

Online Book The Systematics And Biology Of The Cave Crickets Of ...

Hubbell, T. H. and Norton, R. M. 1978. The systematics and biology of the ...
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Biology of Insect eggs. Pergamon press. Oxford. HUBBEL. T.H. and R.M. NORTON. 1978. **The systematic» and biology of che cave crickets of the North American ...**



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Rosemary grasshopper - *Schistocerca ceratiola* Hubbell and Walker One species, the rosemary grasshopper, *S. ceratiola* Hubbell and Walker, occurs only in Florida and is poorly known and rarely seen except by those ...

<http://entnemdept.ufl.edu/creatures/misc/misc/rosemary_grasshopper.htm>

7/13/2011

common name: rosemary grasshopper

scientific name: *Schistocerca ceratiola* Hubbell and Walker (Insecta: Orthoptera: Acrididae)

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Introduction

There are six species of grasshoppers in the genus *Schistocerca* found in Florida. One species, the rosemary grasshopper, *S. ceratiola* Hubbell and Walker, occurs only in Florida and is poorly known and rarely seen except by those specifically seeking it out. Following is an illustrated summary of its appearance and ecology.

Distribution

The rosemary grasshopper is known only from central and northcentral Florida. It occurs in sand scrub areas from Clay County in the north of Florida to Highlands and Martin Counties in the south, and from the Atlantic Coast to the Gulf Coast of Florida. County records where *S. ceratiola* has been found include: Alachua, Clay, Hernando, Highlands, Lake, Levy, Martin, Orange, Polk, Putnam, Seminole and Volusia. Thus, the distribution of the grasshopper is more limited than that of its host plant, which

extends along the coastal plain from southeastern South Carolina to southern Mississippi as well as peninsular Florida. Within this area, the host plant occurs only in xeric areas with deep sandy soils. Rosemary is easily killed by fire, and though locally abundant because it quickly colonizes disturbed soils after fires, eventually it will disappear as trees grow and shade the plants.

Description

Adults: Adult *S. ceratiola* are mottled gray and brown, with some pale green coloration on the abdomen. A pale tan stripe occurs on the upper surface of the head and pronotum, extending weakly along the forewings. On the head and pronotum, the pale stripe is bordered by thinner dark stripes. The underside of the grasshopper is markedly paler, mostly gray. The hind tibiae are red or brown. This species is quite slim in general appearance, slimmer and smaller than any other North American *Schistocerca*. The forewings are narrow, tapering to a rounded point, and extend well beyond the tip of the abdomen. The hindwings are transparent, although the veins are dark. The large eyes bear dark brown bands. Males are 28 to 32 mm long, females 36 to 40 mm.



[adult male](#)



[adult female](#)

Nymphs: The appearance of nymphs contrasts strongly with the dull coloration of adults. Nymphs are bright yellowish green with a pair of yellow stripes located dorsolaterally and running the length of the body. Yellow patches are located elsewhere, especially on the upper surface of the hind femora. There are five nymphal instars that grow in size and display more advanced wing development with each molt. The number of eye bands increases as the nymph matures, though this character is not entirely reliable for determining the instar.



[1st instar](#)



[2nd instar](#)



[3rd instar](#)



[3rd instar close-up](#)



[4th instar](#)



[5th instar](#)

Ecology

Despite its moderately large size, the rosemary grasshopper is not often seen and is poorly known. It escapes detection due to its restricted range - it occurs only on Florida's sandy ridges; its restricted diet - it feeds only on Florida rosemary (*Ceratiola ericoides*); and its restricted period of activity - it is active only early in the evening. Normally it hides deep within rosemary bushes, where it is effectively camouflaged during the daylight hours, moving to the surface of the bushes at night (or sometimes during periods of heavy cloud cover) where it feeds and copulates. The adults closely resemble the stems of rosemary, but the green and yellow nymphs blend perfectly with the foliage. The degree of host specificity displayed by the rosemary grasshopper, wherein a single plant species serves as the host plant, is extremely unusual in grasshoppers.



[Florida rosemary](#)

Adult grasshoppers are found in late summer to autumn. They are reluctant to fly, and when sufficiently disturbed as to take flight, they normally fly only short distances and directly to another rosemary bush.

