

served. During the day the mole crickets return to their permanent burrows and may remain there for long periods of time when weather conditions are unfavorable. Adult mole crickets are strongly attracted to lights during their spring dispersal flights.

When mole crickets come to the soil surface they are subject to predators including fire ants, ground beetles, *Labidura* earwigs, and *Lycosa* spiders. Larger animals including raccoons, skunks, red foxes, armadillos, and several toads also feed on mole crickets, but often damage turf areas when searching for them. Research is underway concerning the introduction of several insect parasites from other countries. In Puerto Rico for example, a parasitic wasp has apparently provided satisfactory control of mole crickets for a number of years.

Late June or early July is the optimum time for controlling mole crickets. At this time, the nymphs are small, $\frac{1}{4}$ to $\frac{1}{2}$ inch, and visible damage will not usually be noticed due to their small size. To determine if the mole crickets are present, use the soap flush as described earlier in this circular. Check several places in the lawn and if an average of 2 to 3 per square foot is detected a treatment should be applied.

Chinch Bugs

The southern chinch bug is the most important insect pest of St. Augustinegrass in Florida (Fig. 3). Adults are about $\frac{1}{4}$ inch long, black and have white patches on the wings. The young (nymphs) range from $\frac{1}{20}$ inch long to nearly adult size. The small nymphs are reddish with a white band across the back, but become black in color as they near adult size. Sometimes adults hibernate in the winter in northern Florida, but all stages are present year around in most of the state. Eggs are laid in leaf sheaths or pushed into soft soil and other protected places. In summer eggs hatch in 1- $\frac{1}{2}$ weeks and the young develop to adults in 4-5 weeks. Chinch bugs pass through 3 generations per year in north Florida and 7 to 10 in south Florida.

Chinch bugs are seriously damaging only to St. Augustinegrass but will feed on other grass species. This insect sucks the plant juices through its needle-like beak and also apparently causes other internal injury to the grass, resulting in yellowish to brownish patches in lawns (Fig. 4). These injured areas frequently are first noticed along edges or in water stressed areas where the grass is growing in full sun. In south Florida chinch bugs may cause economic damage from March through October; in north Florida, usually April through September.

When chinch bugs are present in sufficient numbers to cause yellow or brown areas in lawns, they can be found by parting the