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Authors: Frank, J. H., and Walker, T. J.

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MOLE CRICKETS (ORTHOPTERA: GRYLLOTALPIDAE) IN JAMAICA

J. H. Frank and T. J. Walker
Entomology & Nematology Dept., University of Florida, Gainesville, FL 32611-0630

The only species of mole cricket reported for Jamaica in Gowdey's (1926a,b, 1928) catalogue of the insect fauna is *Scapteriscus didactylus* (Latreille). That mole cricket species was the subject of many reports in Puerto Rico in the latter part of the 19th century and first half of the 20th because of its destructiveness to cultivated crops and grasses (e.g., Barrett 1902). Seemingly, in every West Indian island where it occurs, it has been blamed as a pest; yet, nothing seemed to have been published about it in the Jamaican literature. The contrast—many reports from Puerto Rico and other West Indian islands where *S. didactylus* occurs, but none from Jamaica—did not make sense, because entomologists of the Jamaica Department of Agriculture (later Ministry of Agriculture) published numerous reports about other pest insects. For that reason, we decided to verify existence of *S. didactylus* in Jamaica by examining specimens of mole crickets in Jamaican collections. Our effort had a biogeographic focus (the history of colonization of the West Indies by mole crickets) and a practical implication. The practical implication was that we have worked with biological control agents of *Scapteriscus* mole crickets in Florida, and could have offered help in Jamaica if help had been needed; on the other hand, if some natural enemy had been suppressing *S. didactylus* populations in Jamaica, information that we might glean from Jamaica could be useful in other islands.

The senior author, newly employed by the Sugar Research Department (SRD) of the Sugar Manufacturers' Association (of Jamaica), encountered mole crickets in Jamaica as pest insects. The one incident was in January 1969. The locality was Gray's Inn, an agricultural estate near Buff Bay in the parish of Portland, where he was called by Brian Michelin (Farm Manager) to examine and recommend treatment for this occurrence. A field of banana had been replanted with sugarcane (this was done, as usual in planting sugarcane, by planting cut sections of sugarcane stem), and mole crickets were damaging the roots and shoots produced by the cut sections. Recommendations for insecticidal treatment were given, and specimens were collected and placed in vials of alcohol in the SRD collection. The specimens were not submitted for expert identification by specialists and are no longer available. There was no evidence of mole cricket damage to sugarcane in Jamaica from 1972 to the present (Trevor Falloon, pers. comm.). This assertion corroborates an earlier report by Frank & Bennett (1970) based on lack of mention of these pests in the pre-1970 literature on Jamaican agricultural pests and the direct observations by the senior author in 1969-1970. Other entomologists in Jamaica (Dionne Newell and Eric Garraway, pers. comm.) confirmed these findings not just for sugarcane but for all other crops. It is said that hindsight is a good teacher. The senior author should, in 1969, have sent specimens for expert identification because no key to the West Indian mole cricket species was then available; the key by Nickle & Castner (1984) was 15 years in the future.

Gowdey (1926a) does not specify how he identified most insects whose names appear in his catalogue. In his introduction, he acknowledges obligations to various specialists in England, Canada, and the USA. Among these, he mentions J. A. G. Rehn, of the Academy of Natural Sciences of Philadelphia, a specialist in Orthoptera. It is thus possible that Rehn examined a mole cricket specimen that Gowdey sent to him, or made a presumption, or that Gowdey himself made a presumption without sending a specimen to Rehn. Unfortunately, Rehn (1909) had earlier catalogued *S. didactylus* as being present in Cuba—which later was denied by others, summarized by Frank et al. (2002): *S. didactylus* does not occur in Cuba. Thus, Rehn may have allowed his presumptions to get in the way of hard evidence (examination of specimens) at least once and perhaps twice. In St. Croix (U.S. Virgin Islands) *S. abbreviatus* Scudder had been misidentified as *S. didactylus* (Frank & Keularts 1996).