Unlike many grasshoppers, this species causes no economic injury, and is interesting mostly due to its monophagous feeding behavior, restricted distribution, and cryptic appearance. Its habitat, the xeric sand ridges of Florida, is home to many unique animals and plants. The unusual flora and fauna likely are due to their long periods of geographic isolation, first by higher sea levels in past times that caused the sand ridges to become islands, and now by the differing flora that separates the intermittent hilly regions.

Selected References

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- Franz R, Franz SE. 1989. Records for the rosemary grasshopper, *Schistocerca ceratiola* Hubbell and Walker, in North America (Orthoptera: Acrididae). [Florida Entomologist](#) 72: 386-387.
- Hubbell TH, Walker FW. 1928. A new shrub-inhabiting species of *Schistocerca* from central Florida. Occasional papers of the museum of zoology, University of Michigan 197. 10 pp.

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[Theodore Huntington Hubbell](#)



T H E O D O R E H U N T I N G T O N
H U B B E L L

Years at Michigan: 1955 - 1968

Professor of Zoology

Director of Museum of Zoology

Professor Emeritus

Curator Emeritus

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THEODORE H. HUBBELL

1897-1989

Theodore H. Hubbell, former Director of the Museum of Zoology and Professor Emeritus of Zoology, died September 22, 1989, at the age of 92. Retirement had represented only a minor boundary for him and he continued his research and interactions with colleagues and graduate students until shortly before that date.

Hubbell was born July 4, 1897, in Detroit. Following military service in World War I, he completed his bachelor's degree at Michigan in 1920 and remained for two years as an assistant in the Museum of Zoology. He then went to the Bussey Institution at Harvard and in 1923 to the faculty of the University of Florida. While teaching in Florida, Hubbell also served as Honorary Associate Curator of Orthoptera in the Museum of Zoology and continued work on his doctorate. He received the Ph.D. from Michigan in 1934.

In 1946, Hubbell returned to Michigan as Curator of Insects in the Museum of Zoology and Professor of Zoology. Following the death of the Museum's Director in 1955, he was named Acting Director and then, in 1956, Director. He held the latter position until his retirement in 1968. His intellectual, organizational, and logistical contributions as Director are apparent in the Museum of Zoology even today. His most visible legacy is the unit's six-story laboratory research wing, which was principally funded by a grant from the National Science Foundation, for which he served as Principal Investigator.

Hubbell received the University's Distinguished Faculty Achievement Award in 1967. He was the author of many articles on the systematics, distribution, and ecology of insects of the order Orthoptera, which includes crickets and grasshoppers. His extensive research expeditions took him to much of Europe and Latin America, as well as many parts of the United States. He was a member or fellow of more than a dozen professional societies, including the American Association for the Advancement of Science, the Entomological Society of America, and Sigma

Xi. He is survived by a sister, Harriett; a brother, George; three children, Roger, Mary Joan, and Stephen; and numerous intellectual progeny. A patient, kindly man, Hub's command of language and logic and his knowledge of biology made him a stimulating person with whom to explore ideas. The personnel of the Museum of Zoology miss him greatly.

William R. Dawson

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Summary Information

Title: Theodore H. Hubbell papers

Creator: Hubbell, Theodore H.

Inclusive dates: 1833-1988

Bulk dates: 1852-1970

Extent: 7.4 linear ft.

Abstract:

Professor of entomology at the University of Michigan. Personal and professional papers of Hubbell and his wife Grace Griffin Hubbell; also collected genealogical and family papers relating to the Hubbell and Hussey families (Grace Griffin Hubbell's mother was Lenora Hussey Griffin); Hussey family series includes papers of John Milton and Mary C. Hussey and their children and relate to John M. Hussey's Civil War service, Ohio agriculture and Grange activities and family life and customs; Hubbell family series includes papers of **Clarence W. and Winifred Waters Hubbell** relating in part to his work as engineer in the Philippines, 1907-1913; and collected Hubbell family photos and albums, including views of Benzonia, Michigan family farm and relating to **C. W. Hubbell's** service as engineer in the Philippine Islands, 1909-1911; also personal photograph series, including various residences of Hubbell, his scientific field trips to Tennessee, Florida, and the Philippines, and postcard views of Michigan communities.

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Language: The materials are in English.

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