

are discussed by Beerman and his co-workers² in their comprehensive review, which also appeared in 1938.

The observations and conclusions of the present study support, in the main, those published by Schwartz; however, a current analysis should serve to emphasize what has been accomplished toward eliminating the troublesome and unnecessary problems of occupational dermatitis among these workers. The main advances in prevention of occupational dermatitis during the past 10 years in the citrus fruit industry have occurred because of the introduction of mechanical methods, which have resulted in greater production and at the same time have lessened the workers' contact with the citrus fruit juices and oils.

Unfortunately, only two of the plants visited made a practice of keeping detailed records of the number of cases of dermatitis occurring among their employees. The records of one of these plants showed that during three months, October, November and December of 1946, 18 of the 66 employees lost time, estimated at 2,798 man-hours, because of occupational dermatitis. These figures represent a loss of approximately \$75 per person. The other plant medical records showed that 80 cases of dermatitis had occurred among the peelers, and seven cases among the sectionizers from October through December of 1946. In none of the latter did there result compensable lost time.

All of the plants had first aid medical facilities. Two of the plants had medical departments supervised by graduate nurses. None of the plants visited employed a full time physician, but all referred the cases of industrial injury or illness to outside physicians. Few cases of skin disease, however, were referred to dermatologists.

CANNING OPERATIONS

Citrus fruits were being canned in two forms, as juice or as sections. Fruit to be canned as grapefruit or orange sections was graded by hand and then placed in a hot water bath to remove the soil and insecticides. The hot fruit was next peeled by hand, collected in trays and placed in a 2 to 3 per cent alkali bath. The alkali treatment was used to soften the membrane which remained on the fruit after the peel had been removed. Following the alkali bath, the peeled fruit was sprayed with water to remove the excess alkali and then conveyed to the sectionizing tables, where the grapefruit or the orange sections were removed by hand with the aid of a double-edged knife.

Juicing operations were mechanical and allowed minimal contact of skin with the citrus juices and oils. The fruit was graded, washed and carried by conveyor to the machines which cut the fruit, removed the juice and separated it from pulp and seeds. The juice was then pasteurized and placed in metal containers.

One plant had initiated a process known as "de-celling," which differed from the operations producing fruit sections in that it removed the individual fruit cells from the fruit compartments. The combination of cells plus juice is then processed and canned. Operations incident to this process were noted in detail. Adequate operational conditions were noted with regard to grading, washing, dyeing, waxing and boxing the fresh fruit in all the packing houses.

2. Beerman, H.; Fonde, G. H., and Callaway, J. L.: Citrus Fruit Dermatoses, Arch. Dermat. & Syph. 38:225 (Aug.) 1938.