



# Studies in Hawaiian Diptera II: New Distributional Records for Endemic *Scatella* (Ephydriidae)

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## Abstract

Here we summarize the known distributional data for the Hawaiian *Scatella* (Ephydriidae). We report on four new island records; *S. amnica* and *S. stagnalis* from Kauai, *S. oahuense* from Lanai, and *S. terryi* from Maui. A list of material present, comprising over 3100 individual specimen records in the collections of the Bernice Pauahi Bishop Museum, University of Hawaii at Manoa, and Essig Museum of Entomology at UC Berkeley is included, along with details distributional maps for the Hawaiian endemic species.

## Keywords

Hawaiian Islands, Diptera, Ephydriidae, *Scatella*, distributions, new island records

## Introduction

Diptera research in Hawaii dates to the latter part of the 18th century when RCL Perkins was employed to survey the terrestrial biota of the Hawaiian Archipelago (Evenhuis 2007). Subsequent research by Sweezy, Bryan, Williams, Cresson, Wirth, Hardy and others greatly expanded the number of endemic species and refined our understanding of their relationships (reviewed in Zimmerman and Liebherr 2001). The senior author's laboratory

has been collecting Hawaiian Diptera for the past 15 years in order to elucidate the patterns and processes involved in the impressive radiations seen in these lineages in the Hawaiian Islands. We have amassed a large amount of fine-scale distributional data and new island records for many species and this is the second in a series of papers on the taxonomy and distribution of endemic Hawaiian Diptera. The current paper reports four new island records from the genus *Scatella* (Diptera: Ephydriidae) and provides a comprehensive catalog of the available material in the Bernice Pauahi Bishop Museum (BPBM), University of Hawaii at Manoa (UHM), and Essig Museum of Entomology at UC Berkeley (EMEC).

Ephydriidae, or the shore flies, is a cosmopolitan family of ecologically diverse acalyptrate Diptera, with 2000 species placed in five subfamilies (Mathis and Zatzwornicki 1995, Pape et al. 2011). Most ephydriids are aquatic or semi-aquatic, but some genera have adapted to harsh environments and can survive in high elevations, sulfurous hot springs, highly alkaline or saline lakes, and even in pools of crude petroleum (Evenhuis 2008, Foote 1995). Many ephydriids are beneficial and provide food for wildlife, such as migratory birds (Wirth et al. 1987). Others are agricultural pests, mining in the stems or leaves of watercress, rice, barley, and other irrigated cereals (Grigarick 1959). The majority of native Hawaiian ephydriids are placed in the cosmopolitan genus *Scatella*, a group containing a total of 135 species (Brown 2010). *Scatella* is widespread in the Pacific basin and it has been recorded from Hawaii, French Polynesia, Western Samoa, Australia, New Zealand, and Easter Island (<http://hbs.bishopmuseum.org/aocat/aocatohome.html>). There are 17 Hawaiian species (Table 1), 15 of which are endemic (Nishida 2002). *Scatella* has a complex taxonomic history, particularly in Hawaii. Tenorio (1980) classified these taxa in three separate genera (*Scatella*, *Neoscatella*, and *Apulvillus*), but they have since been combined into the same genus. Ten species are found on multiple islands and only five (*cinereifacies*, *kauaiensis*, *williamsi*, *wirthi*, and *femoralis*) are single island endemics (Nishida 2002).

Table 1.

**Distribution of *Scatella* species in Hawaii.** Status indicates whether the species are endemic (E), introduced (I) or adventive (A). Islands sampled are: Kauai (K), Oahu (O), Molokai (Mo), Lanai (L), Maui (Ma), and Hawaii (H). Presence of a species on a given island is designated by an X. An asterisk denotes a new island record for the species. There are two species with records in the Northwest Hawaiian Islands: *S. sexnotata* (1) has also been recorded from Nihoa, Necker and Laysan, *S. stagnalis* (2) is known from Midway.

Species	Status	K	O	Mo	L	Ma	H
<i>S. amnica</i>	E	X*		X		X	X
<i>S. bryani</i>	E	X	X	X	X	X	X
<i>S. cilipes</i>	E	X	X	X		X	X
<i>S. cinereifacies</i>	E	X					
<i>S. clavipes</i>	E	X	X	X		X	X
<i>S. femoralis</i>	E					X	

<i>S. fluvialis</i>	E		X				X
<i>S. hawaiiensis</i>	E	X	X	X	X	X	X
<i>S. kauaiensis</i>	E	X					
<i>S. mauianis</i>	E			X		X	X
<i>S. oahuense</i>	E		X		X*	X	X
<i>S. sexnotata</i> <sup>1</sup>	I	X	X	X		X	X
<i>S. stagnalis</i> <sup>2</sup>	A	X*	X				X
<i>S. terryi</i>	E		X			X*	
<i>S. warreni</i>	E	X	X	X		X	X
<i>S. williamsi</i>	E						X
<i>S. wirthi</i>	E					X	X

## Materials and methods

### Literature and specimen review

We have reviewed the literature for the Hawaiian *Scatella* and have attempted to include information on both the taxonomic history of the species and all occurrences of the endemic taxa in the literature, including the original descriptions, subsequent revisions, additional descriptive notes, range expansions and new island records and catalogs. We list the primary type, paratypes and other material examined. We include all records from the EMEC and the BPBM. Additional material deposited in the National Museum of Natural History, Smithsonian Institution (USNM) and the UHM are also presented here. All museum abbreviations conform to Evenhuis (2014).

### Collection methods

All material was obtained from general sweeping of vegetation, seeps and streams. Samples were preserved in 95% ethanol (ETOH) and transported to UC Berkeley for identification and subsequent molecular work. The key and descriptions in Tenorio (1980) were used to identify the Hawaiian *Scatella*. Vouchers for all species were preserved in 95% ETOH and are deposited in the BPBM and EMEC.

### Species distribution maps

Distribution maps for each species were produced by combining literature records and the senior author's collections during the past 15 years. Historical collections, shown in red, were georeferenced based on known place names and collection localities. These localities may not be exact but will give the reader some notion of the distribution of these taxa. Placemarks in the .kml file (Suppl. materials 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15) are named by the collector and the year of collection. Two widespread species, *S. sexnotata* and *S. stagnalis*, were not mapped. These taxa are very common in agricultural

settings (irrigation ditches, greenhouses, etc.) and in aquatic habitats close to human habitation. More recent collections, shown in white, were georeferenced using a Garmin Oregon 450 GPS unit.

## Checklist of *Scatella* species found in the Hawaiian Islands

### *Scatella amnica* (Tenorio, 1980)

#### Materials

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 2170 ft.; verbatimEventDate: 14.viii.1970; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 9476; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM

##### *Paratypes:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls, Hilo; verbatimEventDate: iii.1946; individualCount: 1; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: JA Tenorio; institutionCode: UHM
- b. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Halawa Valley; verbatimEventDate: vi.1952; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: JA Tenorio; institutionCode: UHM
- c. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Paaulo; verbatimEventDate: viii.1952; individualCount: 1; lifeStage: adult; recordedBy: WC Mitchel; identifiedBy: JA Tenorio; institutionCode: UHM
- d. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Wailua; verbatimEventDate: vii.1953; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: JA Tenorio; institutionCode: UHM
- e. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikamoi; verbatimElevation: 4000 ft.; verbatimEventDate: vi.1956; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy, R Namba; identifiedBy: JA Tenorio; institutionCode: UHM
- f. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kula Pipeline; verbatimElevation: 4200 ft.; verbatimEventDate: vii.1958; individualCount: 1; lifeStage: adult; recordedBy: R. Namba; identifiedBy: JA Tenorio; institutionCode: UHM
- g. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 19.iv.1964; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: JA Tenorio; institutionCode: UHM
- h. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waiahanau Valley; verbatimEventDate:

- 17.xi.1964; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: JA Tenorio; institutionCode: UHM
- i. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: 5 miles east of Kaeleku; verbatimEventDate: 8.iv.1965; individualCount: 1; lifeStage: adult; recordedBy: TW Fisher; identifiedBy: JA Tenorio; institutionCode: UHM
  - j. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Pihonua, Wailuku Stream; verbatimEventDate: 27.xii.1969; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: UHM
  - k. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kipahulu Valley; verbatimEventDate: 21.ii.1970; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: JA Tenorio; institutionCode: UHM
  - l. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls State Park; verbatimEventDate: 28.v.1970; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: UHM
  - m. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Boiling Pots; verbatimEventDate: 28.v.1970; individualCount: 4; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
  - n. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kawainui Stream; verbatimEventDate: 28.v.1970; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: UHM
  - o. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls; verbatimEventDate: 28.v.1970; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: UHM
  - p. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 2170 ft.; verbatimEventDate: 14.viii.1970; individualCount: 4; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
  - q. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 2170 ft.; verbatimEventDate: 14.viii.1970; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 9476a; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
  - r. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kopiliula Stream; verbatimElevation: 1200 ft.; verbatimEventDate: 4.ix.1970; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: UHM

*Other materials:*

- a. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kamakou Forest Reserve, sweeping in stream before tunnel; verbatimLatitude: 21°6'42.78"N; verbatimLongitude: 156°54'25.20"W; geodeticDatum: WGS84; verbatimEventDate: 19.ii.2007; individualCount: 5; lifeStage: adult; catalogNumber: EMEC7356016; recordedBy: PM O'Grady, KN Magnacca, RT

- Lapoint, GM Bennett; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 379.2
- b. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Hana Highway, first stop, sweeping stream; verbatimLatitude: 20°54'0.07"N; verbatimLongitude: 156°13'17.20"W; geodeticDatum: WGS85; verbatimEventDate: 21.xi.2009; individualCount: 3; lifeStage: adult; catalogNumber: EMEC7356017; recordedBy: PM O'Grady, NL Evenhuis, GM Bennett; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 547.9
  - c. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Whittington Beach Park, South Coast, Kau, sweeping lava rocks and estuary; verbatimLatitude: 19°57.18"N; verbatimLongitude: 155°32'59.65"W; geodeticDatum: WGS84; verbatimEventDate: 1.viii.2010; lifeStage: adult; catalogNumber: EMEC7356018; recordedBy: PM O'Grady, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 612.5
  - d. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kohua Ridge Trail, Mohihi Stream, 0-1.0 miles, sweeping stream; verbatimLatitude: 22°6'44.61"N; verbatimLongitude: 159°36'21.69"W; geodeticDatum: WGS84; verbatimEventDate: 6.i.2010; individualCount: 1; lifeStage: adult; catalogNumber: EMEC7356015; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 574.5

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Kauai, Molokai, Maui, Hawaii.

## ***Scatella bryani* Cresson, 1926**

### **Materials**

#### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Awaawapuhi; verbatimEventDate: 16.vi.1922; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 354; recordedBy: EH Bryan Jr.; institutionCode: BPBM

#### *Other materials:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; individualCount: 1; lifeStage: adult; recordedBy: RCL Perkins; identifiedBy: JA Tenorio; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae, Kolekole; verbatimEventDate: 29.ii.1920; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae; verbatimEventDate: 29.ii.1920; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kamehameha School Campus; verbatimEventDate: ii.1923; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM

- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu, Kailhi Valley, about pools of stagnant rainwater near the Bishop Museum; verbatimEventDate: 12.ii.1923; individualCount: 2; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: ET Cresson; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: 2.iv.1923; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: ET Cresson; institutionCode: BPBM
- g. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: 8.ii.1932; individualCount: 1; lifeStage: adult; recordedBy: O Bryant; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Humuula; verbatimEventDate: 8.viii.1935; individualCount: 1; lifeStage: adult; recordedBy: RL Usinger; identifiedBy: JA Tenorio; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: 16.iv.1941; individualCount: 1; lifeStage: adult; recordedBy: Y Kondo; identifiedBy: JA Tenorio; institutionCode: BPBM
- j. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hering Valley; verbatimEventDate: 29.iv.1945; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- k. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT 00972745; recordedBy: WW Wirth; institutionCode: USNM
- l. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT 00972746; recordedBy: WW Wirth; institutionCode: USNM
- m. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972747; recordedBy: WW Wirth; institutionCode: USNM
- n. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972748; recordedBy: WW Wirth; institutionCode: USNM
- o. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972749; recordedBy: WW Wirth; institutionCode: USNM
- p. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972750; recordedBy: WW Wirth; institutionCode: USNM
- q. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate:

- 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNM00972751; recordedBy: WW Wirth; institutionCode: USNM
- r. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNM00972752; recordedBy: WW Wirth; institutionCode: USNM
- s. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNM00972753; recordedBy: WW Wirth; institutionCode: USNM
- t. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNM00972755; recordedBy: WW Wirth; institutionCode: USNM
- u. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, at light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNM00972756; recordedBy: WW Wirth; institutionCode: USNM
- v. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hawaii National Park, Kilauea, at light trap; verbatimEventDate: x.1946; individualCount: 61; lifeStage: adult; catalogNumber: USNM00972755; recordedBy: CJ Davis; institutionCode: USNM
- w. islandGroup: Hawaiian Islands; island: Lanai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Maunlei Gulch; verbatimEventDate: 28.x.1947; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; institutionCode: BPBM
- x. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kilauea; verbatimEventDate: 22.v.1952; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- y. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kaluakauka, Keanakolu Trail; verbatimElevation: 5000 ft.; verbatimEventDate: 30.x.1952; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; institutionCode: BPBM
- z. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mokuleia, Kukuiala Valley; verbatimEventDate: 13.xii.1952; individualCount: 6; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- aa. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kuliouou; verbatimElevation: 1500; verbatimEventDate: 7.ii.1953; individualCount: 8; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- ab. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kuliouou, B. P. Bishop Museum; verbatimElevation: 1500; verbatimEventDate: 7.ii.1953; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- ac. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kuliouou; verbatimElevation: 1500 ft.; verbatimEventDate: 7.ii.1953; individualCount: 2; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM



- ad. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kuliouou; verbatimElevation: 1500; verbatimEventDate: 7.ii.1953; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- ae. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: above Waikolu Valley; verbatimElevation: 4593; verbatimEventDate: 28.iv.1955; individualCount: 3; lifeStage: adult; recordedBy: JL Gressit; identifiedBy: JA Tenorio; institutionCode: BPBM
- af. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, B. P. Bishop Museum; verbatimEventDate: 19.iv.1958; individualCount: 1; lifeStage: adult; recordedBy: A Suehiro; identifiedBy: JA Tenorio; institutionCode: BPBM
- ag. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mts.; verbatimElevation: 1900; verbatimEventDate: 31.vii.1958; individualCount: 1; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- ah. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Nahiku; verbatimEventDate: 31.vii.1958; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- ai. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mts.; verbatimElevation: 1900; verbatimEventDate: 31.vii.1958; individualCount: 14; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- aj. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikamoi; verbatimElevation: 3936; verbatimEventDate: 14.iii.1961; individualCount: 9; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- ak. islandGroup: Hawaiian Islands; island: Lanai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Maunalei; verbatimEventDate: 18.ii.1965; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- al. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, near dam at lower end of pond; verbatimElevation: 0; verbatimEventDate: 30.vi.1998; individualCount: 11; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- am. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: E'oCanal; verbatimEventDate: 27.vii.1998; individualCount: 2; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- an. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimEventDate: i.2010; lifeStage: adult; catalogNumber: EMEC7356076; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; institutionCode: EMEC

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Kauai, Oahu, Molokai, Lanai, Maui, Hawaii.

