

out the tests without any deviation in the washroom cycle.

A test bundle consisting of white T shirts and white dress shirts was used. Whiteness of the test pieces was measured by the Hunter Reflectometer at the start of the tests and after 20, 40, 60, and 80 complete wash cycles. The average values for the reflectances are shown in the following table:

	Dress Shirts		T Shirts	
	100% Pure Soap Flakes	75% Pure Soap Flakes 25% "Nacconol" NR	100% Pure Soap Flakes	75% Pure Soap Flakes 25% "Nacconol" NR
Start.....	81.3	81.3	83.5	83.5
20 Washings.....	84.4	83.8	82.6	79.3
40 Washings.....	83.9	83.4	78.3	80.3
60 Washings.....	82.8	82.3	78.2	78.1
80 Washings.....	84.3	83.3	78.2	77.7

Examination of the 80 loads run with soap and with the soap-"Nacconol" NR mixture was made by the usual laundry procedure. Laundry inspectors with many years' experience reported that there was no difference in the quality of the work produced.

Diaper Washing

Considerable evidence has been accumulated to show that the manner in which infant garments are washed has a very definite bearing on the infant dermatitis, commonly referred to as "diaper rash." Clinical data obtained by pediatricians show that when diapers and infant garments generally are washed with a synthetic organic detergent such as "Nacconol" NR, either alone or in combination with soap, the dermatitis clears up in almost 100% of the cases. The irritation is believed to be caused by lime soap residues.

Pediatricians now instruct the mothers of young children to wash the infant garments with a synthetic detergent if moderately soiled. If the garments are heavily soiled, it is recommended that they be washed with a combination of $\frac{1}{4}$ to $\frac{1}{3}$ synthetic detergent and $\frac{2}{3}$ to $\frac{3}{4}$ soap, followed by three or more rinses, of which the second rinse can advantageously be made by adding a small amount (about 0.05%) of synthetic detergent to facilitate removal of traces of lime soap.

Fulling Soaps

In the finishing of fine woolen fabrics the fulling process, as the name implies, serves to provide additional body to the fabric. This is done by shrinking the fabric in both length and width through the use of strenuous mechanical action in the presence of a lubricating solution. Although alkaline soap solutions

are perfect lubricants for this purpose, the subsequent rinsing processes to remove these soaps are very lengthy and expensive. Alkaline solutions of synthetic detergents do not provide sufficient lubrication to be good fulling agents by themselves. It is now recognized that when 25-50% of the usual fulling soap is replaced by "Nacconol" NR the fulling will proceed normally in all respects. When this is done the fulling soap may be rinsed out of the fabric in 25-40% less time which is very important from a production standpoint.

A typical formula for a 6-ounce per gallon fulling soap is as follows:

TYPICAL FULLING SOAP COMPOSITION CONTAINING SYNTHETIC DETERGENT

Palm Oil Soap.....	300 lb.
"Nacconol" NR.....	100 lb.
Soda Ash.....	225 lb.
Pine Oil.....	132 lb.
Water to make 1,000 gal.	

In a 1,500-yard run of 8-ounce suiting materials using the above formula, spot samples were taken across the width of every third piece processed in a continuous scouring machine and their residual grease content determined by Soxhlet extraction with carbon tetrachloride. The residual grease values were low and very uniform, averaging 0.22%. It will be recognized that this is an excellent performance since a grease content of 0.50% or slightly higher is usually acceptable.

Summary

This middle ground between the soaps and synthetics has not been actively exploited in spite of the intense current interest in the straight products. It has been a no man's land where the manufacturers of synthetic detergents have carefully avoided soap, which they regard as outside of their field, while many manufacturers of soap have been indifferent to the effect of the synthetic detergents.

In spite of this general indifference work has been done on both sides of the fence with a continually increasing use of the mixtures. Where mixtures have been ready-made, the soap manufacturers have been largely responsible for their manufacture.

Commercial mixtures of soaps and synthetics have been sold where synthetic detergents have been found to improve soap for specific uses. This trend is certain to expand. The present success should encourage further research and development commensurate with the increasing commercial importance of the products.

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Correction

An error in the paper entitled "Nomographs for Calculating the Fatty Acid Compositions of Oils and Fats from Iodine and Thioeyanogen Values" by S. A. Hussain and F. G. Doller in the June 1950 issue of the Journal should be corrected so that the figures

are transposed for the calculated and nomograph percentages of olein and linolein for soybean oil in Table VI, page 209. The transposed figures should read % linolein (calc.) 55.9, nom. 55.8; % olein (calc.) 24.5, nom. 24.6.