but the opinion that the available facts point toward that conclusion is advanced with some assurance.

HENRY S. SHARP
COLUMBIA UNIVERSITY

THE TOXICOGENIC AND TOXINIFEROUS INSECT[1]

THE increasing recognition of purely toxic effects of insect feeding as contrasted with those wherein a virus is concerned suggests the desirability of terms to describe those insects whose feeding results in pathological effects not ascribable to mere mechanical injury and not fulfilling the criteria necessary to establish the presence of a virus.

Possibly the simplest cases of such effects are to be found in the leaf spotting caused by the feeding of scale insects and leafhoppers. The leafhopper burns are more complicated, since the symptoms are not localized at the insects' feeding points and there is evidence of some diffusion of the toxic principle.

Systemic toxic effects are more rare, but psyllid yellows of potatoes and mealybug wilt of pineapples are cases in point.

Although these several types vary greatly in complexity, one characteristic is common, *i.e.*, all are specific toxic effects and the capacity to produce them is inherent in the insects concerned. These insects may therefore be described as "toxicogenic" species. A toxicogenic insect may, however, not always be capable of secreting toxins, since such toxins may only arise as a result of specific or limited nutritional conditions. To describe the active toxin-secreting condition of a toxicogenic insect the term "toxiniferous" is proposed.

This latter term was first used, without amplification, in a recent paper, "Mass Action Phenomena in Mealybug Wilt,"[2] to describe the mealybug species, *Pseudococcus brevipes* (Ckl.). The more restricted use of the word "toxiniferous" and the introduction of the term "toxicogenic" will serve a useful purpose in the clarification of these concepts.

WALTER CARTER
PINEAPPLE EXPERIMENT STATION
HONOLULU, HAWAII

VAGAL AND SYMPATHETIC ENDINGS IN THE RABBIT INTESTINE[1]

WE have previously reported[2] that section of the vagi and the splanchnic nerves below the diaphragm does not alter the response of excised segments of the small intestine to epinephrine, physostigmine, acetylcholine, nicotine or barium or to electrical stimulation of the mesenteric nerves. These observations afforded evidence for the preganglionic nature of the splanchnic and vagus fibers to the intestinal muscle. Further experiments have now shown that cutting the mesenteric nerves, with subsequent degeneration of the fibers, sensitizes the longitudinal muscle coat to the inhibitory action of epinephrine. Responses of the muscle to nicotine, physostigmine, acetylcholine and barium were unchanged. Thus has been obtained pharmacological confirmation, approaching proof, of the anatomical studies of Johnson[3] indicating that the vagus nerves end on the ganglion cells of the Auerbach system; the axones of these ganglion cells therefore constitute the postganglionic fibers of the vagus pathway to the gut muscle. The sensitization of the muscle to epinephrine as a result of sympathetic fiber degeneration indicates that the sympathetic fibers in the mesentery end directly on the muscle and are not relayed through the Auerbach ganglia. It is a well-known fact that smooth muscles are sensitized to epinephrine by degeneration of their postganglionic sympathetic nerve supply. Conversely, physostigmine response of the iris disappears, following degeneration of the postganglionic fibers, but not of the preganglionic fibers of the ciliary ganglion.

These experiments firmly establish the vagal nature of the cells of Auerbach's ganglia of the rabbit but do not rule out their possible secondary rôle for local reflexes in the intestine.

F. S. MODERN
C. H. THIENES
SCHOOL OF MEDICINE
UNIVERSITY OF SOUTHERN CALIFORNIA

LATRODECTUS GEOMETRICUS KOCH IN SOUTHERN FLORIDA

THE presence of the black-widow spider, *Latrodectus mactans* Fab. in Florida has long been recognized. It has not been particularly abundant in southern Florida, but specimens are taken with regularity, and occasionally word is received from some physician that a patient suffering from the bite of this spider has been treated by him.

Early in September, 1935, several spiders with cocoons were collected in their nests on one of the university buildings by certain students engaged in making repairs. A study of these specimens by the writer indicated that they belonged to the genus *Latrodectus,* but variations in markings, the presence of a variable amount of buff or brown in the general coloration of the specimens and the larger, tuberculated egg

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[2] *Ann. Ent. Soc. of America,* 28 (3): 396–403, September, 1935.

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[2] F. S. Modern and C. H. Thienes, *Jour. Pharm. Exper. Ther.,* 51: 128 (Proc.).

[3] S. E. Johnson, *Jour. Comp. Neur.,* 38: 299.