent of 1 g. of metallic Pt (2.1 g. of H_2PtCl_6) in every 10 ml. For materials containing less than 15% of K_2O, a Pt solution containing 0.2 g. of metallic Pt (0.42 g. of H_2PtCl_6) in each 10 ml. is recommended.

II. Preparation of Sample

Weigh a 10 g. (± 0.01 g.) sample of soap. The soap shall be sintered below a dull red heat, the ash leached with hot water, filtered into a 100 ml. volumetric flask and the paper washed with three, 5 to 10 ml. portions of hot water. The ashing shall be completed by returning the filter paper to the original dish. Excessive heating shall be avoided. Removal of most of the alkali present before completion of the ashing aids in preventing over-heating of the greater portion of the sample. Add a few drops of 1:1 HCl to the dish and wash contents into the volumetric flask. Acidify the contents of the volumetric flask with HCl, dilute to 100 ml., mix and pass through a dry filter and then proceed as directed under determination.

III. Determination

Acidify a 10 ml. aliquot of the solution prepared under II with a few drops of HCl, add 10 ml. of the platinum solution [prepared under I (b)] and evaporate on a water bath to a thick paste which becomes solid upon cooling to room temperature, avoiding exposure to NH_3. Treat the residue with approximately 6 ml. of 80% alcohol, adding 0.6 ml. of HCl. Filter on a Gooch crucible and wash the precipitate thoroughly with 80% alcohol, both by decantation and on the filter, continuing the washing after the filtrate is colorless. Then wash 5 or 6 times with 25 ml. portions of the NH_4Cl solution [prepared under I (a)] to remove impurities from the precipitate. Wash again thoroughly with 80% alcohol and dry the percipitate for 30 minutes at 100°C. Weigh and calculate to K_2O. (The precipitate should be completely soluble in water.)

For the conversion of K_2PtCl_6 to K_2O use the factor 0.19376.

Method II—The Perchlorate Method

I. Reagents

a—10% Barium Chloride Solution

b—Perchloric Acid

c—97% Alcohol

II. Preparation of Sample

Ash a 10 g. (± 0.01 g.) sample of soap, *making certain that all organic matter is burned off.* (*WARNING—If there is any organic material present there is likely to be an explosion and it is, therefore, safer to remove ammonium salts and organic matter before the addition of any perchloric acid.*) Dissolve the residue in a few cc. of warm distilled water, acidify with HCl, add a slight excess of a 10% solution of $BaCl_2$, cool, and transfer to a 100 cc. volumetric flask. Dilute to 100 cc., mix and pass through a dry filter and then proceed as directed under determination.

III. Determination

To a neutral or slightly acidified 10 cc. aliquot of the solution prepared above under *Preparation of Sample,* add twice as much perchloric acid as is required to convert all the bases present into perchlorates and evaporate on the water bath with stirring to a syrupy consistency. Add a little hot water and continue the evaporation with constant stirring until all the hydrochloric acid is expelled and heavy white fumes of perchloric acid are evolved. Avoid excessive loss of perchloric acid. Cool the mass to below room temperature. (*WARNING—It is not safe to add alcohol to hot perchloric acid. It is perfectly safe to evaporate an aqueous solution of perchloric acid but a bad explosion may result by heating the alcoholic solution.*) Stir up the *cooled mass* thoroughly (preferably with dish resting in ice water) with 20 cc. of 97% alcohol to which 0.2% perchloric acid has been added, but avoid breaking up the potassium perchlorate crystals too finely or else they may pass through the filter. Allow the mixture to settle, and decant the alcohol off through a Gooch crucible. Repeat the washing once by decantation and then remove the alcohol by blast of air. Dissolve the residue in hot water, add about a half gram of perchloric acid and evaporate again until fumes of perchloric acid are given off. Wash the residue once by decantation and then several times on the filter. Remove the adhering wash-liquid by washing with pure 97% alcohol, dry at 130°C., and weigh. Multiply the weight of $KClO_4$ by 0.2825 to obtain the weight of K; by 0.3402 to obtain K_2O.

