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CONSIDER THE LILIES OF THE FIELD, HOW THEY GROW

Roy A. Larson

Using Scripture as a title for this article might not be appropriate, after listening to the dialogue of 2 jobbers, 2 lily bulb growers, and one truck driver, with regard to the destination of a truckload of bulbs; on the other hand, Scripture might be helpful.

I do want to tell you some of my experiences and thoughts, with regard to the Easter lily as grown and forced in California. I am not writing this as an authority on bulb growing, as Lionel Borroughs, Todd Westbrook, Bob Miller or others could. I am not writing this as an authority on shipping or handling as Fred Gloeckner, Gus Poesch, Darrell Messick, Ed Markham, Dave Sheppard, Hank Michell or others could. I am writing this as a "tourist" who spent about a week in the northern California lily bulb fields, visited several greenhouse ranges where excellent lilies were being forced, observed some refreshingly-new lily experiments at the University of California at Davis, and talked to experts on all aspects of lily culture.

Lily bulb production:

I would have to list the lily bulb harvest operation as one of the most unique facets of the floriculture industry that I have witnessed. There are several reasons for this uniqueness. First of all, the geography of the area is so vastly different from most areas in the United States. Highway 101 north from Eureka takes one right through groves of giant redwoods, and right along the rocky, driftwood-covered shores of the Pacific. Large, double-trailer trucks loaded with redwood logs are common sights on the road. Fog, and smoke from the slab burners at the sawmills, frequently combine to produce a haze (called "smog" by people who do not live in California). A northern California Easter lily field, the forest, and haze can be seen in Figure 1.

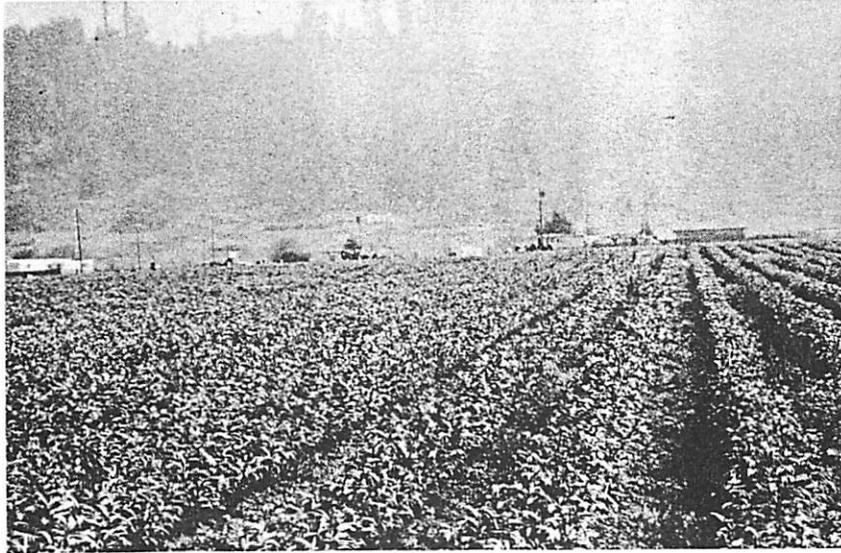


Figure 1. A lily field in Smith River, California. Smoke from sawmills and fog on the mountains combined to form the haze in the picture. This photograph was taken on October 2, 1968 just before harvesting equipment went into the field. (The lilies are in full bloom in mid- to late July.)

You have to go on one of the side roads to see much of the logging operation. The stumps, as shown in Figure 2, are almost as impressive, but not as beautiful, as the trees.

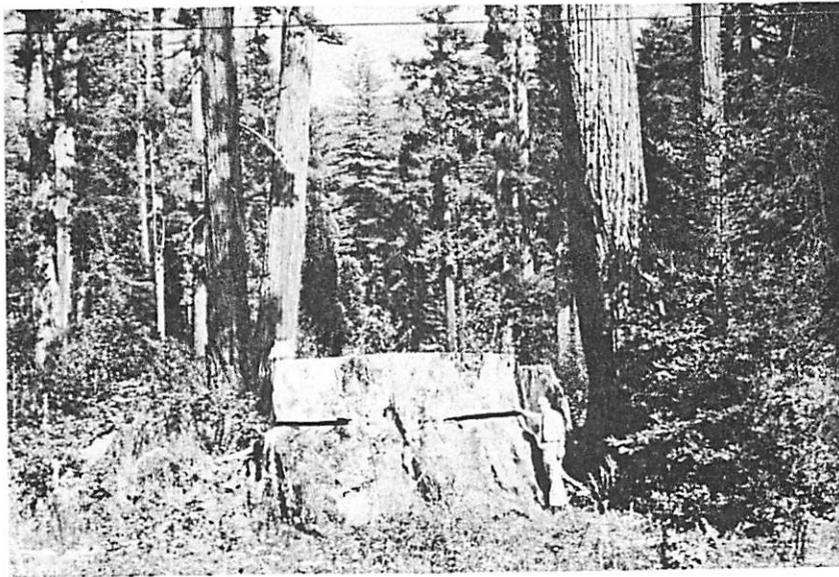


Figure 2. Giant redwood stump, typical of the area near Smith River, California. (The author claims complete innocence in the cutting down of this tree.)