***Scatella cilipes* (Wirth, 1948)****Materials*****Holotype:***

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala, bog at summit; verbatimElevation: 4000 ft.; verbatimEventDate: 25.vii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 1658; recordedBy: WW Wirth; institutionCode: BPBM

***Paratypes:***

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae, edge of swift water; verbatimEventDate: 19.iv.1936; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 1658a; recordedBy: FX Williams; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waihi-iki, Manoa Valley, wet rocks; verbatimEventDate: 28.ii.1937; individualCount: 2; lifeStage: adult; recordedBy: FX Williams; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 6.v.1945; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- d. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 10.iv.1946; individualCount: 2; sex: male; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- e. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Wailua Falls, wet rocks at stream margin; verbatimEventDate: 4.ix. 1946; individualCount: 4; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- f. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee; verbatimElevation: 4000 ft.; verbatimEventDate: 7.ix.1946; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM

***Other materials:***

- a. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Nahiku; verbatimEventDate: date unclear; individualCount: 3; lifeStage: adult; recordedBy: NLH Krauss; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honopu; verbatimEventDate: 17.vi.1922; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: K Arakaki; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kamokuiki Valley; verbatimEventDate: 13.iv.1933; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 24.x.1933; individualCount: 1; lifeStage: adult; recordedBy: FX Williams; identifiedBy: JA Tenorio; institutionCode: BPBM

- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi Valley; verbatimEventDate: 13.iii.1937; individualCount: 1; lifeStage: adult; recordedBy: EC Zimmerman; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi Valley; verbatimEventDate: 13.iii.1937; individualCount: 1; lifeStage: adult; recordedBy: EC Zimmerman; institutionCode: BPBM
- g. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: near Halemanu; verbatimEventDate: 10.vii.1937; individualCount: 1; lifeStage: adult; recordedBy: EC Zimmerman; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Mapalehu; verbatimEventDate: 5.xi.1947; individualCount: 17; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: K Arakaki; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Lulumahu Valley; verbatimEventDate: 20.ii.1953; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; institutionCode: BPBM
- j. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Nahiku; verbatimEventDate: ii.1958; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- k. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mountains; verbatimElevation: 1900 ft.; verbatimEventDate: 3.vii.1958; individualCount: 2; lifeStage: adult; recordedBy: LW Quate; institutionCode: BPBM
- l. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi Valley; verbatimElevation: 1000 ft.; verbatimEventDate: 10.xi.1960; individualCount: 2; lifeStage: adult; recordedBy: LW Quate; institutionCode: BPBM
- m. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikamoi; verbatimElevation: 3937 ft.; verbatimEventDate: 14.iii.1961; individualCount: 12; lifeStage: adult; recordedBy: LW Quate; institutionCode: BPBM
- n. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Head of Waipio Valley; verbatimElevation: 3937 ft.; verbatimEventDate: 23.iii.1961; individualCount: 7; lifeStage: adult; recordedBy: LW Quate; institutionCode: BPBM
- o. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kaupo Gap; verbatimElevation: 5400 ft.; verbatimEventDate: 4.vi.1976; individualCount: 3; lifeStage: adult; recordedBy: RCA Rice; institutionCode: BPBM
- p. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kipahulu Valley, Palikea Stream, gauging station; verbatimElevation: 1640 ft.; verbatimEventDate: 4.vii.1980; individualCount: 1; lifeStage: adult; recordedBy: NL Evenhuis; identifiedBy: K Arakaki; institutionCode: BPBM
- q. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kipahulu Valley, Palikea Stream, gauging station; verbatimElevation: 492 ft.; verbatimEventDate: 4.vii.1980; individualCount: 1; lifeStage: adult; recordedBy: WC Gagne; identifiedBy: K Arakaki; institutionCode: BPBM

- r. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kipahulu Valley, ridge E of Greensword Bog; verbatimElevation: 5947 ft.; verbatimEventDate: 25.vi.1981; individualCount: 19; lifeStage: adult; recordedBy: WC Gagne; identifiedBy: K Arakaki; institutionCode: BPBM
- s. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mountains, Top of Waipio Falls, trail and stream; verbatimLatitude: 20°4'14.57"N; verbatimLongitude: 155°40'10.70"W; geodeticDatum: WGS84; verbatimEventDate: 16.vii.2004; individualCount: 39; lifeStage: adult; catalogNumber: EMEC7356027; recordedBy: PM O'Grady, CD Specht, S Hotchkiss, G Schuurman, M Gianullo; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 270.C
- t. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikamoi Forest Preserve, Stream from Flume; verbatimLatitude: 20°48'45.72"N; verbatimLongitude: 156°14'17.94"W; geodeticDatum: WGS84; verbatimEventDate: 4.viii.2005; individualCount: 6; lifeStage: adult; catalogNumber: EMEC7356026; recordedBy: PM O'Grady, GM Bennett, JE Gatesy, C Hayashi; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 300.4
- u. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Upper Kawaikoi Stream @ Alakai Swamp Trail Crossing; verbatimLatitude: 22°8'48.06"N; verbatimLongitude: 159°36'49.38"W; geodeticDatum: WGS84; verbatimEventDate: 8.i.2010; individualCount: 4; lifeStage: adult; catalogNumber: EMEC7356019; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 581.5
- v. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Nualolo Creek, sweeping vegetation in dry creek; verbatimLatitude: 22°8'34.75"N; verbatimLongitude: 159°41'17.74"W; geodeticDatum: WGS84; verbatimEventDate: 9.i.2010; lifeStage: adult; catalogNumber: EMEC7356020; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 584.A
- w. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee Stream near Canyon Trail; verbatimLatitude: 22°6'18.56"N; verbatimLongitude: 159°39'41.12"W; geodeticDatum: WGS84; verbatimEventDate: 10.i.2010; lifeStage: adult; catalogNumber: EMEC7356021; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 588.E
- x. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Stream #1, Trail along North Coast; verbatimLatitude: 22°12'40.15"N; verbatimLongitude: 159°35'40.29"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; individualCount: 2; lifeStage: adult; catalogNumber: EMEC7356022; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 589.5
- y. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Hanapakai Stream, sweeping beach and stream; verbatimLatitude: 22°12'31.40"N; verbatimLongitude: 159°35'51.88"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; individualCount: 1; lifeStage: adult; catalogNumber: EMEC7356023; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 590.4

- z. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #2; verbatimLatitude: 22° 12'22.91"N; verbatimLongitude: 159°36'3.96"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356024; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 592.4
- aa. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #4; verbatimLatitude: 22° 12'16.43"N; verbatimLongitude: 159°36'12.34"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356025; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 594.7
- ab. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: 0.5 miles from start of scenic drive to Onomea Bay, first major bridge, sweeping along stream; verbatimLatitude: 19°47'42.20"N; verbatimLongitude: 155°5'38.58"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; lifeStage: adult; catalogNumber: EMEC7356028; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 613.3
- ac. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala State Forest, sweeping ditch and top of Waimanu Stream; verbatimLatitude: 20°4'14.57"N; verbatimLongitude: 155°40'10.70"W; geodeticDatum: WGS84; verbatimEventDate: 4.viii.2010; lifeStage: adult; catalogNumber: EMEC7356029; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 621.5
- ad. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mountains, sweeping in stream where bridge crosses road, 0.5 miles before end; verbatimLatitude: 20°3'23.70"N; verbatimLongitude: 155°40'6.10"W; geodeticDatum: WGS84; verbatimEventDate: 4.viii.2010; lifeStage: adult; catalogNumber: EMEC7356030; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 623.5
- ae. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kau Forest Reserve, Hionamo Stream; verbatimLatitude: 19°11'49.11"N; verbatimLongitude: 155°34'42.38"W; geodeticDatum: WGS84; verbatimEventDate: 5.viii.2010; lifeStage: adult; catalogNumber: EMEC7356031; recordedBy: PM O'Grady, RT Lapoint, D Foote; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 628.7

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Kauai, Oahu, Molokai, Maui, Hawaii.

***Scatella cinereifacies* (Tenorio, 1980)****Materials*****Holotype:***

- a. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Opaekaa Stream, collected on wet rocks; verbatimEventDate: 4.iv.1970; individualCount: 1; lifeStage: adult; recordedBy: MD Delfinado, L. Teramoto, L. Uyenishi; identifiedBy: JA Tenorio; institutionCode: BPBM

***Paratypes:***

- a. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Opaekaa Stream, collected on wet rocks; verbatimEventDate: 4.iv.1970; individualCount: 1; lifeStage: adult; recordedBy: MD Delfinado, L. Teramoto, L. Uyenishi; identifiedBy: JA Tenorio; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honopu; verbatimEventDate: 17.vi.1922; individualCount: 3; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Nualolo; verbatimEventDate: 18.vi.1922; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kalalau Valley Trail; verbatimEventDate: 14.xii.1963; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: JA Tenorio; institutionCode: UHM
- e. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Opaekaa Stream, collected on wet rocks; verbatimEventDate: 4.iv.1970; individualCount: 3; lifeStage: adult; recordedBy: MD Delfinado, L. Teramoto, L. Uyenishi; identifiedBy: JA Tenorio; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Opaekaa Stream, collected on wet rocks; verbatimEventDate: 4.iv.1970; individualCount: 8; lifeStage: adult; recordedBy: MD Delfinado, L. Teramoto, L. Uyenishi; identifiedBy: JA Tenorio; institutionCode: UHM
- g. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Waipoo Falls, on wet rocks; verbatimEventDate: 4.iv.1970; lifeStage: adult; recordedBy: MD Delfinado, L. Teramoto, L. Uyenishi; identifiedBy: JA Tenorio; institutionCode: UHM

***Other materials:***

- a. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Nualolo Creek, sweeping vegetation in dry creek; verbatimLatitude: 22°8'34.75"N; verbatimLongitude: 159°41'17.74"W; geodeticDatum: WGS84; verbatimEventDate: 9.i.2010; individualCount: 1; lifeStage: adult; catalogNumber: EMEC7356032; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 584.B
- b. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee Stream near Canyon Trail; verbatimLatitude: 22°6'18.56"N; verbatimLongitude: 159°39'41.12"W; geodeticDatum: WGS84; verbatimEventDate: 10.i.2010; lifeStage: adult; catalogNumber: EMEC7356033;

recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 588.A

- c. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #2; verbatimLatitude: 22° 12'22.91"N; verbatimLongitude: 159°36'3.96"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; individualCount: 2; lifeStage: adult; catalogNumber: EMEC7356034; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 592.5
- d. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kamakou Forest Reserve, sweeping in stream before tunnel; verbatimLatitude: 21°6'42.78"N; verbatimLongitude: 156°54'25.20"W; geodeticDatum: WGS84; verbatimEventDate: 19.ii.2007; lifeStage: adult; catalogNumber: EMEC7356016; recordedBy: PM O'Grady, KN Magnacca, RT Lapoint, GM Bennett; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 379.A

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Kauai.

