4. In general, an increase in the percentage of methanol in the irrigating solvent resulted in an increase in the R_f value of a given phospholipide.

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Letter to Editor

July 2, 1956

I have read with interest the paper on "Determination of Soaps by Ion Exchange Resin" by J. W. Jenkins, published in the May 1956 (p. 225) issue of your esteemed journal. The method developed is no doubt interesting and is apt to be adopted for routine analysis in soap factories in the near future.

In this connection I draw your attention to a paper on the same subject published by me and my student in January 1955 (p. 187) issue of the *Indian Soap Journal*, which maintains an exchange relationship with your journal.

B. K. MUKHERJI
Honorary Editor
Indian Soap Journal
Calcutta, India

ABSTRACTS . . . . . R. A. Reiners, Editor

• Oils and Fats

S. S. Chang, Abstractor
Sin'itiro Kawamura, Abstractor
Dorothy M. Rathmann, Abstractor

Chemistry of the phosphatides. E. Baer(Univ. Toronto). *Ann. Rev. Biochem.* **24**, 135–56(1955). A review of three years' work. (*C. A.* **50**, 6538)

The coconut-like flavor defect of milk fat. I. Isolation of the flavor compound from butter oil and its identification as δ-decalactone. P. G. Keeney and S. Patton(Dept. of Dairy Sci., Penn. Agr. Exp. Station, Univ. Park). *J. Dairy Sci.* **39**, 1104–1113(1956). The coconut-like off-flavor compound, which develops in butter oil during storage or when butter oil has been heated, was isolated and identified as δ-decalactone(lactone of 5-hydroxy decanoic acid). Infrared spectroscopy and paper chromatography were used in establishing flavor compound's coidentity with δ-decalactone. Paper chromatographic methods are presented whereby a homologous series of gamma lactones from nonalactone to dodecalactone can be resolved. Evidence that a similar series of delta lactones can be separated in a like manner was obtained.

The coconut-like flavor defect of milk fat. II. Demonstration of δ-decalactone in dried cream, dry whole milk, and evaporated milk. *Ibid.* **39**, 1114–1119(1956). Coconut-like flavor extracts were obtained from dried cream, dry whole milk and evaporated milk. The presence of δ-decalactone in these flavor extracts was established by paper chromatography, and the characteristic coconut-like flavor defect of these products is attributed to this lactone.

Modification of the refractive index method for the detection of foreign fats in dairy products. V. R. Bhalerao and F. A. Kummerow(Dept. of Food Tech., Univ. of Ill., Urbana, Ill.). *J. Dairy Sci.* **39**, 947–955(1956). A method based on the glyceride structure of butterfat was worked out to detect adulteration of the butterfat by a foreign fat at a 10% level. The suspected sample of butterfat was separated into alcohol-soluble and insoluble triglycerides at 20° in order to increase concentration of the adulterant in one of these fractions. The refractive index of the alcohol-soluble fraction of butterfat was found to vary from 1.4538 to 1.4541, whereas that of the insoluble fraction was found to vary from 1.4539 to 1.4544. The increase in the refractive index of the alcohol-insoluble fraction indicated the presence of vegetable or animal fat. This fraction was further fractionated from acetone at 0°. The acetone-soluble fraction was iodinated with Wijs solution, and refractive index of the iodinated fraction was determined. The refractive index of the iodinated fraction of butterfat was found to vary from 1.4713 to 1.4732. The addition of 10% of foreign fat other than coconut oil increased the refractive index significantly, enabling the detection with a fair degree of accuracy.

The methods of examination of fats and fat products. Committee reports. Tomotaro Tsuchiya *et al. J. Japan Oil Chemists' Soc.* **5**, 47–56(1956). This is the concluding report for chemical tests including acid no., neutralization no., saponification no., ester no., thiocyanogen no., determination of conjugated unsaturated fatty acids (spectroscopic method), determination of unsaponifiable matter, determination of solid fatty acids, and ether-insoluble chloriodide.

Separation and determination of fatty acids. XVIII. Paper chromatography of fatty acids as their acetol ester derivatives. Yoshiyuki Inoue, Osamu Hirayama, and Manjiro Noda(Saikyô Univ., Kyoto). *J. Japan Oil Chemists' Soc.* **5**, 16–18(1956). Acetol esters, $RCOOCH_2COCH_3$, were synthesized from 10 saturated fatty acids from acetic to arachidic by reacting with monobromoacetone. They were converted to their 2,4-dinitrophenylhydrazones and thiosemicarbazones, which were chromatographed on paper by the inverse phase method and the R_f values were determined. The solvents used included methanol-decalin (8:1), methanol-ethyl acetate-decaline (40:3:7), methanol-acetic acid-decalin (50:2:7), and 90% ethanol-acetic acid-decalin (30:5:3). This method is applicable for the separation of mixed fatty acids.

Segregation of soybean fatty acids by urea complex with particular reference to the concentration of urea solution. Hiroshi Sakurai and Masao Fujiwara(Osaka Univ., Sakai). *J. Chem. Soc. Japan, Ind. Chem. Sect.* **59**, 33-6(1956). The optimum temperatures of the segregation of soybean fatty acids by urea complex were in the range 10–25°. The optimum concentration of urea solution was found to be at relative saturation degree of 0.9423, i.e. 43.3% at 10°, 49.0% at 20°, and 51.6% at 25°.

Fatty oils of aquatic invertebrates. X. Fatty oils of Stichopus japonicus, Astriclypeus manni, Clypeaster japonicus, and Gorgonocephalus caryi. Yoshiyuki Toyama and Toru Takagi(Nagoya Univ.). *J. Chem. Soc. Japan, Pure Chem. Sect.* **77**, 102–5 (1956). *S. japonicus, A. manni, C. japonicus,* and *G. caryi* contained, respectively, 2.5, 1.1, 1.7, 2.3% ether extract, and the oils had, respectively, n_D^{30} 1.4686, 1.4776, 1.4758, 1.4702 (at 30°); acid no. 95.2, 41.9, 28.5, 96.0; saponification no. 149.3, 157.1, 164.6, 146.9; iodine no. 106.2, 158.6, 190.3, 91.6; unsaponifiable matter 16.97, 18.97, 14.75, 29.58%; solid fatty acids 27.91, —, 17.30, —%; sterol content of the unsaponifiable matter 7.45, 64.7, —, 62.4% highly unsaturated acid contents (%), dienoic 3.6, —, —, 1.0, —; trienoic 5.3, —, —, 0.9, —; tetraenoic 7.7, —, 17.2, —; pentaenoic 7.5, —, 34.3, —; hexaenoic 5.7, —, 6.5, —; their sterols were chiefly Δ^7-sterol, cholesterol, cholesterol, and Δ^5-sterol, respectively. *S. japonicus* seemed to contain batyl alcohol and selachyl alcohol.