



Studies in Hawaiian Diptera III: New Distributional Records for Canacidae and a New Endemic Species of *Procanace*

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Abstract

The distributions of Hawaiian Canacidae, comprising nearly 800 individual collection events, are reviewed and a total of four new island records are reported. These include *Canaceoides angulatus* from Kahoolawae and *Procanace bifurcata* from Molokai and Maui, and *Procanace constricta* from Oahu. A new species from Kauai, *Procanace hardyi* O'Grady and Pak, is described. This species is closely related to *P. constricta* from Oahu, Maui, Molokai and Hawaii and shares a similar constriction of the abdomen between tergites four and five but differs in the configuration of the seventh abdominal tergite. Detailed distribution maps for all species are included.

Keywords

Hawaii, Diptera, Canacidae, *Procanace*

Introduction

Canacidae, or the beach flies, surf flies and surge flies, is a relatively small family of acalyptrate Diptera primarily found throughout coastal regions of the world. A number of catalogs and revisions have been published in the past 20 years. Traditionally, this group contained only members of the family Canacidae, *sensu stricto*. The Mathis (1992) catalog of this family consisted of 113 species in 12 genera and recognized three subfamilies (Canacinae, Nocticanacinae, Zaleinae). Mathis and Munari (1996) transferred Zaleinae to Tethinidae when they published their tethinid catalog because this subfamily was considered intermediate between the two families. According to their definition, Tethinidae included 126 species in 14 genera arranged into five subfamilies (Apetaeninae, Horaismopterinae, Pelomyiinae, Tethininae, Zaleinae). McAlpine (2007) significantly altered the concept of this family when he included the family Tethinidae as part of a broader Canacidae *sensu lato*. Finally, Munari and Mathis (2010) updated the previous catalogs and now recognize six subfamilies comprising a total of 307 species in 27 genera within the Canacidae.

Five canacid genera are present in Hawaii (Nishida 2002), most of which are represented by only one or two species and were introduced by human activities in the past 100 years. Two genera within the subfamily Tethininae are present in Hawaii, *Dasyrhicnoessa* and *Tethina*. These were recently reviewed and updated by Munari and Evenhuis (2011) and the distributional records will not be repeated here. The genus *Dasyrhicnoessa* contains a total of 28 species, 22 of which are found in the Pacific and four of which are present in Hawaii (Evenhuis 2012, Hardy and Delfinado 1980, Munari and Mathis 2010, Munari and Evenhuis 2011). *Dasyrhicnoessa insularis* was first collected in Hawaii in 1923 and is widespread in Polynesia, Micronesia, Papua New Guinea, Central and South America and the Afrotropics (Evenhuis 2012, Hardy and Delfinado 1980). Hardy and Delfinado (1980) were unable to place the second species, *D. vockerothi*, in the literature and described it as a new species from Hawaii. Subsequent collections have found this species on islands throughout the Pacific and Indian Oceans, as well as in Japan and Australia (Evenhuis 2012). Finally, Munari and Evenhuis (2011) reported two additional species from Hawaii, *D. clandestina* and *D. fulva*. The genus *Tethina* is large, with 78 so far described species worldwide (Munari and Mathis 2010). Ten species are known from the Pacific, including three species from Hawaii. Hardy and Delfinado (1980) listed *T. variseta* from the Hawaiian Islands, a species that has since been synonymized with *T. willistoni* (Munari and Mathis 2010). Two other species, *T. albula* (Evenhuis 2012, Munari and Mathis 2010) and *T. pallipes* (Munari and Evenhuis 2011) have also been reported in Hawaii.

A single genus of the subfamily Pelomyiinae, *Pelomyia*, is found in Hawaii. *Pelomyia* contains a total of 29 species, mostly found in the Nearctic and Neotropical regions. Hardy and Delfinado (1980) described *P. steyskali* from material collected in Hawaii and the west Coast of North America. This species has since been synonymized with *P. occidentalis*, a widespread taxon that is known from Nearctic, Neotropical and Palearctic regions (Evenhuis 2012, Hardy and Delfinado 1980, Munari and Mathis 2010).

The remaining two canacid genera present in Hawaii, *Canaceoides* Cresson and *Procanace* Hendel, are both in the subfamily Canacinae. These two genera can be found in a range of habitats, from the coastal aquatic environments to high elevation freshwater streams. They are most likely the result of at least two separate colonization events (Wirth 1969). The genus *Canaceoides* was last revised by Wirth (1969) and contains 9 species, all of which are either found on Pacific Islands or are distributed along the west coast of North and South America. Two species are recorded from Hawaii, *C. angulatus* and *C. hawaiiensis* (Table 1). Wirth (1969) suggested that the widespread distribution of *C. angulatus*, which is found throughout the Hawaiian Archipelago and Peru, Mexico and the Galapagos Islands (Evenhuis 2012), is evidence for this taxon arriving in Hawaii prior to human contact. He proposed, however, that this was more recently than *C. hawaiiensis*, a species found exclusively in the younger Hawaiian Islands. The biogeographic history and evolutionary relationship of these two species is unclear. The male genitalia of *C. angulatus* is quite distinct for the genus and its sister relationships are not known. Likewise, Wirth (1969) states that *C. hawaiiensis* “has no exact counterpart on the American coasts.” It is possible that these two taxa represent two distinct colonizations of Hawaii. Alternatively, these two species could represent a single colonization of Hawaii, with *C. hawaiiensis* being a recently divergent sibling species of *C. angulatus*. Phylogenetic analyses will need to be undertaken to differentiate between these two hypotheses. Aside from the early collections made by D.E. Hardy, W.W. Wirth and others, there are a number of surveys conducted by D. Polhemus and R. Englund for the Bernice P. Bishop Museum in the early 1990s (e.g., Polhemus 1992, Polhemus 1993).

Table 1.

Distribution of *Canaceoides* and *Procanace* species in Hawaii. Status indicates whether the species are endemic (E) or adventive (A). Islands sampled are: Kauai (K), Oahu (O), Molokai (Mo), Lanai (L), Kahoolawae (Ka) Maui (Ma), Hawaii (H), and the Northwest Hawaiian Islands (NWHI). Presence of a species on a given island is designated by an X. An asterisk denotes a new island record for the species.

| Species | Status | K | O | Mo | L | Ka | Ma | H | NWHI |
|------------------------|--------|---|----|----|---|----|----|---|----------------------------------|
| <i>C. angulatus</i> | A | X | X | X | | X* | X | X | Laysan, Lisianski, Midway, Nihoa |
| <i>C. hawaiiensis</i> | E | X | X | X | | | X | X | Nihoa |
| <i>P. acuminata</i> | E | | | X | | | X | X | |
| <i>P. bifurcata</i> | E | X | X | X* | | | X* | | |
| <i>P. confusa</i> | E | | | | | | X | X | |
| <i>P. constricta</i> | E | | X* | X | | | X | X | |
| <i>P. hardyi</i> | E | X | | | | | | | |
| <i>P. nigroviridis</i> | E | X | | | | | | | |
| <i>P. quadrisetosa</i> | E | X | | | | | | | |

| | | | | | | | | | |
|---------------------------|---|---|---|--|--|--|---|--|--|
| <i>P. williamsi</i> | A | | X | | | | | | |
| <i>P. wirthi</i> | E | X | X | | | | | | |
| <i>P. unnamed sp. DEH</i> | E | | | | | | X | | |

The genus *Procanace* contains 30 species, found in the Palearctic, Nearctic, Australasian/Oceanian and Afrotropical regions. The Oceanian taxa include a small radiation of eight described species present in Hawaii (Table 1). Of these taxa, seven are endemic and one, *P. williamsi*, is known from Oahu and Japan (Evenhuis 2012). It is possible that *P. williamsi* was introduced to Hawaii in the 1940s and has since failed to establish in Hawaii, a common phenomenon among adventive species (Kolar and Lodge 2001). Two individuals are reported by Wirth, one taken at a light on Oahu and another taken in a plane. Additional collections will be required in order to determine the status of *P. williamsi*.

The endemic *Procanace* species are found on all the high Hawaiian Islands. There is one widespread species, *P. bifurcata*, found across the islands. The remainder of the species are found either on the "old" islands of Oahu and Kauai in the northwest and the "young" islands of the Maui Nui complex (Maui, Molokai, Lanai, Kahoolawe) and Hawaii in the southeast (Table 1). For example, *P. hardyi*, *P. nigroviridis*, *P. quadrisetosa*, and *P. wirthi* are present on the older islands in the archipelago. These are mostly single island endemics, although *P. wirthi* is found on both Oahu and Kauai. In contrast, *P. acuminata*, *P. confusa*, and *P. constricta* are found on Maui Nui and Hawaii. These species are not single island endemics and can be found on multiple islands of the Maui Nui group and/or on Hawaii. This difference in distribution pattern may be because of the recent connections between Maui, Molokai, Lanai and Kahoolawe (Price and Elliott-Fisk 2004). Alternately, it might be because the Big Island of Hawaii is less than 500,000 years old and speciation has yet to take place between founder populations on Maui Nui and descendant populations on Hawaii.

The endemic Hawaiian *Procanace* are notable within the genus and the family for their adaptation to freshwater, rather than saltwater, habitats. Hardy and Delfinado (1980) listed seven described endemics (*P. acuminata*, *P. bifurcata*, *P. confusa*, *P. constricta*, *P. nigroviridis*, *P. quadrisetosa*, *P. wirthi*) and one additional species from the island of Hawaii that they did not describe. Here we describe a new species from Kauai, *Procanace hardyi* O'Grady and Pak, bringing the total Hawaiian *Procanace* to nine (eight endemic and one adventive) described and one underscribed species.

Materials and methods

Literature Review

We have reviewed the literature for the endemic, indigenous, and adventive Canacidae species present in the Hawaiian islands. We have attempted to include information on both the taxonomic history of the species and all occurrences of these taxa present 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, whether they were physically examined by us or taken from a database. 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 recently collected material was obtained from general sweeping of streams and sea shores. Samples were preserved in 95% ethanol (ETOH) and transported to UC Berkeley for identification and subsequent molecular work. The key and descriptions in (Hardy and Delfinado 1980) were used to identify taxa to species. Vouchers for all species were preserved in 95% ETOH and are deposited in the EMEC.

Taxon treatment

Procanace hardyi O'Grady and Pak, sp. n.

- ZooBank urn:lsid:zoobank.org:act:8FF8BBA3-45A9-465A-962B-8AC994B7652F

Materials

Holotype:

- kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; 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; samplingProtocol: sweeping over running water; eventDate: 10.i.2010; individualCount: 1; sex: female; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, B Ort, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 7 Oct 2014; collectionID: 588.7; institutionCode: EMEC

Paratypes:

- kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Waiahuakua Stream at Kalalau Trail, on wet rocks; verbatimElevation: 400 ft.; eventDate: 30.iii.1993;

- individualCount: 1; sex: 1 male; lifeStage: adult; recordedBy: DA Polhemus; identifiedBy: PM O'Grady; dateIdentified: 1.2016; collectionID: CL8133; institutionCode: BPBM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kaapoko Stream, tributary to Hanalei River, on wet rocks.; verbatimElevation: 1200ft.; eventDate: 3.xi.1993; individualCount: 3; sex: females; lifeStage: adult; recordedBy: DA Polhemus; identifiedBy: PM O'Grady; dateIdentified: 2.2016; collectionID: CL8233; institutionCode: BPBM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kaapoko Stream, trib. to Hanalei River; verbatimElevation: 1200 ft.; samplingProtocol: in malaise trap; eventDate: 3.xi.1994; individualCount: 2; sex: 1 male, 1 female; lifeStage: adult; recordedBy: DA Polhemus; identifiedBy: PM O'Grady; dateIdentified: 1.2016; collectionID: CL8233; institutionCode: BPBM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Koiae Stream, 150m down from dam; verbatimElevation: 3500 ft; samplingProtocol: 20 net swings; eventDate: 1.viii.1997; individualCount: 6; sex: 5 females, 1 male; lifeStage: adult; recordedBy: RA England; identifiedBy: PM O'Grady; dateIdentified: i.2016; institutionCode: BPBM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kauai, Koiae Stream, cascade riffles; verbatimElevation: 3680 ft.; samplingProtocol: 10 net swings; eventDate: 3.viii.1997; individualCount: 14; sex: 2 males, 12 females; lifeStage: adult; recordedBy: RA England; identifiedBy: PM O'Grady; dateIdentified: i.2016; institutionCode: BPBM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kauai, Kokee, Waialae Stream, rocks in stream; verbatimElevation: 3400 ft.; eventDate: 5-6.i.1999; individualCount: 27; sex: 9 females, 18 males; lifeStage: adult; recordedBy: RA England; identifiedBy: PM O'Grady; dateIdentified: i.2016; institutionCode: BPBM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kokee, Waialae Stream, rocks in stream; verbatimElevation: 3400 ft.; samplingProtocol: 20 net swings; eventDate: 5-6.i.1999; individualCount: 52; sex: 29 females, 23 males; lifeStage: adult; recordedBy: D Preston; identifiedBy: PM O'Grady; dateIdentified: i.2016; institutionCode: BPBM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kokee, Waialae Stream, rocks in stream; verbatimElevation: 3400 ft.; samplingProtocol: 30 net swings; eventDate: 5-6.i.1999; individualCount: 44; sex: 24 females, 20 males; lifeStage: adult; recordedBy: D Preston; identifiedBy: PM O'Grady; dateIdentified: i.2016; institutionCode: BPBM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kokee, Waialae Stream, first fall below Waialae cabin; samplingProtocol: 25 net swings (#1); eventDate:

- 5-6.i.1999; individualCount: 101; sex: 49 females, 52 males; lifeStage: adult; recordedBy: D Polhemus; identifiedBy: PM O'Grady; dateIdentified: 1.2016; institutionCode: BPBM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kokee, Waialae Stream, first fall below Waialae cabin; verbatimElevation: 3500 ft.; samplingProtocol: 25 net swings (#2); eventDate: 5-6.i.1999; individualCount: 41; sex: 23 females, 18 males; lifeStage: adult; recordedBy: D Polhemus; identifiedBy: PM O'Grady; dateIdentified: i.2016; institutionCode: BPBM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Kokee, Waialae Stream, rocks in stream; verbatimElevation: 3400 ft.; samplingProtocol: 25 net swings (#3); eventDate: 5-6.i.1999; individualCount: 101; sex: 46 females, 55 males; lifeStage: adult; recordedBy: D Preston; identifiedBy: PM O'Grady; dateIdentified: 1.2016; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; verbatimLocality: Hanakapai Stream, 200m from ocean.; verbatimElevation: 5m; eventDate: 2.i.2002; individualCount: 5; sex: 4 females, 1 male; lifeStage: adult; recordedBy: RA Englund; identifiedBy: PM O'Grady; dateIdentified: i.2016; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; 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; samplingProtocol: sweeping over running water; eventDate: 10.i.2010; individualCount: 3; sex: female; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, B Ort, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 7 Oct 2014; collectionID: 588.7; institutionCode: EMEC
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kawaiiki Stream at Sugi Grove; verbatimLatitude: 22° 7'53.12"N; verbatimLongitude: 159° 37'18.12"W; eventDate: 19.ix.2011; individualCount: 1; sex: female; recordedBy: PM O'Grady, KR Goodman, H Machado; identifiedBy: PM O'Grady; dateIdentified: 7 Oct 2014; collectionID: 705.7; institutionCode: EMEC

Other materials:

- a. kingdom: Amimalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kalalau Valley; eventDate: viii.1953; individualCount: 4; sex: 4 females; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: PM O'Grady; dateIdentified: 22 Jan 2016; institutionCode: USNM
- b. kingdom: Amimalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Awaawapuhi; eventDate: viii.1953; sex: 1 male; lifeStage: adult; recordedBy: EH Bryan, Jr.; identifiedBy: PM O'Grady; dateIdentified: 22 Jan 2016; institutionCode: USNM

