

MILK PUMPS AND ELEVATORS

daily penetration of fat has been considerable. When washing soda and similar cleansers were used absorption of fat increased greatly.

The primary objective in cleaning dairy equipment is to destroy bacteria and remove fat.

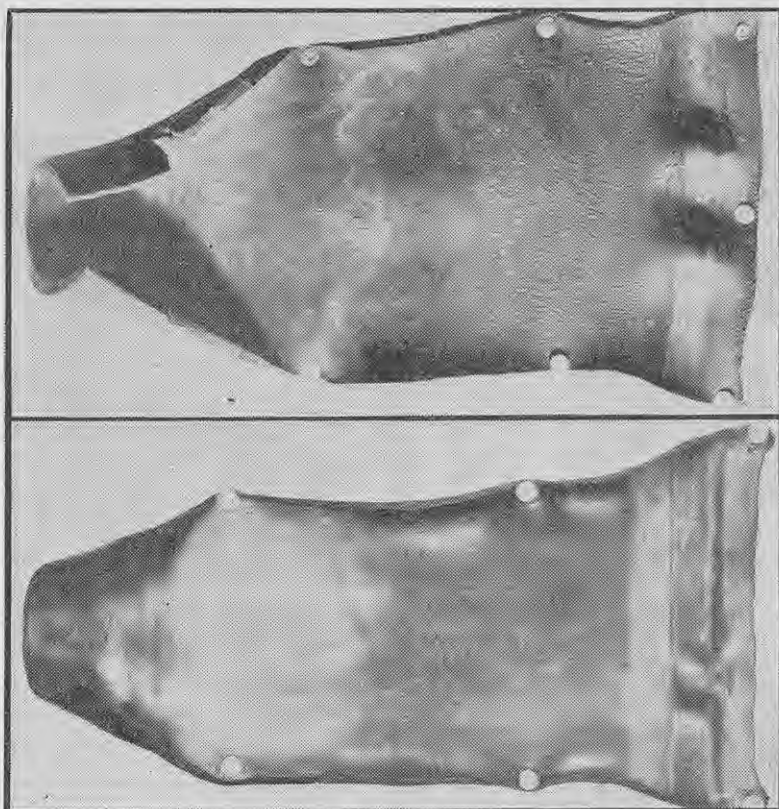
Caustic soda is the only detergent which will effectively remove fat from rubber. It is also a germicide, and bacteria will be destroyed by its use and by sterilisation with boiling water.

There are many cleansers, including washing soda, which are very effective as water softeners and are useful if used in conjunction with caustic soda, particularly where hard water is common, but they are not effective as sole cleaning agents.

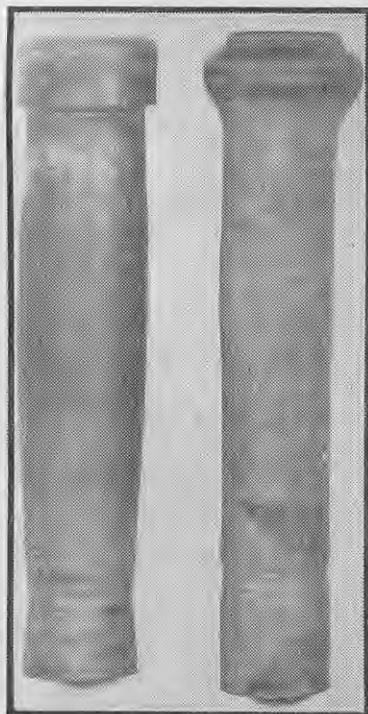
With the exception of stainless steel all metals used in dairy equipment, unless properly coated with tin, are porous, and being porous they harbour bacteria and also impart metallic flavours. The effect of milk acids and long usage will cause tinning to be removed gradually and in this condition the metal has a highly contaminating influence. No bare metal should be used in handling dairy produce and all parts so affected must be retinned or replaced.

Milk Pumps and Elevators

Inspection frequently reveals much more serious contamination in milk pumps and elevators and in the connecting pipes and rubbers than in the milking machine, and sometimes the last named is clean though the other parts mentioned are affected. An in-



Upper—Teat-cup soft inflation, after 8 weeks' use, perished by fat penetration. Note the perished and cracked surface, which harbours bacteria. Lower—Teat-cup soft inflation after 18 weeks' use during which it was treated by the boiling water-caustic soda method.



Outside view of the inflations shown in the illustration at the top of the page. The bulging of the inflation on the left is due to absorption of fat.

vestigation has shown that this is due to the common fault of flushing these units and parts simultaneously with the milking machine and with the same solutions. Trial and experiment have shown that these devices can be kept in as clean condition as the machine if they are treated separately and with the same procedure.

All milk pumps and elevators at present on the market are regarded as satisfactory for their purpose, but one cleaning operation, by flushing the milking machine and milk elevator, is insufficient and unsatisfactory, chiefly because of the considerable fall in temperature of the solutions by the time they reach the milk elevation equipment. While the boiling detergents and rinses are under vacuum in the milking machine they maintain largely their efficiency, but as soon as they are released into cool air between the milking machine and milk elevator their power to cleanse and to remove fat is diminished and their value as sterilising agents is lost. The position is aggravated in cases where the solutions are allowed to run over a milk cooler before reaching the milk elevator.

The practice of taking milk elevators to pieces daily and cleaning the in-

flations and parts by hand is not recommended and the same methods and detergents as are used in cleaning the milking machine should be employed, using the following procedure:—

1. Draw 1 bucket of cold water through the milk elevator and its connections.
2. Put through $\frac{1}{2}$ gallon of boiling water to which has been added caustic soda (1 level teaspoon to 4 gallons of water).
3. Rinse with $\frac{1}{2}$ gallon of clean, boiling water.

The important point is that this equipment must be treated independently of the milking machine.

Fittings on Milking Machines

Where a part of a milking machine is difficult to take apart it is usually found in an unclean condition because it is inconvenient to give it proper and regular attention.

The number of releasers unclean and coated in milkstone, especially in the top chamber, coincides with the number which are difficult to take apart