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**ON THE**

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**PROGRESS ON THE SURVEY OF THE DARKLING BEETLES  
(COLEOPTERA: TENEBRIONIDAE) OF NEW PROVIDENCE ISLAND, BAHAMAS,  
AND NEW RECORDS FOR TWO SPECIES ON SAN SALVADOR**

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**ABSTRACT**

A list of species known to date from New Providence is presented as part of an ongoing survey of darkling beetles of the Bahamas, documenting the endemism and adventive elements in the islands of the Bahamian region. Prior to this work, only 8 species of Tenebrionidae were known from the island. By focusing on known habitats and collecting techniques, a total of 37 species are currently documented as a result of 11 days of field work and supplemented by literature records and museum specimens. A number of new island records, first-time Bahamian occurrences, and one undescribed flightless species (genus *Trientoma*) are reported here, with some discussion of distributional data. A rare flightless species, *Branchus woodi* LeConte, was "rediscovered" at several coastal localities. It had not been known from the island since its original description in 1866. Two new island records for San Salvador are also reported, based on recent collections.

**INTRODUCTION**

This report quadruples the number of known species of darkling beetles (Coleoptera: Tenebrionidae) recorded from the island of New Providence, as a continuation of the survey of this family throughout the Bahamian archipelago (Steiner 2005a, 2005b, 2006a, 2006b, 2007). More sampling on the island is needed, so the checklist of species presented here should be considered preliminary, and a full listing of specimen data is to be given in a future work.

Of all Bahamian islands, New Providence is the most developed, with severe habitat fragmentation and loss of native vegetation. However, by sampling remnant tracts of coastal scrub and interior forests on three brief visits (11-15 February 2005, 14-18 April 2007, and 17 June 2009), the 200 square kilometer island was found to be rich in species of this family. Dense tropical hardwood scrub interfaces with beach strand habitats and relatively open interior karst flats with sparse Caribbean pine; disturbed sandy soil areas of open roadside habitats were also sampled. Microhabitats investigated and collecting techniques used were as described earlier (Steiner 2005b). Two new island records for San Salvador are also reported, based on specimens found during the Thirteenth Natural History Symposium at the Gerace Research Center, June 2009.

**DEDICATION**

I dedicate this work to Mary Jo Molineaux (1949-2009), Museum Specialist and co-worker at the Department of Entomology, Smithsonian Institution, who initiated my entomological investigations of these islands with an invitation to accompany her family on a visit to Grand Bahama in 1987 (see Steiner 2005a).

**RESULTS AND DISCUSSION**

The 11 days of fieldwork listed above, supplemented by literature records and label data on museum specimens, add 29 species (Table 1) to the list of 8 recorded from New Providence in

earlier literature (see Steiner 2006b; Turnbow and Thomas 2008).

Table 1. Checklist of Tenebrionidae known from New Providence Island. Classification follows that of Bouchard et al. (2005). Abbreviations: A, adventive; B, new island record but previously known from the Bahamas; N, new record for the Bahamas; E, apparently endemic to the Bahamas; P, previously reported from the island; FL and CU, also known from Florida and/or Cuba. S(ources): L, literature record; M, museum specimens; R, recent collections by the author and Jil M. Swearingen.

Pimeliinae

Branchini

1. *Branchus woodi* LeConte  
P, E; S: L, R

Edrotini

2. *Trientoma* n. sp.  
N, E; S: R

Diaperinae

Phaleriini

3. *Phaleria picipes* Say  
B; FL+CU; S: R
4. *Phaleria punctipes* LeConte  
P; FL+CU; S: L, R
5. *Phaleria testacea* Say  
B; FL+CU; S: R

Diaperini

6. *Adelina plana* (Fabricius)  
B; FL+CU; S: R
7. *Adelina bidens* (Schaeffer)  
B; FL+CU; S: R
8. *Adelina maryjoae* Steiner  
B, E(?); S: L, R
9. *Adelina pici* (Ardoin)  
N; CU; S: R
10. *Sitophagus hololeptoides* (Laporte)  
N; FL+CU; S: R
11. *Diaperis maculata* Olivier  
P; FL+CU; S:
12. *Platydema antennatum* Laporte & Brullé  
N; CU; S: R