### *Scatella clavipes* (Wirth, 1948)

#### Materials

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 1659; recordedBy: WW Wirth; institutionCode: BPBM

##### *Paratypes:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 1659a; recordedBy: WW Wirth; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 7; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 64; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- d. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Wailuku River; verbatimEventDate: 2.iii.1946; individualCount: 22; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM

##### *Other materials:*

- a. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Awaawapuhi; verbatimEventDate: 16.vi.1922; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Olinda; verbatimElevation: 4500 ft.;

- verbatimEventDate: 15.iii.1932; individualCount: 1; lifeStage: adult; recordedBy: O Bryant; identifiedBy: WW Wirth; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Olinda; verbatimEventDate: 1.viii.1932; individualCount: 6; lifeStage: adult; recordedBy: NLH Krauss; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley; verbatimElevation: 2000 ft.; verbatimEventDate: 14.iii.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; previousIdentifications: holotype of *N. clavipes tenda*; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley; verbatimElevation: 2000 ft.; verbatimEventDate: 14.iii.1946; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; previousIdentifications: allotype of *N. clavipes tenda*; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley; verbatimElevation: 2000 ft.; verbatimEventDate: 14.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972732; recordedBy: WW Wirth; previousIdentifications: paratype of *N. clavipes tenda*; institutionCode: USNM
- g. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley; verbatimElevation: 2000 ft.; verbatimEventDate: 14.iii.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; previousIdentifications: paratype of *N. clavipes tenda*; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Nahiku; verbatimEventDate: ii.1958; individualCount: 5; lifeStage: adult; recordedBy: NLH Krauss; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mountains; verbatimElevation: 1900 ft.; verbatimEventDate: 31.vii.1958; individualCount: 2; lifeStage: adult; recordedBy: LW Quate; institutionCode: BPBM
- j. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikamoi; verbatimElevation: 3936 ft.; verbatimEventDate: 14.iii.1961; individualCount: 3; lifeStage: adult; recordedBy: LW Quate; identifiedBy: WW Wirth; institutionCode: BPBM
- k. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: West Halawa Valley; verbatimElevation: 164 ft.; verbatimEventDate: 23.iii.1970; individualCount: 1; lifeStage: adult; recordedBy: JL Gressitt; institutionCode: BPBM
- l. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kipahulu Valley, Pualuu Stream; verbatimElevation: 984 ft.; verbatimEventDate: 21.vii.1980; individualCount: 1; lifeStage: adult; recordedBy: WA Steffan; institutionCode: BPBM
- m. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kawaikoi Stream at Sugi Grove; verbatimLatitude: 22°7'53.12"N; verbatimLongitude: 159°37'18.12"W; geodeticDatum: WGS84; verbatimEventDate: 4.i.2010; lifeStage: adult; catalogNumber: EMEC7356041; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 567.6



- n. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Hanapakai Stream, sweeping beach and stream; verbatimLatitude: 22°12'31.40"N; verbatimLongitude: 159°35'51.88"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; individualCount: 7; lifeStage: adult; catalogNumber: EMEC7356035; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 590.3
- o. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #2; verbatimLatitude: 22°12'22.91"N; verbatimLongitude: 159°36'3.96"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356042; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 592.2
- p. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: 0.5 miles from start of scenic drive to Onomea Bay, first major bridge, sweeping along stream; verbatimLatitude: 19°47'42.20"N; verbatimLongitude: 155°5'38.58"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; lifeStage: adult; catalogNumber: EMEC7356036; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 613.2
- q. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Alakahi Trail to Onomea Bay, adjacent to Hawaiiia Botanical Garden, sweeping rocks in surf; verbatimLatitude: 19°48'32.54"N; verbatimLongitude: 155°5'34.98"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; lifeStage: adult; catalogNumber: EMEC7356038; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 614.2
- r. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kawainui Stream, 6 ton bridge on Scenic Loop; verbatimLatitude: 19°48'42.10"N; verbatimLongitude: 155°5'37.88"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; lifeStage: adult; catalogNumber: EMEC7356039; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 615.2
- s. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kolekole Beach Park, sweeping along ocean coast; verbatimLatitude: 19°52'57.93"N; verbatimLongitude: 155°7'9.22"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; lifeStage: adult; catalogNumber: EMEC7356037; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 616.2
- t. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Waipio Stream, near the base of He'elawae Falls; verbatimLatitude: 20°4'36.46"N; verbatimLongitude: 155°37'8.72"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; lifeStage: adult; catalogNumber: EMEC7356040; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 617.1
- u. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Ohanakupa Rd, 1st bridge at south end of road; verbatimLatitude: 19°47'42.20"N; verbatimLongitude: 155°5'38.58"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: EMEC7356043; recordedBy: BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: BO7.1

- v. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Waipio Valley, near base of He'eilawe Falls at dammed reservoir; verbatimLatitude: 20°4'36.46"N; verbatimLongitude: 155°37'8.72"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: EMEC7356044; recordedBy: BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: BO10.2
- w. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Waipio Valley, near base of He'eilawe Falls at dammed reservoir; verbatimLatitude: 20°4'36.46"N; verbatimLongitude: 155°37'8.72"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; individualCount: 3; sex: females; lifeStage: adult; catalogNumber: EMEC7356045; recordedBy: BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: BO10.2

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Kauai, Oahu, Molokai, Maui, Hawaii.

**Notes:** 52 specimens from USNM not examined.

### ***Scatella femoralis* (Tenorio, 1980)**

#### **Material**

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Puu Nianiau; verbatimEventDate: iv.1954; individualCount: 1; sex: male; lifeStage: adult; recordedBy: M Tamashiro; institutionCode: UHM

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Maui.

### ***Scatella fluvialis* (Tenorio, 1980)**

#### **Materials**

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 2170 ft.; verbatimEventDate: 14.viii.1970; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 9477; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM

##### *Paratypes:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 2170 ft.; verbatimEventDate: 14.viii.1970; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 9477a; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 2170 ft.;

- verbatimEventDate: 14.viii.1970; individualCount: 5; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 2170 ft.; verbatimEventDate: 14.viii.1970; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: JA Tenorio; institutionCode: UHM
- d. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 2000 ft.; verbatimEventDate: 14.viii.1970; individualCount: 3; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahana Stream; verbatimElevation: 180 ft.; verbatimEventDate: 27.viii.1970; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: UHM

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Oahu, Hawaii.

### ***Scatella hawaiiensis* Grimshaw, 1901**

#### **Materials**

##### *Syntypes:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimElevation: 2000 ft.; verbatimEventDate: iii.1893; individualCount: 8; lifeStage: adult; catalogNumber: 15628; recordedBy: no collector given; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimElevation: 2000 ft.; verbatimEventDate: iii.1893; individualCount: 2; lifeStage: adult; recordedBy: no collector given; institutionCode: BMNH

##### *Other materials:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae Mts.; verbatimEventDate: no date given; individualCount: 2; lifeStage: adult; recordedBy: JF Illingworth; identifiedBy: ET Cresson; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae Mts.; verbatimEventDate: no date given; individualCount: 5; sex: female; lifeStage: adult; recordedBy: JF Illingworth; identifiedBy: ET Cresson; institutionCode: UHM
- c. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kula Pipe Line; verbatimElevation: 5000 ft.; verbatimEventDate: no date given; individualCount: 1; sex: female; lifeStage: adult; recordedBy: O Bryant; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hutchinson Plant.; verbatimEventDate: 1903; individualCount: 1; lifeStage: adult; recordedBy: FW Terry; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Tantalus; verbatimElevation: 1300;

- verbatimEventDate: 3.iii.1907; individualCount: 1; lifeStage: adult; recordedBy: WM Giffard; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimanalo; verbatimEventDate: 7.x.1907; individualCount: 1; lifeStage: adult; recordedBy: no collector given; institutionCode: BPBM
- g. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimanalo; verbatimEventDate: 7.xi.1907; individualCount: 1; lifeStage: adult; recordedBy: no collector given; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Palolo Falls; verbatimEventDate: vii.1916; individualCount: 1; lifeStage: adult; recordedBy: JF Illingworth; institutionCode: UHM
- i. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Palolo Falls; verbatimEventDate: vii.1916; individualCount: 3; lifeStage: adult; recordedBy: JF Illingworth; identifiedBy: ET Cresson; institutionCode: BPBM
- j. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae; verbatimEventDate: 25.ii.1920; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- k. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala, Makaleha; verbatimEventDate: 8.i.1922; individualCount: 2; lifeStage: adult; recordedBy: OH Swezey; identifiedBy: ET Cresson; institutionCode: BPBM
- l. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Tantalus; verbatimEventDate: 2.ii.1922; individualCount: 1; lifeStage: adult; recordedBy: OH Swezey; identifiedBy: ET Cresson; institutionCode: BPBM
- m. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Palolo; verbatimEventDate: 26.ii.1922; individualCount: 2; lifeStage: adult; recordedBy: OH Swezey; institutionCode: BPBM
- n. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Moanalua; verbatimEventDate: 9.iv.1922; individualCount: 2; lifeStage: adult; recordedBy: OH Swezey; identifiedBy: WW Wirth; institutionCode: BPBM
- o. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Moanalua; verbatimEventDate: 9.iv.1922; individualCount: 1; sex: male; lifeStage: adult; recordedBy: OH Swezey; institutionCode: UHM
- p. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Moanalua; verbatimEventDate: 9.iv.1922; individualCount: 5; lifeStage: adult; recordedBy: OH Swezey; identifiedBy: WW Wirth; institutionCode: BPBM
- q. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Awaawapuhi; verbatimEventDate: 16.vi.1922; individualCount: 3; sex: female; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- r. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honopu; verbatimEventDate: 17.vi.1922; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: ET Cresson; institutionCode: BPBM

- s. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, Kamehameha; verbatimEventDate: 12.ii.1923; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- t. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: 2.iv.1923; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- u. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Niu, waterfall; verbatimEventDate: 13.i.1924; individualCount: 3; lifeStage: adult; recordedBy: OH Swezey; identifiedBy: ET Cresson; institutionCode: BPBM
- v. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Niu, waterfall; verbatimEventDate: 13.i.1924; individualCount: 4; lifeStage: adult; recordedBy: OH Swezey; institutionCode: UHM
- w. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Olaa, 29 miles; verbatimEventDate: viii.1925; individualCount: 2; lifeStage: adult; recordedBy: WM Giffard; institutionCode: BPBM
- x. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Makaleha; verbatimEventDate: 13.i.1929; individualCount: 9; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: WW Wirth; institutionCode: BPBM
- y. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Makaleha; verbatimEventDate: 13.i.1929; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: UHM
- z. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: 8.ii.1932; individualCount: 1; lifeStage: adult; recordedBy: O Bryant; institutionCode: BPBM
- aa. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Olinda; verbatimElevation: 4500; verbatimEventDate: 15.iii.1932; individualCount: 1; sex: female; lifeStage: adult; recordedBy: O Bryant; identifiedBy: WW Wirth; institutionCode: BPBM
- ab. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Olinda; verbatimElevation: 5000-6000; verbatimEventDate: 19.iii.1932; individualCount: 5; lifeStage: adult; recordedBy: O Bryant; identifiedBy: JA Tenorio; institutionCode: BPBM
- ac. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kula Pipeline; verbatimElevation: 4500; verbatimEventDate: 19.iii.1932; individualCount: 2; lifeStage: adult; recordedBy: O Bryant; identifiedBy: JA Tenorio; institutionCode: BPBM
- ad. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kula Pipeline; verbatimElevation: 4500; verbatimEventDate: 19.iii.1932; individualCount: 1; lifeStage: adult; recordedBy: O Bryant; identifiedBy: WW Wirth; institutionCode: BPBM
- ae. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala Crater; verbatimElevation: 7000; verbatimEventDate: 22.iii.1932; individualCount: 3; lifeStage: adult; recordedBy: O Bryant; identifiedBy: WW Wirth; institutionCode: BPBM
- af. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kula Pipeline; verbatimElevation: 4500;

- verbatimEventDate: 3.iv.1932; individualCount: 1; lifeStage: adult; recordedBy: O Bryant; identifiedBy: JA Tenorio; institutionCode: BPBM
- ag. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kula Pipeline; verbatimElevation: 4500; verbatimEventDate: 8.iv.1932; individualCount: 6; lifeStage: adult; recordedBy: O Bryant; identifiedBy: JA Tenorio; institutionCode: BPBM
- ah. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Olinda; verbatimElevation: 4500; verbatimEventDate: 8.iv.1932; individualCount: 1; lifeStage: adult; recordedBy: O Bryant; identifiedBy: ET Cresson; institutionCode: BPBM
- ai. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Awaawapuhi; verbatimEventDate: 16.vi.1932; individualCount: 3; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: WW Wirth; institutionCode: BPBM
- aj. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kamokuiki Valley, about water pool; verbatimEventDate: 13.iv.1933; individualCount: 11; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- ak. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Castle Trail; verbatimEventDate: 14.x.1934; individualCount: 5; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- al. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Maunawili; verbatimElevation: 800; verbatimEventDate: 25.ii.1935; individualCount: 1; lifeStage: adult; recordedBy: WM Giffard; institutionCode: BPBM
- am. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kumuwela; verbatimEventDate: 30.xii.1935; individualCount: 1; lifeStage: adult; recordedBy: RL Usinger; institutionCode: BPBM
- an. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae Mts.; verbatimEventDate: 22.ii.1937; individualCount: 3; lifeStage: adult; recordedBy: EC Zimmerman; institutionCode: BPBM
- ao. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimEventDate: 29.iv.1945; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT 00972734; recordedBy: WW Wirth; institutionCode: USNM
- ap. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hering Valley; verbatimEventDate: 29.iv.1945; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972735; recordedBy: WW Wirth; institutionCode: USNM
- aq. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hering Valley; verbatimEventDate: 29.iv.1945; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT 00972736; recordedBy: WW Wirth; institutionCode: USNM
- ar. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimElevation: 2000 ft.; verbatimEventDate: iii.1946; individualCount: 3; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- as. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hering Valley; verbatimElevation: 2000 ft.;

