

RESULTS OF EXAMINATIONS

During the course of this investigation, about 1,200 employees were examined for occupational skin disorders. Most frequently seen were defatting of the skin, finger nail deformities and contact dermatitis among those peeling and sectionizing the fresh fruit.

In some plants investigated, as many as 50 per cent of the peelers showed finger nail deformities, notably erosion (onychia), due to the constant trauma associated with peeling the fruit. Peel oil, which is mostly d-limonene,³ contributes to nail deformities, because of its irritant qualities. Some of the peelers were affected with blisters and burns of the palms consequent to handling the hot fruit. Practically all those engaged in peeling the fruit showed marked callosities of the palms from handling the utility knife used in the peeling process.

Fully 25 per cent of the sectionizers were affected with one or more types of skin involvement related to their occupation. Many of these workers showed finger nail changes which occurred as the result of infection around one or more nails due to prolonged contact with moist fruit. This type of infection (paronychia) can be seen among many groups of cannery or kitchen employees who are exposed to moisture, sugars and syrups over long periods of time.

Some of the female employees engaged in sectionizing were affected with lesions involving one or more of the finger webs. This, too, is a rather common infection among cannery employees. This disease, *erosio interdigitalis blastomycetica*, is generally believed to be commonly due to infection with a yeastlike fungus known as *Candida albicans*.

Several of the sectionizers had scaly dermatitis and callosities on the palm of the hand employed for cutting, and all but the most skilled sectionizers were subject to frequent knife blade lacerations.

A few workers engaged in the quality grading of fruit were affected with minor irritations, such as abrasions and callosities of the finger tips, because of handling the fruit without using gloves.

In the packing houses no cases of dermatitis were observed among those employees who operated the wash, dye and wax tanks or those who boxed the fruit. Similarly, operators of juicing machines showed little or no dermatitis, because in this operation mechanical juicing machines minimize contact with the citrus juices and oils.

PATCH TESTS

To determine which cases were due to allergy, patch tests were performed on workers in whom dermatitis had developed from contact with citrus juices and pulp. Since only one of the plants visited was processing peeled oranges, most of the patch tests were made with grapefruit pulp and juice.

The test results are given in table 1 and may be summarized as follows:

1. None reacted to grapefruit pulp which had not been processed in alkali.
2. None reacted to orange juice.

3. Horner, S. G.: Dermatitis from Oranges and Lemons, *Lancet* 2:961 (Oct. 31) 1931.