13. *Platydema excavatum* (Say)  
B; FL+CU; S: R
14. *Platydema nigratum* (Motschulsky)  
B; FL+CU; S: R
15. *Platydema ruficorne* (Sturm)  
B; FL; S: R
16. *Gnatocerus curvicornis* (Champion)  
B; FL+CU; S: M, R
17. *Gnatocerus guatemalensis* (Champion)  
B; FL+CU; S: R
18. *Ulomoides ocularis* (Casey)  
A, P; FL+CU; S: L, M
19. *Neomida bicornis* (Fabricius)  
B; FL+CU; S: R

Crypticini

20. *Gondwanocrypticus platensis* (Fairmaire)  
A, B; FL; S: R

Hypophlaeini

21. *Corticeus glaber* (LeConte)  
B; FL; S: R
22. *Corticeus thoracicus* (Melsheimer)  
B; FL; S: R

Tenebrioninae

Bolitophagini

23. *Rhipidandrus fulvomaculatus* (Dury)  
B; FL; S: R
24. *Rhipidandrus sulcatus* (Gorham)  
N; CU; S: R

Tenebrionini

25. *Zophobas atratus* (Fabricius)  
A(?), N; FL+CU; S: M, R

Helopini

26. *Nautes azurescens* (Jacquelin du Val)  
B; FL+CU; S: M, R

Pedinini

27. *Alaetrinus pullus* (Sahlberg)  
A(?), B; FL+CU; S: R

Opatrini

28. *Blapstinus fortis* LeConte  
P; FL+CU; S: L, R

29. *Blapstinus aciculus* Blatchley  
B; FL; S: R  
30. *Diastolinus bahamae* Marcuzzi  
B, E; S: R

Alphitobiini

31. *Alphitobius diaperinus* Panzer  
A, B; FL+CU; S: M

Triboliini

32. *Tharsus seditiosus* LeConte  
B; FL; S: R  
33. *Hypogena tricornis* (Dalman)  
N; FL+CU; S: R

Alleculinae

Alleculini

34. *Lobopoda androsi* Campbell  
P, E; S: L  
35. *Hymenorus bahamensis* Campbell  
P, E; S: L  
36. *Hymenorus convexus* Casey  
P; FL+CU; S: L  
37. *Hymenorus* sp., probably undescribed  
N; S: R

The list includes species from a variety of known tenebrionid habitats and substrates, e.g., dead wood, polypore fungi, under leaf litter on sandy soil, and under seaweed drift on beaches. Many of the wood- and fungus-dwelling ones were found under loose bark of dead *Pinus caribaea* Morelet and *Bursera simaruba* (L.) Sarg. The majority of species are also known to occur in neighboring Cuba and/or Florida (see Peck 2005; Peck and Thomas 1998) and on Grand Bahama (Steiner 2005a), all of which have similar pine and mixed forest habitats, and beach strands.

Eight of the species listed represent new records for the Bahamas and include an undescribed *Trientoma* not known in museum collections. Three genera (*Hypogena*, *Sitophagus*, *Zophobas*) are also newly reported from the Bahamas but the species are known to be widespread in the Caribbean region. One undetermined *Hymenorus* species is also probably undescribed, but so far known only from two

female specimens. *Corticeus glaber* was recently reported from Andros (Turnbow and Thomas 2008). A series of *Adelina maryjoae* (Figure 1), formerly known only from the holotype male from Grand Bahama, was found under bark of dead standing *Coccoloba diversifolia* Jacq., including females and larvae, to be described in a future work. The *Gnatocerus* sp. listed is the same as that formerly identified as *G. guatemalensis* (Champion) in recent literature, but studies in progress (L. Watrous, personal communication) have revealed this to be a misidentification, with another name to be determined.

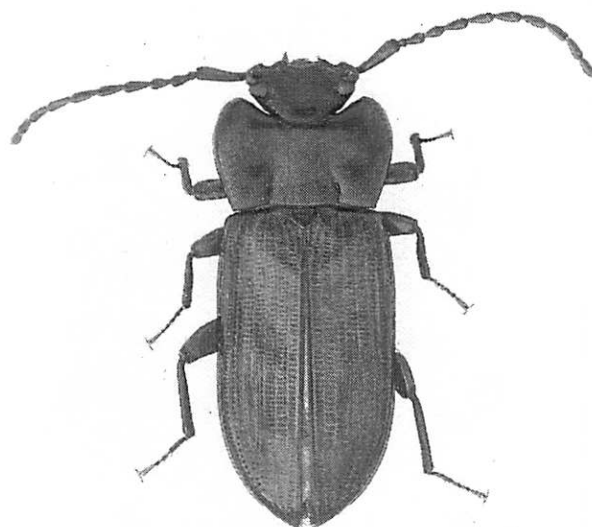


Figure 1. *Adelina maryjoae* Steiner, male, length 7.5 mm. Male specimen from 1 km. S. Love Beach near Old Fort Bay, New Providence.