- verbatimEventDate: iii.1946; individualCount: 1; sex: female; lifeStage: adult;  
catalogNumber: USNMMENT 00972737; recordedBy: WW Wirth; institutionCode: USNM
- at. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Mt. Kaala; verbatimElevation: 4200 ft.;  
verbatimEventDate: 4.iii.1946; individualCount: 1; sex: female; lifeStage: adult;  
catalogNumber: USNMMENT 00972733; recordedBy: WW Wirth; institutionCode: USNM
- au. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 10.iv.1946; individualCount: 5; lifeStage: adult; recordedBy: WW Wirth; institutionCode: USNM
- av. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 17.iv.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972738; recordedBy: WW Wirth; institutionCode: USNM
- aw. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimEventDate: 17.iv.1946; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- ax. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimEventDate: 6.v.1945; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972739; recordedBy: WW Wirth; institutionCode: USNM
- ay. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 6.v.1945; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- az. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley, at stream; verbatimElevation: 2000 ft.; verbatimEventDate: 14.v.1946; individualCount: 2; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- ba. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley, at stream; verbatimElevation: 2000 ft.; verbatimEventDate: 14.v.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972743; recordedBy: WW Wirth; institutionCode: USNM
- bb. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley, at stream; verbatimElevation: 4000 ft.; verbatimEventDate: 25.vii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972740; recordedBy: WW Wirth; institutionCode: USNM
- bc. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimElevation: 2000 ft.; verbatimEventDate: 14.v.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972742; recordedBy: WW Wirth; institutionCode: USNM
- bd. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala, bog at summit; verbatimElevation: 4000 ft.; verbatimEventDate: 25.vii.1946; individualCount: 2; sex: female; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- be. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala, bog at summit; verbatimElevation: 4000 ft.; verbatimEventDate: 25.vii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972741; recordedBy: WW Wirth; institutionCode: USNM

- bf. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Mt. Kaala, bog at summit; verbatimElevation: 4000 ft.; verbatimEventDate: 6.ix.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972744; recordedBy: WW Wirth; institutionCode: USNM
- bg. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Laulaupoe Gulch; verbatimEventDate: 9.vii.1951; individualCount: 5; lifeStage: adult; recordedBy: Y Kondo; institutionCode: BPBM
- bh. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mokuleia, Kukuiala Valley; verbatimEventDate: 13.xii.1952; individualCount: 8; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- bi. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Maunawili; verbatimElevation: 1200; verbatimEventDate: 31.i.1953; individualCount: 16; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- bj. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Maunawili; verbatimElevation: 1200; verbatimEventDate: 31.i.1953; individualCount: 52; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- bk. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kuliouou; verbatimElevation: 1500; verbatimEventDate: 7.ii.1953; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- bl. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimEventDate: 3.iv.1953; individualCount: 10; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- bm. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikolu Valley; verbatimElevation: 4593; verbatimEventDate: 1.v.1955; individualCount: 1; lifeStage: adult; recordedBy: JL Gressitt; identifiedBy: JA Tenorio; institutionCode: BPBM
- bn. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mts.; verbatimElevation: 1900; verbatimEventDate: 31.vii.1958; individualCount: 2; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- bo. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikamoi; verbatimElevation: 3936; verbatimEventDate: 14.iii.1961; individualCount: 3; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- bp. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Haena; verbatimEventDate: 10.iii.1963; individualCount: 3; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- bq. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Tantalus; verbatimElevation: 984-1968; verbatimEventDate: 26.i.1964; individualCount: 1; lifeStage: adult; recordedBy: GA Samuelson; identifiedBy: JA Tenorio; institutionCode: BPBM
- br. islandGroup: Hawaiian Islands; island: Lanai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Lanai Mts.; verbatimEventDate: 17.ii.1965;



- individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- bs. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakalae National Park, Haleakala Crater, Paliku; verbatimElevation: 6400; verbatimEventDate: 24.vi.1975; individualCount: 5; lifeStage: adult; recordedBy: R. Burkhart; identifiedBy: DE Hardy; institutionCode: BPBM
- bt. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakalae National Park, Haleakala Crater, Paliku; verbatimElevation: 6900; verbatimEventDate: 27.vi.1975; individualCount: 2; lifeStage: adult; recordedBy: R. Burkhart; identifiedBy: DE Hardy; institutionCode: BPBM
- bu. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakalae National Park, Haleakala Crater, Paliku; verbatimElevation: 6500; verbatimEventDate: 27.vi.1975; individualCount: 1; lifeStage: adult; recordedBy: R. Burkhart; identifiedBy: DE Hardy; institutionCode: BPBM
- bv. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kaupo Gap; verbatimElevation: 6100; verbatimEventDate: 3.vii.1975; individualCount: 1; lifeStage: adult; recordedBy: R. Burkhart; identifiedBy: DE Hardy; institutionCode: BPBM
- bw. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kipahulu Valley; verbatimElevation: 5002; verbatimEventDate: 25.xi.1980; individualCount: 1; lifeStage: adult; recordedBy: WC Gagne; identifiedBy: K Arakaki; institutionCode: BPBM
- bx. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Puhawai Aqueduct, 0.25 miles E of Lualalei; verbatimElevation: 850; verbatimEventDate: 7.iii.1996; individualCount: 3; lifeStage: adult; recordedBy: GM Nishida; identifiedBy: K Arakaki; institutionCode: BPBM
- by. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Lualualei Valley, Puhawai, stream gulch, 0.4 km E of aqueduct; verbatimElevation: 1050; verbatimEventDate: 6.iii.1996; individualCount: 1; lifeStage: adult; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM
- bz. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Lualualei Valley, Puhawai Waterfall; verbatimEventDate: 23.ii.1996; individualCount: 1; lifeStage: adult; recordedBy: GM Nishida; identifiedBy: K Arakaki; institutionCode: BPBM
- ca. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Manoa Valley; verbatimLatitude: 20°48'45.72"N; verbatimLongitude: 156°14'17.94"W; geodeticDatum: WGS84; verbatimEventDate: 4.viii.2005; individualCount: 22; lifeStage: adult; catalogNumber: EMEC7356048; recordedBy: PM O'Grady, GM Bennett, JE Gatesy, C Hayashi; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 300.5
- cb. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kaupo Gap Trail, on seep near Lobelia; verbatimLatitude: 20°42'35.88"N; verbatimLongitude: 156°8'26.82"W; geodeticDatum: WGS84; verbatimEventDate: 4.viii.2007; individualCount: many; lifeStage: adult; catalogNumber: EMEC7356047; recordedBy: PM O'Grady, KN Magnacca, RT Lapoint, GM Bennett; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 400.1
- cc. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kawaikoi Stream at Sugi Grove; verbatimLatitude: 22°7'53.12"N; verbatimLongitude: 159°37'18.12"W; geodeticDatum:

- WGS84; verbatimEventDate: 4.i.2010; lifeStage: adult; catalogNumber: EMEC7356049; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 567.5
- cd. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kawaikoi Stream Trail Sugi Grove to 0.5 miles; verbatimLatitude: 22°7'57.31"N; verbatimLongitude: 159°37'2.13"W; geodeticDatum: WGS84; verbatimEventDate: 4.i.2010; lifeStage: adult; catalogNumber: EMEC7356050; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 568.6
- ce. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kohua Ridge Trail, Mohihi Stream, 0-1.0 miles, sweeping stream; verbatimLatitude: 22°6'44.61"N; verbatimLongitude: 159°36'21.69"W; geodeticDatum: WGS84; verbatimEventDate: 6.i.2010; individualCount: 1; lifeStage: adult; catalogNumber: EMEC7356051; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 574.5
- cf. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Upper Kawaikoi Stream @ Alakai Swamp Trail Crossing; verbatimLatitude: 22°8'48.06"N; verbatimLongitude: 159°36'49.38"W; geodeticDatum: WGS84; verbatimEventDate: 8.i.2010; individualCount: 4; lifeStage: adult; catalogNumber: EMEC7356046; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 581.4
- cg. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Nualolo Creek, sweeping vegetation in dry creek; verbatimLatitude: 22°8'34.75"N; verbatimLongitude: 159°41'17.74"W; geodeticDatum: WGS84; verbatimEventDate: 9.i.2010; lifeStage: adult; catalogNumber: EMEC7356052; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 584.9
- ch. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee Stream near Canyon Trail; verbatimLatitude: 22°6'18.56"N; verbatimLongitude: 159°39'41.12"W; geodeticDatum: WGS84; verbatimEventDate: 10.i.2010; lifeStage: adult; catalogNumber: EMEC7356053; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 588.C
- ci. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Stream #1, Trail along North Coast; verbatimLatitude: 22°12'40.15"N; verbatimLongitude: 159°35'40.29"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356054; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 589.4
- cj. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #2; verbatimLatitude: 22°12'22.91"N; verbatimLongitude: 159°36'3.96"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356055; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 592.6
- ck. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #2; verbatimLatitude: 22°12'22.91"N; verbatimLongitude: 159°36'3.96"W; geodeticDatum: WGS84;

- verbatimEventDate: 11.i.2010; individualCount: 2; lifeStage: adult; catalogNumber: EMEC7356056; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 592.3
- cl. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #4; verbatimLatitude: 22° 12'16.43"N; verbatimLongitude: 159°36'12.34"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; individualCount: many; lifeStage: adult; catalogNumber: EMEC7356057; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 594.6
- cm. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Gulch on Puu o Kila Road; geodeticDatum: WGS84; verbatimEventDate: 25.vii.2010; lifeStage: adult; catalogNumber: EMEC7356077; recordedBy: KN Magnacca; identifiedBy: PM O'Grady; institutionCode: EMEC
- cn. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kau Forest Reserve, Alahi Spring; verbatimLatitude: 19°13'40.71"N; verbatimLongitude: 155°31'6.27"W; geodeticDatum: WGS84; verbatimEventDate: 6.viii.2010; lifeStage: adult; catalogNumber: EMEC7356058; recordedBy: PM O'Grady, RT Lapoint, D Foote; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 631.8
- co. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala State Forest, sweeping ditch and top of Waimanu Stream; verbatimLatitude: 20°4'14.57"N; verbatimLongitude: 155°40'10.70"W; geodeticDatum: WGS84; verbatimEventDate: 4.viii.2010; lifeStage: adult; catalogNumber: EMEC7356059; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 621.4

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Kauai, Oahu, Molokai, Lanai, Maui, Hawaii.

**Notes:** 15 specimens from USNM not examined.

### ***Scatella kauaiensis* (Wirth, 1948)**

#### **Materials**

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee, at falls near tunnel; verbatimElevation: 4000 ft.; verbatimEventDate: 6.ix.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 1656; recordedBy: WW Wirth; institutionCode: BPBM

##### *Paratypes:*

- a. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee, at falls near tunnel; verbatimElevation: 4000 ft.; verbatimEventDate: 6.ix.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 1656a; recordedBy: WW Wirth; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee, at falls near tunnel; verbatimElevation:

- 4000 ft.; verbatimEventDate: 6.ix.1946; individualCount: 45; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- c. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee, at falls near tunnel; verbatimElevation: 4000 ft.; verbatimEventDate: 6.ix.1946; individualCount: 3; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM

*Other materials:*

- a. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Awaawapuhi; verbatimEventDate: 16.vi.1922; individualCount: 14; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honopu; verbatimEventDate: 17.vi.1922; individualCount: 6; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kalalau; verbatimEventDate: 18.vi.1922; individualCount: 4; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honopu; verbatimEventDate: 20.vi.1922; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kumuwela; verbatimEventDate: 30.xi.1935; individualCount: 3; lifeStage: adult; recordedBy: RL Usinger; identifiedBy: JA Tenorio; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Near Halemanu; verbatimEventDate: 10.vii.1939; individualCount: 23; lifeStage: adult; recordedBy: EC Zimmerman; identifiedBy: JA Tenorio; institutionCode: BPBM
- g. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee, at light trap; verbatimEventDate: 24.viii.1959; individualCount: 3; lifeStage: adult; recordedBy: JW Beardsley; identifiedBy: JA Tenorio; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Haena; verbatimEventDate: 10.iii.1963; individualCount: 12; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee, Honopu; verbatimEventDate: 25.xi.1978; individualCount: 1; lifeStage: adult; recordedBy: SL Montgomery; identifiedBy: JA Tenorio; institutionCode: BPBM
- j. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee State Park, Kawaikina Stream, at first bridge, sweeping stream; verbatimLatitude: 22°7'58.15"N; verbatimLongitude: 159°37'51.67"W; geodeticDatum: WGS84; verbatimEventDate: 4.i.2010; lifeStage: adult; catalogNumber: EMEC7356060; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 566.2