- c. kingdom: Amimalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kalalau Valley; eventDate: viii.1953; individualCount: 1; sex: 1 male; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: PM O'Grady; dateIdentified: 22 Jan 2016; institutionCode: USNM
- d. kingdom: Amimalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Kawaikoi Stream at Sugi Grove, Grove Campground; verbatimElevation: 1050; minimumElevationInMeters: 787; eventDate: 08.xi.1990; individualCount: 1; sex: female; recordedBy: DA Polhemus; identifiedBy: PM O'Grady; dateIdentified: 22 Jan 2016; institutionCode: USNM
- e. kingdom: Amimalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *hardyi*; islandGroup: Hawaiian Islands; island: Kauai; country: United States; stateProvince: Hawaii; county: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; eventDate: 08.xi.1990; individualCount: 11; sex: 7 males, 4 females; recordedBy: DA Polhemus; identifiedBy: PM O'Grady; dateIdentified: 22 Jan 2016; institutionCode: USNM

Description

MALE, FEMALE. Head. Ground color dull black (Figs 1, 2, 3). Frons and fronto-orbital plates covered with indistinct golden pollen. Frons lacking setae. Three subequal laterocline fronto-orbital setae present. Ocellar triangle subshining black; ocelli whitish gray; two strong proclinate ocellar setae. Postocellar setae absent. Inner and outer vertical setae strong, subequal. Antennae, face, carina, gena and clypeus subshining, gray pollinose. Arista pubescent, inserted at base of third segment. Gena wide, about 3/4 width of eye, with three setae inserted along anterior margin of eye. Anterior genal seta weak, about 1/3 length of two strong, upward-directed posterior genal setae. Eye dark red, ovoid in shape, about two times longer than high. **Thorax.** Mesonotum dull black, indistinctly golden pollinose. Four pairs of dorsocentral setae present; anterior pair inserted well forward of suture; posteriormost are inserted slightly laterally relative to the others. One strong humeral seta. Scutellum subshining black, with two convergent anterior and two convergent posterior scutellar setae. **Legs.** Entirely black. **Wings.** Smoky dark gray, with even dark infuscation on entire surface of blade. Halteres brown. **Abdomen.** Subshining dark brown to black, with slightly lighter areas on posterior margins of each segment. Epandrium and surstyli of males very similar to *P. constricta*. Apices of surstyli narrowed, not straight-sided (Figs 1, 4). Surstyli and central region of epandrium lightened. Females with a strong constriction between tergites four and five (Figs 2, 3, 5). Seventh tergite greatly expanded along ventrolateral margins, extending beyond the apices of the cerci. Eighth tergite with two strong dorsal setae along midline of seventh tergite and two subequal but finer setae on lateral margins of segment. Ovipositor strongly bifurcate in a distinct V shape. Ovipositor about two times longer than wide, with each half bearing three strong leaf-like spines at apex and numerous finer setae subapically.



Figure 1.
Habitus of a paratype male of *P. hardyi* in lateral view.



Figure 2.
Habitus of the holotype female of *P. hardyi* in lateral view.



Figure 3.
Habitus of the holotype female of *P. hardyi* in dorsal view.



Figure 4.

External male genitalia of *P. hardyi*. The narrowed, lightened tips of the surstyli suggest that this species is most closely related to *P. constricta*. Refer to figure 162e from Hardy and Delfinado (1980).

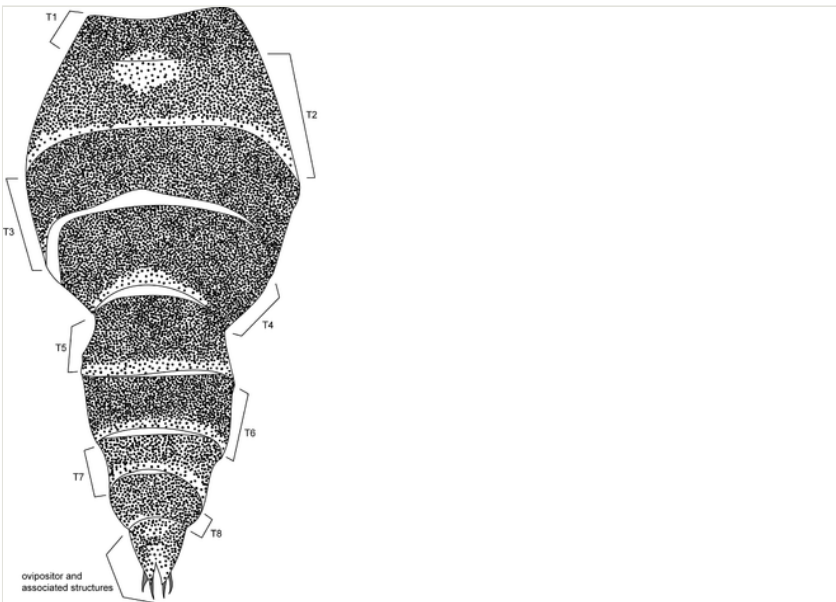


Figure 5.

Abdomen of *P. hardyi* female, showing constriction between tergites 4 and 5, the telescoping form of tergite 8 and the ovipositor and associated structures.

Diagnosis

This species is most closely related to *Procanace constricta* from Maui, Molokai and Hawaii. It is differentiated most readily by the shape of tergite seven. In *P. constricta* tergite seven is greatly expanded on the lateroventral margins and extends to the apices of the cerci (Fig. 6). The seventh tergite of *P. hardyi* (Fig. 5) is not expanded on the lateroventral margins and has a telescoping form typical of the other members of this genus. The ovipositor of *P. hardyi* is long and narrow, about two times longer than wide, with distinct setae at the apices. The width and length of the cerci in *P. constricta* is roughly equal and the setae at the apices of the cerci are short and inconspicuous.

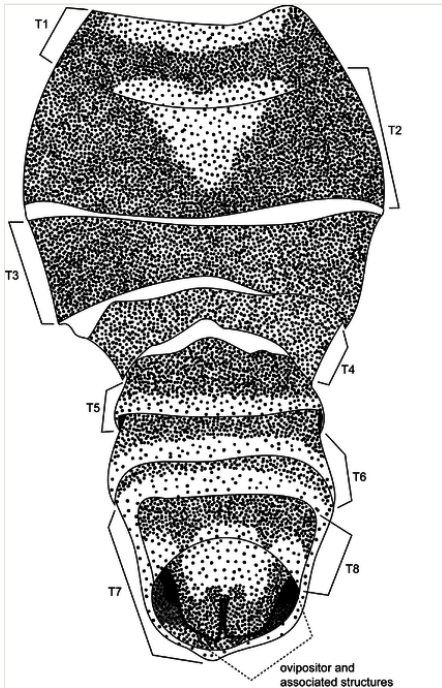


Figure 6.

Abdomen of *P. constricta* female, showing constriction between tergites 4 and 5, the lateral extension of tergite 8 beyond the apex of the ovipositor, and the ovipositor and associated structures. The specimen imaged is from collection 205268.

Etymology

It is a pleasure to dedicate this species to the memory of Dr. D. Elmo Hardy.

Distribution

This species is endemic to Kauai (Fig. 7).

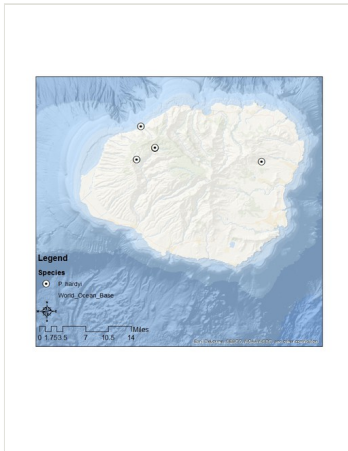


Figure 7.
Distribution of *P. hardyi* (Kauai).

Distributional Analyses of Hawaiian Canacinae (Diptera: Canacidae)

Canaceoides angulatus Wirth, 1969

Materials

Holotype:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waimea, on intertidal rocks; verbatimEventDate: 31.i.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla San Esteban; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 20.iv.1920; individualCount: 1; sex: male; lifeStage: adult; recordedBy: EP VanDuzee; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS, ANSP
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla San Esteban; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 20.iv.1920; individualCount: 3; sex: female; lifeStage: adult; recordedBy: EP VanDuzee; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS, ANSP

- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach near Koko Crater; verbatimEventDate: 17.xii.1922; individualCount: 1; sex: female; lifeStage: adult; recordedBy: EH Bryan; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Lisianski; verbatimLocality: no location given; verbatimEventDate: 19.v.1923; individualCount: 1; sex: male; lifeStage: adult; recordedBy: C. Grant; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: ANSP
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Lisianski; verbatimLocality: no location given; verbatimEventDate: 19.v.1923; individualCount: 1; sex: female; lifeStage: adult; recordedBy: C. Grant; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: ANSP
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 23.vii.1923; individualCount: 3; sex: female; lifeStage: adult; recordedBy: EH Bryan; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo; verbatimEventDate: xii.1945; individualCount: 2; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Lanikai; verbatimEventDate: 29.xii.1945; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Lanikai; verbatimEventDate: 29.xii.1945; individualCount: 2; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waimea, on intertidal rocks; verbatimEventDate: 31.i.1946; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waimea, on intertidal rocks; verbatimEventDate: 31.i.1946; individualCount: 7; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969;

- islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waimea, on intertidal rocks; verbatimEventDate: 31.i.1946; individualCount: 12; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Sand Island, light trap; verbatimEventDate: 22.v.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 25.vi.1946; individualCount: 2; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Rabbit Island; verbatimEventDate: 30.viii.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Rabbit Island; verbatimEventDate: 30.viii.1946; individualCount: 2; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kilauea; verbatimEventDate: 8.ix.1946; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Nawiliwili; verbatimEventDate: 9.ix.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Nawiliwili; verbatimEventDate: 9.ix.1946; individualCount: 2; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Waialua; verbatimEventDate: vii.1952; individualCount: 28; sex: female; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Waialua; verbatimEventDate: vii.1952; individualCount: 30; sex: male; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM

- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla Cerralvo; country: Mexico; verbatimLocality: Gordas Point; verbatimEventDate: 20.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 12; sex: male; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla Cerralvo; country: Mexico; verbatimLocality: Gordas Point; verbatimEventDate: 20.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 13; sex: female; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla Partida; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 23.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 2; sex: male; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla Partida; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 23.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 11; sex: female; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- z. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla San Francisco; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 24.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 20; sex: female; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- aa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla San Francisco; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 24.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 34; sex: male; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- ab. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; country: Mexico; stateProvince: Baja California Sur; verbatimLocality: Agua Verde Bay; verbatimEventDate: 26.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 3; sex: female; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- ac. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; country: Mexico; stateProvince: Baja California Sur; verbatimLocality: Agua Verde Bay; verbatimEventDate: 26.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 1; sex: male; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS

- ad. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla Idefonso; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 30.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 8; sex: male; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- ae. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla Idefonso; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 30.iii.1953; eventRemarks: Sefton-Orca Expedition; individualCount: 10; sex: female; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- af. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; country: Mexico; stateProvince: Baja California Norte; verbatimLocality: San Felipe; verbatimEventDate: 19.ii.1954; individualCount: 34; sex: female; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- ag. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; country: Mexico; stateProvince: Baja California Norte; verbatimLocality: San Felipe; verbatimEventDate: 19.ii.1954; individualCount: 19; sex: male; lifeStage: adult; recordedBy: PH Arnaud; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- ah. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; country: Peru; verbatimLocality: Lima, 3km northwest Canete; verbatimEventDate: 13.ix.1954; individualCount: 12; sex: male; lifeStage: adult; recordedBy: EI Schlinger, ES Ross; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- ai. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; country: Peru; verbatimLocality: Lima, 3km northwest Canete; verbatimEventDate: 13.ix.1954; individualCount: 10; sex: female; lifeStage: adult; recordedBy: EI Schlinger, ES Ross; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- aj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Hauula; verbatimEventDate: 4.vii.1955; individualCount: 2; sex: male; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- ak. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Midway; verbatimLocality: at light; verbatimEventDate: 12.xi.1959; individualCount: 1; sex: male; lifeStage: adult; recordedBy: no collector given; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- al. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; country: Mexico; stateProvince: Sonora; verbatimLocality: San Carlos Bay; verbatimEventDate: 10.viii.1960; individualCount: 11; sex: female; lifeStage: adult;

- recordedBy: PH Arnauld, E Ross, Rentz; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- am. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; country: Mexico; stateProvince: Sonora; verbatimLocality: San Carlos Bay; verbatimEventDate: 10.viii.1960; individualCount: 9; sex: male; lifeStage: adult; recordedBy: PH Arnauld, E Ross, Rentz; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- an. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Laysan; verbatimLocality: no location given; verbatimEventDate: ix.1961; individualCount: 1; sex: female; lifeStage: adult; recordedBy: GD Butler; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- ao. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla Salsipuedes; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 20.v.1962; individualCount: 10; sex: male; lifeStage: adult; recordedBy: Ryckman, Ryckman, Christianson; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- ap. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; waterBody: Gulf of California; island: Isla Salsipuedes; country: Mexico; verbatimLocality: no location given; verbatimEventDate: 20.v.1962; individualCount: 6; sex: female; lifeStage: adult; recordedBy: Ryckman, Ryckman, Christianson; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- aq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Galapagos Archipelago; island: Isla Santa Cruz; country: Ecuador; verbatimLocality: Academy Bay; verbatimEventDate: 24.i.1964; individualCount: 1; sex: female; lifeStage: adult; recordedBy: DQ Cavagnaro, RO Schuster; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- ar. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Galapagos Archipelago; island: Isla Santa Fe; country: Ecuador; verbatimLocality: no location given; verbatimEventDate: 5.ii.1964; individualCount: 11; sex: female; lifeStage: adult; recordedBy: T Pappenfuss; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- as. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Galapagos Archipelago; island: Isla Santa Cruz; country: Ecuador; verbatimLocality: Academy Bay, at light; verbatimEventDate: 17.ii.1964; individualCount: 1; sex: male; lifeStage: adult; recordedBy: PD Ashlock; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- at. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Galapagos Archipelago; island: Isla Santa Cruz; country: Ecuador; verbatimLocality: Academy Bay, at light; verbatimEventDate: 17.ii.1964; individualCount: 1; sex: female; lifeStage: adult; recordedBy: PD Ashlock; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

- au. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Galapagos Archipelago; island: Isla Pinta; country: Ecuador; verbatimLocality: southeast coast; verbatimEventDate: 25.v.1964; individualCount: 22; sex: male; lifeStage: adult; recordedBy: DQ Cavagnaro; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- av. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Galapagos Archipelago; island: Isla Pinta; country: Ecuador; verbatimLocality: southeast coast; verbatimEventDate: 25.v.1964; individualCount: 24; sex: female; lifeStage: adult; recordedBy: DQ Cavagnaro; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CAS
- aw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu, wave swept rocks; verbatimEventDate: 25.ix.1966 and 20.xi.1966; individualCount: 47; sex: female; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- ax. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu, wave swept rocks; verbatimEventDate: 25.ix.1966 and 20.xi.1966; individualCount: 40; sex: male; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- ay. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kailua-Kona; verbatimEventDate: 2.x.1966; individualCount: 21; sex: male; lifeStage: adult; recordedBy: W. Voss; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- az. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kailua-Kona; verbatimEventDate: 2.x.1966; individualCount: 31; sex: female; lifeStage: adult; recordedBy: W. Voss; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- ba. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Honokowai; verbatimEventDate: 28.x.1966; individualCount: 2; sex: female; lifeStage: adult; recordedBy: T. Saigusa; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- bb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kihei; verbatimEventDate: 28.x.1966; individualCount: 1; sex: male; lifeStage: adult; recordedBy: T. Saigusa; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- bc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kihei; verbatimEventDate:

- 28.x.1966; individualCount: 1; sex: female; lifeStage: adult; recordedBy: T. Saigusa; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- bd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Honokowai; verbatimEventDate: 28.x.1966; individualCount: 2; sex: male; lifeStage: adult; recordedBy: T. Saigusa; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- be. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: McGregor Point; verbatimEventDate: 28.x.1966; individualCount: 2; sex: female; lifeStage: adult; recordedBy: T. Saigusa; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- bf. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo; verbatimEventDate: 23.iii.1967; individualCount: 5; sex: female; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- bg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo; verbatimEventDate: 23.iii.1967; individualCount: 3; sex: male; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- bh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kalapana Park; verbatimEventDate: 24.iii.1967; individualCount: 10; sex: female; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- bi. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kalapana Park; verbatimEventDate: 24.iii.1967; individualCount: 10; sex: male; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Leahi, at shore; verbatimEventDate: 26.ii.1911; lifeStage: adult; catalogNumber: 2006004911; recordedBy: Terry; identifiedBy: Cresson; institutionCode: BPBM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 23.vii.1922; lifeStage: adult; catalogNumber: 2006004873; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969;

- islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 23.vii.1922; lifeStage: adult; catalogNumber: 2006004878; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 23.vii.1922; lifeStage: adult; catalogNumber: 2006004879; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 23.vii.1922; lifeStage: adult; catalogNumber: 2006004880; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 23.vii.1922; lifeStage: adult; catalogNumber: 2006004881; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 23.vii.1922; lifeStage: adult; catalogNumber: 2006004882; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: 23.vii.1922; lifeStage: adult; catalogNumber: 2006004883; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004895; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004896; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004897; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004889; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969;

- islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004890; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004891; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004892; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004893; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach, near Koko Head; verbatimEventDate: 17.xii.1922; lifeStage: adult; catalogNumber: 2006004894; recordedBy: EH Bryan, Jr.; identifiedBy: Cresson; institutionCode: BPBM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Lisianski; verbatimEventDate: 19.v.1923; lifeStage: adult; catalogNumber: 2006004656; recordedBy: C Grant; institutionCode: BPBM
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Lisianski; verbatimEventDate: 19.v.1923; lifeStage: adult; catalogNumber: 2008008252; recordedBy: C Grant; identifiedBy: J Straxanac; dateIdentified: 1991; institutionCode: BPBM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Rabbit Island; verbatimEventDate: 26.viii.1934; lifeStage: adult; catalogNumber: 2006004855; recordedBy: EH Bryan, Jr.; identifiedBy: MD Delfinado; institutionCode: BPBM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikiki; verbatimEventDate: 16.iv.1950; individualCount: 1; lifeStage: adult; recordedBy: MS Adachi; institutionCode: UHM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kailua; verbatimEventDate: xii.1950; individualCount: 8; lifeStage: adult; recordedBy: NLH Krauss; institutionCode: UHM
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honaunau;

- verbatimEventDate: x.1951; individualCount: 9; lifeStage: adult; recordedBy: HA Bess; institutionCode: UHM
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Ala Wai Canal; verbatimEventDate: vi.1952; individualCount: 1; lifeStage: adult; recordedBy: MS Adachi; institutionCode: UHM
- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu; verbatimEventDate: iii.1953; individualCount: 2; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- z. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Waialua Beach; verbatimEventDate: vii.1953; individualCount: 3; lifeStage: adult; recordedBy: M Tamashiro; institutionCode: UHM
- aa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Mokumanu I.; verbatimEventDate: 23.vi.1954; lifeStage: adult; catalogNumber: 2006004924; recordedBy: JL Gressitt; institutionCode: BPBM
- ab. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kona, near Puuhonua Point; verbatimEventDate: 23.i.1957; lifeStage: adult; catalogNumber: 2006004765; recordedBy: EH Bryan, Jr.; institutionCode: BPBM
- ac. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kona, near Puuhonua Point; verbatimEventDate: 23.i.1957; lifeStage: adult; catalogNumber: 2006004771; recordedBy: EH Bryan, Jr.; institutionCode: BPBM
- ad. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae; verbatimEventDate: 1958; individualCount: 1; lifeStage: adult; recordedBy: Y Kondoh; institutionCode: UHM
- ae. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kona, Kahaluu; verbatimEventDate: August 1958; lifeStage: adult; catalogNumber: 2006004702; recordedBy: Y Kondo; institutionCode: BPBM
- af. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Lisianski; verbatimEventDate: 18.ix.1964; lifeStage: adult; catalogNumber: 2006004649; recordedBy: JW Beardsley; institutionCode: BPBM
- ag. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae Beach Park;

- verbatimEventDate: 11.vi.1967; individualCount: 13; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- ah. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Nawiliwili Dock; verbatimEventDate: 14.vii.1968; individualCount: 3; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- ai. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kapaa Beach Park, Kapaa; verbatimEventDate: 13.viii.1968; individualCount: 48; lifeStage: adult; recordedBy: OM Barber; institutionCode: UHM
- aj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Naalehu Beach Park; verbatimEventDate: 15.viii.1968; individualCount: 7; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- ak. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kalapana; verbatimEventDate: 29.xi.1968; individualCount: 10; lifeStage: adult; recordedBy: JA Tenorio, JM Tenorio; institutionCode: UHM
- al. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Barking Sands; verbatimEventDate: 02.iv.1969; lifeStage: adult; catalogNumber: 2006004658; recordedBy: JL Gressitt; institutionCode: BPBM
- am. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Wailua Beach; verbatimEventDate: 4.iv.1970; individualCount: 26; lifeStage: adult; recordedBy: L Teremoto, L Uyenishi; institutionCode: UHM
- an. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kahului, Power Plant Discharge #1; verbatimEventDate: 08.viii.1973; lifeStage: adult; catalogNumber: 2006004912; recordedBy: D Devaney; identifiedBy: JA Tenorio; institutionCode: BPBM
- ao. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kahoolawe; verbatimLocality: Hakioawa Point, to 2km SW; minimumElevationInMeters: 0; maximumElevationInMeters: 66; verbatimEventDate: 07.xi.1979; lifeStage: adult; catalogNumber: 2006008014; recordedBy: GM Nishida; identifiedBy: NL Evenhuis; dateIdentified: 1984; institutionCode: BPBM
- ap. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 24.vi.1990; lifeStage: adult; catalogNumber: 2008008253; recordedBy: J Strazanac; institutionCode: BPBM

- aq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Blaisdell Park, Waimalu Stream; verbatimEventDate: 28.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000617; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM
- ar. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, Okiokiolepe Pond, sheltered cove; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000594; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- as. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, at Pearl Harbor entrance; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000595; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- at. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, at Pearl Harbor entrance; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000596; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- au. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, at Pearl Harbor entrance; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000597; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- av. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, edge of fish pond; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000598; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- aw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, at Pearl Harbor entrance; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000599; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ax. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, edge of fish pond; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000600; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ay. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969;

- islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, at Pearl Harbor entrance; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000601; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- az. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, at Pearl Harbor entrance; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000602; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ba. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Iroquois Point, at Pearl Harbor entrance; verbatimEventDate: 23.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000603; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, rocky shoreline; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000619; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, rocky shoreline; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000620; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, stream mouth; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000621; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- be. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000606; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bf. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000607; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969;

- islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000608; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000609; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bi. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; sex: female; lifeStage: adult; catalogNumber: 2008000610; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000611; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bk. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000612; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000613; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000614; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric

- Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000615; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bo. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000616; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bp. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, open rocky shoreline at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000618; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: E'o Canal, Ted Makalena Golf Course, at shore line; verbatimEventDate: 27.vii.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000622; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- br. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: E'o Canal, Ted Makalena Golf Course, at shore line; verbatimEventDate: 27.vii.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000623; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bs. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: E'o Canal, Ted Makalena Golf Course, at shore line; verbatimEventDate: 27.vii.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000624; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bt. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: E'o Canal, Ted Makalena Golf Course, at shore line; verbatimEventDate: 27.vii.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000625; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bu. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimEventDate: 13 Aug 2005; lifeStage: adult; catalogNumber: 2006016244; recordedBy: PT Oboyski; identifiedBy: PT Oboyski; dateIdentified: 2005; institutionCode: BPBM
- bv. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimEventDate: 13 Aug 2005;

- lifeStage: adult; catalogNumber: 2006016243; recordedBy: PT Oboyski; identifiedBy: PT Oboyski; dateIdentified: 2005; institutionCode: BPBM
- bw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kolekole Beach Park; verbatimEventDate: 31.vii.2009; lifeStage: adult; recordedBy: RT Lapoint; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205642
- bx. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kikiaola, Small Boat Harbor; verbatimEventDate: 5.i.2010; lifeStage: adult; recordedBy: PM O'Grady; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205640
- by. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Punaluu Beach Park; verbatimEventDate: 26.vi.2010; lifeStage: adult; recordedBy: NL Evenhuis; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205519
- bz. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Ninole, Kauwale Fish Pond; verbatimEventDate: 26.vi.2010; lifeStage: adult; recordedBy: NL Evenhuis; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205646
- ca. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Bay Park; verbatimEventDate: 12.i.2011; lifeStage: adult; recordedBy: NL Evenhuis, G Bennett, KR Goodman, BS Ort, S Wang; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC
- cb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Waialua beach rocks; verbatimEventDate: 12.i.2011; lifeStage: adult; recordedBy: NL Evenhuis; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205534
- cc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; verbatimEventDate: 12.i.2011; lifeStage: adult; recordedBy: KR Goodman; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205638
- cd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Hale O Ono; verbatimEventDate: 12.i.2011; lifeStage: adult; recordedBy: KR Goodman; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205644
- ce. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Beach rocks near mile 21.25; verbatimEventDate: 12.i.2011; lifeStage: adult; recordedBy: KR Goodman;

- identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205645
- cf. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Moomoni; verbatimEventDate: 13.i.2011; lifeStage: adult; recordedBy: no collector given; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205637
- cg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Moomoni; verbatimEventDate: 13.i.2011; lifeStage: adult; recordedBy: KR Goodman; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205639
- ch. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *angulatus*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Moomoni; verbatimEventDate: 15.i.2011; lifeStage: adult; recordedBy: NL Evenhuis; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205520

Native status: adventive

Distribution: HAWAIIAN ISLANDS: Midway, Laysan, Lisianski, Nihoa, Kauai, Oahu, Molokai, Kahoolawae, Maui, Hawaii (Fig. 8); MEXICO: Baja California Norte, Baja California Sur, Sonora; ECUADOR: Galapagos Islands; PERU

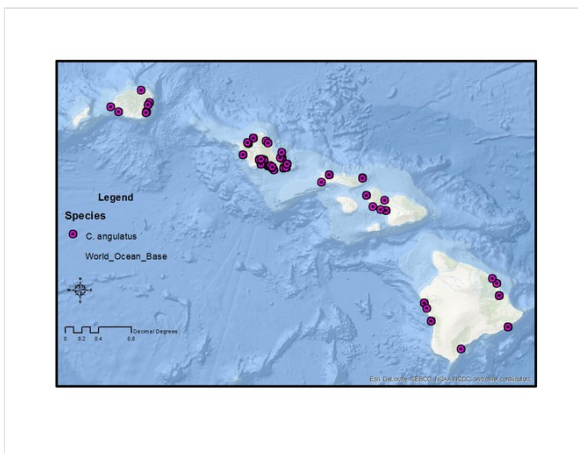


Figure 8.

Distribution of *C. angulatus* in the main Hawaiian Islands. This species is also found in the Northwest Hawaiian Islands (Laysan, Lisianski, Midway, Nihoa).

Notes: Cresson (1926), [description of *Canace nudata*]; Williams (1938), as *C. nudata*, [ecology; eggs, larvae, puparium]; Wirth (1951), as *C. nudata*, [family revision; male genitalia (ventral and lateral)]; Wirth (1969), [original description; male genitalia, female terminalia, ninth sternum, spermatheca, distribution map (partial)]; Hardy and Delfinado

(1980), [redescription and revision of Hawaiian taxa; head (front and lateral), female terminalia (dorsal and ventral), spermathecae, wing, surstylus; cephalopharyngeal skeleton (larval and pupal, puparium, third instar larvae); Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist]; Evenhuis and Eldredge (2004), [Natural History of Nihoa and Necker Islands].

***Canaceoides hawaiiensis* Wirth, 1969**

Materials

Holotype:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Hana; verbatimEventDate: 20.vi.1967; individualCount: 1; sex: male; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: ex pools of salt water; verbatimEventDate: 12.vi.1922; individualCount: 1; sex: male; lifeStage: adult; recordedBy: EH Bryan; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: ANSP
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: ex pools of salt water; verbatimEventDate: 12.vi.1922; individualCount: 1; sex: female; lifeStage: adult; recordedBy: EH Bryan; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: ANSP
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Wawamalu Beach near Koko Crater; verbatimEventDate: 17.xii.1922; individualCount: 3; sex: male; lifeStage: adult; recordedBy: EH Bryan; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: ANSP
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Mapulehu, Kupeke Pond; verbatimEventDate: 28.viii.1944; individualCount: 2; sex: male; lifeStage: adult; recordedBy: Y Tanada; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Niaupala; verbatimEventDate: 28.xii.1944; individualCount: 3; sex: male; lifeStage: adult; recordedBy: Y Tanada; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Niaupala;

- verbatimEventDate: 28.xii.1944; individualCount: 4; sex: female; lifeStage: adult; recordedBy: Y Tanada; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Hanauma Bay; verbatimEventDate: 4.i.1946; individualCount: 2; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Maile; verbatimEventDate: 8.i.1946; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Nawiliwili; verbatimEventDate: 9.ix.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Hanauma Bay; verbatimEventDate: 4.viii.1950; individualCount: 2; sex: male; lifeStage: adult; recordedBy: MS Adachi; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Hanauma Bay; verbatimEventDate: 4.viii.1950; individualCount: 2; sex: female; lifeStage: adult; recordedBy: MS Adachi; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waimanalo; verbatimEventDate: 4.viii.1951; individualCount: 2; sex: female; lifeStage: adult; recordedBy: MS Adachi; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honaunau, Kona; verbatimEventDate: x.1951; individualCount: 13; sex: male; lifeStage: adult; recordedBy: HA Bess; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honaunau, Kona; verbatimEventDate: x.1951; individualCount: 3; sex: female; lifeStage: adult; recordedBy: HA Bess; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koko Head; verbatimEventDate: vi.1955; individualCount: 2; sex: male; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980

- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae; verbatimEventDate: v.1958; individualCount: 5; sex: male; lifeStage: adult; recordedBy: Y Kondo; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae; verbatimEventDate: v.1958; individualCount: 4; sex: female; lifeStage: adult; recordedBy: Y Kondo; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: on lava at edge of sea; verbatimEventDate: 10.ii.1965; individualCount: 1; sex: male; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: on lava at edge of sea; verbatimEventDate: 10.ii.1965; individualCount: 3; sex: female; lifeStage: adult; recordedBy: NLH Krauss; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Sunset Beach, light trap; verbatimEventDate: 24.iii.1966; individualCount: 4; sex: male; lifeStage: adult; recordedBy: no collector given; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Sunset Beach, light trap; verbatimEventDate: 24.iii.1966; individualCount: 2; sex: female; lifeStage: adult; recordedBy: no collector given; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu, wave swept rocks; verbatimEventDate: 24.viii.1966; individualCount: 29; sex: male; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu, wave swept rocks; verbatimEventDate: 24.viii.1966; individualCount: 30; sex: female; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kaanapali; verbatimEventDate: 28.x.1966; individualCount: 5; sex: male; lifeStage: adult; recordedBy: T. Saigusa; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC

- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kaanapali; verbatimEventDate: 28.x.1966; individualCount: 2; sex: female; lifeStage: adult; recordedBy: T. Saigusa; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- z. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kalapana Park; verbatimEventDate: 24.iii.1967; individualCount: 1; sex: male; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: CNC
- aa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Hana; verbatimEventDate: 20.vi.1967; individualCount: 3; sex: female; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- ab. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Hana; verbatimEventDate: 20.vi.1967; individualCount: 21; sex: male; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimEventDate: 12.vi.1923; lifeStage: adult; catalogNumber: 2008008278; recordedBy: EH Bryan, Jr.; identifiedBy: J Straxanac; dateIdentified: 1991; institutionCode: BPBM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honaunau; verbatimEventDate: October 1951; lifeStage: adult; catalogNumber: 2006004951; recordedBy: HA Bess; identifiedBy: WW Wirth; dateIdentified: 1969; institutionCode: BPBM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honaunau; verbatimEventDate: October 1951; lifeStage: adult; catalogNumber: 2006004948; recordedBy: HA Bess; identifiedBy: WW Wirth; dateIdentified: 1969; institutionCode: BPBM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honaunau; verbatimEventDate: x.1951; lifeStage: adult; catalogNumber: 2006004950; recordedBy: HA Bess; identifiedBy: WW Wirth; dateIdentified: 1969; institutionCode: BPBM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honaunau;