The “re-discovery” of *Branchus woodi* (Figure 2) on New Providence was reported earlier (Steiner 2006b) and it is known from other islands of the Great Bahama Bank, but no records had been seen from New Providence since its description from Nassau specimens in 1866. Being flightless and restricted to mostly coastal sites with deep sand, this and other species of maritime scrub are highly threatened by habitat loss and from over-shading by invasive *Casuarina* trees. It was encouraging to find at least small remnant populations at several locations around the island in 2005 and 2007, including larvae of various sizes.

Specimens of *Diastolinus bahamae* on New Providence, while highly variable in size, do not differ from those on Grand Bahama, the type-locality. This does not fit the predicted pattern for this genus, with different species occurring on separate island banks (see Steiner 2006b, 2007) so this occurrence was unexpected. Other specimens are needed from islands not yet sampled so that a full comparison among populations can be studied, and a systematic review of this circum-Caribbean group can be carried out.

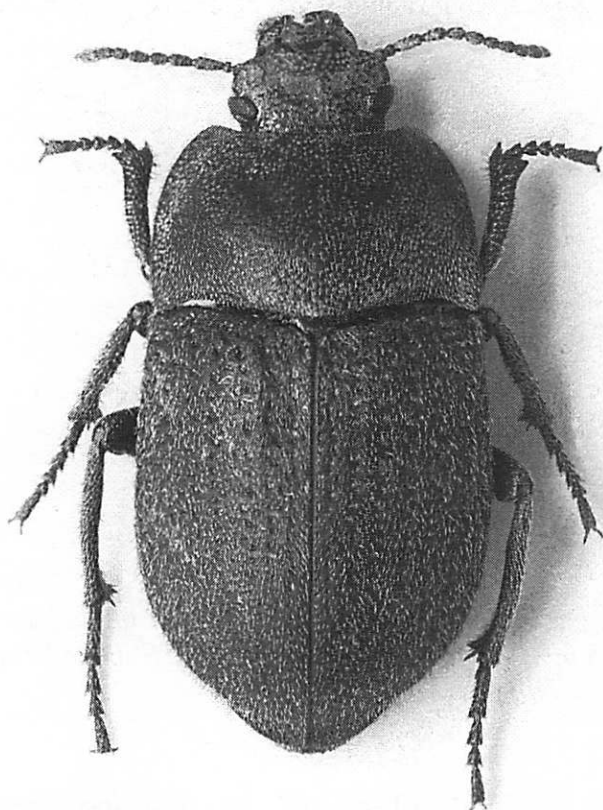


Figure 2. *Branchus woodi* LeConte, length 11.2 mm. Specimen from Coral Harbour, New Providence.

#### NEW RECORDS FOR SAN SALVADOR

Recent collections made during the few days of the symposium that generated these proceedings included records of two species not previously detected on the island (see Steiner 2007). A single male *Adelina maryjoae* (Figure 1) was found after dark on the outside wall at lights of the main

office building of the GRC; the specimen is labeled "BAHAMA ISLANDS: San Salvador, Gerace Research Ctr., 24°07'02"N, 74°27'50"W, 18 June 2009 / W. E. Steiner & J. M. Swearingen collectors." To confirm identity, dissections of male genitalia were compared to those of the holotype and with the specimens from New Providence mentioned above. This winged species is now known from islands of three Bahamian banks, and will likely be found to be more widespread than originally thought. It is the fourth species of *Adelina* now known on San Salvador and can be easily separated from all others of the genus by the very long basal segment (scape) of the antenna.

