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The American grasshopper, *Schistocerca americana americana* (Drury) (Orthoptera: Acrididae)[1]

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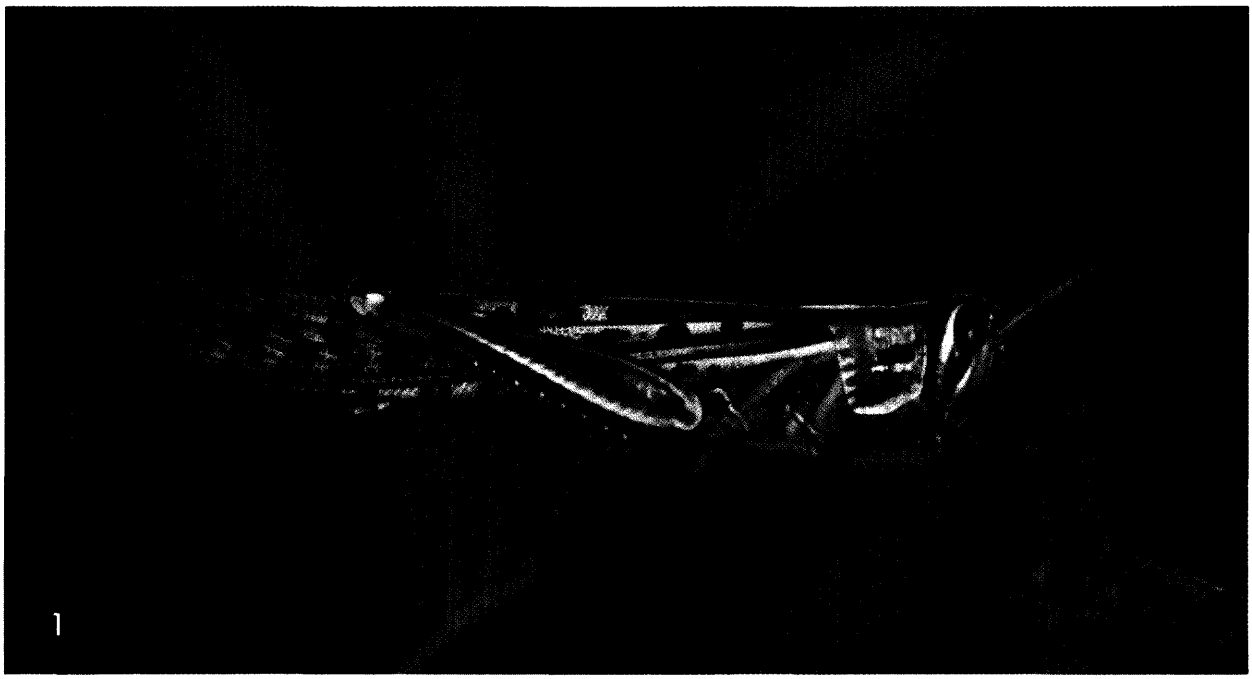
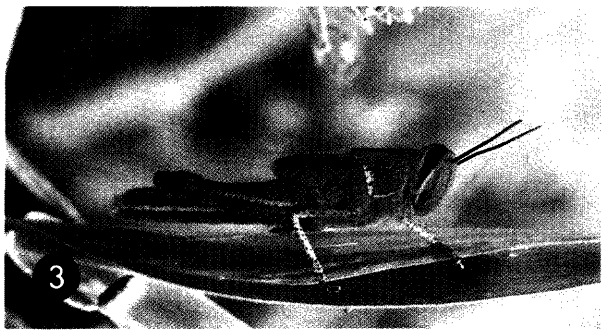
INTRODUCTION: The American grasshopper, sometimes known as a "bird grasshopper," ranges throughout the eastern United States to the Great Plains, and south to Mexico. It is closely related to the desert locust (*Schistocerca gregaria* (Forskal)) of Africa and the Middle East, but does not have a true swarming phase like the African species. The American grasshopper is common in Florida, especially in the drier habitats, but is rarely an economic pest. Occasionally, populations increase tremendously and can inflict severe damage in localized areas (Kuitert and Connin 1952, Griffiths and Thompson 1952). In May 1991 very high populations were reported in parts of an approximately 52,000-acre area in Pasco and Hernando counties, where they were seriously damaging several thousand acres of citrus.





