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Structure and Function of the Stigma in Relation to the Germinative Requirements of the Pollen in the Easter Lily

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BOTANICAL ABSTRACTS

STRUCTURE AND FUNCTION OF THE STIGMA IN RELATION TO THE GERMINATIVE REQUIRE- MENTS OF THE POLLEN IN THE EASTER LILY

J. N. MARTIN, FRED C. WERKENTHIN, AND ELIZABETH
HUDSON

Abstract

Stigma of Easter Lily is papillate. Over the surface of the papillae a mucilaginous layer is formed and from this mucilaginous layer the pollen absorbs the requisite amount of water for germination. The papillae and nearly all cells of the stigma previous to the opening of the flower contain much starch which is transported from cell to cell chiefly in the form of dextrin. As the starch disappears in the papillae the mucilage appears on the outside of their walls.

The pollen germinates on almost any media or in almost any solution that furnishes the required amount of water.

IOWA STATE COLLEGE.

THE STRUCTURE AND DEVELOPMENT OF THE SEED COAT AND CAUSE OF DELAYED GERMINA- TION IN MELLILLOTUS ALBA

J. N. MARTIN

Abstract

The epidermis of the ovules forms the much elongated cells, known as the Malpighian cells of the seed coat. The outer walls of the Malpighian cells are much thickened and are composed of layers differing in physical properties. One of these layers is the light line which in most seeds is impervious to water until it is modified by weathering or by some artificial means. The light line is apparently only more compact cellulose for it hydrates quickly in water at 80° C. and then gives a distinct cellulose reaction and is permeable to water.

The action of the weather on seeds lying out over winter is