The specimens housed in the Institute of Jamaica are the best evidence of identity of the mole cricket species in Jamaica. There are only five, and all are *Scapteriscus abbreviatus*. The earliest specimen (1) has no label and is from Gowdey's collection (*teste* Dionne Newell), presumably collected before 1926. All of the other specimens are from the parish of Kingston and St. Andrew. Collection data are: (2) St. Andrew, Sandy Gully nr. Barbican, 7-VII-1957, Peter Drummond, (3) Kingston, beneath seashells at foot of Paradise Street, 9-IX-1961, K. Eldemire, (4) St. Andrew, Port Royal, 14-I-1975, Donna Clark, (5) Kingston, Sutton Street, 9-V-1992, E. Sterling. These data suggest restriction of mole crickets to one parish (Kingston and St. Andrew), but evidence of mole crickets in Portland Parish (above) suggests a wider distribution. The first specimen of *S. abbreviatus* is from the collection that Gowdey assembled. It was the first general collection of insects formed by a Department of Agriculture entomologist (Gowdey 1926a). This is crucial evidence because Gowdey (1926a,b, 1928) acknowledges the presence only of *S. didactylus* in Jamaica. A misidentification was made. The mole cricket present in Jamaica is *S. abbrevia-*

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tus (not *S. didactylus*). We must presume that *S. abbreviatus* arrived in Jamaica before 1926, possibly in ship ballast to Port Royal or to the port of Kingston, or both, as it is believed to have done in Cuba, Haiti, Puerto Rico, and St. Croix in the West Indies, and Florida and Georgia in the USA. Restriction of *S. abbreviatus* to the vicinity of its port of arrival (the parish of Kingston and St. Andrew), because adults are flightless, may account for the lack of widespread damage by it. Its presumed presence in Portland Parish on Jamaica's north coast is then more interesting, and suggests a separate arrival, perhaps at Buff Bay, or Port Antonio.

Neither of us has visited Jamaica in many years. We have not interviewed golf course superintendents about insect damage to turfgrass. It is golf course superintendents who may bear the brunt of damage by pest mole crickets, if there is any, because of the highly attractive habitat that they provide to these insects.

This note would not have been possible without the collaboration of Mrs. Dionne Newell (Natural History Department, Institute of Jamaica) who lent the five mole cricket specimens housed in the Institute's collections, and Dr. Eric Garraway (University of the West Indies, Mona, Kingston) and Mr. Trevor Falloon (Sugar Industry Research Institute, Mandeville) who made helpful comments. We acknowledge critical reviews of the manuscript of this note by Drs. Pauline Lawrence and Norman Leppla (University of Florida). This is Florida Agricultural Experiment Station Journal Series No. R-09469.

Summary

One species of mole cricket is proven to occur in Jamaica, and it is *Scapteriscus abbreviatus* Scudder. It is not native to Jamaica, and it arrived there before 1926. This species occasionally damages crops, but has not heretofore in print, to the best of our knowledge, been reported to do so in Jamaica. In the West Indian islands of St. Croix and Cuba, *S. abbreviatus* was apparently misidentified as *S. didactylus* (Latreille), and here we report that the same misidentification was made in Jamaica in the 1920s, uncorrected until now.

References Cited

Barrett, O. W. 1902. The changa, or mole cricket (*Scapteriscus didactylus* Latr.) in Porto Rico. Porto Rico Agric. Exp. Stn. Bull. 2: 1-19.

Frank, J. H., and F. D. Bennett. 1970. List of the sugar cane arthropods of Jamaica. Sug. Manuf. Assoc., Sug. Res. Dept., Tech. Bull. 1/70: 1-24.

Frank, J. H., and J. L. W. Keularts. 1996. *Scapteriscus abbreviatus* (Orthoptera: Gryllotalpidae), a minor pest on St. Croix, US Virgin Islands. Florida Entomol. 79: 468-470.

Frank, J. H., R. E. Woodruff, and M. C. Thomas. 2002. Mole crickets (Orthoptera: Gryllotalpidae) in Grenada, West Indies. Entomotropica 17: 207-212.

Gowdey, C. C. 1926a. Catalogus Insectorum Jamaicensis. Dept. Agric., Jamaica, Entomol. Bull. 4(1): 1-114, i-xiv.

Gowdey, C. C. 1926b. Catalogus Insectorum Jamaicensis. Dept. Agric., Jamaica, Entomol. Bull. 4(2): 1-11.

Gowdey, C. C. 1928. Catalogus Insectorum Jamaicensis. Dept. Sci. Agric., Jamaica, Entomol. Bull. 4(3): 1-45, i-iii.

Nickle, D. A., and J. A Castner. 1984. Introduced species of mole crickets in the United States, Puerto Rico, and the Virgin Islands (Orthoptera: Gryllotalpidae). Ann. Entomol. Soc. America 77: 450-465.

Rehn, J. A. G. 1909. A catalog of the Orthoptera of Cuba and the Isle of Pines. Cuba: Estación Central Agronómica, Report 2: 175-206.

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