Figures 1-3. 1) Adult *Schistocerca americana* (Drury); 2) nymphs of *S. americana* on citrus tree near Dade City in Pasco County, June 1991; 3) nymph of *S. americana*.

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IDENTIFICATION: There are four species of *Schistocerca* in Florida: *a. americana* (Drury), *alutacea* (Harris) (with two subspecies), *ceratiola* Hubbell and Walker, and *damnifica* (Saussure) (Dirsch 1974). From the other Florida species, *americana* can be distinguished by its large size (body about 35mm-60mm long), presence of distinct, well-defined spots on the median part of the tegmina, and median carina of pronotum fine, not elevated.

TAXONOMY: Many of the species of *Schistocerca* are extremely variable in external and genitalic morphology and the taxonomy of this genus is unsettled. In his 1974 revision, Dirsch listed 11 subspecies and 24 junior synonyms under *americana* alone. He treated the desert locust as a subspecies of *americana*. In 1981, Harvey reviewed the *Schistocerca americana* complex (*S. americana sensu* Dirsch 1974) and listed six species, four with two subspecies each. Harvey (1981) treated the desert locust as a full species.

DISTRIBUTION: Blatchley (1920) recorded *Schistocerca americana* as having "been recorded many times from all parts of the State, including the southern keys." Division of Plant Industry records include the following counties: Alachua, Broward, Dade, Marion, Hernando, Osceola, Pasco, Polk, St. Johns, and Suwannee.

LIFE HISTORY: The following account is drawn mainly from Kuitert and Connin (1952) and Griffiths and Thompson (1952). Like most acridids, the American grasshopper lays its eggs in masses in soil, preferably in areas with good ground cover, but not in solidly sodded areas. The number of eggs in each egg mass averages about 85. There are two generations a year in Florida: one in the spring and another in late summer. Oviposition and development vary with temperature, but generally eggs are laid in March-April and July-September. The eggs hatch about a month after oviposition and the green, first instar nymphs make their way to the surface and begin to feed. There are five or six nymphal instars; after the first instar nymphs may be green or orange to black with green or yellow markings. It is during the nymphal stages that most feeding damage is done; adults feed relatively little. Adults of the spring generation begin appearing in early June; those of the fall generation in September. Fall generation adults overwinter to give rise to the spring generation the following year.

OUTBREAKS: Infrequently, Florida populations of the American grasshopper undergo population explosions that result in destructive outbreaks. These outbreaks generally occur in upland ridge areas (Kuitert and Connin 1952). A 1950-51 outbreak in north-central Florida was blamed, at least partially, on a succession of unusually mild winters (Kuitert and Connin 1952), much as the most recent outbreak followed two relatively mild winters.

CONTROL: Proper cultural practices seem to be effective in preventing population increases. Since ground cover is necessary for oviposition and survival of first instar nymphs, it is essential that ground cover be denied the grasshoppers at critical times. Clean culture should be maintained from February through the middle of May and from August through September.

Chemical controls are available. Contact your local county extension agent for the latest recommendations.

REFERENCES CITED

Blatchley, W.S. 1920. Orthoptera of Northeastern America, with especial reference to the faunas of Indiana and Florida. The Nature Publishing Company, Indianapolis, 784p.

Dirsch, V.M. 1974. Genus *Schistocerca* (Acridomorpha, Insecta). Dr. W. Junk B.V., The Hague, vi + 238pp.

Griffiths, J.T., and W.L. Thompson. 1952. Grasshoppers in citrus groves. Florida Agric. Exp. Sta., Bull. 496: 1-26.

Harvey, A.W. 1981. A reclassification of the *Schistocerca americana* complex (Orthoptera: Acrididae). Acrida 10(2): 61-77.

Kuitert, L.C., and R.V. Connin. 1952. Biology of the American grasshopper in the southeastern United States. Florida Ent. 35(1): 22-33.