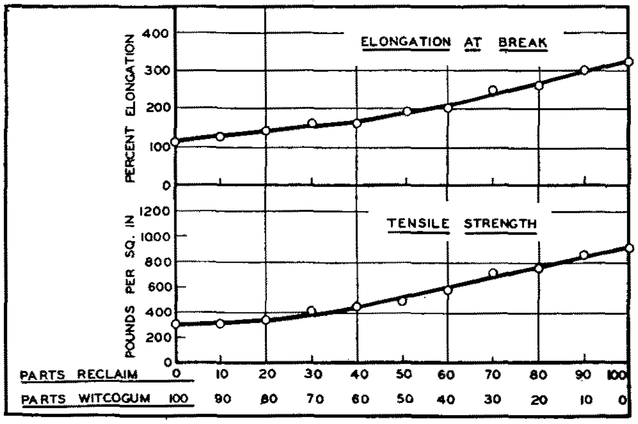

FIG. 1

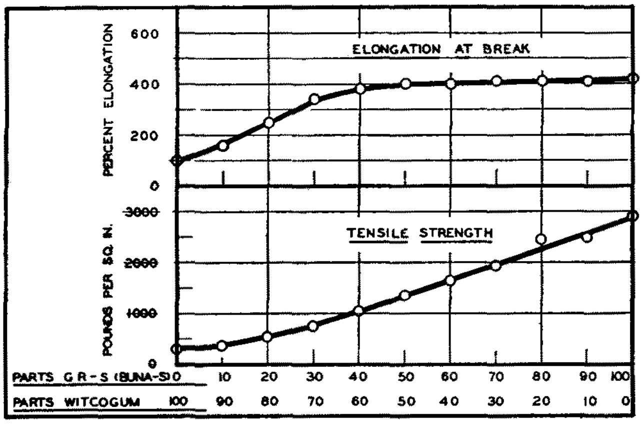

FIG. 2

other pigments, however, its use in large loadings is not recommended because of an increased tendency of the Witcogum to crack when sharply flexed. Softeners such as rosin, coumarone-indene resins, etc., may be added to Witcogum to increase tack and improve processing and molding and give a more homogeneous product.

Present information indicates that Witcogum cannot be put into solution and therefore cannot be used in cements or for proofed goods. The effect of solvents and chemicals in Witcogum is in general similar to their effect on rubber. Water and alcohol have no apparent effect but petroleum solvents, aromatic solvents, acetone and esters cause swelling with consequent loss of strength.

Although Witcogum is designed primarily for use alone, it may be blended with rubber, reclaim or synthetic rubber to improve processing or to extend these elastomers. The use of Witcogum with reclaim to improve processing is particularly interesting since it serves to soften and smooth out a batch without increasing the tackiness. The physical properties which are obtained when Witcogum is used to extend reclaim are summarized in Table 1, and in Figure 1.

Even though there is no advantage from a processing angle of using Witcogum with natural rubber there is an advantage in extending the rubber by using it. Because of the fact that it may be milled alone without any other material, large quantities of Witcogum may be used with rubber without destroying the milling qualities. Therefore, by use of Witcogum a small quantity of natural rubber may be made to furnish a larger volume of cured rubber compound.

With the Buna N and Buna S type synthetics the use of Witcogum serves to smooth out the sheet and improve the processing qualities in much the same way as it does with reclaim batches. Table 2, and Figure 2 show properties which result when Witcogum is used with Buna S (GR-S) type synthetic.

Witcogum is offered as a replacement for rubber and reclaim only for certain products which do not require high tensile strength, maximum elongation, or superior resistance to abrasion and flex cracking. Some of the products in which Witcogum is being used are extruded channels, jar rings, hospital sheeting, hose and tubing, wire insulation, brake linings, stationer's goods, gaskets and grommets.

The advantages of Witcogum over similar materials are that it is available in quantity and it may be milled, extruded, calendered, and cured without difficulty on standard equipment using standard rubber compounding ingredients. The present use of Witcogum by many manufacturers in the rubber industry for a wide variety of products is releasing a considerable quantity of rubber, reclaim and synthetic rubber for more essential purposes.

