I. VEGETATIVE OR VISCERAL NEUROLOGY.

2. ENDOCRINOPATHIES.

Lindblom, S. THE SIGNIFICANCE OF HYPERGLYCAEMIA IN DIABETES.
[Hygiea, Sept. 31, 1919.]

The author, stimulated by Engstrand's recent investigations into the relation of hyperglycemia to diabetes mellitus, presents certain hypotheses which are largely based on Engstrand's material, but which do not tally with his conclusions. The author reports that diabetes patients are often discharged from hospital much improved, without sugar in the urine. But their hyperglycemia still exists. In health the formation and destruction of sugar in the body are evenly balanced; there is a state of stable equilibrium. When overproduction threatens, hyperglycemia ensues because the kidneys are comparatively impermeable to sugar. This hyperglycemia provokes the system to diminishing the production and increasing the destruction of sugar, and it thus restores the sugar equilibrium. But in diabetes this reaction of the body to hyperglycemia is impaired; the sugar equilibrium cannot be restored without sugar escaping into the urine. In other words, before the sugar content of the blood has become great enough to provoke the system to restore the sugar equilibrium the kidneys have let some of the sugar escape. Hyperglycemia is, in a sense, helpful—a stimulus to the system to restore the sugar equilibrium. When, in diabetes, the permeability of the kidneys to sugar is diminished by renal sclerosis, hyperglycemia reaches such a height that even though the responsiveness of the system to the stimulus of hyperglycemia is lessened, the production of sugar is diminished and its destruction increased. Hence a partial or complete restoration of the sugar equilibrium. The author compares this beneficial action of hyperglycemia with that of increased blood pressure in arteriosclerosis. The latter helps to drive the blood through rigid arteries, the former is required to supply comparatively powerful stimuli to the sugar-regulating mechanism which is incapable of responding to normal comparatively weak stimuli. But just as a high blood pressure ultimately aggravates arteriosclerosis, so hyperglycemia tends to lessen the irritability of the mechanism regulating the production and destruction of sugar. The author has noted that the constant passage of sugar through the kidneys diminishes their permeability to sugar, and he makes the suggestion that sugar disappears from the urine because of, not in spite of, the persistence of hyperglycemia.