- verbatimEventDate: x.1951; lifeStage: adult; catalogNumber: 2006004949; recordedBy: HA Bess; identifiedBy: WW Wirth; dateIdentified: 1969; institutionCode: BPBM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae; verbatimEventDate: May 1958; lifeStage: adult; catalogNumber: 2006004946; recordedBy: Y Kondo; identifiedBy: WW Wirth; dateIdentified: 1969; institutionCode: BPBM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae; verbatimEventDate: May 1958; lifeStage: adult; catalogNumber: 2006004947; recordedBy: Y Kondo; identifiedBy: WW Wirth; dateIdentified: 1969; institutionCode: BPBM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008266; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008267; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008268; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008269; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008263; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008276; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008257; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM

- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008254; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008265; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008256; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008259; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008264; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008260; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008261; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008262; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: on coast; verbatimEventDate: 20.iv.1983; lifeStage: adult; catalogNumber: 2008008255; recordedBy: WC Gagne; identifiedBy: DE Hardy; institutionCode: BPBM
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 25.vi.1990; lifeStage: adult;

- catalogNumber: 2008008270; recordedBy: J Strazanac; identifiedBy: DE Hardy; institutionCode: BPBM
- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 25.vi.1990; lifeStage: adult; catalogNumber: 2008008271; recordedBy: J Strazanac; identifiedBy: DE Hardy; institutionCode: BPBM
- z. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 25.vi.1990; lifeStage: adult; catalogNumber: 2008008272; recordedBy: J Strazanac; identifiedBy: DE Hardy; institutionCode: BPBM
- aa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 25.vi.1990; lifeStage: adult; catalogNumber: 2008008273; recordedBy: J Strazanac; identifiedBy: DE Hardy; institutionCode: BPBM
- ab. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 25.vi.1990; lifeStage: adult; catalogNumber: 2008008274; recordedBy: J Strazanac; identifiedBy: DE Hardy; institutionCode: BPBM
- ac. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 25.vi.1990; lifeStage: adult; catalogNumber: 2008008275; recordedBy: J Strazanac; identifiedBy: DE Hardy; institutionCode: BPBM
- ad. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 25.vi.1990; lifeStage: adult; catalogNumber: 2008008277; recordedBy: J Strazanac; identifiedBy: DE Hardy; institutionCode: BPBM
- ae. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Nihoa; verbatimLocality: Miller Valley; minimumElevationInMeters: 10; verbatimEventDate: 25.vi.1990; lifeStage: adult; catalogNumber: 2008008258; recordedBy: J Strazanac; identifiedBy: DE Hardy; institutionCode: BPBM
- af. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaluauo Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000626; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM

- ag. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Ninole, Kauwale Fish Pond; verbatimEventDate: 26.vi.2010; lifeStage: adult; recordedBy: NL Evenhuis; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205542
- ah. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Whittington Beach Park, South Coast, Kau; verbatimEventDate: 1.viii.2010; lifeStage: adult; recordedBy: PM O'Grady, B Ort, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205121
- ai. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Whittington Beach Park, South Coast, Kau, sweeping lava rocks and estuary; verbatimEventDate: 1.viii.2010; lifeStage: adult; recordedBy: PM O'Grady, BS Ort, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 612.6
- aj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Alakahi Trail to Onomea Bay, adjacent to Hawaii Botanical Garden, sweeping rocks in surf; verbatimEventDate: 2.viii.2010; lifeStage: adult; recordedBy: PM O'Grady, BS Ort, RT Lapoint, GM Bennett, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 614.4
- ak. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kolekole Beach Park, sweeping along ocean coast; verbatimEventDate: 2.viii.2010; lifeStage: adult; recordedBy: PM O'Grady, BS Ort, RT Lapoint, GM Bennett, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 616.3
- al. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Alakahi Trail to Onomea Bay, adjacent to Hawaii Botanical Garden; verbatimEventDate: 2.viii.2010; lifeStage: adult; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205130
- am. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Alakahi Trail to Onomea Bay, adjacent to Hawaii Botanical Garden; verbatimEventDate: 2.viii.2010; lifeStage: adult; recordedBy: BS Ort; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205636
- an. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: South West Molokai, Hale O Lono; verbatimEventDate: 12.i.2011; lifeStage: adult; recordedBy: KR Goodman; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205643

- ao. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Makapuu Point; verbatimEventDate: 25.v.2011; lifeStage: adult; recordedBy: BS Ort; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205641
- ap. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Canaceoides*; specificEpithet: *hawaiiensis*; scientificNameAuthorship: Wirth, 1969; islandGroup: Hawaiian Islands; island: Hawaii; lifeStage: adult; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205725

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Nihoa, Kauai, Oahu, Molokai, Maui, Hawaii (Fig. 9).

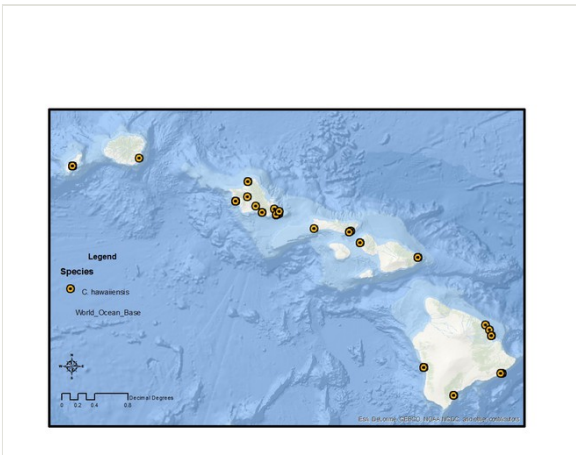


Figure 9.

Distribution of *C. hawaiiensis* in the main Hawaiian Islands. This species is also found in the Northwest Hawaiian Islands (Nihoa).

Notes: Wirth (1969), [original description; male genitalia, female terminalia, ninth sternum, spermatheca]; Hardy and Delfinado (1980), [redescription and revision of Hawaiian taxa; female terminalia (dorsal and ventral), spermathecae, ninth sternum, epandrium and surstylus]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist]; Evenhuis and Eldredge (2004), [Natural History of Nihoa and Necker Islands].

Procanace acuminata Hardy and Delfinado, 1980

Materials

Holotype:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy &

Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream, east slope of Mauna Kea; verbatimElevation: 1000 ft.; verbatimEventDate: 29.v.1970; individualCount: 1; sex: male; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Iao Valley; verbatimEventDate: vi.1952; individualCount: 3; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Iao Valley, on wet rocks in swift moving stream; verbatimEventDate: vi.1952; lifeStage: adult; recordedBy: DE Hardy, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Wailua; verbatimEventDate: vi.1953; individualCount: 3; lifeStage: adult; recordedBy: CR Joyce; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Wailua; verbatimEventDate: vi.1953; lifeStage: adult; recordedBy: CR Joyce; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Iao Stream; verbatimEventDate: 13.ix.1968; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kawaiiki Stream; verbatimEventDate: 27.xii.1969; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kawaiiki Stream; verbatimEventDate: 27.xii.1969; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honomu Mailii Stream; verbatimEventDate: 28.ii.1970; individualCount: 1; lifeStage: adult;

- recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Honomu Maiki Stream; verbatimEventDate: 28.ii.1970; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: lao Valley; verbatimEventDate: 27.iii.1970; individualCount: 10; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: On Stream, lao Valley; verbatimEventDate: 28.iii.1970; individualCount: 20; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: lao Valley, on wet rocks in swift moving stream; verbatimEventDate: 28.iii.1970; individualCount: 8; sex: 3 males, 5 females; lifeStage: adult; recordedBy: DE Hardy, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Stream in lao Valley; verbatimElevation: 1375 ft.; verbatimEventDate: 31.iii.1970; individualCount: 3; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Makamakaole Valley, on wet rocks along stream; verbatimElevation: 1100 ft.; verbatimEventDate: 31.iii.1970; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Rainbow Falls Park; verbatimEventDate: 28.v.1970; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: above Rainbow Falls, on rocks in swift stream; verbatimEventDate: 28.v.1970; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980

- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe Stream; verbatimEventDate: 29.v.1970; individualCount: 3; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; datelIdentified: 1980; institutionCode: UHM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; verbatimElevation: 1000 ft.; verbatimEventDate: 29.v.1970; individualCount: 10; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; datelIdentified: 1980; institutionCode: UHM
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; verbatimElevation: 750 ft.; verbatimEventDate: 29.v.1970; individualCount: 11; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; datelIdentified: 1980; institutionCode: UHM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe Stream; verbatimElevation: 750 ft.; verbatimEventDate: 29.v.1970; individualCount: 11; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; datelIdentified: 1980; institutionCode: UHM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream, east slope of Mauna Kea; verbatimElevation: 1000 ft.; verbatimEventDate: 29.v.1970; individualCount: 1; sex: female; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; datelIdentified: 1980; institutionCode: BPBM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream, east slope of Mauna Kea; verbatimElevation: 1000 ft.; verbatimEventDate: 29.v.1970; lifeStage: adult; recordedBy: MD Delfinado, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; datelIdentified: 1980
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe, on rocks in swift moving stream; verbatimEventDate: 29.v.1970; lifeStage: adult; recordedBy: MD Delfinado, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; datelIdentified: 1980
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Iao Stream; verbatimElevation: 800 ft.; verbatimEventDate: 2.ix.1970; individualCount: 3; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; datelIdentified: 1980; institutionCode: UHM

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Moaula Stream; verbatimElevation: 2000 ft.; verbatimEventDate: 28.xi.1933; individualCount: 4; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Valley; verbatimEventDate: 30.xi.1933; individualCount: 4; lifeStage: adult; recordedBy: FX Williams; institutionCode: UHM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Nahiku; verbatimEventDate: viii.1952; individualCount: 1; lifeStage: adult; recordedBy: NLH Krauss; institutionCode: UHM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Ulupalakua; verbatimEventDate: 8.ii.1958; individualCount: 13; lifeStage: adult; recordedBy: NLH Krauss; institutionCode: UHM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Valley, Stream below Moalua Falls; verbatimEventDate: 16.iii.1970; individualCount: 72; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Waterfalls, Halawa Valley; verbatimEventDate: 16.iii.1970; individualCount: 95; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Moaula Falls, Halawa Valley; verbatimEventDate: 16.iii.1970; individualCount: 79; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Stream; verbatimEventDate: 16.iii.1970; individualCount: 61; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Valley; verbatimEventDate: 16.iii.1970; individualCount: 2; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality:

- Moaula Falls, Halawa Valley; verbatimEventDate: 16.iii.1970; lifeStage: adult; recordedBy: DE Hardy, MD Delfinado, JA Tenorio
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004967; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004960; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004962; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004963; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004964; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004965; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004966; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004961; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004959; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004952; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006004953; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Makamakaole Valley, along stream; minimumElevationInMeters: 1100; verbatimEventDate: 31.iii.1970; lifeStage: adult; catalogNumber: 2006004968; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Wailuku Stream, above Rainbow Falls; verbatimEventDate: 28.v.1970; individualCount: 1; lifeStage: adult; recordedBy: MD Delfinado; institutionCode: UHM
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Akaka Park Stream; verbatimEventDate: 29.v.1970; individualCount: 3; lifeStage: adult; recordedBy: MD Delfinado; institutionCode: UHM
- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kaieie Stream; verbatimElevation: 1000 ft.; verbatimEventDate: 29.v.1970; individualCount: 3; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- z. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kaieie Stream; verbatimElevation: 1000 ft.; verbatimEventDate: 29.v.1970; individualCount: 5; lifeStage: adult; recordedBy: MD Delfinado; institutionCode: UHM
- aa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehe Stream; verbatimElevation: 1200 ft.; verbatimEventDate: 29.v.1970; individualCount: 1; lifeStage: adult; recordedBy: M Tamashiro; institutionCode: UHM

- ab. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; minimumElevationInMeters: 750; verbatimEventDate: 29.v.1970; lifeStage: adult; catalogNumber: 2006004954; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- ac. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; minimumElevationInMeters: 750; verbatimEventDate: 29.v.1970; lifeStage: adult; catalogNumber: 2006004957; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- ad. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; minimumElevationInMeters: 750; verbatimEventDate: 29.v.1970; lifeStage: adult; catalogNumber: 2006004955; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- ae. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; minimumElevationInMeters: 750; verbatimEventDate: 29.v.1970; lifeStage: adult; catalogNumber: 2006004956; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- af. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; minimumElevationInMeters: 1000; verbatimEventDate: 29.v.1970; lifeStage: adult; catalogNumber: 2006004958; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- ag. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pulena Stream; verbatimElevation: 650 ft.; verbatimEventDate: 3.vi.1970; individualCount: 5; lifeStage: adult; recordedBy: J Kjargaard; institutionCode: UHM
- ah. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: 0.5 miles above Wailau Stream gauge; verbatimElevation: 700 ft.; verbatimEventDate: 3.vi.1970; individualCount: 1; lifeStage: adult; recordedBy: J Kjargaard; institutionCode: UHM
- ai. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: 0.25 miles below Wailau Stream gauge; verbatimElevation: 550 ft.; verbatimEventDate: 4.vi.1970; individualCount: 1; lifeStage: adult; recordedBy: J Kjargaard; institutionCode: UHM
- aj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kohala

- Mountains, Honopue Stream; verbatimElevation: 2000 ft.; verbatimEventDate: 12.vi.1970; individualCount: 1; lifeStage: adult; recordedBy: WC Gagne; institutionCode: UHM
- ak. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Seven Sacred Pools; verbatimEventDate: 3.viii.1970; individualCount: 4; lifeStage: adult; recordedBy: MD Delfinado; institutionCode: UHM
- al. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 880 ft.; verbatimEventDate: 14.viii.1970; individualCount: 8; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- am. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kinihapai Stream, lao Valley; verbatimElevation: 800 ft.; verbatimEventDate: 2.ix.1970; individualCount: 80; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- an. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: lao Stream, lao Valley; verbatimElevation: 800 ft.; verbatimEventDate: 2.ix.1970; individualCount: 56; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- ao. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kopiliula Stream, Hana; verbatimElevation: 1200 ft.; verbatimEventDate: 4.ix.1970; individualCount: 8; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- ap. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waikane Stream; verbatimElevation: 600 ft.; verbatimEventDate: 4.ix.1970; individualCount: 30; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- aq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kinihapai Stream, lao Valley; verbatimElevation: 300 ft.; verbatimEventDate: 2.x.1970; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- ar. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005037; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- as. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; verbatimElevation: 400; minimumElevationInMeters: 400; eventDate: 26.vii.1990; verbatimEventDate: 26.x.1990; individualCount: 1; sex: 1 male; lifeStage: adult; catalogNumber: 2006005039; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: USNM

- at. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.x.1990; lifeStage: adult; catalogNumber: 2006005038; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- au. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 400; verbatimEventDate: 26.x.1990; individualCount: 5; sex: 3 males, 2 females; lifeStage: adult; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: USNM
- av. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.x.1990; lifeStage: adult; catalogNumber: 2006005039; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- aw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004999; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ax. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004975; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ay. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004993; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- az. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004994; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ba. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0;

- maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004995; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004996; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004991; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004998; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- be. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004990; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bf. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005000; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005001; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006005002; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bi. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005003; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005004; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bk. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005005; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004997; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004977; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004983; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bo. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006004978; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bp. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004979; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004980; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- br. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004992; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bs. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004982; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bt. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005008; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bu. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004984; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bv. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006004985; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004986; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bx. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004987; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- by. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004988; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bz. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005032; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ca. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004981; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004989; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006005025; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005026; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ce. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005027; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cf. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005028; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005006; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ch. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005029; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ci. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005031; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006005022; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ck. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005033; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005034; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005036; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005035; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- co. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005030; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cp. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005016; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006004974; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cr. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005009; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cs. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005010; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ct. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005011; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cu. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005012; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cv. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005013; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005024; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cx. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006005015; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cy. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005023; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- cz. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005017; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- da. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005018; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- db. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005019; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- dc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005020; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- dd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005021; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- de. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006005007; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- df. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006005014; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- dg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004976; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- dh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004969; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- di. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004970; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- dj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004971; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- dk. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult; catalogNumber: 2006004972; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- dl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 98; verbatimEventDate: 19.viii.1991; lifeStage: adult;

- catalogNumber: 2006004973; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- dm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 30; verbatimEventDate: 19.viii.1991; individualCount: 20; sex: 13 males, 7 females; lifeStage: adult; recordedBy: DA Polhemus; institutionCode: USNM
- dn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Pelekunu TNCH Preserve, Lower Pelekunu Valley; minimumElevationInMeters: 0; maximumElevationInMeters: 100; verbatimEventDate: 19.viii.1991; individualCount: 12; sex: 7 males, 5 females; lifeStage: adult; recordedBy: DA Polhemus; institutionCode: USNM
- do. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *acuminata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kawainui Stream, 6 ton bridge on Scenic Loop; verbatimEventDate: 2.viii.2010; lifeStage: adult; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205136

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Molokai, Maui, Hawaii (Fig. 10).