- k. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kawaikoi Stream at Sugi Grove; verbatimLatitude: 22°7'53.12"N; verbatimLongitude: 159°37'18.12"W; geodeticDatum: WGS84; verbatimEventDate: 4.i.2010; lifeStage: adult; catalogNumber: EMEC7356061; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 567.2
- l. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kawaikoi Stream Trail Sugi Grove to 0.5 miles; verbatimLatitude: 22°7'57.31"N; verbatimLongitude: 159°37'2.13"W; geodeticDatum: WGS84; verbatimEventDate: 4.i.2010; lifeStage: adult; catalogNumber: EMEC7356062; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 568.1
- m. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kohua Ridge Trail, Mohihi Stream, 0-1.0 miles, sweeping stream; verbatimLatitude: 22°6'44.61"N; verbatimLongitude: 159°36'21.69"W; geodeticDatum: WGS84; verbatimEventDate: 6.i.2010; individualCount: many; lifeStage: adult; catalogNumber: EMEC7356063; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 574.2
- n. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee State Park, Mohihi-Waialae Trail @ Mohihi Stream crossing, 0.25miles from parking; verbatimLatitude: 22°7'0.60"N; verbatimLongitude: 159°36'0.31"W; geodeticDatum: WGS84; verbatimEventDate: 7.i.2010; lifeStage: adult; catalogNumber: EMEC7356064; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja, E Owen; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 577.1
- o. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Upper Kawaikoi Stream @ Alakai Swamp Trail Crossing; verbatimLatitude: 22°8'48.06"N; verbatimLongitude: 159°36'49.38"W; geodeticDatum: WGS84; verbatimEventDate: 8.i.2010; individualCount: many; lifeStage: adult; catalogNumber: EMEC7356065; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 581.1
- p. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Nualolo Creek, sweeping vegetation in dry creek; verbatimLatitude: 22°8'34.75"N; verbatimLongitude: 159°41'17.74"W; geodeticDatum: WGS84; verbatimEventDate: 9.i.2010; lifeStage: adult; catalogNumber: EMEC7356066; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 584.2
- q. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kokee Stream near Canyon Trail; verbatimLatitude: 22°6'18.56"N; verbatimLongitude: 159°39'41.12"W; geodeticDatum: WGS84; verbatimEventDate: 10.i.2010; individualCount: 1; lifeStage: adult; catalogNumber: EMEC7356067; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 588.2
- r. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Stream #1, Trail along North Coast; verbatimLatitude: 22°12'40.15"N; verbatimLongitude: 159°35'40.29"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356068;

- recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 589.1
- s. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Hanapakai Stream, sweeping beach and stream; verbatimLatitude: 22°12'31.40"N; verbatimLongitude: 159°35'51.88"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356069; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 590.1
- t. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honoka Trail, seep #1, sweeping cliff face; verbatimLatitude: 22°12'25.22"N; verbatimLongitude: 159°36'1.11"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356070; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 591.4
- u. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #2; verbatimLatitude: 22°12'22.91"N; verbatimLongitude: 159°36'3.96"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; lifeStage: adult; catalogNumber: EMEC7356071; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 592.2
- v. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #3; verbatimLatitude: 22°12'19.21"N; verbatimLongitude: 159°36'10.24"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; individualCount: 2; lifeStage: adult; catalogNumber: EMEC7356072; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 593.1
- w. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honokoa Trail, seep #4; verbatimLatitude: 22°12'16.43"N; verbatimLongitude: 159°36'12.34"W; geodeticDatum: WGS84; verbatimEventDate: 11.i.2010; individualCount: many; lifeStage: adult; catalogNumber: EMEC7356073; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 594.1

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Kauai.

### ***Scatella mauiensis* (Wirth, 1948)**

#### **Materials**

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haipuaena; verbatimEventDate: 25.vi.1920; individualCount: 1; sex: male; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: UHM

##### *Other materials:*

- a. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikamoi; verbatimElevation: 3936 ft.;

- verbatimEventDate: 14.iii.1961; individualCount: 1; lifeStage: adult; recordedBy: LW Quate; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Halawa Valley; verbatimEventDate: 23.iii.1970; individualCount: 2; lifeStage: adult; recordedBy: JL Gressitt; identifiedBy: K Arakaki; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mountains, Honokane Nui Stream and branch; verbatimEventDate: 13.vi.1970; individualCount: 4; lifeStage: adult; recordedBy: WC Gagne; identifiedBy: JA Tenorio; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kipahulu Valley, ridge E. of Greensword Bog; verbatimElevation: 5947 ft.; verbatimEventDate: 25.vi.1981; individualCount: 1; lifeStage: adult; recordedBy: WC Gagne; identifiedBy: K Arakaki; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: E. Hahalawe Gulch, in waterfall spray zone; verbatimElevation: 1197-1345 ft.; verbatimEventDate: 5.v.1984; individualCount: 24; lifeStage: adult; recordedBy: GM Nishida; identifiedBy: K Arakaki; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kolekole Beach Park, sweeping along ocean coast; verbatimLatitude: 19°52'57.93"N; verbatimLongitude: 155°7'9.22"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; lifeStage: adult; catalogNumber: EMEC7356074; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 616.5

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Molokai, Maui, Hawaii.

## ***Scatella oahuense* Williams, 1938**

### **Materials**

#### ***Holotype:***

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hering Valley, Tantalus, wet bank; verbatimEventDate: 6.iii.1937; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 4245; recordedBy: FX Williams; institutionCode: BPBM

#### ***Paratypes:***

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hering Valley, Tantalus, wet bank; verbatimEventDate: 6.iii.1937; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 4245a; recordedBy: FX Williams; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Tantalus; verbatimEventDate: 1936-1937; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Upper Manoa Valley; verbatimEventDate: 1936-1937; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM

- d. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: 1936-1937; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waikane; verbatimEventDate: 1936-1937; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- f. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley; verbatimEventDate: 1936-1937; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- g. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimEventDate: 1936-1937; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM

*Other materials:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Palolo Falls; verbatimEventDate: vii.1916; individualCount: 11; lifeStage: adult; recordedBy: JF Illingworth; institutionCode: UHM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Palolo Falls; verbatimEventDate: vii.1916; individualCount: 7; lifeStage: adult; recordedBy: JF Illingworth; identifiedBy: WW Wirth; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Lanihuli R.; verbatimEventDate: 3.ix.1916; individualCount: 1; lifeStage: adult; recordedBy: JC Bridwell; identifiedBy: WW Wirth; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Puu Nianiau; verbatimEventDate: 16.vii.1919; individualCount: 1; lifeStage: adult; recordedBy: Timberlake; identifiedBy: JA Tenorio; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haipuaena; verbatimEventDate: 25.vi.1920; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Niu; verbatimEventDate: 13.i.1924; individualCount: 4; sex: male; lifeStage: adult; recordedBy: OH Swezey; institutionCode: UHM
- g. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Niu; verbatimEventDate: 13.i.1924; individualCount: 1; lifeStage: adult; recordedBy: OH Swezey; identifiedBy: WW Wirth; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Lanai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Lanaihale; verbatimEventDate: 17.ii.1965; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Makaleha; verbatimEventDate: 13.i.1929; individualCount: 2; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: WW Wirth; institutionCode: BPBM
- j. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala Crater; verbatimElevation: 7000;



- verbatimEventDate: 23.iii.1932; individualCount: 2; lifeStage: adult; recordedBy: O Bryant; identifiedBy: JA Tenorio; institutionCode: BPBM
- k. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kamokuiki Valley; verbatimEventDate: 13.iv.1933; individualCount: 21; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: WW Wirth; institutionCode: BPBM
- l. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Castle trail; verbatimEventDate: 14.x.1934; individualCount: 3; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: WW Wirth; institutionCode: BPBM
- m. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Tantalus; verbatimEventDate: 23.i.1937; individualCount: 1; lifeStage: adult; recordedBy: EC Zimmerman; identifiedBy: WW Wirth; institutionCode: BPBM
- n. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 6.v.1945; individualCount: 3; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- o. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 6.v.1945; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972758; recordedBy: WW Wirth; institutionCode: USNM
- p. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 6.v.1945; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972759; recordedBy: WW Wirth; institutionCode: USNM
- q. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 6.v.1945; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972760; recordedBy: WW Wirth; institutionCode: USNM
- r. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley, on moist rocks in stream; verbatimEventDate: 19.i.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- s. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Laulapoe Gulch; verbatimEventDate: 9.vii.1951; individualCount: 1; lifeStage: adult; recordedBy: Y Kondo; identifiedBy: WW Wirth; institutionCode: BPBM
- t. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Maunawili; verbatimElevation: 1200; verbatimEventDate: 31.i.1953; individualCount: 6; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- u. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kuliouou; verbatimElevation: 1500; verbatimEventDate: 7.ii.1953; individualCount: 5; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- v. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimEventDate: 3.iv.1953; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM

- w. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Wailua; verbatimEventDate: xii.1956; individualCount: 2; lifeStage: adult; recordedBy: CA Isenberg; identifiedBy: JA Tenorio; institutionCode: BPBM
- x. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Ulupalakua; verbatimEventDate: 8.ii.1958; individualCount: 2; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- y. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Head of Waipio Valley; verbatimElevation: 3936; verbatimEventDate: 23.iii.1961; individualCount: 2; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- z. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kaupo Gap; verbatimElevation: 5400; verbatimEventDate: 24.vi.1976; individualCount: 15; lifeStage: adult; recordedBy: RCA Rice; identifiedBy: K Arakaki; institutionCode: BPBM
- aa. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kipahulu Valley, ridge E. of Greensword Bog; verbatimElevation: 5947; verbatimEventDate: 25.vii.1981; individualCount: 3; lifeStage: adult; recordedBy: WC Gagne; identifiedBy: K Arakaki; institutionCode: BPBM

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Oahu, Lanai, Maui, Hawaii.

**Notes:** 12 specimens from USNM not examined.

### ***Scatella sexnotata* Cresson, 1926**

#### **Materials**

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimanalo; verbatimEventDate: 11.vi.1907; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 352; recordedBy: FW Terry; institutionCode: BPBM

##### *Paratypes:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimanalo; verbatimEventDate: 11.vi.1907; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 352a; recordedBy: FW Terry; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimanalo; verbatimEventDate: 11.vi.1907; individualCount: 5; lifeStage: adult; recordedBy: FW Terry; institutionCode: UHM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimanalo; verbatimEventDate: 11.vii.1907; individualCount: 3; lifeStage: adult; recordedBy: FW Terry; identifiedBy: ET Cresson; institutionCode: BPBM

*Other materials:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: no date given; individualCount: 1; lifeStage: adult; recordedBy: no collector given; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: no date given; individualCount: 5; lifeStage: adult; recordedBy: RCL Perkins; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimEventDate: no date given; individualCount: 1; lifeStage: adult; recordedBy: RCL Perkins; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimEventDate: no date given; individualCount: 38; lifeStage: adult; recordedBy: GP Wilder; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimEventDate: 7.i.1913; individualCount: 1; lifeStage: adult; recordedBy: JF Illingworth; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimEventDate: ix.1914; individualCount: 5; lifeStage: adult; recordedBy: JF Illingworth; institutionCode: BPBM
- g. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimEventDate: viii.1920; individualCount: 6; lifeStage: adult; recordedBy: GP Wilder; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kahalui Swamp; verbatimEventDate: 7.vii.1920; individualCount: 16; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Ewa Coral Plain; verbatimEventDate: 29.i.1922; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- j. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: 2.iv.1923; individualCount: 2; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- k. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimEventDate: 8-11.iv.1923; individualCount: 21; lifeStage: adult; recordedBy: DT Fullaway; institutionCode: BPBM
- l. islandGroup: Hawaiian Islands; island: Nihoa; country: United States; stateProvince: Hawaii; county: Nihoa; verbatimLocality: stagnant water; verbatimEventDate: 13.vi.1923; individualCount: 11; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- m. islandGroup: Hawaiian Islands; island: Necker; country: United States; stateProvince: Hawaii; verbatimLocality: pools of salt water; verbatimEventDate: 18.vi.1923; individualCount: 17; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- n. islandGroup: Hawaiian Islands; island: Necker; country: United States; stateProvince: Hawaii; verbatimEventDate: 29.vi.1923; individualCount: 4; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- o. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waikiki; verbatimEventDate: 1.iii.1932; individualCount: 1; lifeStage: adult; recordedBy: O Bryant; institutionCode: BPBM
- p. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Maunaloa; verbatimEventDate: 19.iv.1937; individualCount: 37; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM

- q. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimea, on rocks by sea; verbatimEventDate: 31.i.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972761; recordedBy: WW Wirth; institutionCode: USNM
- r. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimea, on rocks by sea; verbatimEventDate: 31.i.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972762; recordedBy: WW Wirth; institutionCode: USNM
- s. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- t. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972763; recordedBy: WW Wirth; institutionCode: USNM
- u. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT 00972764; recordedBy: WW Wirth; institutionCode: USNM
- v. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: ?; lifeStage: adult; catalogNumber: USNMENT 00972765; recordedBy: WW Wirth; institutionCode: USNM
- w. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMENT 00972766; recordedBy: WW Wirth; institutionCode: USNM
- x. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972767; recordedBy: WW Wirth; institutionCode: USNM
- y. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972768; recordedBy: WW Wirth; institutionCode: USNM
- z. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972769; recordedBy: WW Wirth; institutionCode: USNM
- aa. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972770; recordedBy: WW Wirth; institutionCode: USNM
- ab. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMENT 00972771; recordedBy: WW Wirth; institutionCode: USNM
- ac. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi, light trap; verbatimEventDate: ii.1946;

- individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972772; recordedBy: WW Wirth; institutionCode: USNM
- ad. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waipio, at light trap; verbatimEventDate: 29.i-4.ii.1946; individualCount: 2; lifeStage: adult; recordedBy: no collector given; institutionCode: BPBM
- ae. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- af. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972773; recordedBy: WW Wirth; institutionCode: USNM
- ag. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972774; recordedBy: WW Wirth; institutionCode: USNM
- ah. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972775; recordedBy: WW Wirth; institutionCode: USNM
- ai. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972776; recordedBy: WW Wirth; institutionCode: USNM
- aj. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, light trap; verbatimEventDate: 1.ii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972777; recordedBy: WW Wirth; institutionCode: USNM
- ak. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaneohe, marshy bay shore; verbatimEventDate: 13.iii.1946; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- al. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaneohe, marshy bay shore; verbatimEventDate: 13.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972778; recordedBy: WW Wirth; institutionCode: USNM
- am. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaneohe, marshy bay shore; verbatimEventDate: 13.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972779; recordedBy: WW Wirth; institutionCode: USNM
- an. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Ewa, on stranded seaweed on beach; verbatimEventDate: 14.iii.1946; individualCount: 5; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- ao. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Ewa, on stranded seaweed on beach; verbatimEventDate: 14.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972781; recordedBy: WW Wirth; institutionCode: USNM