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Abstracts

Oils and Fats

Edited by
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A PILOT REFINING UNIT. For vegetable and fatty oil processing. D. G. Gillies. *Oil Colour Trades J. 105,* 240-3 (1944).

HIGH-VACUUM SHORT-PATH DISTILLATION — A REVIEW. K. C. D. Hickman. *Chem. Revs. 34,* 51-106 (1944).

FANWEED SEED OIL. POTENTIAL SUBSTITUTE FOR RAPESEED OIL. J. R. Clopton and H. O. Triebold. *Ind. Eng. Chem. 36,* 218-19 (1944). Fanweed (Thalspi arvense) seeds contain 33 to 35% oil. The compn. and properties are similar to those of rapeseed oil. Glycerides of both oils are characterized by a high content of erucic acid. Fanweed seed oil glycerides are somewhat higher in linoleic acid than those of rapeseed oil. Viscosities of the two oils at ordinary temp. are similar, and their changes in viscosity with temp. are comparable. This property suggests that fanweed seed oil could be used in place of rapeseed oil as a lubricant constituent and for other industrial purposes.

Determination of the total fat in foods. J. Grossfeld and Barbara Schroeder. *Z. Untersuch. Lebensm. 85,* 225-37 (1943). A simple method for detg. fat in food products was developed: 5 g. of finely divided air dried sample are placed in a fluted filter as used in the isoöleic acid test app. of Grossfeld and Peters; it is plugged with cotton and extd. in an extn. app. for 30 min. using 30 cc. of a 1:1 alc. in an extn. app. for 30 min. using 30 cc. of a 1:1 alc.: C_6H_6 mixt. as the solvent. Solvent is evapd. and the residue is shaken with 10 cc. water and 50 cc. benzine (b. 60-70°). After standing over night the fat is detd. on a 25 cc. aliquot. The alc.:C_6H_6 solvent dissolves all the fat and phosphatides and some sugar. The benzine seps. the fat and phosphatides from the water sol. material. In a comparison of this method with a method contg. a HCl hydrolysis step on 5 bakery products (7.8-26.1% fat) the av. of all data, resp., was: 15.9 and 15.6% fat. With baked goods of low fat content (2.3%), such as waffles, bread, oat zwieback, baby food and zwieback for infants, the new method checked the Weibull and the Schloemer and Rauch (*C.A.* 37, 5152^4) methods. The data on several year old dried milk samples using simple HCl hydrolysis plus extn., the Schloemer and Rauch procedure and the authors' method, resp., were: 19.0, 24.3 and 24.0%. The new method was also suitable for soup powders, but unsuitable for fat poor confectionery products. Extn. of fresh or old whole egg powder with alc.:C_6H_6 solvent after hydrolysis with 10-25% HCl yielded 90.4-91.9% of the actual fat plus phosphatides in the samples. (*Chem. Abs.*)

Some factors affecting the control of oxidative rancidity. T. P. Hilditch. *Chemistry and Industry 63,* 67-71 (1944).

A method for studying the effect of antioxidants on the oxidations of aqueous suspensions of unsaturated fatty acids. A. Banks. *J. Soc. Chem. Ind. 63,* 8-13 (1944). The rapid oxidation resulting from the addition of small quantities of haematin to suspensions of linoleic acid in buffered 2% starch soln. can be measured by using the Warburg or Barcroft technic at 30°C., and this procedure has been adopted for the rapid testing of antioxidants. Evidence is produced to show that the initial stage of the oxidation is not catalyzed by the haematin. The results of tests, therefore, refer to the action of antioxidants on the spontaneous oxidation of suspensions of linoleic acid at 30°. Numerous substances have been tested, and certain dried flower petals, logwood extract, haematoxylin, haematein, brazilin, and the usual antioxidants have been found to be active antioxidants for the system. Preliminary tests have shown that compds. contg. a carboxyl, keto-, or R·CH(OH) group are not good antioxidants.