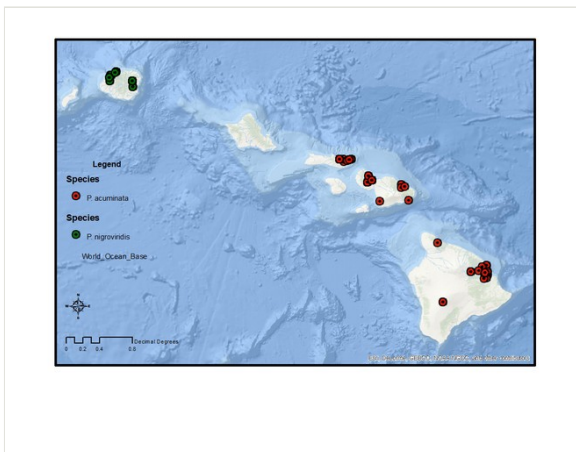


Figure 10.

Distribution of *P. acuminata* on Oahu, Molokai, Maui and Hawaii and *P. nigroviridis* on Kauai.

Notes: Hardy and Delfinado (1980), [original description; female terminalia (dorsal and ventral), spermathecae, ninth sternum, epandrium and surstylus]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist].

Procanace bifurcata* Hardy and Delfinado, 1980*Materials***Holotype:*

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaepala Stream; verbatimElevation: 1150 ft.; verbatimEventDate: 12.vi.1970; individualCount: 1; sex: male; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waihinui, Manoa; verbatimEventDate: 13.viii.1933; lifeStage: adult; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waihai-iki, Manoa Valley; verbatimEventDate: 22.iii.1936; lifeStage: adult; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Head of Kaluanui Valley; verbatimEventDate: v.1951; individualCount: 1; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Head of Kalunui Valley; verbatimEventDate: v.1951; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Manoa Valley; verbatimEventDate: i.1952; lifeStage: adult; recordedBy: MS Adachi, DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Manoa Valley; verbatimEventDate: i.1952; individualCount: 1; lifeStage: adult; recordedBy: MS Adachi; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Manoa Valley; verbatimEventDate: i.1953; lifeStage: adult; recordedBy: MS Adachi, DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980

- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Punaluu Stream; verbatimEventDate: 24.v.1962; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaepala Stream; verbatimElevation: 1150 ft.; verbatimEventDate: 12.v.1970; individualCount: 26; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kahalanui Stream; verbatimEventDate: 26.v.1970; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kawai-iki Stream; verbatimEventDate: 12.vi.1970; individualCount: 1; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaepala Stream; verbatimElevation: 1150 ft.; verbatimEventDate: 12.vi.1970; individualCount: 1; sex: female; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaepala Stream; verbatimElevation: 1150 ft.; verbatimEventDate: 12.vi.1970; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kawai-iki Stream; verbatimEventDate: 12.vi.1970; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Hanakapiai, mouth of River nr beach; verbatimEventDate: 10.viii.1971; lifeStage: adult; recordedBy: MD Delfinado, DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu, Manoa; verbatimEventDate: 13.viii.1933; lifeStage: adult; catalogNumber:

- 2006005050; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Manoa Valley, Waihi-iki; verbatimEventDate: 22.iii.1936; lifeStage: adult; catalogNumber: 2006005042; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Head of Kaluanui Valley; verbatimEventDate: May 1951; lifeStage: adult; catalogNumber: 2006005048; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Head of Kaluanui Valley; verbatimEventDate: v.1951; lifeStage: adult; catalogNumber: 2006005049; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Manoa Valley; verbatimEventDate: January 1952; lifeStage: adult; catalogNumber: 2006005051; recordedBy: MS Adachi; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Punaluu; verbatimEventDate: 24.v.1968; lifeStage: adult; catalogNumber: 2006005043; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Moaula Valley; verbatimEventDate: 16.iii.1970; individualCount: 58; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kahalanui Stream; verbatimEventDate: 26.v.1970; lifeStage: adult; catalogNumber: 2006005041; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaeula Stream; verbatimEventDate: 12.vi.1970; individualCount: 5; lifeStage: adult; recordedBy: MD Delfinado; institutionCode: UHM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy &

- Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaepala Stream; verbatimEventDate: 12.vi.1970; individualCount: 3; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaepala Stream; minimumElevationInMeters: 1150; verbatimEventDate: 12.vi.1970; lifeStage: adult; catalogNumber: 2006005045; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaepala Stream; minimumElevationInMeters: 1150; verbatimEventDate: 12.vi.1970; lifeStage: adult; catalogNumber: 2006005044; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Opaepala Stream; minimumElevationInMeters: 1150; verbatimEventDate: 12.vi.1970; lifeStage: adult; catalogNumber: 2006005046; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: West Maui, Iao Valley; minimumElevationInMeters: 1150; verbatimEventDate: 12.vi.1970; lifeStage: adult; catalogNumber: 2006005047; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kawai-iki Stream; verbatimEventDate: 12.vi.1970; lifeStage: adult; catalogNumber: 2006005040; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Iao Stream, Iao Valley; verbatimElevation: 800 ft.; verbatimEventDate: 2.ix.1970; individualCount: 72; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waikane Stream; verbatimEventDate: 4.ix.1970; individualCount: 2; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kipahulu Valley; verbatimElevation: 500 ft.; verbatimEventDate: 1.x.1970; individualCount: 28; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy &

- Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kinihapai Stream, Iao Valley; verbatimElevation: 500 ft.; verbatimEventDate: 2.x.1970; individualCount: 48; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kopiliula Stream, Hana; verbatimElevation: 500 ft.; verbatimEventDate: 2.x.1970; individualCount: 9; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *bifurcata*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kauai, Hanakapai Stream, 5m elevation, 200m from ocean; eventDate: 2.i.2002; individualCount: 5; sex: females; lifeStage: adult; recordedBy: RA Englund; identifiedBy: PM O'Grady; dateIdentified: i.2016; institutionCode: BPBM

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Kauai, Oahu, Molokai and Maui (Fig. 11).

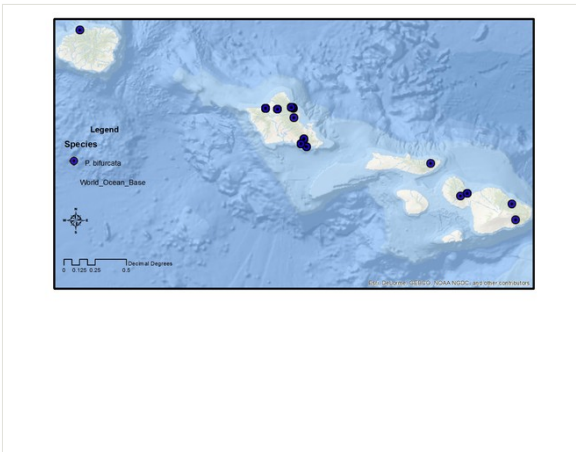


Figure 11.

Distribution of *P. bifurcata* (Kauai, Oahu, Molokai and Maui).

Notes: Hardy and Delfinado (1980), [original description; female terminalia (dorsal and ventral), spermathecae, ninth sternum, epandrium and surstylus]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist].

Procanace confusa* Hardy and Delfinado, 1980*Materials***Holotype:*

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 19.vi.1964; individualCount: 1; sex: male; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waihee Stream; verbatimEventDate: v.1952; lifeStage: adult; recordedBy: M Tamashiro; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waihee Valley; verbatimEventDate: v.1952; individualCount: 1; lifeStage: adult; recordedBy: M Tamashiro; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waihee Valley; verbatimEventDate: vi.1952; individualCount: 1; lifeStage: adult; recordedBy: M Tamashiro; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: lao Valley, on wet rocks in swift running stream; verbatimEventDate: vi.1952; lifeStage: adult; recordedBy: DE Hardy, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waialua; verbatimEventDate: vi.1953; sex: 1 female; lifeStage: adult; recordedBy: CR Joyce; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Maui, Wailua; verbatimEventDate: vii.1953; individualCount: 3; sex: 3 females; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 19.vi.1964; individualCount: 29; lifeStage: adult; recordedBy:

- DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 19.vi.1964; individualCount: 1; sex: female; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Akaka Falls; verbatimEventDate: 19.vi.1964; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Iao Valley, on wet rocks in swift running stream; verbatimEventDate: 13.ix.1968; sex: 1 female; lifeStage: adult; recordedBy: DE Hardy, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kipahulu Valley; verbatimEventDate: 21.ii.1970; individualCount: 15; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kipahulu Valley, Seven Sacred Pools; verbatimEventDate: 21.ii.1970; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waiakani Falls, roadside water dripping; verbatimEventDate: 26.iii.1970; individualCount: 2; sex: 2 females; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Iao Valley, on wet rocks in swift running stream; verbatimEventDate: 28-31.iii.1970; sex: 1 male; lifeStage: adult; recordedBy: DE Hardy, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Stream in Iao Valley; verbatimElevation: 1375 ft.; verbatimEventDate: 31.iii.1970; individualCount: 10; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy &

- Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; verbatimElevation: 750 ft.; verbatimEventDate: 29.v.1970; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; verbatimElevation: 1000 ft.; verbatimEventDate: 29.v.1970; individualCount: 2; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kaieie Stream; verbatimElevation: 1000 ft.; verbatimEventDate: 29.v.1970; individualCount: 5; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe Stream; verbatimEventDate: 29.v.1970; individualCount: 29; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe Stream; verbatimEventDate: 29.v.1970; lifeStage: adult; recordedBy: MD Delfinado, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; verbatimEventDate: 29.v.1970; lifeStage: adult; recordedBy: MD Delfinado, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream, on rocks in stream; verbatimElevation: 750 ft.; verbatimEventDate: 29.v.1970; individualCount: 1; sex: 1 female; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 500 ft.; verbatimEventDate: 23.vi.1970; individualCount: 2; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kopiliula Stream; verbatimEventDate: viii.1970; lifeStage: adult; recordedBy: DE Hardy, MD Delfinado, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980

- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Wailuku River; verbatimEventDate: iii-vii.1971; lifeStage: adult; recordedBy: MD Delfinado, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waihee; verbatimEventDate: v.1952; sex: male; lifeStage: adult; catalogNumber: 2006005065; recordedBy: M Tamachiro; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; verbatimEventDate: vi.1952; lifeStage: adult; catalogNumber: 2006005066; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Wailua; verbatimEventDate: June 1953; sex: male; lifeStage: adult; catalogNumber: 2006005052; recordedBy: CR Joyce; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Wailua; verbatimEventDate: June 1953; lifeStage: adult; catalogNumber: 2006005053; recordedBy: CR Joyce; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Wailua; verbatimEventDate: June 1953; lifeStage: adult; catalogNumber: 2006005054; recordedBy: CR Joyce; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Wailua; verbatimEventDate: vi.1953; lifeStage: adult; catalogNumber: 2006005055; recordedBy: CR Joyce; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Keanae; verbatimEventDate: vii.1953; lifeStage: adult; catalogNumber: 2006005067; recordedBy: CR Joyce; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; minimumElevationInMeters: 1375; verbatimEventDate: 21.iii.1970; lifeStage: adult; catalogNumber: 2006005070; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; minimumElevationInMeters: 1375; verbatimEventDate: 21.iii.1970; lifeStage: adult; catalogNumber: 2006005071; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006005068; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley, on stream; verbatimEventDate: 28.iii.1970; lifeStage: adult; catalogNumber: 2006005069; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe Stream; verbatimEventDate: 28.v.1970; sex: female; lifeStage: adult; catalogNumber: 2006005061; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe Stream; verbatimEventDate: 28.v.1970; sex: female; lifeStage: adult; catalogNumber: 2006005062; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe Stream; verbatimEventDate: 28.v.1970; sex: male; lifeStage: adult; catalogNumber: 2006005064; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Pahoehoe Stream; verbatimEventDate: 28.v.1970; sex: male; lifeStage: adult; catalogNumber: 2006005063; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy &

- Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; minimumElevationInMeters: 750; verbatimEventDate: 29.v.1970; sex: male; lifeStage: adult; catalogNumber: 2006005058; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; minimumElevationInMeters: 750; verbatimEventDate: 29.v.1970; sex: female; lifeStage: adult; catalogNumber: 2006005059; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kaieie Stream; minimumElevationInMeters: 1000; verbatimEventDate: 29.v.1970; sex: female; lifeStage: adult; catalogNumber: 2006005060; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kapue Stream; minimumElevationInMeters: 750; verbatimEventDate: 29.v.1970; sex: female; lifeStage: adult; catalogNumber: 2006005057; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kapue Stream; minimumElevationInMeters: 750; verbatimEventDate: 29.v.1970; sex: male; lifeStage: adult; catalogNumber: 2006005056; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005114; recordedBy: GM Nishida; institutionCode: BPBM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005108; recordedBy: GM Nishida; institutionCode: BPBM
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005109; recordedBy: GM Nishida; institutionCode: BPBM
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters:

- 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005110; recordedBy: GM Nishida; institutionCode: BPBM
- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005111; recordedBy: GM Nishida; institutionCode: BPBM
- z. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005113; recordedBy: GM Nishida; institutionCode: BPBM
- aa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005115; recordedBy: GM Nishida; institutionCode: BPBM
- ab. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005117; recordedBy: GM Nishida; institutionCode: BPBM
- ac. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005118; recordedBy: GM Nishida; institutionCode: BPBM
- ad. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: East Maui, Hahalawe Gulch; minimumElevationInMeters: 1197; maximumElevationInMeters: 1345; verbatimEventDate: 05.v.1984; lifeStage: adult; catalogNumber: 2006005116; recordedBy: GM Nishida; institutionCode: BPBM
- ae. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005107; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- af. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005106; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM

- ag. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Opaueula Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005098; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ah. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005091; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ai. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005092; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- aj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005093; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ak. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005094; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- al. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005095; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- am. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005097; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- an. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005088; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ao. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy &

- Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005099; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ap. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005100; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- aq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005101; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ar. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005102; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- as. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005096; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- at. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005082; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- au. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005079; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- av. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005090; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- aw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990;

- lifeStage: adult; catalogNumber: 2006005081; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ax. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005089; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ay. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005083; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- az. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005084; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- ba. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005085; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005086; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005087; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; lifeStage: adult; catalogNumber: 2006005080; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- be. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.vii.1990; individualCount: 25; sex: 11 males, 14 females; lifeStage: adult; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: USNM

- bf. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.x.1990; lifeStage: adult; catalogNumber: 2006005103; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.x.1990; lifeStage: adult; catalogNumber: 2006005104; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Hilo, NW of Honolii Stream; minimumElevationInMeters: 1312; verbatimEventDate: 26.x.1990; lifeStage: adult; catalogNumber: 2006005105; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bi. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; verbatimEventDate: 30.x.1990; lifeStage: adult; catalogNumber: 2006005072; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimEventDate: 30.x.1990; lifeStage: adult; catalogNumber: 2006005073; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bk. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; verbatimEventDate: 30.x.1990; lifeStage: adult; catalogNumber: 2006005074; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; verbatimEventDate: 30.x.1990; lifeStage: adult; catalogNumber: 2006005075; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; verbatimEventDate: 30.x.1990; lifeStage: adult; catalogNumber: 2006005076; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West

Maui, Iao Valley; verbatimEventDate: 30.x.1990; lifeStage: adult; catalogNumber: 2006005077; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM

- bo. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; verbatimEventDate: 30.x.1990; lifeStage: adult; catalogNumber: 2006005078; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- bp. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *confusa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: West Maui, Iao Valley; verbatimEventDate: 30.x.1990; individualCount: 4; sex: 1 male, 3 females; lifeStage: adult; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: USNM

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Maui, Hawaii (Fig. 12).