- verbatimEventDate: 14.iii.1946; individualCount: 1; sex: male; lifeStage: adult;  
catalogNumber: USNMMENT 00972794; recordedBy: WW Wirth; institutionCode: USNM
- bc. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Ewa, on stranded seaweed on beach; verbatimEventDate: 14.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972795; recordedBy: WW Wirth; institutionCode: USNM
- bd. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Keanakolu; verbatimElevation: 4500 ft.; verbatimEventDate: 28.x.1952; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; institutionCode: BPBM
- be. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: N. Halawa Trail; verbatimEventDate: 24.xi.1952; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; institutionCode: BPBM
- bf. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kailua; verbatimEventDate: 2.xii.1956; individualCount: 5; lifeStage: adult; recordedBy: JL Gressitt; institutionCode: BPBM
- bg. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae Mts.; verbatimElevation: 2000 ft.; verbatimEventDate: 11.x.1957; individualCount: 1; lifeStage: adult; recordedBy: RE Leech; institutionCode: BPBM
- bh. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Barber's Point, at light trap; verbatimEventDate: i.1959; individualCount: 1; lifeStage: adult; recordedBy: no collector given; institutionCode: BPBM
- bi. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimEventDate: 27.iv-7.v.1959; individualCount: 19; lifeStage: adult; recordedBy: GD Butler; institutionCode: BPBM
- bj. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimEventDate: 20-28.vii.1959; individualCount: 51; lifeStage: adult; recordedBy: GD Butler; institutionCode: BPBM
- bk. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu, Manoa; verbatimEventDate: 2.iii.1962; individualCount: 1; lifeStage: adult; recordedBy: D Tsuda; institutionCode: BPBM
- bl. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimEventDate: 16-21.vi.1962; individualCount: 6; lifeStage: adult; recordedBy: JW Beardsley; institutionCode: BPBM
- bm. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimEventDate: 8.xii.1963; individualCount: 15; lifeStage: adult; recordedBy: N Wilson; institutionCode: BPBM
- bn. islandGroup: Hawaiian Islands; island: Laysan; country: United States; stateProvince: Hawaii; verbatimLocality: sweeping around lagoon; verbatimEventDate: 19.ix.1964; individualCount: 1179; lifeStage: adult; recordedBy: JW Beardsley; institutionCode: BPBM
- bo. islandGroup: Hawaiian Islands; island: Nihoa; country: United States; stateProvince: Hawaii; county: Nihoa; verbatimLocality: ex *Chenopodium oahuense*; verbatimEventDate: 23.ix.1964; individualCount: 25; lifeStage: adult; recordedBy: JW Beardsley; institutionCode: BPBM

- bp. islandGroup: Hawaiian Islands; island: Nihoa; country: United States; stateProvince: Hawaii; county: Nihoa; verbatimLocality: ex *Eragrotis variabilis*; verbatimEventDate: 24.ix.1964; individualCount: 12; lifeStage: adult; recordedBy: JW Beardsley; institutionCode: BPBM
- bq. islandGroup: Hawaiian Islands; island: Necker; country: United States; stateProvince: Hawaii; verbatimEventDate: 26-27.ix.1964; individualCount: 1; lifeStage: adult; recordedBy: JW Beardsley; institutionCode: BPBM
- br. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: South Coast, Kaunakakai, E. of UH Fish Pond, shore mud; verbatimEventDate: 23.iii.1970; individualCount: 72; lifeStage: adult; recordedBy: JL Gressitt; institutionCode: BPBM
- bs. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Aii Pond; verbatimEventDate: 24.iii.1970; individualCount: 3; lifeStage: adult; recordedBy: JL Gressitt; institutionCode: BPBM
- bt. islandGroup: Hawaiian Islands; island: Nihoa; country: United States; stateProvince: Hawaii; county: Nihoa; verbatimLocality: Miller Valley; verbatimElevation: 100 ft.; verbatimEventDate: 22.vi.1990; individualCount: 6; lifeStage: adult; recordedBy: J Strazanac; institutionCode: BPBM
- bu. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, mouth of Waimalu Stream; verbatimEventDate: 3.xi.1997; individualCount: 7; lifeStage: adult; recordedBy: DJ Preston; identifiedBy: DJ Preston; institutionCode: BPBM
- bv. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Honoluiuli Stream, near pipeline bridge; verbatimEventDate: 19.xi.1997; individualCount: 3; lifeStage: adult; recordedBy: DJ Preston, R Englund, R Wolfe; identifiedBy: DJ Preston; institutionCode: BPBM
- bw. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Halawa Stream, mud bar near Salt Lake Blvd Bridge; verbatimEventDate: 8.xii.1997; individualCount: 1; lifeStage: adult; recordedBy: DJ Preston, R Englund, R Wolfe; identifiedBy: DJ Preston; institutionCode: BPBM
- bx. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae Mountains, Mt Kaala, at summit area near newly buried electrical cable; verbatimEventDate: ii.1998; individualCount: 1; lifeStage: adult; recordedBy: DJ Preston; identifiedBy: DJ Preston; institutionCode: BPBM
- by. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae Mountains, Pearl Harbor, Makaha Wetlands, N of roadway; verbatimEventDate: 2.ii.1998; individualCount: 5; lifeStage: adult; recordedBy: DJ Preston, R Englund; identifiedBy: DJ Preston; institutionCode: BPBM
- bz. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Koolau Mountains, Pearl Harbor, Halawa Stream, S of Salt Lake Blvd Bridge; verbatimEventDate: 23.iii.1998; individualCount: 5; lifeStage: adult; recordedBy: DJ Preston, R Englund, R Wolfe; identifiedBy: DJ Preston; institutionCode: BPBM
- ca. islandGroup: Hawaiian Islands; island: Nihoa; country: United States; stateProvince: Hawaii; county: Nihoa; verbatimLocality: Miller Valley; verbatimElevation: 150 ft.; verbatimEventDate: 29.iv.1983; individualCount: 10; lifeStage: adult; recordedBy: WC Gagne; institutionCode: BPBM



- cb. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Baisdell Park, shoreline; verbatimEventDate: 28.v.1998; individualCount: 12; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- cc. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimalu Stream, near Blaisdell Park on narrow trail; verbatimEventDate: 28.v.1998; individualCount: 8; lifeStage: adult; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM
- cd. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Baisdell Park, Waimalu Stream; verbatimEventDate: 28.v.1998; individualCount: 2; lifeStage: adult; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM
- ce. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Halawa Stream (lower); verbatimEventDate: 2.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM
- cf. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Waiawa Springs; verbatimEventDate: 3.vi.1998; individualCount: 2; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- cg. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honouliuli; verbatimEventDate: 17.vi.1998; individualCount: 7; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- ch. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Puohala Marsh; verbatimEventDate: 19.vi.1998; individualCount: 6; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- ci. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, E'o Stream, waterline near bridge foundation; verbatimEventDate: 19.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- cj. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Aiea Stream; verbatimEventDate: 24.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- ck. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Aiea Bay; verbatimEventDate: 24.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- cl. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalauao stream; verbatimEventDate: 29.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- cm. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Waiiau Hawaiian Electric Power Plant, near dam at lower end of pond; verbatimEventDate: 30.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM

**Native status:** Immigrant?

**Distribution:** Pacific: Wake Island. Hawaiian Islands, Laysan, Necker, Nihoa, Kauai, Oahu, Molokai, Maui, Hawaii.

**Notes:** 47 specimens from USNM not examined.

### ***Scatella stagnalis* (Fallen, 1813)**

#### **Materials**

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; country: United States; stateProvince: Hawaii; lifeStage: adult; recordedBy: no collector given; institutionCode: MZLU

##### *Other materials:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hilo, Waiakea Pond; verbatimEventDate: 27.xii.1969; individualCount: 9; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kalapana, on beach; verbatimEventDate: 29.xi.1969; individualCount: 1; lifeStage: adult; recordedBy: Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hickam Air Force Base; verbatimEventDate: 29.x.1977; individualCount: 2; lifeStage: adult; recordedBy: CW Mills III; identifiedBy: K Arakaki; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hickam Air Force Base, at light; verbatimEventDate: 8.i.1978; individualCount: 5; lifeStage: adult; recordedBy: CW Mill III; identifiedBy: K Arakaki; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Barber's Point; verbatimEventDate: 6.ii.1982; individualCount: 3; lifeStage: adult; recordedBy: WC Gagne; identifiedBy: K Arakaki; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Midway; country: United States; stateProvince: Hawaii; verbatimLocality: Sand Island, Dump Lake; verbatimEventDate: 17.xii.1997; individualCount: 20; lifeStage: adult; recordedBy: GM Nishida; identifiedBy: K Arakaki; institutionCode: BPBM
- g. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt Kaala, at summit area near newly buried electrical cable; verbatimEventDate: ii.1998; individualCount: 3; lifeStage: adult; recordedBy: DJ Preston; identifiedBy: K Arakaki; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Koolau Mountains, Pearl Harbor, Halawa Stream, S. of Salt Lake Bird Bridge; verbatimEventDate: 23.iii.1998; individualCount: 3; lifeStage: adult; recordedBy: DJ Preston; identifiedBy: K Arakaki; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Middle Loch near Waiwa Springs, along shore; verbatimEventDate: 6.v.1998; individualCount: 1; lifeStage: adult; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM

- j. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Baisdell Park, Waimalu Stream; verbatimEventDate: 28.v.1998; individualCount: 1; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- k. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Koolau Mountains, Halawa Stream, McDonald's Area; verbatimEventDate: 2.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM
- l. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waikele Stream, near Cultural Garden; verbatimEventDate: 9.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM
- m. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waiawa Stream; verbatimEventDate: 16.vi.1998; individualCount: 3; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- n. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Honouliuli; verbatimEventDate: 17.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- o. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Puohala Marsh, first pool; verbatimEventDate: 19.vi.1998; individualCount: 3; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- p. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kapakahi Stream, at edge; verbatimEventDate: 19.vi.1998; individualCount: 2; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- q. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearly Harbor, Waiiau Hawaiian Electric Power Plant, near dam at lower end of pond; verbatimEventDate: 20.vi.1998; individualCount: 9; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- r. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Aiea Bay, park area; verbatimEventDate: 24.vi.1998; individualCount: 8; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- s. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Aiea Bay, Aiea Stream, mouth; verbatimEventDate: 24.vi.1998; individualCount: 1; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- t. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Aiea Stream; verbatimEventDate: 24.vi.1998; individualCount: 2; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- u. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalauao Stream; verbatimEventDate: 29.vi.1998; individualCount: 2; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM

- v. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, Kalauao ponds, stream from watercress ponds; verbatimEventDate: 29.vi.1998; individualCount: 3; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- w. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Pearl Harbor, E'o, Canal Ted Makalena Golf Course, on fairway; verbatimEventDate: 27.vii.1998; individualCount: 4; lifeStage: adult; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- x. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Mouth of Lower Kaeke Stream; verbatimEventDate: 28.ix.2001; individualCount: 6; lifeStage: adult; recordedBy: RA Englund; identifiedBy: K Arakaki; institutionCode: BPBM
- y. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kahuku, Kahuku Shrimp Farm; verbatimEventDate: 2.iv.2004; individualCount: 5; lifeStage: adult; recordedBy: D. Montgomery-Brock; identifiedBy: K Arakaki; institutionCode: BPBM

**Native status:** Immigrant.

**Distribution:** Cosmopolitan. Hawaiian Islands: Midway, Hawaii, Oahu, Hawaii.

## *Scatella terryi* Cresson, 1926

### Materials

#### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Wawamalu Beach, near Koko Crater; verbatimEventDate: 12.xii.1922; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 9175; recordedBy: EH Bryan Jr.; institutionCode: BPBM

#### *Other materials:*

- a. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Hanauma Bay, on rocks by sea; verbatimEventDate: 4.i.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimea, on rocks by sea; verbatimEventDate: 15.i.1946; individualCount: 2; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimea, on rocks by sea; verbatimEventDate: 15.i.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972796; recordedBy: WW Wirth; institutionCode: USNM
- d. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimea, on rocks by sea; verbatimEventDate: 15.i.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972797; recordedBy: WW Wirth; institutionCode: USNM
- e. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waimanalo; verbatimEventDate: 26.xii.1949;

individualCount: 2; lifeStage: adult; recordedBy: MS Adachi; identifiedBy: JA Tenorio;  
institutionCode: BPBM

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Oahu, Maui.