A second reason for the uniqueness of the lily bulb operation is the manner in which the bulb orders are filled. The lily bulb growers are responsible for the digging, grading, and packing, but the various jobbers have top representatives at the various packing sheds, and they are responsible for actually filling the orders of the lily forcers. The jobber arranges the transportation. The fact that the grower does the packing but the jobber makes up the shipments means everyone has to be fairly well synchronized. Then, to make the situation a bit more complex, two jobbers may ship on the same truck, but from different packing sheds.

Everyone involved in the lily bulb operation is under considerable pressure in late September and early October. The grower may have several jobbers looking over his shoulder while he is trying to harvest, grade and pack the commercial bulbs, treat and plant yearling bulbs, bulblets, and scales, worry about rain, labor, etc. Though the growers have mechanized the harvesting, grading and loading of the bulbs, the process of packing is still done by hand, to give the bulbs a final inspection and to make certain that the proper number of right-sized bulbs are going into each case. The jobbers do their utmost to fill their orders properly. They feel the tension of making decisions while a large, expensive, empty truck is waiting at the loading platform, the grower has a fork lift truck and operator to go, and another jobber may be waiting to get started on his orders. The jobber also may have been in the area for 2 or 3 weeks, and for some reason he may be getting anxious to leave the redwood country for the skyscraper city.

I will not describe lily bulb culture. That topic was more ably handled by Blaney and Roberts of Oregon State in the Lily manual published by Cornell and Ohio State. The procedure varies somewhat from one grower to another. One grower may have difficulty removing the bulblets from the stem, while another grower may be troubled with some other difficulty. Immature bulbs, premature sprouting, too many wrong-sized bulbs, rain -- these are topics you would not bring up while relaxing over a delicious meal of fresh salmon.

The number of lily bulb growers in northern California and southern Oregon has decreased in recent years, but the number of bulbs produced has remained quite stable. The number of semi-truck loads of bulbs leaving the Smith River area varies from 58 to 65 each season. The trucks delivering bulbs for forcing on the West Coast may make 20 stops between Smith River and Seattle, or down to Los Angeles, while the deliveries to the 18 storage centers in the country will be almost non-stop. A few lily forcers on the West Coast pick up their own bulbs but this is certainly the exception, rather than the rule.

Pre-forcing and forcing methods:

The method of forcing lilies on the West Coast is much different from the procedure followed in the Midwest and East. Southern growers were introduced to the western style when the Harson lily cultural program was devised at Mississippi State University. A brief outline of the western method would be:

1. Pot bulbs upon arrival (mid-October) and expose to warm temperatures (60-65°F).
2. After 3 to 4 weeks, expose the plants to cool temperatures (38-40°).
3. Mid-December - force at 60°.

Steps 1 and 2 are provided by placing the potted bulbs outdoors. The warm temperatures are available in October, and then the cooler temperatures naturally follow.

Michigan State research workers have been advocating a somewhat similar procedure for midwestern and eastern forcers, but under controlled conditions (Controlled Temperature Forcing). The bud count is high, plant height is satisfactory, and *the number of days required for forcing is acceptable, provided accurate pre-forcing temperatures are maintained.* A study was conducted at Davis in 1968-69, in which potted Ace lily bulbs were exposed to 60° for 3 weeks, then placed outdoors where fluctuating temperatures occurred. Plants in this treatment flowered in 137 days (missed Easter Sunday by 2 weeks). Plants which were kept outdoors from time of potting (October 4) to start of forcing (Dec. 6) flowered in 122 days, while those given the eastern treatment (stored in the case and potted Dec. 6) flowered in 106 days with 3 less flowers/plant than were produced in the 2 other treatments. These results are shown in Figure 3.



Figure 3. 'Ace' lily bulbs subjected to 3 pre-forcing temperature treatments. Left to right: bulbs potted October 4, placed at 60°F for 3 weeks, then placed outdoors for 5 weeks; bulb potted October 4 and placed outdoors for 8 weeks; bulbs placed in 40°F cooler for 8 weeks and then potted. All plants were forced at 60°. Plants photographed April 11, 1969.

I had several opportunities to see lily crops as they were being forced, particularly in the San Francisco area. I predicted excessively tall plants when I saw the very close spacing as shown in Figure 4, but I was unaware of the dry conditions to which the plants would be subjected, and whatever other techniques the growers out West use to produce a high-quality, crowded crop.



Figure 4. Lily crop coming into flower in Half Moon Bay, California. The timing was excellent, the height was satisfactory.

I showed a slide of Figure 4 to growers at a flower growers' meeting in Pullman, Washington. One grower remarked, "They're not even pot-to-pot". Apparently he grew his plants even closer than those shown in the photograph. I can say with complete honesty and accuracy that I never did meet anyone who grew them closer than pot-to-pot.