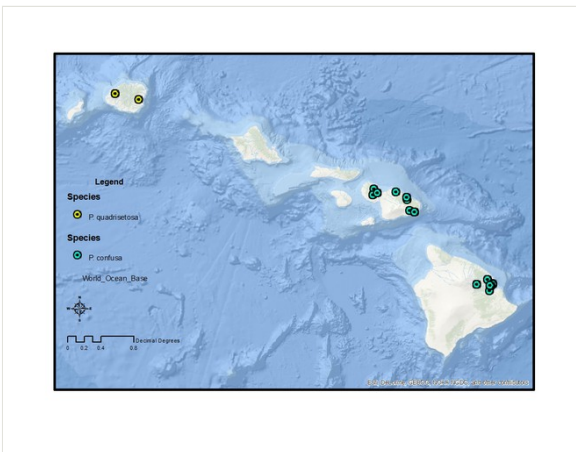


Figure 12.

Distribution of *P. confusa* (Maui, Hawaii) and *P. quadrisetosa* (Kauai).

Notes: Hardy and Delfinado (1980), [original description; female terminalia (dorsal and ventral), spermathecae, ninth sternum, epandrium and surstylus]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist].

Procanace constricta* Hardy and Delfinado, 1980*Materials***Holotype:*

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Valley, collected on wet rocks in swift moving stream; verbatimEventDate: vii.1952; individualCount: 1; sex: male; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Valley, collected on wet rocks in swift moving stream; verbatimEventDate: vii.1952; individualCount: 1; sex: female; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Valley, collected on wet rocks in swift moving stream; verbatimEventDate: vii.1952; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Wailua, Maui; verbatimEventDate: vii.1953; sex: 1 female; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: below Moaulu Falls; verbatimEventDate: 16.iii.1970; sex: 1 female; lifeStage: adult; recordedBy: DE Hardy, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Halawa Valley, waterfalls; verbatimEventDate: 16.iii.1970; sex: 1 female; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kopiliula and Waikane Streams; verbatimEventDate: 9.iv.1970; lifeStage: adult; recordedBy: DE Hardy, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Molokai; verbatimLocality: Wailua

- Stream gauge; verbatimElevation: 605 ft.; verbatimEventDate: 4.vi.1970; lifeStage: adult; recordedBy: J Kjargaard; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waikane Stream; verbatimElevation: 600 ft.; verbatimEventDate: 4.ix.1970; individualCount: 7; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kopiliula Stream, Hana; verbatimElevation: 1200 ft.; verbatimEventDate: 4.ix.1970; individualCount: 7; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kopiliula Stream, Hana; verbatimElevation: 1200 ft.; verbatimEventDate: 4.ix.1970; individualCount: 2; sex: 2 females; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waikane Stream; verbatimElevation: 600 ft.; verbatimEventDate: 4.ix.1970; sex: 1 female; lifeStage: adult; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Wailuku River; verbatimEventDate: 22.vi.1971; lifeStage: adult; recordedBy: MD Delfinado, JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 500 ft.; verbatimEventDate: 23.vi.1971; individualCount: 4; lifeStage: adult; recordedBy: JA Tenorio; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaluanui Valley, at a stream; verbatimElevation: 609 m; verbatimEventDate: 14.v.1946; sex: 1 female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: PM O'Grady; dateIdentified: 22 Jan 2016; institutionCode: USNM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Seven Sacred Pools; verbatimEventDate: 3.viii.1970; individualCount: 2; lifeStage: adult; recordedBy: MD Delfinado; institutionCode: UHM

- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kopiliula Stream, Hana; verbatimElevation: 1200 ft.; verbatimEventDate: 4.ix.1970; individualCount: 26; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waikane Stream; minimumElevationInMeters: 600; verbatimEventDate: 04.ix.1970; lifeStage: adult; catalogNumber: 2006005120; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; institutionCode: BPBM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waikane Stream; minimumElevationInMeters: 600; verbatimEventDate: 04.ix.1970; lifeStage: adult; catalogNumber: 2006005121; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; institutionCode: BPBM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waikane Stream; minimumElevationInMeters: 600; verbatimEventDate: 04.ix.1970; lifeStage: adult; catalogNumber: 2006005122; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; institutionCode: BPBM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Waikane Stream; minimumElevationInMeters: 600; verbatimEventDate: 04.ix.1970; lifeStage: adult; catalogNumber: 2006005123; recordedBy: DE Hardy; identifiedBy: DE Hardy & MD Delfinado; institutionCode: BPBM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kipahulu Valley; verbatimElevation: 500 ft.; verbatimEventDate: 2.x.1970; individualCount: 5; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Kinihapai Stream, Iao Valley; verbatimElevation: 500 ft.; verbatimEventDate: 2.x.1970; individualCount: 2; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Waipio Valley, Near base of He'eilawe Falls at dammed reservoir; verbatimEventDate: 2.viii.2010; individualCount: 4; sex: females; lifeStage: adult; recordedBy: BS Ort; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *constricta*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Kohala Mountains, sweeping in stream where bridge crosses road, 0.5 miles before end; verbatimEventDate: 4.viii.2010; lifeStage: adult; recordedBy: PM O'Grady, RT Lapoint, B

Ort, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205268

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Oahu, Molokai, Maui, Hawaii (Fig. 13).

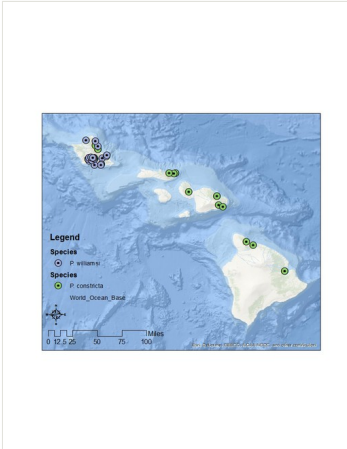


Figure 13.

Distribution of *P. constricta* (Molokai, Maui, Hawaii) and *P. williamsi* (Oahu).

Notes: Hardy and Delfinado (1980), [original description; female terminalia (dorsal and ventral), spermathecae, ninth sternum, epandrium and surstylus]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist].

Procane nigroviridis Cresson, 1926

Materials

Holotype:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procane*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Awaawapuhi; verbatimEventDate: 16.vi.1922; individualCount: 1; sex: male; lifeStage: adult; recordedBy: EH Bryan; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procane*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Awaawapuhi; verbatimEventDate: 16.vi.1922; lifeStage: adult; catalogNumber: 2006005125; recordedBy: EH Bryan, Jr.; identifiedBy: DE Hardy; dateIdentified: 1980; institutionCode: BPBM

- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kalalau Valley; verbatimEventDate: viii.1953; individualCount: 101; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kalalau; verbatimElevation: 2.5 miles upstream on rocks; verbatimEventDate: 22.iii.1970; individualCount: 1; lifeStage: adult; recordedBy: J Kjargaard; institutionCode: UHM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Waipoo Falls; verbatimEventDate: 2.iv.1970; individualCount: 1; lifeStage: adult; recordedBy: L Uyenishi; institutionCode: UHM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kalalau; verbatimElevation: 3/4 mile upstream on rocks; verbatimEventDate: 4.iv.1970; individualCount: 5; lifeStage: adult; recordedBy: J Kjargaard; institutionCode: UHM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Top of Wailua Falls; verbatimEventDate: 4.iv.1970; individualCount: 1; lifeStage: adult; recordedBy: MD Delfinado; institutionCode: UHM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Wailua Falls; verbatimEventDate: 4.iv.1970; individualCount: 13; lifeStage: adult; recordedBy: MD Delfinado; institutionCode: UHM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kalalau; verbatimElevation: 3/4 mile upstream on rocks; verbatimEventDate: 4.iv.1970; individualCount: 5; sex: 1 male, 4 females; lifeStage: adult; recordedBy: J Kjargaard; institutionCode: USNM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005163; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005156; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926;

- islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005157; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005158; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005159; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005160; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005162; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005153; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005164; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005165; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990;

- lifeStage: adult; catalogNumber: 2006005161; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005155; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006005154; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Kokee Stream near Canyon Trail; verbatimEventDate: 10.i.2010; lifeStage: adult; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, B Ort, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205648
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Stream #1, Trail along North Coast; verbatimEventDate: 11.i.2010; lifeStage: adult; recordedBy: PM O'Grady, BS Ort, RT Lapoint, GM Bennett; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205647
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *nigroviridis*; scientificNameAuthorship: Cresson, 1926; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Hanapakai Stream; verbatimEventDate: 11.i.2010; lifeStage: adult; recordedBy: PM O'Grady, BS Ort, RT Lapoint, GM Bennett; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205650

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Kauai (Fig. 10).

Notes: Cresson (1926), [original description]; Wirth (1951), [family revision; male genitalia (ventral and lateral), female genitalia (lateral)]; Hardy and Delfinado (1980), [redescription and revision of Hawaiian taxa; head (front and lateral), female terminalia (dorsal and ventral), spermathecae, wing, surstylus; cephalopharyngael skeleton (larval and pupal, puparium, third instar larvae)]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist].

Procanace quadrisetosa* Hardy and Delfinado, 1980*Materials***Holotype:*

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *quadrisetosa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Waipoo Falls, Waimea Canyon, Kokee, on wet rocks; verbatimEventDate: 2.iv.1970; individualCount: 1; sex: female; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *quadrisetosa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Waipoo Falls, Waimea Canyon, Kokee, on wet rocks; verbatimEventDate: 2.iv.1970; individualCount: 1; sex: female; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *quadrisetosa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Wailua Falls; verbatimEventDate: 4.iv.1970; individualCount: 2; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *quadrisetosa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Wailua Falls, on wet rocks; verbatimEventDate: 4.iv.1970; individualCount: 1; sex: female; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM

Other material:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *quadrisetosa*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; verbatimLocality: Kokee Stream near Canyon Trail; verbatimEventDate: 10.i.2010; lifeStage: adult; recordedBy: PM O'Grady, RT Lapoint, GM Bennett, B Ort, NA Pantoja; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 588.8

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Kauai (Fig. 12).

Notes: Hardy and Delfinado (1980), [original description; head (front and lateral), female terminalia (dorsal and ventral), spermathecae, wing, surstylus; cephalopharyngeal skeleton (larval and pupal, puparium, third instar larvae]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist].

Procanace williamsi* Wirth, 1951*Materials***Holotype:*

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalihi, light trap near shore; verbatimEventDate: 11.v.1946; individualCount: 1; sex: male; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; verbatimLocality: from plane; verbatimEventDate: 8.xi.1944; individualCount: 1; sex: female; lifeStage: adult; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; verbatimLocality: from plane; verbatimEventDate: 8.xi.1944; individualCount: 1; sex: male; lifeStage: adult; catalogNumber: 59965; recordedBy: WW Wirth; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikiki; verbatimEventDate: 16.iv.1950; individualCount: 5; lifeStage: adult; recordedBy: MS Adachi; institutionCode: UHM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikiki; verbatimEventDate: 16.iv.1950; individualCount: 2; sex: 2 males; lifeStage: adult; recordedBy: MS Adachi; institutionCode: USNM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikiki; verbatimEventDate: i.1952; individualCount: 13; lifeStage: adult; recordedBy: MS Adachi; institutionCode: UHM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Ala Wai Canal; verbatimEventDate: vi.1952; individualCount: 22; lifeStage: adult; recordedBy: MS Adachi; institutionCode: UHM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Shikoku; verbatimLocality: Ehime Prefecture, Matsuyama; verbatimEventDate: 4.x.1961; individualCount: 2; sex: female; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU

- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Kyushu; verbatimLocality: Kagoshima Prefecture, Ibusuki; verbatimEventDate: 17.x.1961; individualCount: 4; sex: male; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Kyushu; verbatimLocality: Kagoshima Prefecture, Ibusuki; verbatimEventDate: 17.x.1961; individualCount: 3; sex: female; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Ewa; verbatimElevation: light trap; verbatimEventDate: xi.1962; individualCount: 1; lifeStage: adult; recordedBy: JW Beardsley; institutionCode: UHM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Shikoku; verbatimLocality: Ehime Prefecture, Nagahama; verbatimEventDate: 8.ix.1962; individualCount: 5; sex: female; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Shikoku; verbatimLocality: Ehime Prefecture, Nagahama; verbatimEventDate: 8.ix.1962; individualCount: 6; sex: male; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Shikoku; verbatimLocality: Ehime Prefecture, Uwajima; verbatimEventDate: 9.ix.1962; individualCount: 20; sex: female; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Shikoku; verbatimLocality: Ehime Prefecture, Uwajima; verbatimEventDate: 9.ix.1962; individualCount: 20; sex: male; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Honshu; verbatimLocality: Sizuoka Prefecture, Izu; verbatimEventDate: 20.vii.1963; individualCount: 10; sex: female; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Honshu; verbatimLocality: Sizuoka Prefecture, Izu; verbatimEventDate: 20.vii.1963; individualCount: 5; sex: male; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Honshu; verbatimLocality: Sizuoka Prefecture, Omaezaki; verbatimEventDate: 22.vii.1963; individualCount: 10; sex: female; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU

- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Honshu; verbatimLocality: Sizuoka Prefecture, Omaezaki; verbatimEventDate: 22.vii.1963; individualCount: 5; sex: male; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Kyushu; verbatimLocality: Tsushima; verbatimEventDate: 6.viii.1963; individualCount: 7; sex: female; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Kyushu; verbatimLocality: Tsushima; verbatimEventDate: 6.viii.1963; individualCount: 12; sex: male; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Kyushu; verbatimLocality: Yakushima; verbatimEventDate: 13.viii.1963; individualCount: 20; sex: female; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Japan; island: Kyushu; verbatimLocality: Yakushima; verbatimEventDate: 13.viii.1963; individualCount: 13; sex: male; lifeStage: adult; recordedBy: I Miyagi; institutionCode: EIHU
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe Fire Station; verbatimEventDate: 28.iii.1966; individualCount: 3; lifeStage: adult; recordedBy: no collector given; institutionCode: UHM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu, brackish pond on coral Ala Moana; eventDate: 25.ix.1996; verbatimEventDate: 25.iv.1966; individualCount: 4; sex: 2 males, 2 females; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: W Mathis; institutionCode: USNM
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu, brackish pond on coral Ala Moana; eventDate: 8.i.1996; verbatimEventDate: 25.iv.1966; individualCount: 4; sex: 4 females; lifeStage: adult; recordedBy: JR Vockeroth; identifiedBy: W Mathis; institutionCode: USNM
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Ala Wai Canal; verbatimEventDate: 22.v.1970; individualCount: 33; lifeStage: adult; recordedBy: JA Tenorio, MD Dedlinado; institutionCode: UHM
- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kahana Stream Estuary;

- verbatimEventDate: 26.v.1970; individualCount: 45; lifeStage: adult; recordedBy: SL Montgomery; institutionCode: UHM
- z. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Laiemaloo Bridge, Laie; verbatimEventDate: 26.v.1970; individualCount: 39; lifeStage: adult; recordedBy: L Teremoto, L Uyenishi; institutionCode: UHM
- aa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waimea Bay, under bridge; verbatimEventDate: 26.v.1970; individualCount: 1; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- ab. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Oneawa Canal, Kailua; verbatimEventDate: 31.v.1970; individualCount: 53; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: UHM
- ac. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli Stream, near pipeline bridge; verbatimEventDate: 19.xi.1997; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000695; recordedBy: DJ Preston; identifiedBy: K Arakaki; institutionCode: BPBM
- ad. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli Stream, near pipeline bridge; verbatimEventDate: 19.xi.1997; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000693; recordedBy: DJ Preston, R Englund, R Wolfe; identifiedBy: K Arakaki; institutionCode: BPBM
- ae. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli Stream, near pipeline bridge; verbatimEventDate: 19.xi.1997; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000694; recordedBy: DJ Preston, R Englund, R Wolfe; identifiedBy: K Arakaki; institutionCode: BPBM
- af. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli Stream, near pipeline bridge; verbatimEventDate: 19.xi.1997; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000548; recordedBy: DJ Preston, R Englund, R Wolfe; identifiedBy: K Arakaki; institutionCode: BPBM
- ag. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Halawa Stream, at Salt Lake Blvd.; verbatimEventDate: 08.xii.1997; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000708; recordedBy: DJ Preston; identifiedBy: K Arakaki; institutionCode: BPBM
- ah. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains,

