improve cleansing (Tucker—*U. S. 2,251,694-5*). A hydraulic pressure transmitting fluid contained castor oil glycerol, glycol, alcohol, soap and water (Fulton—*U. S. 2,238,045*). A mixture of fat acids and oil of fish or linseed oil was patented for use as a wave-stilling oil (Compagnie francaise de raffinage —*Brit. 529,429*). A synthetic wax contained hydrogenated castor oil, abietyl alcohol and ethyl ethers of cellulose (E. I. du Pont de Nemours & Co. — *Brit. 529,797*). Tallow or resin treated cement increased the resistance of concrete made therefrom to freezing and thawing (Swayze—*Eng. News-Record 126,* 946). A substantially anhydrous solution of ammonium salts of tall oil acids in saturated alcohols of one to five carbon atoms was used as a flotation agent (Jayne —*U. S. 2,238,021*).

Interest in manufacturing hydrocarbons from fats appeared in countries lacking mineral oils. Hydrocarbons were prepared by heating fat acid nitriles with acid clays (Mori — *Japan 131,410*), by heating oils with sulfur dioxide and hydrogenating the product (Kioka—*Japan 130,295*) and by cracking cottonseed oil with heat under pressure (Lo and Ts'ai—*J. Chinese Chem. Soc. 16,* 1). Splitting off carbon dioxide from tallow with heat and a catalyst, followed by hydrogenation yielded high molecular weight hydrocarbons or alcohols or both (Jahrstorfer and Schwarte —*Ger. 695,862 Cl. 12o*).

Note On the Use of Southern Sweet Gum As An Anti-Oxidant In Lard*

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In the search for anti-oxidants or stabilizers for use in lard, vegetable oil shortenings, and other edible fats, many investigators have studied natural vegetable gums or resins.

The idea of using natural gums as anti-oxidants in fats would seem to be a logical one because of the experience of manufacturers of lard with the greatly increased keeping time of benzoinated lard (lard containing gum benzoin). Natural gums have been used as preservatives, drugs, and perfumes from the ancient days of frankincense and myrrh up to the present time.

Storax or Styrax gum has been found to have some value as an anti-oxidant in edible fats, and since Southern Sweet Gum (Liquid-ambar Styraciflua) produces a gum similar to the oriental Styrax, two small samples of this American gum of known origin were tested in laboratory samples of lard.

The sweet gum samples were gathered in August, 1940, and August, 1941, from trees growing near Darlington, South Carolina. The gum was separated from pieces of bark and other foreign material by hand, so that the samples used in the lard were somewhat crude in character.

The 1940 sample of sweet gum was added to prime steam lard and the mixtures along with a control sample were tested for keeping time by the Swift method with the following results:

Prime steam lard-control	7 hrs. keeping time.
Lard plus .05 per cent sweet gum	17 hrs. keeping time.
Lard plus .05 per cent sweet gum, plus .01 per cent phosphoric acid	17 hrs. keeping time.

(NOTE: The lard used in above test was produced and tested in Toronto, Canada.)

The 1941 sample of sweet gum gave the following results:

Prime-steam lard-control	10 hrs. keeping time.
Lard plus .10 per cent sweet gum	13 hrs. keeping time.
Lard bleached with .05 per cent Fullers earth	3 hrs. keeping time.
Lard plus .10 per cent sweet gum, bleached with .05 per cent Fullers earth	7 hrs. keeping time.

(NOTE: Above test was made on lard produced in Madison, Wis.)

The samples of lard containing sweet gum had an aromatic odor and flavor which could undoubtedly be removed by steam deodorization.

The Swift accelerated stability test results on the two samples of Southern Sweet Gum indicate that this native American gum has some value as a stabilizer when used in lard in relatively small percentages.

It is proposed to do further work on additional samples of sweet gum to check its value as an anti-oxidant and to determine whether or not it can be used in edible fats under the food laws.

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