

treatment. As a check on the effect of the low-temperature treatment on butter keeping-quality, trials were made with low-temperature pasteurization of normal factory cream free from cress taint. It was found that pasteurization at this temperature does not greatly affect the quality of the butter when fresh, but after eight months' storage there was a slightly greater decrease in grade score than for the control butter from cream treated at 200° F. It has been confirmed that garden-cress does not cause true land-cress taint and that nasturtiums do not cause the taint. It appears certain, therefore, that the taint is not due to the benzyl mustard oil glucoside present in the cress plant.

*Parchment for the Wrapping of Butter.*—Investigations are being made of the effects of various amounts of iron and copper in parchment on the keeping-quality of butter for which it is used as a wrapper. It is confirmed that the value for total copper and iron is of less importance than that for soluble copper and iron. The information being obtained will, it is hoped, serve as a basis in the formulation of a standard specification for copper and iron contents of parchment.

*Treatment of Pinus radiata Butter-boxes.*—Boxes of *Pinus radiata* timber treated with various surface coatings at the Dominion Laboratory have been tried for use as butter-containers. The treatments reduced the intensity of timber taint, but none of them was effective in preventing the wood taint from passing through the double layer of parchment to the surface of the butter.

*Vitamin A Potency of Butter.*—The survey has now been completed for a second year. The results follow the same trend as for the first year, although the minimum value has persisted for rather longer into the autumn months.

*Disposal of Buttermilk Powder.*—By arrangement with the Export Division of the Marketing Department, trials are being made of the keeping-quality of buttermilk powder under export shipping conditions. Trials are also under way on the use of buttermilk powder in ice-cream manufacture. Ice-cream made with inclusion of buttermilk powder was considered of satisfactory quality.

*Neutralization of Cream for Buttermaking.*—A chart has been prepared and distributed to factories showing the amount of sodium bicarbonate neutralizer required for cream neutralization, allowing for the effect of increasing carbon dioxide content of the cream with increasing acidity of the cream neutralized.

*Separation of Buttermilk.*—A study is being made of the commercial possibility of separating fat from buttermilk.

*Manufacture of Casein.*—Assistance has been given to a number of dairy companies which have taken up the manufacture of casein during the year under review, and to the Internal Marketing Division in the adaptation of the vegetable-drying plant at Pukekohe to the drying of rennet casein.

*Vitamin B Content of Milk.*—Estimations made by the Plant Chemistry Laboratory of thiamin, riboflavin, and niacin in milk samples collected by the Institute from several groups of cows have shown that the milks contained normal amounts of these vitamins, and confirmed the results of workers elsewhere that Jersey milk contains more riboflavin and thiamin than Friesian milk.

*Salt Flavour in Butter.*—Manufacture of butter from salted cream did not reduce the salty taste of butter as compared with butters made from unsalted cream in the normal way to the same salt content. Reworking of butter in a vacuum worker to reduce the size of the brine globules did not give any consistent difference in the salinity of the butters to the palate until the examination six months after the butters were made. No difference in salinity was observed in butters of the same salt contents from vacreated as compared with flash-pasteurized creams.

*Continuous Churning of Butter.*—Contact with developments overseas on the continuous churning of butter has been maintained, and assistance is being given in the arrangements for trials of the machines purchased by the Department of Agriculture