- Halawa Stream, South of Salt Lake Blvd Bridge; minimumElevationInMeters: 0; maximumElevationInMeters: 16; verbatimEventDate: 23.iii.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000709; recordedBy: DJ Preston, R Englund, R Wolfe; identifiedBy: K Arakaki; institutionCode: BPBM
- ai. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000760; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
- aj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000761; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
- ak. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000764; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
- al. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000763; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
- am. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000765; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
- an. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000766; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
- ao. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000767; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
- ap. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks:

- Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000769; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
 aq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000768; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
 ar. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000762; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
 as. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000770; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
 at. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000773; recordedBy: GA Samuelson; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
 au. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000772; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
 av. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Middle Loch, near Waiawa Springs along shore; verbatimEventDate: 06.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000771; recordedBy: K Arakaki; identifiedBy: K Arakaki; dateIdentified: 1998; institutionCode: BPBM
 aw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Blaisdell Park, shoreline; verbatimEventDate: 28.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008005104; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
 ax. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Blaisdell Park, shoreline; verbatimEventDate: 28.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008005103; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM

- ay. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waimalu Stream, Blaisdell Park; verbatimEventDate: 28.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000716; recordedBy: GA Samuelson; identifiedBy: K Arakaki; institutionCode: BPBM
- az. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waimalu Stream, Blaisdell Park; verbatimEventDate: 28.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000715; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- ba. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Blaisdell Park, shoreline; verbatimEventDate: 28.v.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000714; recordedBy: K Arakaki; identifiedBy: K Arakaki; institutionCode: BPBM
- bb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream, bridge area along stream; minimumElevationInMeters: 0; maximumElevationInMeters: 3; verbatimEventDate: 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000751; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream, bridge area along stream; minimumElevationInMeters: 0; maximumElevationInMeters: 3; verbatimEventDate: 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000752; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream, McDonald's Area; minimumElevationInMeters: 0; verbatimEventDate: 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000755; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- be. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream, McDonald's Area; minimumElevationInMeters: 0; verbatimEventDate: 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000759; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bf. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream, McDonald's Area; minimumElevationInMeters: 0; verbatimEventDate:

- 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000756; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream, McDonald's Area; minimumElevationInMeters: 0; verbatimEventDate: 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000758; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream (lower), under bridge; minimumElevationInMeters: 0; verbatimEventDate: 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000753; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bi. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream (upper); minimumElevationInMeters: 0; verbatimEventDate: 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000754; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Koolau Mountains, Halawa Stream, McDonald's Area; minimumElevationInMeters: 0; verbatimEventDate: 02.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000757; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bk. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Waiawa Springs, stream bank; minimumElevationInMeters: 0; verbatimEventDate: 03.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000717; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Waiawa Springs, stream bank; minimumElevationInMeters: 0; verbatimEventDate: 03.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000718; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Waiawa Springs, stream bank; minimumElevationInMeters: 0; verbatimEventDate: 03.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000719;

- recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Waiawa Springs, stream bank; minimumElevationInMeters: 0; verbatimEventDate: 03.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000720; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bo. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikele Stream, near Cultural Garden; verbatimEventDate: 09.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000706; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bp. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikele Stream, near Cultural Garden; verbatimEventDate: 09.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000704; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikele Stream, near Cultural Garden; verbatimEventDate: 09.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000703; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- br. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikele Stream, near Cultural Garden; verbatimEventDate: 09.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000707; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bs. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waikele Stream, near Cultural Garden; verbatimEventDate: 09.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000705; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bt. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000635; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bu. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks:

- Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000636; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bv. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000637; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000638; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bx. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000639; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- by. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000642; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- bz. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000666; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ca. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000659; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000660; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000661; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM

- cd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000662; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ce. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000663; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cf. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000640; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000656; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ch. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000665; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ci. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000667; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000668; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ck. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000669; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951;

- islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000670; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000671; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000672; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- co. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000664; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cp. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000650; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000643; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cr. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000644; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cs. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000645; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ct. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks:

- Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000646; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cu. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000647; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cv. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000658; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000649; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cx. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000657; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- cy. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000651; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- Procanace; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000652; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM

da. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000653; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM

db. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000654; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM

- dc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000655; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000641; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- de. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000648; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- df. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000675; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000673; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, rocky mud flats; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000692; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- di. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000676; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000683; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dk. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951;

- islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, rocky mud flats; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000689; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000677; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000679; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000678; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- do. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000680; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dp. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, rocky mud flats; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000691; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000682; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dr. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000684; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ds. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, pong along golf course, opposite pier; minimumElevationInMeters: 0; verbatimEventDate:

- 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000685; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dt. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, rocky mud flats; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000690; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- du. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, rocky mud flats; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000686; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dv. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, rocky mud flats; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000688; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dw. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000681; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dx. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli edge of mangrove; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000687; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dy. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, Honouliuli, shore; minimumElevationInMeters: 0; verbatimEventDate: 17.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000674; recordedBy: GA Samuelson, K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- dz. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, E'o Stream, waterline, near bridge foundation; verbatimEventDate: 19.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000699; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ea. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, E'o Stream, waterline, near bridge foundation; verbatimEventDate: 19.vi.1998; eventRemarks: Pearl

- Harbor Survey; lifeStage: adult; catalogNumber: 2008000698; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- eb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: E'o Stream, in canal; verbatimEventDate: 19.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000700; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ec. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, E'o Stream, waterline, near bridge foundation; verbatimEventDate: 19.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000696; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ed. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Pearl Harbor, E'o Stream, waterline, near bridge foundation; verbatimEventDate: 19.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000697; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ee. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, rocky shoreline; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000748; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ef. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Stream; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; sex: female; lifeStage: adult; catalogNumber: 2008000744; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- eg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, rocky shoreline; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000745; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- eh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, rocky shoreline; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000747; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ei. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, rocky shoreline; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000749; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM

- ej. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, rocky shoreline; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000750; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ek. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Aiea Bay, rocky shoreline; verbatimEventDate: 24.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000746; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- el. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000741; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- em. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, stream from watercress farm; minimumElevationInMeters: 0; maximumElevationInMeters: 3; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000742; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- en. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000738; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- eo. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, stream from watercress farm; minimumElevationInMeters: 0; maximumElevationInMeters: 3; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000743; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ep. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000740; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- eq. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000732; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM

- er. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000725; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- es. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000726; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- et. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000727; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- eu. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000728; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ev. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000729; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ew. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000731; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ex. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000722; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ey. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000734; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ez. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951;

- islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000733; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000735; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fb. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000736; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fc. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000737; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fd. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000730; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fe. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000724; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- ff. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000723; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fg. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000721; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fh. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalauao Ponds, Ewa Stream; minimumElevationInMeters: 0; verbatimEventDate: 29.vi.1998; eventRemarks:

- Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000739; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fi. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000710; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fj. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000711; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fk. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000712; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fl. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waiiau Hawaiian Electric Power Plant, at ewa end; minimumElevationInMeters: 0; verbatimEventDate: 30.vi.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000713; recordedBy: K Arakaki, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fm. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: E'o Canal, Ted Makalena Golf Course, at shore line; verbatimEventDate: 27.vii.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000701; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM
- fn. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *williamsi*; scientificNameAuthorship: Wirth, 1951; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: E'o Canal, Ted Makalena Golf Course, at shore line; verbatimEventDate: 27.vii.1998; eventRemarks: Pearl Harbor Survey; lifeStage: adult; catalogNumber: 2008000702; recordedBy: K Arakaki, GA Samuelson, K Kami; identifiedBy: K Arakaki; institutionCode: BPBM

Native status: adventive

Distribution: HAWAIIAN ISLANDS: Oahu (Fig. 13); JAPAN.

Notes: Wirth (1951), [original description; male genitalia (ventral and lateral)]; Hardy and Delfinado (1980), [redescription and revision of Hawaiian taxa; head (front and lateral), female terminalia (dorsal and ventral), spermathecae, wing, surstylus; cephalopharyngael skeleton (larval and pupal, puparium, third instar larvae)]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist].

Procanace wirthi* Hardy and Delfinado, 1980*Materials*****Holotype:***

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Maunawili Stream, on wet rocks; verbatimElevation: 800 ft.; verbatimEventDate: 15.iv.1970; individualCount: 1; sex: male; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM

Paratypes:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Hering Valley, Tantalus, wet rocks near waterfall; verbatimEventDate: 30.vii.1933; lifeStage: adult; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu, Hering Valley, Tantalus; verbatimEventDate: 30.vii.1933; lifeStage: adult; catalogNumber: 2006005169; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Konahuinui, on stream rocks; verbatimEventDate: 12.v.1935; lifeStage: adult; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Konahuanui; verbatimEventDate: 12.v.1935; lifeStage: adult; catalogNumber: 2006005167; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waihi-iki, Manoa Valley; verbatimEventDate: 22.iii.1936; lifeStage: adult; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Manoa Valley, Waihi-iki; verbatimEventDate: 22.iii.1936; sex: female; lifeStage: adult; catalogNumber: 2006005166; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Manoa Valley, Waihi-iki; verbatimEventDate: 22.iii.1936; sex: female; lifeStage: adult; catalogNumber:

- 2006005171; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae; verbatimEventDate: 19.iv.1936; lifeStage: adult; catalogNumber: 2006005176; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae, swift water stone ditch; verbatimEventDate: vii.1936; lifeStage: adult; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae; verbatimEventDate: 19.vii.1936; lifeStage: adult; catalogNumber: 2006005168; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waianae; verbatimEventDate: 19.vii.1936; lifeStage: adult; catalogNumber: 2006005175; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaluanui Stream; verbatimElevation: 2000 ft.; verbatimEventDate: 18.x.1936; lifeStage: adult; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaluanui Stream; minimumElevationInMeters: 2000; verbatimEventDate: 18.x.1936; individualCount: 2; lifeStage: adult; catalogNumber: 2006005170; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaluanui Stream; minimumElevationInMeters: 2000; verbatimEventDate: 18.x.1936; sex: male; lifeStage: adult; catalogNumber: 2006005174; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Honolulu Kalihi Stream; verbatimEventDate: 13.iii.1937; lifeStage: adult; catalogNumber: 2006005172; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado,

- 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Punaluu Stream; verbatimEventDate: 28.xi.1937; lifeStage: adult; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Punaluu; minimumElevationInMeters: 800; verbatimEventDate: 28.xi.1937; sex: male; lifeStage: adult; catalogNumber: 2006005173; recordedBy: FX Williams; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kalihi Stream, wet boulder; verbatimEventDate: 13.iii.1957; lifeStage: adult; recordedBy: FX Williams, D Ashdow; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Punaluu Stream; verbatimEventDate: 12.vi.1968; lifeStage: adult; recordedBy: FX Williams, D Ashdown; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Maunawili Stream; verbatimElevation: 800 ft., on rocks; verbatimEventDate: 15.iv.1970; individualCount: 12; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: UHM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Maunawili Stream; minimumElevationInMeters: 800; verbatimEventDate: 15.iv.1970; lifeStage: adult; catalogNumber: 2006005178; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Maunawili Stream, on wet rocks; verbatimElevation: 800 ft.; verbatimEventDate: 15.iv.1970; individualCount: 1; sex: female; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- w. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Maunawili Stream, on wet rocks; verbatimElevation: 800 ft.; verbatimEventDate: 15.iv.1970; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980
- x. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Maunawili Stream; minimumElevationInMeters: 800; verbatimEventDate: 15.iv.1970; lifeStage: adult; catalogNumber: 2006005177; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: BPBM
- y. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado,

- 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Maunawili Stream; verbatimElevation: 800 ft., on rocks; verbatimEventDate: 15.iv.1970; individualCount: 3; sex: 2 males, 1 female; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- z. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaluanui Stream, on wet rocks; minimumElevationInMeters: 800; verbatimEventDate: 22.iv.1970; sex: 1 female; lifeStage: adult; recordedBy: MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980; institutionCode: USNM
- aa. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Hanakapiai River; verbatimElevation: sea level to 600 ft.; verbatimEventDate: 10.viii.1971; lifeStage: adult; recordedBy: DE Hardy, MD Delfinado; identifiedBy: DE Hardy & MD Delfinado; dateIdentified: 1980

Other materials:

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kahana Stream; verbatimElevation: 180 ft.; verbatimEventDate: 27.viii.1970; individualCount: 4; sex: 4 males; lifeStage: adult; recordedBy: DE Hardy; institutionCode: USNM
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kahana Valley; verbatimElevation: 600 ft.; verbatimEventDate: 17.ix.1970; individualCount: 5; lifeStage: adult; recordedBy: DE Hardy; institutionCode: UHM
- c. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kahana Stream, slow flowing stream; verbatimElevation: 800 ft.; verbatimEventDate: 17.ix.1970; individualCount: 3; sex: 2 males, 1 female; lifeStage: adult; recordedBy: JA Tenorio; institutionCode: USNM
- d. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Maui; verbatimLocality: Iao Valley, West Maui; verbatimEventDate: 30.x.1990; individualCount: 2; sex: 1 male, 1 female; lifeStage: adult; recordedBy: DA Polhemus; institutionCode: USNM
- e. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006008034; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- f. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; verbatimElevation: 240; verbatimEventDate: 08.xi.1990;

- individualCount: 7; sex: 4 males, 3 females; lifeStage: adult; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: USNM
- g. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006008033; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- h. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Makaleha Stream, at Makaleha Springs; minimumElevationInMeters: 787; verbatimEventDate: 08.xi.1990; lifeStage: adult; catalogNumber: 2006008035; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- i. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006008026; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- j. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006008028; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- k. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006008029; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- l. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006008030; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- m. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006008031; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- n. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006008032; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM

- o. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006008027; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- p. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006005179; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- q. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006005180; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- r. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006005181; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- s. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006005182; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- t. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Waihee Stream, near Kaneohe; verbatimElevation: 215; verbatimEventDate: 22.xi.1991; individualCount: 8; sex: 5 males, 3 females; lifeStage: adult; recordedBy: DA Polhemus; institutionCode: USNM
- u. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006005184; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM
- v. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: *wirthi*; scientificNameAuthorship: Hardy & Delfinado, 1980; islandGroup: Hawaiian Islands; island: Oahu; verbatimLocality: Kaneohe, near Waihee Stream; minimumElevationInMeters: 705; verbatimEventDate: 22.xi.1991; lifeStage: adult; catalogNumber: 2006005183; recordedBy: DA Polhemus; identifiedBy: WN Mathis; dateIdentified: 1992; institutionCode: BPBM

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Kauai, Oahu (Fig. 14).

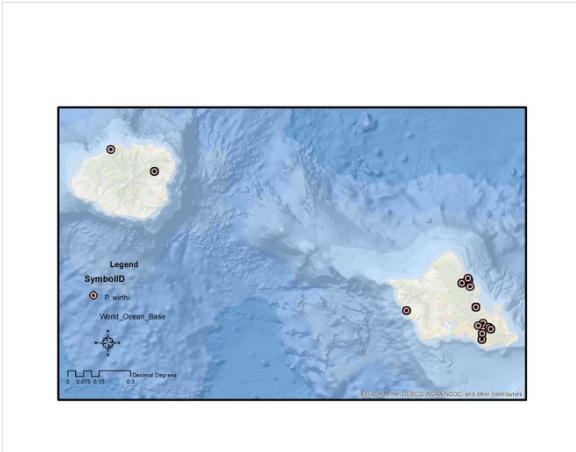


Figure 14.

Distribution of *P. wirthi* (Oahu and Kauai)

Notes: Hardy and Delfinado (1980), [redescription and revision of Hawaiian taxa; head (front and lateral), female terminalia (dorsal and ventral), spermathecae, wing, surstylus; cephalopharyngeal skeleton (larval and pupal, puparium, third instar larvae]; Mathis (1992), [World Catalog]; Nishida (2002), [Hawaiian Arthropod Checklist].