Method III—Ash-Titration Method

(Suggested by J.T.R. Andrews)

Ten grams of K or Na soap are dissolved in hot alcohol, filtered and washed with hot alcohol. The filtrate will contain all of the alkali salts of fatty acids, all or part of the alkali chlorides, all of the alkali hydroxides and only traces of other non-combustible materials. Builders, such as alkali carbonates, silicates, phosphates, etc., will be found in the alcohol insoluble portion. The alcoholic filtrate is burned and ignited at low temperature until complete charring has occurred, the charred mass lixiviated with hot water, filtered and the washed residue and filter paper again ashed, by which procedure all organic matter is destroyed easily without unduly protracted ignition time or excessively high temperatures. Alkali salts of fatty acids and alkali hydroxides are converted into carbonates, while alkali chlorides remain unaffected. The aqueous filtrate may be evaporated in the weighed platinum dish, dried at 150°C. and the weight of the ash determined. This ash, dissolved in water, is titrated with standard H_2SO_4 to methyl orange and then with 0.1 N $AgNO_3$ using K_2CrO_4 indicator.

Except for a small amount of chlorides, the ash will consist almost entirely of mixed carbonates. The weight of ash divided by the number of ml. of N/1 H_2SO_4 required for its titration to methyl orange will be, roughly, the weight of alkali carbonates equivalent to one ml. of normal solution. To this figure is added 0.0055 to get the weight of alkali chloride corresponding to one ml. of normal $AgNO_3$ solution and from this value and the $AgNO_3$ titration the weight of alkali chlorides in the ash is calculated. The ash, corrected for its chloride content, will be considered pure alkali carbonates of weight "W". The titration of the ash in normal H_2SO_4 is designated as "T."

Calculation of Per Cent Combined K_2O and Na_2O:

In the 10 gm. sample just analyzed, let us denote

Per cent $K_2O = X$

Per cent $Na_2O = Y$

and let W and T have the meaning given to them above. Then:

$$1.467\,X = \%\ K_2CO_3$$

$$1.710\,Y = \%\ Na_2CO_3$$

$$(1)\quad \frac{0.1467\,X}{0.0691} + \frac{0.1710\,Y}{0.0530} = T$$

$$(2)\quad 0.1467\,X + 0.1710\,Y = W$$

Solving equations (1) and (2)

$$Y = 1.332\,T - 19.28\,W = \%\ Na_2O$$

$$X = 6.817\,W - 1.165\,Y = \%\ K_2O$$

The percentages of K_2O and Na_2O given by these values of "X" and "Y" will include both combined and free alkali oxides. If the free or caustic alkali is more than a trace, or a few hundredths of one per cent, its amount may be found in the usual way and deducted on a prorated basis from "X" and "Y" in order to find the actual combined K_2O and Na_2O percentages.

To find the percentages of K and Na soap, the combined K_2O is converted to its equivalent in Na_2O by multiplying by 0.658; the total fatty acid anhydride is prorated between these two Na_2O percentages and K soap is found by replacing the Na_2O equivalent to K_2O by the combined K_2O itself and taking the sum of it and the fatty anhydride with which it is combined. The remaining fatty anhydride is added to the combined Na_2O given by "Y".

The ratio of K soap to Na soap may be calculated from the above figures but such ratios often magnify analytical errors to such an extent as to discredit analyses which are really quite dependable. The writer prefers to let the combined K_2O and Na_2O figures speak for themselves or at most leave the calculation alone after K and Na soaps have been figured.

The soap used in this work was a potash-soda vegetable oil paste soap which was carefully prepared in a 20-lb. batch using C.P. potassium and sodium hydroxides and a theoretical amount of a low titer vegetable oil fatty acid. The making of this soap was carefully controlled and any loss of moisture during the saponification process was accounted for by weighing the entire batch of soap upon completion of saponification. The percentages of potash, soda and moisture known to be present in this soap was then calculated as follows:

Moisture	50.0 %
Potassium Oxide	3.89%
Sodium Oxide	2.51%

RESULTS OF K_2O AND Na_2O DETERMINATIONS IN SOAP

(Basis 50 per cent moisture)