## *Scatella warreni* Cresson, 1926

### Materials

#### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haipuaena; verbatimEventDate: 25.vii.1920; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 353; recordedBy: EH Bryan Jr.; institutionCode: BPBM

#### *Paratypes:*

- a. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haipuaena; verbatimEventDate: 25.vii.1920; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 353a; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haipuaena; verbatimEventDate: 25.vii.1920; individualCount: 3; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: UHM
- c. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haipuaena; verbatimEventDate: 25.vi.1920; individualCount: 3; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: WW Wirth; institutionCode: BPBM

#### *Other materials:*

- a. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Nahiku; verbatimEventDate: date unclear; individualCount: 9; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimEventDate: i.1913; individualCount: 1; lifeStage: adult; recordedBy: no collector given; identifiedBy: ET Cresson; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu; verbatimEventDate: 26.x.1913; individualCount: 2; lifeStage: adult; recordedBy: A Warren; identifiedBy: ET Cresson; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimEventDate: vii.1914; individualCount: 4; lifeStage: adult; recordedBy: JF Illingworth; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Iao Valley; verbatimEventDate: 3.i.1915; individualCount: 1; lifeStage: adult; recordedBy: JF Illingworth; identifiedBy: ET Cresson; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Lanihuli R.; verbatimEventDate: 2.ix.1916;

- individualCount: 1; lifeStage: adult; recordedBy: C Bridwell; identifiedBy: WW Wirth; institutionCode: BPBM
- g. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Moanalua; verbatimEventDate: 9.iv.1922; individualCount: 9; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: WW Wirth; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi Valley; verbatimEventDate: 12.ii.1923; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: ET Cresson; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Palolo; verbatimEventDate: 25.ii.1925; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: ET Cresson; institutionCode: BPBM
- j. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kamokuiki Valley, about water pool; verbatimEventDate: 13.iv.1933; individualCount: 2; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- k. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kamokuiki Valley, ex stagnant water; verbatimEventDate: 13.iv.1933; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: BPBM
- l. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waipio, Waihole Ditch; verbatimEventDate: 26.iv.1935; individualCount: 9; lifeStage: adult; recordedBy: K Ito; identifiedBy: JA Tenorio; institutionCode: BPBM
- m. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae; verbatimEventDate: 7.vii.1935; individualCount: 1; lifeStage: adult; recordedBy: RL Usinger; institutionCode: BPBM
- n. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hamakua Ditch Trail; verbatimEventDate: 15.viii.1935; individualCount: 3; lifeStage: adult; recordedBy: RL Usinger; identifiedBy: WW Wirth; institutionCode: BPBM
- o. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae, swift water ditch; verbatimEventDate: 10.iii.1936; individualCount: 1; lifeStage: adult; recordedBy: FX Williams; institutionCode: BPBM
- p. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi Valley; verbatimEventDate: 13.iii.1937; individualCount: 13; lifeStage: adult; recordedBy: EC Zimmerman; institutionCode: BPBM
- q. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu, Kalihi Stream, wet boulder; verbatimEventDate: 14.iii.1937; individualCount: 2; lifeStage: adult; recordedBy: FX Williams; institutionCode: BPBM
- r. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kumuwela; verbatimEventDate: 20.xii.1935; individualCount: 1; lifeStage: adult; recordedBy: RL Usinger; identifiedBy: WW Wirth; institutionCode: BPBM
- s. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Wailuaiki; verbatimEventDate: 2.vii.1920;

- individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: WW Wirth; institutionCode: BPBM
- t. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Olinda; verbatimElevation: 4500 ft.; verbatimEventDate: 8.iv.1932; individualCount: 1; lifeStage: adult; recordedBy: O Bryant; identifiedBy: WW Wirth; institutionCode: BPBM
- u. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala, near Kahua Ranch; verbatimElevation: 4500 ft.; verbatimEventDate: 4.ix.1936; individualCount: 1; lifeStage: adult; recordedBy: EY Hosaka; identifiedBy: WW Wirth; institutionCode: BPBM
- v. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kipahulu Valley; verbatimElevation: 1500 ft.; verbatimEventDate: 5.vii.1980; individualCount: 1; lifeStage: adult; recordedBy: WC Gagne; identifiedBy: NL Evenhuis; institutionCode: BPBM
- w. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haipuaena; verbatimEventDate: 25.vi.1920; individualCount: 3; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: ET Cresson; institutionCode: BPBM
- x. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls, about water; verbatimEventDate: 24.x.1931; individualCount: 2; lifeStage: adult; recordedBy: FX Williams; identifiedBy: WW Wirth; institutionCode: BPBM
- y. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kapahulu Rd.; verbatimEventDate: 26.x.1931; individualCount: 1; lifeStage: adult; recordedBy: FX Williams; identifiedBy: ET Cresson; institutionCode: BPBM
- z. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hilo substation; verbatimEventDate: vii.1936; individualCount: 1; lifeStage: adult; recordedBy: no collector given; identifiedBy: WW Wirth; institutionCode: BPBM
- aa. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Near Halemanu; verbatimEventDate: 10.vii.1937; individualCount: 15; lifeStage: adult; recordedBy: EC Zimmerman; identifiedBy: JA Tenorio; institutionCode: BPBM
- ab. islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Honopu; verbatimEventDate: 17.vi.1922; individualCount: 1; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: JA Tenorio; institutionCode: BPBM
- ac. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Wailuaiki; verbatimEventDate: 3.vii.1920; individualCount: 4; lifeStage: adult; recordedBy: EH Bryan Jr.; identifiedBy: ET Cresson; institutionCode: BPBM
- ad. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Olawalu; verbatimEventDate: 21.iii.1967; individualCount: 4; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- ae. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Olinda; verbatimEventDate: 1.viii.1932; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM

- af. islandGroup: Hawaiian Islands; island: Molokai; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikolu Valley; verbatimElevation: 4593 ft.; verbatimEventDate: 1.v.1955; individualCount: 1; lifeStage: adult; recordedBy: EJ Ford; identifiedBy: JA Tenorio; institutionCode: BPBM
- ag. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Ulupalakua; verbatimEventDate: 8.ii.1958; individualCount: 2; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- ah. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kaupo; verbatimEventDate: ii.1958; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- ai. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Nahiku; verbatimEventDate: ii.1958; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- aj. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Waikamoi; verbatimElevation: 3936 ft.; verbatimEventDate: 14.iii.1961; individualCount: 1; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- ak. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala; verbatimEventDate: no date given; individualCount: 1; lifeStage: adult; recordedBy: no collector given; identifiedBy: JA Tenorio; institutionCode: BPBM
- al. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Pololu Valley; verbatimEventDate: 2.viii.1958; individualCount: 1; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- am. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mts.; verbatimElevation: 1900 ft.; verbatimEventDate: 31.vii.1958; individualCount: 5; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- an. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Head of Waipio Valley; verbatimElevation: 3936 ft.; verbatimEventDate: 23.iii.1961; individualCount: 2; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- ao. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Honolulu, Lulumahu Valley; verbatimEventDate: 20.ii.1953; individualCount: 38; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- ap. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Makapu; verbatimEventDate: 21.viii.1953; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- aq. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimEventDate: 1932; individualCount: 2; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: JA Tenorio; institutionCode: BPBM
- ar. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala National Park, Kaupo Gap;



- verbatimElevation: 5400 ft.; verbatimEventDate: 24.vi.1976; individualCount: 1; lifeStage: adult; recordedBy: RCA Rice; identifiedBy: K Arakaki; institutionCode: BPBM
- as. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 16; lifeStage: adult; recordedBy: WW Wirth; institutionCode: UHM
- at. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972811; recordedBy: WW Wirth; institutionCode: USNM
- au. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972812; recordedBy: WW Wirth; institutionCode: USNM
- av. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972813; recordedBy: WW Wirth; institutionCode: USNM
- aw. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972814; recordedBy: WW Wirth; institutionCode: USNM
- ax. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972815; recordedBy: WW Wirth; institutionCode: USNM
- ay. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972816; recordedBy: WW Wirth; institutionCode: USNM
- az. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972817; recordedBy: WW Wirth; institutionCode: USNM
- ba. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972818; recordedBy: WW Wirth; institutionCode: USNM
- bb. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972819; recordedBy: WW Wirth; institutionCode: USNM
- bc. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972821; recordedBy: WW Wirth; institutionCode: USNM
- bd. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972822; recordedBy: WW Wirth; institutionCode: USNM



- individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972835; recordedBy: WW Wirth; institutionCode: USNM
- br. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972836; recordedBy: WW Wirth; institutionCode: USNM
- bs. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972837; recordedBy: WW Wirth; institutionCode: USNM
- bt. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972838; recordedBy: WW Wirth; institutionCode: USNM
- bu. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972801; recordedBy: WW Wirth; institutionCode: USNM
- bv. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972802; recordedBy: WW Wirth; institutionCode: USNM
- bw. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972803; recordedBy: WW Wirth; institutionCode: USNM
- bx. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972804; recordedBy: WW Wirth; institutionCode: USNM
- by. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972805; recordedBy: WW Wirth; institutionCode: USNM
- bz. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972806; recordedBy: WW Wirth; institutionCode: USNM
- ca. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972807; recordedBy: WW Wirth; institutionCode: USNM
- cb. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972808; recordedBy: WW Wirth; institutionCode: USNM
- cc. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972809; recordedBy: WW Wirth; institutionCode: USNM

- cd. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Rainbow Falls, Hilo; verbatimEventDate: 3.iii.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972810; recordedBy: WW Wirth; institutionCode: USNM
- ce. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 21.x.1931; individualCount: 2; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- cf. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hilo, flume; verbatimEventDate: vii.1936; individualCount: 9; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- cg. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Iao Valley; verbatimEventDate: 3.i.1915; individualCount: 2; lifeStage: adult; recordedBy: JF Illingworth; institutionCode: UHM
- ch. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kailua; verbatimEventDate: 20.vi.1920; individualCount: 1; sex: male; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: UHM
- ci. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Wailua-iki; verbatimEventDate: 3.vii.1920; individualCount: 1; sex: male; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: UHM
- cj. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Palolo Valley; verbatimElevation: 1500 ft.; verbatimEventDate: 19.i.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; previousIdentifications: holotype of *N. fimbriata*; institutionCode: BPBM
- ck. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley, at stream; verbatimElevation: 2000 ft.; verbatimEventDate: 14.v.1946; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; previousIdentifications: allotype of *N. fimbriata*; institutionCode: BPBM
- cl. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley, at stream; verbatimElevation: 2000 ft.; verbatimEventDate: 14.v.1946; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972799; recordedBy: WW Wirth; institutionCode: USNM
- cm. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley, at stream; verbatimElevation: 2000 ft.; verbatimEventDate: 14.v.1946; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: USNMMENT 00972800; recordedBy: WW Wirth; institutionCode: USNM
- cn. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 6.v.1945; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; previousIdentifications: paratype of *N. fimbriata*; institutionCode: BPBM
- co. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Manoa Valley; verbatimEventDate: 6.v.1945; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: USNMMENT 00972798; recordedBy: WW Wirth; institutionCode: USNM
- cp. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kaluanui Valley, at stream; verbatimElevation: 2000 ft.; verbatimEventDate: 14.v.1946; individualCount: 3; lifeStage: adult; recordedBy: WW Wirth; previousIdentifications: paratype of *N. fimbriata*; institutionCode: BPBM

- cq. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Mt. Kaala; verbatimEventDate: 17.iv.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; previousIdentifications: paratype of *N. fimbriata*; institutionCode: BPBM
- cr. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Makaleha; verbatimEventDate: 13.i.1929; individualCount: 6; lifeStage: adult; recordedBy: EH Bryan Jr.; previousIdentifications: paratype of *N. fimbriata*; identifiedBy: WW Wirth; institutionCode: BPBM
- cs. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Waianae, swift water ditch; verbatimEventDate: 10.v.1936; individualCount: 3; lifeStage: adult; recordedBy: FX Williams; previousIdentifications: paratype of *N. fimbriata*; institutionCode: UHM
- ct. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Kalihi Stream, Honolulu, wet boulder; verbatimEventDate: 13-14.v.1937; individualCount: 4; sex: female; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- cu. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Moanalua; verbatimEventDate: 9.iv.1922; individualCount: 8; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: UHM
- cv. islandGroup: Hawaiian Islands; island: Oahu; country: United States; stateProvince: Hawaii; county: Honolulu; verbatimLocality: Palolo; verbatimEventDate: 25.ii.1922; individualCount: 1; sex: female; lifeStage: adult; recordedBy: EH Bryan Jr.; institutionCode: UHM

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Kauai, Oahu, Molokai, Maui, Hawaii.