Procanace unnamed species

Materials

- a. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: unnamed species; islandGroup: Hawaiian Islands; island: Hawaii; verbatimLocality: Wailuku River; verbatimElevation: 50 ft.; verbatimEventDate: 23.vi.1971; lifeStage: adult; recordedBy: JA Tenorio
- b. kingdom: Animalia; phylum: Arthropoda; class: Insecta; order: Diptera; family: Canacidae; genus: *Procanace*; specificEpithet: unnamed species; islandGroup: Hawaiian Islands; island: Kauai; verbatimLocality: Hanapakai Stream; verbatimEventDate: 11.i.2010; lifeStage: adult; recordedBy: PM O'Grady, BS Ort, RT Lapoint, GM Bennett; identifiedBy: PM O'Grady; dateIdentified: 2014; institutionCode: EMEC; collectionCode: 205649

Native status: endemic

Distribution: HAWAIIAN ISLANDS: Hawaii

Identification keys

Revised Key to the Hawaiian Species of Canacidae

This key relies heavily on the couplets in the Hardy and Delfinado (1980) keys to the Tethinidae and the Canacidae. It has been modified to accommodate the inclusion of Tethinidae in the Canacidae and to add the new species *Procanace hardyi*. The first couplet separates Canacidae and Ephydriidae. While these families aren't close phylogenetically, they are commonly collected in the same habitats in Hawaii and do look quite similar.

| | | |
|---|---|---|
| 1 | C broken once at terminus of Sc (Fig. 15); lower portion of face not bulging (Fig. 16). | Canacidae, 2 |
| – | C broken twice, with both humeral and subcostal breaks (Fig. 22); lower portion of face typically large, extending over oral cavity (Fig. 21). | Ephydriidae |
| 2 | Single pair of fronto-orbital setae present; frons with only a few scattered setae; gena covered with short setae; oral vibrissae weak; only two incomplete rows of acrostichael setulae; cell M joined with 2nd cell M2. | Pelomyiinae, <i>Pelomyia occidentalis</i> Williston, 1893 |
| – | Three to five fronto-orbital setae present; other characters not in the combination above. | 3 |
| 3 | Genal setae lacking. | Tethininae, refer to Munari & Evenhuis (2011) |
| – | Genal setae present. | Canacinae, 4 |
| 4 | One pair of strong setae present on front, just anterior and lateral to the ocellar triangle (Fig. 16); mesofrons lacking setae; 4 pairs of strong setae present on genae (Fig. 16); scutellum with 2-4 strong setae on disc (Fig. 17). | <i>Canaceoides</i> , 5 |
| – | No strong setae on front; at least a few setulae on mesofrons; 3 (or fewer) pairs of genal setae; scutellum lacking strong setae on disc (Fig. 20). | <i>Procanace</i> , 6 |
| 5 | Femur irregularly setose, with setae present on all posterior surfaces (Fig. 18). Hawaiian Islands, Ecuador, Mexico, Peru. | <i>Canaceoides angulatus</i> Wirth |
| – | Femur with setae on two distinct rows on posterior and posterodorsal surfaces; no setae on posteroventral surface (Fig. 19). Hawaiian Islands. | <i>Canaceoides hawaiiensis</i> Wirth |

| | | |
|----|--|--|
| 6 | Predominately dull black, including squamae and halteres, often with brownish pollinosity on mesonotum and scutellum and greenish sheen over front and face; clypeus very large, nearly as long as face; mesofrons with only a few setae on lower portion; actostichal setulae absent; wings dark, smoky gray; usually two strong genal setae. Hawaiian Islands. | <i>nigroviridis</i> complex, 7 |
| – | Mostly lighy-gray pollinose, with squamae and halteres yellow; clypeus small, less than ½ length of face; front with numerous setulae over lower ½ - 2/3; acrostichals well developed; 3 strong genal setae. Oahu, Japan. | <i>Procanace williamsi</i> Wirth |
| 7 | Males. | 8 |
| – | Females. | 14 |
| 8 | Surstylus bifurcate, each lobe roughly equal in size; lacking a small basal lobe on outer margin. | 9 |
| – | Surstylus not divided, with small basal lobe arising from outer ventral margin. | 10 |
| 9 | Outer lobe of surstylus straight, broad (not tapered and blunt), rounded at apex. Kauai, Oahu, Molokai, Maui. | <i>Procanace bifurcata</i> Hardy & Delfinado |
| – | Outer lobe curved upward, tapered at apex, with apical portion thinner, more translucent than remainder of lobe. Hawaii, Maui. | <i>Procanace confusa</i> Hardy & Delfinado |
| 10 | Surstylus slender, boomerang shaped. Kauai, Oahu. | <i>Procanace wirthi</i> Hardy & Delfinado |
| – | Surstylus not as above. | 11 |
| 11 | Surstylus comparatively slender, 3-4x longer than wide. Hawaii, Maui, Molokai. | <i>Procanace acuminata</i> Hardy & Delfinado |
| – | Surstylus shorter and broader, ½ longer than wide | 12 |
| 12 | Hypandrium forming a complete ring beneath apices of stustyli; front and face usually with a coppery green sheen; mesonotum and scutellum chocolate-brown pollinose with a faint green sheen. Kauai. | <i>Procanace nigroviridis</i> Cresson |
| – | Hypandrium developed into two upcurved arms on venter; coloration not as above. | 13 |

| | | |
|----|--|---|
| 13 | Oahu, Molokai, Maui, Hawaii. | <i>Procanace constricta</i> Hardy & Delfinado |
| – | Kauai | <i>Procanace hardyi</i> sp. nov |
| 14 | Second tergum greatly elongated, tergites 1+2 longer than remainder of abdomen. Hawaii, Maui, Molokai. | <i>Procanace acuminata</i> Hardy & Delfinado |
| – | Second tergum equal in size of other tergites (or only slightly longer than tergites 1 and 3 in <i>P. wirthi</i>). | 15 |
| 15 | Abdomen constricted medially. | 16 |
| – | Abdomen not constricted medially. | 17 |
| 16 | Lateral margins of tergite 8 do not extend beyond the apex of the ovipositor; thickened setae on ovipositor long, distinct (Fig. 5). Kauai. | <i>Procanace hardyi</i> sp. nov. |
| – | Lateral margins of tergite 8 extend beyond the apex of the ovipositor; thickened setae on ovipositor short, indistinct (Fig. 6). Oahu, Molokai, Maui, Hawaii. | <i>Procanace constricta</i> Hardy & Delfinado |
| 17 | Posterior plates of 8th sternum each with 7-8 long setae; 8th tergum with a row long and short setae. | 18 |
| – | Characteristics of 8th sterna and terga not as above. | 19 |
| 18 | Kauai, Oahu, Molokai, Maui. | <i>Procanace bifurcata</i> Hardy & Delfinado |
| – | Maui and Hawaii. | <i>Procanace confusa</i> Hardy & Delfinado |
| 19 | Eighth tergum comparatively narrow, with four long setae on hind margin. Kauai. | <i>Procanace quadrisetosa</i> Hardy and Delfinado |
| – | Eighth tergum with numerous setae of varying lengths. | 20 |
| 20 | Cerci short and broad, as wide as long; eighth tergum cordate, as long as wide; ninth sternum nearly divided in middle of anterior margin; seventh sternum large, at least two times longer than atrial sclerotization and convex. Oahu and Kauai. | <i>Procanace wirthi</i> Hardy & Delfinado |
| – | Cerci longer than wide; eighth tergum about two times wider than long; ninth sternum entire, not concave on anterior margin; seventh sternum scarcely longer than atrial sclerotization and concave on posterior margin. Kauai. | <i>Procanace nigroviridis</i> Hardy & Delfinado |



Figure 15.

Wing of *Canaceoides hawaiiensis*, showing a single break at the terminus of the subcostal vein. The specimen imaged was from collection 205542.

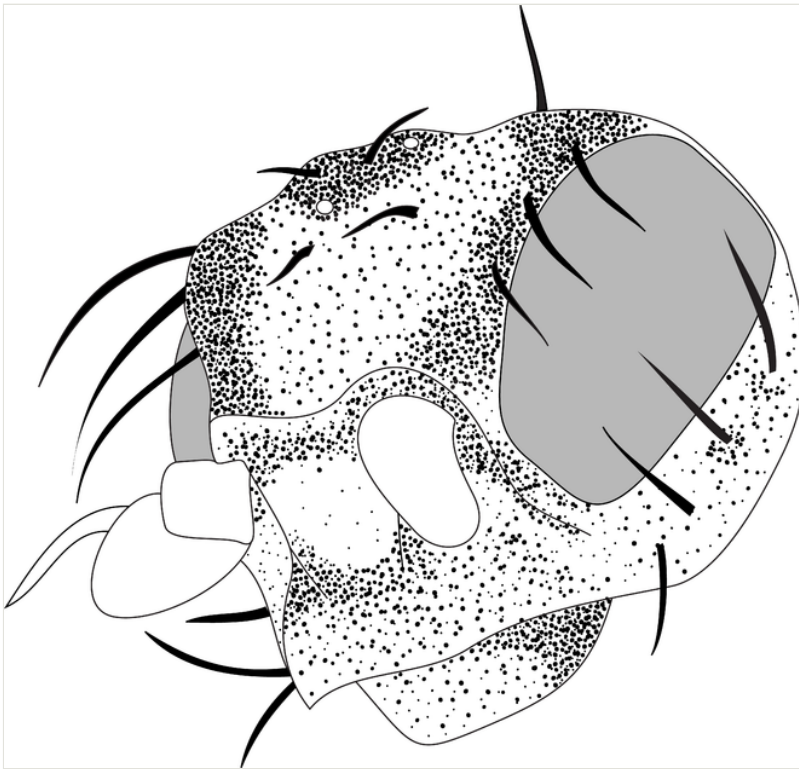


Figure 16.

Face of *Canaceoides hawaiiensis*, showing the widely separated antennal bases and swollen upper portion of the face and enlarged clypeus. The specimen imaged was from collection 205542.

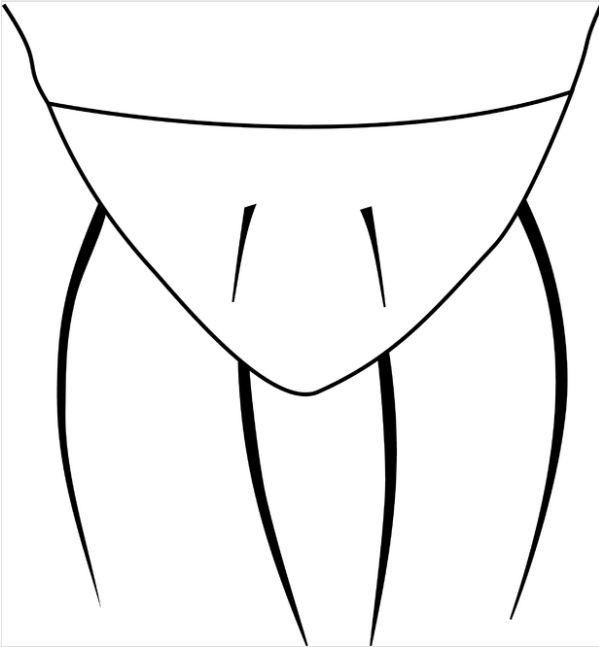


Figure 17.

Dorsal view of posterior thorax of *Canaceoides angulatus* showing extranumerary setae on disc of scutellum. The specimen imaged is from collection 205519.

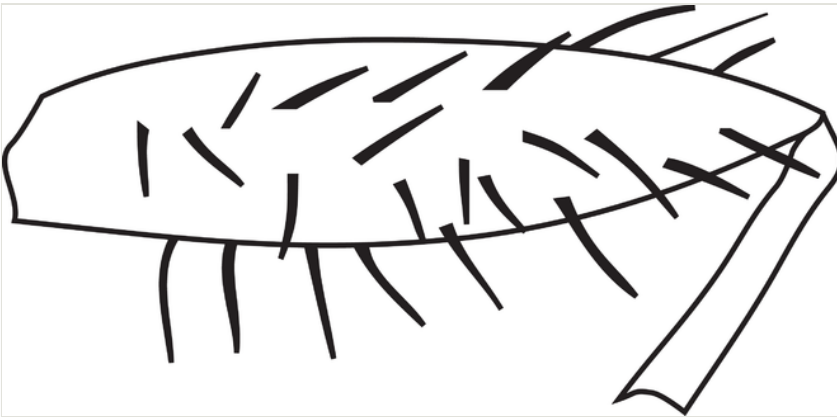


Figure 18.

Leg of *Canaceoides angulatus* showing irregularly placed setae on posterior surface of femur. The specimen imaged is from collection 205519.

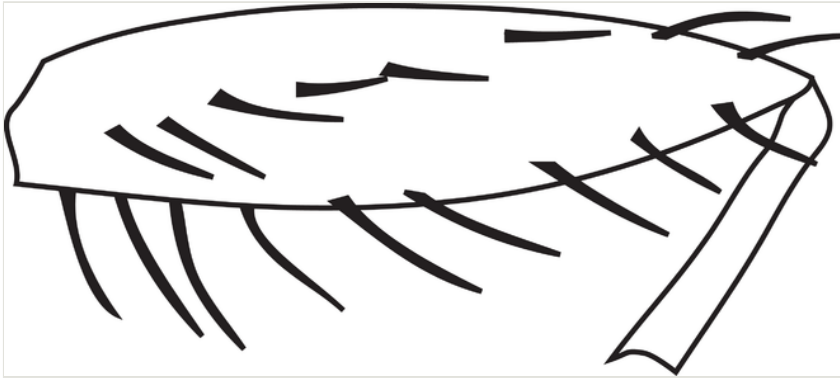


Figure 19.

Leg of *Canaceoides hawaiiensis*, showing two regular rows of setae on posterior surface of femur. The specimen imaged was from collection 205542.

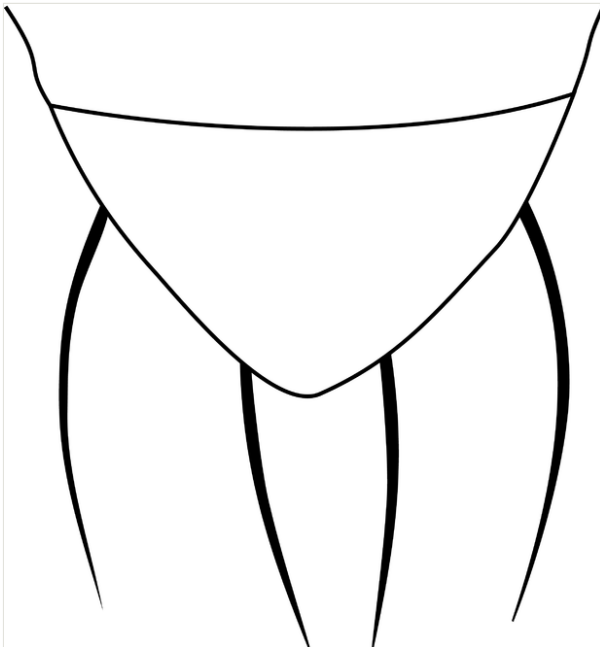


Figure 20.

Dorsal view of posterior thorax of *Procanace constricta* showing the lack of supernumerary setae on disc of scutellum. The specimen imaged is from collection 205268.

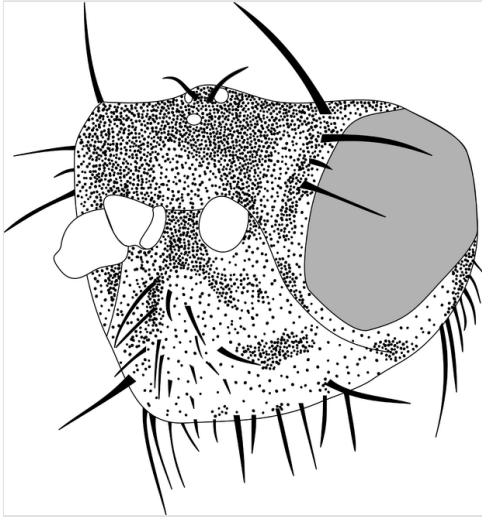


Figure 21.

Head of *Scatella kauaiensis*, showing the large face which extends over the oral cavity. The clypeus is normal in size and does not extend over the mouth. The specimen imaged was from collection 205192.



Figure 22.

Wing of *Scatella kauaiensis*, showing breaks in the costal vein at the insertion points of the humeral crossvein and the subcostal vein. The specimen imaged was from collection 205192.

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