Amaryllids and the Hemerocallis or Day-lily, under the editorship of Dr. Hamilton P. Traub, now with the U. S. Department of Agriculture, in Washington, D. C. This Society has had considerable success in stimulating enthusiasm for the field of bulbous plants.

One of the fascinating facts of bulb culture and experimentation in Florida is the seemingly endless list of new material which we are anxious to obtain and test for Florida conditions. There is always so much to look forward to seeing and so much work to be done that it keeps one on the alert continually. Never a dull moment. I wish to thank you, Mr. Chairman, for the opportunity to say something in behalf of my favorite subject, and to express to you, ladies and gentlemen, my sincere appreciation for your kind attention.

THE DISEASE FACTOR IN EASTER LILY BULB PRODUCTION IN FLORIDA

HOWARD B. JOHNSON
Sebring

Commercial Easter Lily plantings are found in widely separated locations in Florida ranging from Perry in the north to Homestead in the south. However, the largest concentration of plantings is found in the Lake Placid area where acid muck and climatic conditions are generally adapted for the culture of Easter Lilies.

In the past, practically every grower in the area was interested in bulb production rather than the sale of flowers. The commercial bulbs, six inches or larger in circumference, grown in Florida provided the northern greenhouse operators with a large part of their forcing stock. During the war years, with Japanese bulbs off the market, the financial return to the grower was considerable. In good years gross incomes of five to six thousand dollars per acre for commercial bulbs only were common.

The Easter Lily is quite resistant to man-made hazards of cultivation practices. Unfortunately, however, the lily is not resistant to necrotic fleck and other virus diseases.

Necrotic fleck[1] is described by Brierly and Smith as a complex disease, the result of two viruses being present in the plant at the same time. One is apparently limited to Easter Lilies and is completely symptomless when present alone. The other virus is the common cucumber-mosaic virus. Neither of these viruses injures Easter Lilies materially when present alone but the two in combination produce necrotic fleck. The melon and green peach aphids are responsible for the field spread of the disease.

Necrotic fleck made its appearance in the Lake Placid area in the 1943-44 season. It apparently came in on planting stock from outside the area. Because of their concentration in a relatively small area all fields were affected to some extent within two years after the introduction of the disease. Careful roguing kept the visual infection to a low percentage in most cases. However, late season infections, which are not noticeable until the following growing season, resulted in a carry-over of the disease in the planting stock for the 1946-47 crop year.

This initial source of infection, present in practically every Easter Lily field in Lake Placid and wherever Lake Placid planting stock had been carried, set the stage for a most disastrous year. Summer-like weather, continuing until the freeze

[1]BRIERLEY, PHILLIP, AND SMITH, FLOYD F. Spread of Fleck Disease. *Florist Review* 96 (2491): Aug. 23, 1943. *Florist Exch.* 105 (11):16 Sept. 15, 1945.

in early February, was ideal for large aphid populations. The secondary spread of the disease was impossible to control.

One example is cited. Easter Lilies and cucumbers were planted in adjacent fields separated by a roadway. The commercial bulbs of the previous season showed 1/2 of one percent infection after forcing so the planting stock was fairly clean. The fall crop of cucumbers matured about the time the lilies were nicely above ground. Good roguing failed to keep pace with new infections. Cold injury to the foliage masked the fleck-symptoms so completely that roguing was impossible until new growth made its appearance. To complete the picture was the spring crop of cucumbers. At digging time the visual infection was 80-85 percent.

It is difficult to convince all growers of the importance of necrotic fleck because the disease does not materially affect bulb or flower production in the field. Also, there has been little or no price distinction between clean and infected bulbs.

Necrotic fleck seriously impairs the forcing performance of bulbs under greenhouse conditions. The foliage is unsightly, the flowers are often spotted and many plants come blind.

Repercussions from this past season's bad lot of bulbs will materialize before another crop is marketed.

One can be sure that binder payments of $500 to $1000 per acre are things of the past. Likewise there will be a big price distinction between clean and infected bulbs.

The present status of the Florida Easter Lily bulb industry will not improve until the growers realize they must produce a good quality bulb. Bulb buyers are largely responsible for the present condition of the industry. If purchases, in the past, had been limited to clean fields the individual grower would have had an incentive to continue careful roguing.

There are a few isolated plantings of clean bulbs in the State although many plantings, which appeared to be isolated, were "flecked" out this past season. This illustrates the difficulty of growing clean bulbs regardless of the distance to the nearest infected field.

The possible solution is for the growers to organize and request legislation prohibiting the movement of diseased bulbs.

HORTICULTURAL TRADING CO.,
Sebring, Fla.

NEW DEVELOPMENTS IN INSECTICIDES AND APPLICATION EQUIPMENT

JOHN T. CREIGHTON
Head Department of Entomology
University of Florida
Gainesville

In 1945 the author presented before the members of The Florida Horticultural Society a paper entitled, "Present Status of DDT As An Insecticide." In this paper an effort was made to present the most *pertinent* facts pertaining to this compound. Since 1945 research work relative to the use of this compound has broadened greatly, and the possible uses of this chemical, as an insecticide, have been extended. In 1947 we find a general tendency toward widespread recommendations for the use of various formulations of DDT in the control of pests of garden and truck crops, deciduous fruits, citrus, cereal and forage crops, cotton, forest and shade trees, stored seed, grain, and pests affecting the health and comfort of man and domestic animals.

The advent of DDT upon the world ento-