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Citrus and Modern Technology

IF ONE DARES publicly to become nostalgic at this time of the year about the thrill of an orange in a christmas stocking, he is immediately dated as having been born about the turn of the century.

Science and technology have teamed up in spectacular fashion to make the orange an item of daily consumption in millions of homes—not just an occasional delicacy, one associated with the holiday season.

First came orange juice in cans, but its success was never phenomenal. Grapefruit juice and even pineapple in the roaring twenties proved more popular—either plain or otherwise. The peak in canned orange juice was reached in the 1947–48 season with 25.6 million cases contrasted with 17.8 million last year.

The biggest factor, however, in the drop in canned juice production was the entrance into the field of the frozen concentrates. Production of the concentrates zoomed from a mere 226,000 gallons in 1945–46 to 65.5 million gallons last year. Each gallon of concentrate makes three gallons of juice.

The rise to fame of orange juice concentrate did not occur overnight. Many technological difficulties were experienced along the way. Chemists and chemical engineers brought to bear their knowledge of the techniques of low temperature vacuum distillation and still others discovered certain bits of very essential “know-how” that made the juice taste the way the public thought orange juice should taste.

The net result has been a bonanza for Florida. The fantastic acceptance of the citrus concentrates (grapefruit and tangerine juices are definitely in the marketing picture now in a substantial way) has led to the establishment of many new can factories and the enlargement of existing ones.

Production of stock feed from the refuse peel, pulp, and seeds of citrus has also increased greatly in the past six years. Between 25 and 30 such plants currently are turning out more than 200,000 tons annually.

Taking a leaf out of the book of the meat packers, the citrus processors, if anything, go them one better. At least there is no squeal to torture the efficiency-minded citrus concentrate plant manager.

When the ultimate waste is pressed, it yields, under vacuum, a heavy sirup which in the trade is known as citrus molasses. Some 70,000 tons of this are mixed an-

nually into cattle feeds. Still other by-products include peel oil (1 million pounds annually), ethyl alcohol from waste juices, citrus wines, and citrus seed oil which is being marketed as a salad oil.

One might well assume that those well-established in the citrus concentrate field haven't a care in the world, but the very thing that made their industry a success—modern technology—is also the basis of some serious concern competitionwise. In short, there is a new “squeeze” on the citrus concentrate business.

At this moment, there are about a half dozen companies successfully shipping fresh whole orange juice packed in quart-size milk-type containers. It sells for about 25 cents a quart in supermarkets.

The infant industry, only four years old, is already shipping 5 million quarts a month. One company, Borden, is shipping its product north in tank cars and packaging it at a plant in Newark, N. J. The company states that its juice is delivered three days from the time the oranges are picked in Florida.

The secret of being able to ship orange juice like liquid milk is said to be due to the discovery, in 1950, by George Sperti, that ultraviolet rays could be used to suspend the bacteriological and enzymatic activity that causes rapid deterioration of untreated juice.

What the future holds is anybody's guess. Science and technology and modern packaging and transportation methods have made orange juice a part of the food intake of millions. The contribution to better nutrition is obvious.

Lest one gain the impression that the fun of peeling an orange is denied to most in this era of modern science, it should be reported that more than 5 million boxes of citrus fruit, mainly oranges, were sent home by Florida tourists last year.

We're willing to bet, despite chemists, engineers, physicists, food technologists, etc., that as Santa descends most chimneys this year, one of the most fragrant aromas that will greet him will come from the oranges in the stockings hung on the fireplaces in millions of homes all over America. There are some customs that must be preserved regardless of the progress of modern technology.