	Lindo-Gladding Method		Perchlorate Method		Ash-Titration Method		
	% K_2O	% Na_2O	% K_2O	% Na_2O	% K_2O	% Na_2O	Mois.
Actual amount added	3.89	2.51	3.89	2.51	3.89	2.51	50.0%
L. B. Hitchcock	3.89	2.47	3.76	2.55	4.18	2.24	50.0
E. R. Luckow	3.66	2.45	3.67	2.44	3.63	2.54	....
M. L. Sheely	3 81	2.54	3.86	2.49	3.90	2.34	50.4
R. C. Newton	3.71	2.61	3.54	2.75	3.48	2.74	50.8
H. C. Cutts	3.75	2.57	3.57	2.50	....	....	....
H. C. Bennett	3.76	2.43	3.96	2.29	3.96	2.29	50.3
J. E. Doherty	3.72	2.52	3.80	2.47	4.22	2.25	....
B. S. Van Zile	3.73 3.55	2.64 2.65	2.44* 3.29	3.49* 2.83	4.99 5.08	1.81 1.68	....
C. P. Long	3.74	2.46	3.57	2.74	4.09	2.33	....
F. W. Smither	3.50	2.50	3.20	2.70	4.55	1.67	48.2
Low	3.50%	2.43%	3.20%	2.29%	3.48%	1.67%	....
High	3.89	2.65	3.96	2.83	5.08	2.74	....
Average	3.71	2.53	3.62	2.58	4.18	2.19	....

*Omitted from average and high and low figures.

COMMENTS OF COLLABORATORS

Mr. L. B. Hitchcock

"In the alkali determinations the perchlorate method is easier to apply, but the results seem to be low. We would like to make a comparison of these two methods on a mixture of CP chlorides of the two alkalies."

Mr. E. R. Luckow

"We experienced little difficulty in either of the first two (chloroplatinate and perchlorate) methods. In the perchlorate method it is very important to keep the boiled down mass and washing alcohol cooled in an ice bath as otherwise low results are obtained due to appreciable solubility of the $KClO_4$ at higher temperatures.

"The Andrews Method (Ash-Titration) is simple and rapid and theoretically correct. However, slight errors in weight of ash are multiplied by such a large amount that the results would not be as dependable as the other two methods. Ashing down a carbonaceous residue of this sort is not sufficiently reliable. It is an excellent method for approximate results."

Mr. M. L. Sheely

"All three methods gave results which were in close agreement. However, we consider the Lindo-Gladding method to be the most satisfactory. Although the reagents required in the Lindo-Gladding method are rather expensive, nevertheless with regular usage, the cost can be minimized by the recovery of the platinum. Some difficulty in filtering and washing was experienced in the Perchlorate method due to the gelatinous nature of the potassium perchlorate precipitate. The Ash-Titration method is rapid and would probably be satisfactory for approximate determinations. The presence of a large amount of chlorides in a soap would probably interfere with the accuracy of this method."

Mr. J. E. Doherty

"In our opinion, there is little difference between the Perchloric acid method and the Lindo-Gladding method as far as accuracy and time are concerned. The Lindo-Gladding method does not require the removal of sulphates and produces a precipitate of a more distinctive color than the Perchloric acid method. However, the reagents employed by the Lindo-Gladding method are more expensive than those used in the Perchloric Acid method.

"The results which we obtained by the Weight-Titration method do not agree with those obtained by either of the other two methods. In this method, it is very difficult to evaporate the ash to dryness without losing some of the substance due to spattering; and this is decidedly to its disadvantage. A thin crust forms on the surface trapping water beneath it. When this water is converted into steam, it breaks through the crust causing spattering. Furthermore, this method would not be applicable to soaps containing large amounts of chlorides."

Mr. B. S. Van Zile

"In using this method (Perchlorate) in the past, I have found that the method as written by G. Frederick Smith in his booklet on "Perchloric Acid," wherein he uses N butyl alcohol and ethyl acetate is much more satisfactory.

"About the method of Mr. J. T. R. Andrews (Ash-Titration), I do not know what to say except that the results are very disappointing. I much prefer the Lindo-Gladding procedure with some very slight modifications."

Mr. C. P. Long

"You will notice that the results by the method Mr. Andrews (Ash-Titration) suggested gave higher results in every case. He also feels that it would be possible by selecting the depth of the methyl orange endpoint to obtain results closer to method I (Lindo-Gladding). Mr. Stillman, who made the analysis, feels that the Lindo-Gladding method would be the preferable method since he believes it is more accurate than either of the other two methods. It is also a very easy method to carry out. It is but little, if any, more time consuming than the titration method. If it were used regularly the question of expense could be held to a minimum by the recovery of the platinum.