The second new island record is for the non-native *Ulomoides ocularis* (Casey) (Figure 3), previously recorded in the Bahamas from Nassau (Triplehorn 1965) and more recently from Andros (Turnbow and Thomas 2008). This beetle is known to breed in the pods of tamarind and based on past experiences of collecting pods with beetles in several Antillean localities and Florida Keys, can be expected to occur anywhere tamarind trees are established. When fallen pods were found on this occasion, about 30 were examined for beetles, with those having been broken open on the ground holding many various beetles. Four specimens of *U. ocularis* were discovered, labeled "BAHAMA ISLANDS: San Salvador, at Dixon Hill Lighthouse, 24°05'51"N, 74°27'04"W, 19 June 2009 / In fallen pods of *Tamarindus indicus* on sandy soil; colls. W. E. Steiner & J. M. Swearingen."

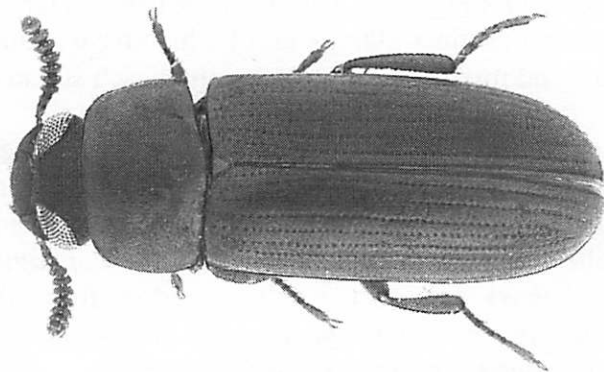


Figure 3. *Ulomoides ocularis* (Casey), length 4.7 mm.

Co-occurring in the pods with *U. ocularis* were two other Tenebrionidae known from the island, but not previously recorded from tamarind pods: One specimen of *Gondwanocrypticus platensis* (Fairmaire), adventive from South America, and 12 specimens of *Blapstinus kalik* Steiner, a presumed endemic species on San Salvador (Steiner 2006a).

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#### REFERENCES

- Bouchard, P., J. F. Lawrence, A. E. Davies, and A. F. Newton. 2005. Synoptic classification of the World Tenebrionidae (Insecta: Coleoptera) with a review of family group names. *Annales Zoologici* 55(4): 499-530.
- Peck S. B. 2005. A checklist of the beetles of Cuba with data on distributions and bionomics (Insecta: Coleoptera). *Arthropods of Florida and Neighboring Land Areas* 18: 1-241.
- Peck, S. B. and M. C. Thomas. 1998. A Distributional Checklist of the Beetles (Coleoptera) of Florida. *Arthropods of Florida and Neighboring Land Areas* 16: 1-166.
- Steiner, W. E. 2005a. Studies on the darkling beetles (Coleoptera: Tenebrionidae) known from Grand Bahama Island, with descriptions of new species of *Branchus* and *Adelina*. *Proceedings of the Entomological Society of Washington* 107(2): 441-459.
- Steiner, W. E. 2005b. Notes and proposed studies on the darkling beetles (Coleoptera: Tenebrionidae) of the Bahamian region. Pp. 120-136 in Buckner, S. D. & T. S. McGrath, eds., *Proceedings of the Tenth Symposium on the Natural History of the Bahamas*. Gerace Research Center, San Salvador, Bahamas.
- Steiner, W. E., Jr. 2006a. New species of darkling beetles (Coleoptera: Tenebrionidae) from San Salvador Island, Bahamas. *Zootaxa* 1158: 1-38.
- Steiner, W. E., Jr. 2006b. Patterns of Distribution and Endemism in Bahamian Tenebrionidae (Coleoptera). *Cahiers Scientifiques* 10: 103-109.
- Steiner, W. E., Jr. 2007. The darkling beetles (Coleoptera: Tenebrionidae) of San Salvador, Bahamas, with notes on biogeography. Pp. 99-116 in Rathke, B. J. and W. K. Hayes, eds., *Proceedings of the Eleventh Symposium on the Natural History of the Bahamas*. Gerace Research Center, San Salvador, Bahamas.
- Triplehorn, C. A. 1965. Revision of Diaperini of America north of Mexico with notes on extralimital species (Coleoptera: Tenebrionidae): *Proceedings of the United States National Museum* 117: 349-458.
- Turnbow, R. H., Jr. and M. C. Thomas. 2008. An annotated checklist of the Coleoptera (Insecta) of the Bahamas. *Insecta Mundi* 34: 1-64.