Antioxidants for carotene and vitamin-a. J. A. Lovern. *J. Soc. Chem. Ind. 63,* 13-15 (1944). Many polyphenolic compds. and some aliphatic compds. have been found to exert considerable antioxygenic activity towards solns. of carotene in ethyl acetate exposed to light.

Solubilities of high molecular weight normal aliphatic nitriles. C. W. Hoerr, E. F. Binkerd, W. O. Pool, and A. W. Ralston. *J. Org. Chem. 9,* 68-80 (1944). The solubilities of caprinitrile, lauronitrile, myristonitrile, palmitonitrile, and stearonitrile have been detnd. in benzene, cyclohexane, tetrachloromethane, trichloromethane, ethyl ether, glacial acetic acid, ethyl acetate, butyl acetate, acetone, 2-butanone, methanol, 95% ethanol, isopropanol, n-butanol, nitroethane, and acetonitrile. Solubilities of high molecular weight normal aliphatic primary amines. A. W. Ralston, C. W. Hoerr, W. O. Pool and H. J. Harwood. *Ibid.* 102-12 (1944). The solubilities of decylamine, dodecylamine, tetradecylamine, hexadecylamine, and octadecylamine have been detnd. in benzene, cyclohexane, tetrachloromethane, trichloromethane, ethyl ether, ethyl acetate, butyl acetate, acetone, 2-butanone, methanol, 95%, ethanol, isopropanol, n-butanol, and acetonitrile.

Refractive indices of the normal saturated aliphatic nitriles. A. Dorinson and A. W. Ralston. *J. Am. Chem. Soc. 66,* 361-2 (1944). The refractive indices of the normal aliphatic nitriles from butyronitrile to stearonitrile, inclusive, were determined at a number of temperatures between 20 and 75°. For each nitrile an abrupt change of slope in the refractive index vs. temperature curve occurs at 40-45°. Corresponding graphs of the molecular refractivities also show a change of slope.

Studies on the chemistry of the fatty acids. Absorption spectra analysis of conjugation in fatty acid. W. R. Brode, J. W. Patterson, J. B. Brown and J. Frankel. *Ind. Eng. Chem. Anal. Ed. 16,* 77-80 (1944). A method of detng. the amt. of 2, 3 and 4 double bond conjugation in the presence of nonconjugated unsatd. fat acids has been used in the analysis of samples of linoleic acid. The results indicate that the recrystallization method of purification gives a product more nearly free from conjugation than is obtained by debromination procedures. The conjugation rearrangement is probably caused by the $ZnBr_2$ formed during the debromination, and the β form of the acid contains a comparatively high percentage of conjugated material.

The shortener tolerance of biscuit and self-rising flours. F. R. Schwain and H. J. Loving. *Cereal Chem. 21,* 27-32 (1944).

PATENTS

High vacuum still. K. C. D. Hickman (Distillation Products, Inc.). *U. S. 2,343,665.*

High vacuum still. K. C. D. Hickman (Distillation Products, Inc.). *U. S. 2,343,668.*

Process for treating fish livers. L. O. Buxton (National Oil Products Co.). *U. S. 2,345,099.* In a process of removing oil from raw fish livers, the step comprises conjointly treating the livers with a mixt. of an organic solvent for the oil and a water-miscible lower aliphatic acid.

Process of saponifying vitamin-contg. fatty material. L. O. Buxton. *U. S. 2,345,098.* In a process of treating fat-sol. vitamin-contg. oil, the improvement comprises saponifying the oil in the presence of a sugar.

Process for treating fatty oils. L. O. Buxton. *U. S. 2,345,097.* A process of treating fish liver oils, which comprises admixing a fish liver oil with a solvent comprising chiefly alc., heating the mass to effect substantially complete miscibility of the oil in the solvent, cooling the mass to produce 2 layers, separating the solvent layer from the oil layer and subjecting the oil layer to distn. at a press. below 0.1 mm. and temp. of 140-250°C. to recover a fraction rich in fat-sol. vitamin esters.