"Regardless of what method is adopted, we believe that more detail should be included on the preparation of the sample. The soap should be sintered at a very low temperature, leached with water, filtered, washed somewhat and the ashing completed by returning the filter paper to the original dish. Excessive heating should be avoided. Removal of most of the alkali present before completion of the ashing aids in preventing over-heating of the greater portion of the sample."

Conclusions and Recommendations

On the basis of the collaborative results on the three methods studied, the Lindo-Gladding Method gave the most concordant results. Consequently the Committee recommends the adoption of this modification of the Lindo-Gladding Method as a tentative method of the Society.

The Committee recommends that the method for the Determination of Volatile Hydrocarbons tentatively adopted October, 1935, be made official.

The 1937 membership of this committee is as follows:

Messrs: H. C. Bennett
J. M. Burmaster
H. E. Cutts
J. E. Doherty
L. B. Hitchcock
L. F. Hoyt
C. P. Long
E. R. Luckow
R. C. Newton
B. S. Van Zile
F. W. Smither
H. F. Trevithick
R. B. Trusler
M. L. Sheely, Chairman

REPORT OF THE UNIFORM METHODS AND PLANNING COMMITTEE--FALL MEETING--OCTOBER 14-15, 1937

THE Uniform Methods and Planning Committee received no methods for consideration except those of the Soap Section. The full reports of the Committees of this section will appear in OIL & SOAP. The recommendations of these committees follow:

Sections 16 *and* 17 *Screen Test:*

It is recommended that:

1. The Ro-Tap Method be changed to read 100 gms. (± 0.1 gm.) instead of 8 ounces.
2. A slight modification of the hand test is recommended to define "negligible" quantity passing through the bottom sieve. The committee defines this as "less than 0.1 gm. per minute of shaking."
3. Change present methods, both hand screen and Ro-Tap, to read: "clean and dry" instead of "dry."
4. Insert the following note after *procedure* in both methods: "Note —At least duplicate determinations shall be made and averages taken."

Determination of Combined Sodium and Potassium Oxides in Soaps

On the basis of the collaborative results obtained by the three methods studied, the Lindo-Gladding method gave the most concordant results. Consequently the Committee recommends the adoption of this modification of the Lindo-Gladding Method as a tentative method of the Society.

Section 15. *Volatile Hydrocarbons* (*Tentative*)

The Committee recommends that the method for the determination of volatile hydrocarbons, which was tentatively adopted in October 1935, be made official.

Committee on Soap Wrapper Paper (1937)

The affirmative votes involving the use of a soap contact method for testing soap wrapper paper, appear to warrant that this method as published in OIL & SOAP, in the 1936 Report of the Soap Wrapper Committee, be recommended as a tentative standard of the A.O.C.S.

The Uniform Methods Committee concur in all of these recommendations and move their adoption. The motion was seconded and the changes were adopted unanimously.

E. B. Freyer
C. P. Long
R. C. Hatter
J. T. R. Andrews
H. P. Trevithick
J. J. Vollertsen, Chairman

ABSTRACTS

Oils and Fats

Edited by
M. M. PISKUR and RUTH LINDAHL

The extraction process—the unique oil production methods of the future. M. Singer. *Seifensieder-Ztg.* **64**, 863-5, 881-2 (1937). The extn. of oil is discussed. The advantages of solvent extn. in that greater yields and better qual. oil are obtained is stressed. Differences in cost of pressing and extn. are briefly given.

Wool fat and wool fat alcohols, valuable materials for the manufacture of cosmetics. W. Gansale. *Fette u. Seifen* **44**, 460-2 (1937). Review.

Relation between iodine value and refractive index of some hardened oils. Y. Maruta and K. Teruvama. *J. Soc. Chem. Ind. Japan* **40**, Suppl. binding 299 (1937). Equations are given. (*Chem. Abs.*)

Hydrogenation of oils with a multicomponent catalyst under high pressure. S. Ueno. Z. Okamura and S. Ueda. *J. Soc. Chem. Ind. Japan* **40**, Suppl. binding 292-4 (1937). Expts. showed: speed of hydrogenation increases as temp., pressure and amt. of catalyst are raised; at about 200° the reaction rate increases abruptly; the multicomponent catalyst is more powerful than a reduced Ni catalyst and when mixed with reduced Ni makes a very effective catalyst. (*Chem. Abs.*)

A note on the preferential reduction of certain fatty acid groups during hydrogenation of natural fats. D. A. Harper. *J. Soc. Chem. Ind.* **56**, 308-10T