considered characteristic early symptoms of copper deficiency in the avocado.

Ruehle and Lynch (6) described the development of a severe multiple bud condition and dieback of the shoots of their copper-deficient avocado trees. Their photographs showing this condition bear at least a superficial resemblance to our illustration of boron deficiency. Therefore, under field conditions, it may be difficult to distinguish between multiple buds and dieback caused by a deficiency of copper and the condition caused by a deficiency of boron, and caution should be exercised in diagnosing these deficiencies without additional criteria.

LITERATURE CITED

1. CAMP, A. F., and B. R. FUDGE. Some symptoms of citrus malnutrition in Florida. *Fla. Agr. Exp. Sta. Bul.* 335, 1939.
2. HAAS, A. R. C. Avocado leaf symptoms characteristic of potassium, phosphate, manganese, and boron deficiencies in solution cultures. *Calif. Avocado Assoc. Yearbook* 1939, pp. 103-109.
3. HOAGLAND, D. R., and D. I. ARNON. The water culture method for growing plants without soil. *Calif. Agr. Exp. Sta. Circ.* 347, 1938.
4. PARKER, E. R. Mottle-leaf and sun-blotch disease control. *Calif. Avocado Assoc. Yearbook* 1936, pp. 149-151.
5. RUEHLE, G. D. Zinc deficiency of the avocado. *Proc. Fla. State Hort. Soc.* 53: 150-152, 1940.
6. RUEHLE, G. D., and S. J. LYNCH. Copper sulfate as a corrective for dieback, a new disease of the avocado. *Proc. Fla. State Hort. Soc.* 53: 152-154, 1940.

THE INHIBITING EFFECT OF THE TERMINAL BUD ON FLOWER FORMATION IN THE AUXILIARY BUDS OF THE HADEN MANGO (Mangifera indica L.)

PHILIP C. REESE, J. B. FURR AND W. C. COOPER
Bureau of Plant Industry, Soils and Agricultural Engineering
U. S. Department of Agriculture
Orlando

SUMMARY

Inflorescences in the mango are determinate and appear under normal conditions only from terminal buds. If, however, the terminal buds are removed during the flowering period, inflorescences are produced by axillary buds in the distal region of the shoot. Normally the axillary buds remain dormant during this period, but later some of them produce vegetative shoots. Results of experiments on girdled, decapitated branches which were defoliated at various intervals after the removal of the terminal bud indicate that when leaves were present above the girdle floral induction took place in the axillary buds in a period between one and four days after decapitation and that floral differentiation rapidly followed.

Note: This paper was published in full in *American Journal of Botany* for March 1946.