

RESULTS

Time of Plant Emergence.—Cool storage (at 40° F.) for periods of approximately one month or more hastened bulb sprouting and resulted in early emergence of the plants. Twenty-one days of cool storage proved insufficient to bring about these effects. Whether the bulbs exposed to warm temperatures only were left in the field continuously (briefly lifted in this case to remove the bulb increase) or held for a rather extended time out of the ground made no difference in time of emergence of the plants.

Growth of Plants.—It soon became evident that storage at 40° F. for 30 days or more not only resulted in early emergence of the plants but caused the plants to make a noticeably more rapid growth. These differences were quite marked by January 11, at which time height measurements were taken of all plants. Plants from bulbs receiving 30 days or more of cool storage averaged considerably taller than those from bulbs receiving no cool storage. It is further indicated that this growth acceleration is to some extent, at least, directly proportional to the duration of the cool storage period. The advanced state of growth of plants from bulbs receiving cool storage was doubtless not due entirely to stimulation by cool storage, but was due in part to a longer period of growth, since the plants came up earlier, and to the benefit derived from warmer temperatures prevailing during the fore part of the period.

At the same time it became apparent that cool storage did not affect all bulbs in the same manner. There was considerable variation in time of emergence of plants from bulbs receiving similar cool storage treatment. At the time height measurements were made this variation was much in evidence. Height of the plants ranged all the way from 1 to 16 inches. In the 21-day cool storage plats no plants were taller than three inches; in the 34-day plats a small proportion was taller than three inches; in the 51-day plats there were fairly uniform numbers of plants throughout the scale of 1 to 16 inches, and in the 65-day plats the majority of the plants were in the taller sizes. Prolonged cool storage also resulted in the failure of some bulbs to sprout, this being pronounced in the case of the 65-day treatment. On January 11, 26 percent of the bulbs in this lot had not yet sprouted.

Of course, the greater height of plants in the cool storage plats at mid-season does not imply that they were taller at