**Notes:** 32 specimens from USNM not examined.

### *Scatella williamsi* (Wirth, 1948)

#### Materials

##### *Holotype:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls, Hilo; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM

##### *Paratypes:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls, Hilo; verbatimEventDate: 5.iii.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls, Hilo; verbatimEventDate: 5.iii.1946; individualCount: 7; lifeStage: adult; recordedBy: WW Wirth; institutionCode: BPBM

*Other materials:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls, about water; verbatimEventDate: 24.x.1931; individualCount: 1; lifeStage: adult; recordedBy: FX Williams; identifiedBy: WW Wirth; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kohala Mts.; verbatimElevation: 1900 ft.; verbatimEventDate: 31.vii.1958; individualCount: 1; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Head of Waipio Valley; verbatimElevation: 3936 ft.; verbatimEventDate: 23.iii.1961; individualCount: 4; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 28.v.1970; individualCount: 4; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: JA Tenorio; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: 0.5 miles from start of scenic drive to Onomea Bay, first major bridge, sweeping along stream; verbatimLatitude: 19°47'42.20"N; verbatimLongitude: 155°5'38.58"W; geodeticDatum: WGS84; verbatimEventDate: 2.viii.2010; lifeStage: adult; catalogNumber: EMEC7356075; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; institutionCode: EMEC; collectionCode: 613.4

**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Hawaii.

***Scatella wirthi* Tenorio, 1980****Materials***Holotype:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Keanakolu, Kaula Gulch; verbatimElevation: 7000 ft.; verbatimEventDate: 29.x.1952; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 9478; recordedBy: CP Hoyt; institutionCode: BPBM

*Paratypes:*

- a. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Kula Pipe Line; verbatimElevation: 4600-5000 ft.; verbatimEventDate: 15.iii.1932; lifeStage: adult; recordedBy: O Bryant; institutionCode: UHM
- b. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala; verbatimEventDate: 23.iii.1932; lifeStage: adult; recordedBy: O Bryant; institutionCode: UHM
- c. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hamuula; verbatimEventDate: 7.vii.1935; lifeStage: adult; recordedBy: RL Usinger; institutionCode: UHM

- d. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kilauea; verbatimEventDate: viii.1949; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- e. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Pauahi; verbatimEventDate: 12.viii.1949; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- f. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Lake Waiau, Mauna Kea; verbatimEventDate: x.1951; individualCount: 2; lifeStage: adult; recordedBy: E Dresner; institutionCode: BPBM
- g. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kulani; verbatimElevation: 5200 ft.; verbatimEventDate: vii.1952; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy; institutionCode: BPBM
- h. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kulani; verbatimElevation: 5200 ft.; verbatimEventDate: vii.1952; individualCount: 1; lifeStage: adult; recordedBy: WC Mitchel; institutionCode: BPBM
- i. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Paliku, Haleakala; verbatimElevation: 6000 ft.; verbatimEventDate: vii.1952; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- j. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Puu Kalepa Pond; verbatimElevation: 8000 ft.; verbatimEventDate: x.1952; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- k. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Keanakolu, Kaula Gulch; verbatimElevation: 7000 ft.; verbatimEventDate: 29.x.1952; individualCount: 1; sex: female; lifeStage: adult; catalogNumber: 9478a; recordedBy: CP Hoyt; institutionCode: BPBM
- l. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Keanakolu, Kaula Gulch; verbatimElevation: 7000 ft.; verbatimEventDate: 29.x.1952; individualCount: 2; lifeStage: adult; recordedBy: CP Hoyt; institutionCode: BPBM
- m. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Keanakolu, Kaula Gulch; verbatimElevation: 7000 ft.; verbatimEventDate: 29.x.1952; individualCount: 9; lifeStage: adult; recordedBy: CP Hoyt; institutionCode: UHM
- n. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Holua; verbatimElevation: 6500 ft.; verbatimEventDate: vi.1953; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- o. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Puu Nianiau; verbatimElevation: 7000 ft.; verbatimEventDate: iv.1954; individualCount: 1; lifeStage: adult; recordedBy: M Tamashiro; institutionCode: BPBM
- p. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haiku; verbatimEventDate: iii.1956; lifeStage: adult; recordedBy: NLH Krauss; institutionCode: UHM

- q. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Puu Nianiau; verbatimElevation: 7000 ft.; verbatimEventDate: vii.1956; lifeStage: adult; recordedBy: R Namba, DE Hardy; institutionCode: UHM
- r. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Upper OIaa Forest; verbatimElevation: 4000 ft.; verbatimEventDate: vii.1956; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- s. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala; verbatimElevation: 10000 ft.; verbatimEventDate: ix.1956; individualCount: 1; lifeStage: adult; recordedBy: JW Beardsley; institutionCode: BPBM
- t. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hualalei; verbatimEventDate: 19.x.1963; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- u. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Oili Puu, Haleakala; verbatimEventDate: 23.vii.1965; lifeStage: adult; recordedBy: JW Beardsley; institutionCode: UHM
- v. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Paliku, Haleakala, sweeping over mud; verbatimEventDate: 12.ix.1968; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM

*Other materials:*

- a. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: 29 mi OIaa; verbatimEventDate: viii.1925; individualCount: 3; lifeStage: adult; recordedBy: WM Giffard; identifiedBy: JA Tenorio; institutionCode: BPBM
- b. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Humuula; verbatimEventDate: 7.viii.1935; individualCount: 2; lifeStage: adult; recordedBy: RL Usinger; identifiedBy: JA Tenorio; institutionCode: BPBM
- c. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Hookomo; verbatimEventDate: 9.vii.1935; individualCount: 1; lifeStage: adult; recordedBy: RL Usinger; identifiedBy: JA Tenorio; institutionCode: BPBM
- d. islandGroup: Hawaiian Islands; island: Maui; country: United States; stateProvince: Hawaii; county: Maui; verbatimLocality: Haleakala Road; verbatimElevation: 6396 ft.; verbatimEventDate: 15.iii.1951; individualCount: 1; lifeStage: adult; recordedBy: LW Quate; identifiedBy: JA Tenorio; institutionCode: BPBM
- e. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Kaluakauka, Keanakolu Trail; verbatimElevation: 5000 ft.; verbatimEventDate: 30.x.1952; individualCount: 1; lifeStage: adult; recordedBy: CP Hoyt; identifiedBy: JA Tenorio; institutionCode: BPBM
- f. islandGroup: Hawaiian Islands; island: Hawaii; country: United States; stateProvince: Hawaii; county: Hawaii; verbatimLocality: Mt. Hualalai, above Captain Cook; verbatimElevation: 4000 ft.; verbatimEventDate: 12.v.1959; individualCount: 1; lifeStage: adult; recordedBy: S Kimoto; identifiedBy: JA Tenorio; institutionCode: BPBM



**Native status:** Endemic.

**Distribution:** Hawaiian Islands: Maui, Hawaii.

## Discussion

Although Ephydriidae represent only a small percentage of the Diptera diversity present in the Hawaiian Islands, these taxa are notable for exploiting aquatic environments ranging from marine to brackish swamps to high-elevation freshwater streams. Hawaiian *Scatella* feed on algae and microorganisms, and can be found in a range of habitats, from stagnant water in the lowlands or clean fast-running mountain streams (Tenorio 1980). Larvae of species inhabiting swift-flowing streams possess strong spines on the posterior spiracular tubes that enable the larvae to cling onto substrates of algae and rocks so they would not be dislodged by the rushing water (Tenorio 1980). In contrast, larvae of species that inhabit calm, stagnant waters do not exhibit these spines, but instead have palmate “hydrofuge” hairs surrounding the posterior spiracular openings (Tenorio 1980). When these species forage for food on the water surface, the palmate hairs spread out over the water, break the water tension, and allow the spiracles to have direct contact with the air (Tenorio 1980). It is possible that many species of *Scatella*, because of their ancestral ability to tolerate saline environments, can disperse across the ocean channels surrounding the main Hawaiian Islands. Because different species tend to exhibit different morphological characteristics and occupy different niche when they exist in the same area, *Scatella* may be another example of adaptive radiation, albeit a smaller example, in Hawaii.

Thirteen of the 17 species we treat here are widespread and found on multiple islands. This is similar to what is seen in the endemic crane flies (*Dicranomyia*; Goodman and O’Grady 2013, Nitta and O’Grady 2008) and may be a general pattern for aquatic taxa with tolerance to salt water environments and a correspondingly higher dispersal ability than those species without such adaptations. Four species in the genus *Scatella*, *S. cinereifacies*, *S. fluvialis*, *S. kauaiensis*, and *S. terryi*, are single island endemics. Three of these are found at high elevations in association with fresh water, suggesting that dispersal ability has been lost or is much reduced in these species. Of the single island endemics, only *S. terryi* is found at lower elevations in association with salt water. There are only a few known collection records of this species, all of which were made prior to 1950. It is possible that it exists on other islands but has never been collected because it is rare. It is also possible that this is truly a narrow endemic and may have been driven to the point of extinction by human activity. Many of these are in areas that are subject to high use by humans (e.g., Hanauma Bay, Waimanalo, Koko Crater). Additional collections are needed to fully assess the status of this taxon.

## Acknowledgements

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## References

- Brown B (2010) Manual of Central American Diptera. 2. Canadian Science Publishing, 1442 pp.
- Evenhuis N (2007) Barefoot on lava. The journals and correspondence of naturalist R.C.L. Perkins in Hawai'i, 1892–1901. Bishop Museum Press, Honolulu, 412 pp.
- Evenhuis N (2008) Hawaii's Diptera biodiversity, pp. 47-70. In: Pape T, Bickel D, Meier R (Eds) Diptera diversity: status, challenges and tools. E.J. Brill, Leiden.
- Evenhuis N (2014) Abbreviations for insect and spider collections of the world. Available at: <http://hbs.bishopmuseum.org/codens/codens-inst.html> [Last accessed: 23 April 2014]. Bernice Pauahi Bishop Museum, Honolulu, 25 pp.
- Foote B (1995) Biology of shore flies. Annual Review of Entomology 40: 417-442.
- Goodman KR, O'Grady P (2013) Molecular Phylogeny and Biogeography of the Hawaiian Craneflies *Dicranomyia* (Diptera: Limoniidae). PLoS ONE 8 (9): e73019. DOI: [10.1371/journal.pone.0073019](https://doi.org/10.1371/journal.pone.0073019)
- Grigarick A (1959) Bionomics of the rice leafminer, *Hydrellia griseola* (Fallén), in California (Diptera: Ephydriidae). Hilgardia 29: 1-80.
- Mathis W, Zatwarnicki T (1995) World Catalog of Shore Flies (Diptera: Ephydriidae). Memoirs on Entomology, International 4: 1-423.
- Nishida G (2002) Hawaiian Terrestrial Arthropod Checklist. Bishop Museum Technical Report 22: 1-313.
- Nitta J, O'Grady P (2008) Mitochondrial phylogeny of the endemic Hawaiian craneflies (Diptera, Limoniidae, *Dicranomyia*): Implications for biogeography and species formation. Molecular Phylogenetics and Evolution 46 (3): 1182-1190. DOI: [10.1016/j.ympev.2007.12.021](https://doi.org/10.1016/j.ympev.2007.12.021)
- Pape T, Blagoderov V, Mostovski M (2011) Order DIPTERA Linnaeus, 1758. In: Zhang Z-Q (Ed.) Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. Zootaxa 3148: 222-229. URL: <http://www.mapress.com/zootaxa/list/2011/3148.html>
- Tenorio J (1980) Ephydriidae. In: Hardy D, Delfinado M (Eds) Insects of Hawaii, Diptera: Cyclorrhapha III. 13. University of Hawaii Press, Honolulu.
- Wirth W, Mathis W, Vockeroth J (1987) 98. Ephydriidae. In: McAlpine J (Ed.) Manual of Nearctic Diptera. 2. Ottawa.
- Zimmerman E, Liebherr J (2001) Insects of Hawaii: Introduction (reissued). 1. University of Hawaii Press, Honolulu, 254 pp.
- Evenhuis, NL (editor) Catalog of the Diptera of the Australasian and Oceanian Regions, (online version). Version 18 January 2014. <http://hbs.bishopmuseum.org/aocat/aocathome.html>. Accession date: 2014 4 24.

## Supplementary materials

### Suppl. material 1: Distribution of *Scatella amnica*

Authors: PM O'Grady

Data type: occurrence

Brief description: Distribution of *S. amnica*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

Filename: S\_amnica.kml - [Download file](#) (14.58 kb)

### Suppl. material 2: Distribution of *Scatella bryani*

Authors: PM O'Grady

Data type: occurrence

Brief description: Distribution of *S. bryani*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

Filename: S\_bryani.kml - [Download file](#) (12.45 kb)

### Suppl. material 3: Distribution of *Scatella cilipes*

Authors: PM O'Grady

Data type: occurrence

Brief description: Distribution of *S. cilipes*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

Filename: S\_cilipes.kml - [Download file](#) (36.09 kb)

### Suppl. material 4: Distribution of *Scatella cinereifacies*

Authors: PM O'Grady

Data type: occurrence

Brief description: Distribution of *S. cinereifacies*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

Filename: S\_cinereifacies.kml - [Download file](#) (11.57 kb)

### Suppl. material 5: Distribution of *Scatella clavipes*

Authors: PM O'Grady

Data type: occurrence

Brief description: Distribution of *S. clavipes*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

Filename: S\_clavipes.kml - [Download file](#) (16.02 kb)

### Suppl. material 6: Distribution of *Scatella femoralis*

Authors: PM O'Grady

Data type: occurrence

Brief description: Distribution of *S. femoralis*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

Filename: S\_femoralis.kml - [Download file](#) (1.67 kb)

**Suppl. material 7: Distribution of *Scatella fluvialis***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. fluvialis*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_fluvialis.kml - [Download file](#) (3.14 kb)

**Suppl. material 8: Distribution of *Scatella hawaiiensis***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. hawaiiensis*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_hawaiiensis.kml - [Download file](#) (62.14 kb)

**Suppl. material 9: Distribution of *Scatella kauaiensis***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. kauaiensis*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_kauaiensis.kml - [Download file](#) (23.00 kb)

**Suppl. material 10: Distribution of *Scatella mauiensis***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. mauiensis*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_mauiensis.kml - [Download file](#) (9.53 kb)

**Suppl. material 11: Distribution of *Scatella oahuense***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. oahuense*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_oahuense.kml - [Download file](#) (34.82 kb)

**Suppl. material 12: Distribution of *Scatella terryi***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. terryi*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_terryi.kml - [Download file](#) (5.98 kb)

**Suppl. material 13: Distribution of *Scatella warreni***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. warreni*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_warreni.kml - [Download file](#) (50.69 kb)

**Suppl. material 14: Distribution of *Scatella williamsi***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. williamsi*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_williamsi.kml - [Download file](#) (8.34 kb)

**Suppl. material 15: Distribution of *Scatella wirthi***

**Authors:** PM O'Grady

**Data type:** occurrence

**Brief description:** Distribution of *S. wirthi*. Samples with GPS coordinates shown in white; georeferenced historical samples shown in red.

**Filename:** S\_wirthi.kml - [Download file](#) (16.55 kb)