# Letters to the Editor

### Iodine as a Cytological Stain

The use of iodine as a staining reagent in cytological work has apparently never been very carefully explored. It has been employed, however, as a test stain to demonstrate the presence of glycogen (Lee, 1937) and amyloid (McClung, 1937) and thus has some value as a cytochemical reagent. Presumably also on the basis of the precipitation reaction produced by choline derivatives (Greiss and Harrow, 1885; Rosenheim, 1905; Booth, 1935) it should have some value as a neurological stain. Although this assumption may be entirely fallacious, it has been found that iodine in potassium iodide solution (Lugol's solution) can be used successfully as a staining reagent. When applied to fresh frozen sections of nervous tissue such as brain material, it is found to stain selectively a host of exceedingly minute bodies scattered throughout the cytoplasm and along the processes of the neurone. These bodies can be seen clearly only with the oil immersion objective. Their nature is also uncertain, but for the present they may be designated simply as periodide bodies. Similar organelles are present in some other tissues, such as liver and pancreas, which have been investigated in a preliminary fashion.

In like manner, if iodine is applied to fresh teased muscle preparations, it will stain the nerve end organs and make evident the characteristic features of these structures, namely, the sole plate, the granules of Kuhne, and, to some extent, the periterminal net. While the use of iodine as a stain for nerve endings has certain disadvantages it also possesses some distinct advantages, such as speed of application, and it is hoped it will make a staining reagent of considerable technical value. Full details of the methods employed in using the iodine staining reaction will be given in a forthcoming article.

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### DDT and the Black Widow Spider

Occasionally, under favorable conditions, a considerable concentration of black widow spiders (*Latrodectus mactans*) may occur around a single dwelling. This results from the "ballooning" method of dispersal employed by the young spiders on emergence from the egg sac. With the wind in the right direction and other conditions favorable, a house may be treated to a shower of spiderlings, many of which will find suitable locations, establish their webs, and grow to maturity. I have seen houses with black widows behind every shutter and drain pipe, around the foundation, in cellar windows, etc. While the risk is not great, due to the shy and retiring nature of the spider, it is just as well to exterminate them, particularly if young children are present.

Since the common insect sprays are ineffective and lethal substances, such as hyrdogen cyanide are too dangerous or difficult for common use, there has been to date no satisfactory method of eradication short of hunting out and destroying each individual spider. This is always very difficult, as the spider tends to make her retreat in the deepest hole or crack available.

To test the action of DDT a number of mature black widow females were collected. One was placed in an up-ended, open cigar box fixed in a retort stand over a pan of water (to prevent the escape of the spider). The spider made her characteristic irregular web through the box and out to the retort stand. A 10-per cent solution of DDT in kerosene was sprayed very lightly on the outer part of the web, care being taken not to hit the spider or the inner part of the web where she had her retreat. After about 24 hours the spider was observed halfway down the web with the legs constantly making an unnatural twitching motion. The next day she had dropped from the web and was dead. Without additional spraying another spider was placed in the same web and in a couple of days was dead. Four additional spiders placed in the web also died.

As a result of this experiment it may be said that a 10-per cent solution of DDT in kerosene sprayed on the web is lethal to the black widow spider and that the effect of one spraying lasts for some time. This, then, should prove to be a safe and sure method of eradication.

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### Fairy Shrimps in California Rice Fields

Branchiopod crustaceans have been of interest to zoologists for many years, chiefly because of their phylogenetic significance. These have a wide distribution in various parts of the world as inhabitants of lakes, streams, and especially small ponds. Recently a charge has been placed against a member of this group—the genus *Apus*—as being of some economic consequence to the rice growers in the Sacramento Valley of California. Growers have occasionally seen *Apus* in the rice checks, but no damage has been claimed until during the season of 1946.

The first report of damage by *Apus* was received on 31 May 1946 from L. L. Davis, of the U. S. Rice Experiment Station at Biggs, Butte County, California. Reports from Sutter County have also been received. Upon investigation it was found that *Apus* were present in many rice checks and in such numbers that their presence was of definite significance. The damage by these animals is twofold. The young plants are attacked shortly after germination; young leaves are chewed off at the base and float free on the surface. Subsequent wind action brings the freed leaves into windrows against the dikes. A second damaging effect is that the silt is stirred up and the water kept in a muddy condition. As a consequence, sunlight penetration is prevented and poor growth of the plants results.

The undersigned would welcome reports of damage by