Helminth records for the Madagascan giant day gecko, *Phelsuma grandis* (Gekkonidae) from Hawai‘i

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The Madagascan giant day gecko, *Phelsuma grandis* Gray is native to Madagascar (Henkel & Schmidt, 2000). This species was first collected in Hawai‘i in December 1996 in Mānoa Valley, O‘ahu where it was intentionally established (Kraus, 2002, as “*P. mada-gascariensis*”).

Between 1996 and 2008, 60 *P. grandis* were collected on O‘ahu, (mean snout-vent length, SVL = 87 mm ± 26.7 SD, range = 34–118 mm), fixed in 10% formalin then transferred to 70% ethanol for storage in the herpetology collection of the Bishop Museum (BPBM), Honolulu, Hawai‘i. The following specimens of *P. grandis* were loaned to SRG and examined at Whittier College, Whittier, California: BPBM 13285, 14089, 14092, 14756, 18226, 18227, 20990, 20999, 21000, 21138-21140, 21142, 21143, 21150, 21151, 23521, 23597, 23601-23603, 23917, 23918, 23975, 24106, 24107, 24110, 24112, 24123, 24217, 24710-24712, 24718, 25360, 25589, 27297, 28353-28357, 28361-28364, 28654-28663, 28665-28667, 31551. The gastrointestinal tract and lungs were removed and searched for helminths. Nematodes and pentastomes were placed in glycerol on glass slides, allowed to clear and examined under a light microscope. Voucher helminths were placed in vials of alcohol and deposited in the United States National Parasite Collection (USNPC), Beltsville, Maryland and the Bishop Museum, Honolulu (BPBM). The following species were found and are recorded below as new host records.

**Cestoda: Linstowiidae**

*Oochoristica javaensis* Kennedy, Killick & Beverley-Burton

*Oochoristica javaensis* was originally described from the small intestines of geckos, *Gehyra mutilata*, *Hemidactylus platyurus*, and *H. frenatus* from Java, Indonesia (Kennedy et al., 1982), and there is one report from Hawai‘i (*H. frenatus*; Goldberg & Bursey, 2000a). It is a wide-ranging species currently known only from lizards: a second report in *H. platyurus* from Indonesia (Matsu & Oku, 2002); additional reports in *Gehyra mutilata* from Guam, Indonesia, and the Philippine Islands (Kugi, 1993; Goldberg et al., 1998; Matsu & Oku, 2002; Goldberg et al., 2005); *Gehyra oceanaica* from Guam and Oceania (Goldberg et al., 1998; Goldberg & Bursey, 2002); additional reports in *H. frenatus* from Oceania, Philippines and Thailand (Hanley et al., 1998; Goldberg & Bursey, 2001a, 2002); *Lepidodactylus paurolepis* from the Marshall Islands (Goldberg & Bursey, 2002); *Mabuya carinata* from Bangladesh (Yesmin et al., 2006) and *Sphenomorphus jobiensis* from Papua New Guinea (Bursey et al., 2005). Criscione & Font (2001) reported *O. javaensis* in nonnative *Hemidactylus turcicus* collected in the southern United States and they experimentally infected nonnative *Hemi-

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dactylus garnotii and native Sceloporus undulatus. Prevalence (number infected hosts/number hosts examined): 1/60 (2%); mean intensity (mean number parasites per infected host): 1.0, infection site, small intestine.

Material examined: O'AHU (BPBM F328).

Nematoda: Seuratidae
Skrjabinelazia machidai Hasegawa  New host record
Skrjabinelazia machidai was originally described from the intestine of the gekko, Gekko japonicus from Okinawa Island, Japan by Hasegawa (1984). In Hawai‘i, it was first found in Lepidodactylus lugubris by Goldberg & Bursey (1997) and subsequently reported in L. lugubris and Hemidactylus frenatus by Hanley et al. (1998) and Goldberg & Bursey (2000a). It has also been reported from Australia in the gecko Diplodactylus ciliaris (Goldberg & Bursey, 2001b), as well as Gehyra mutilata, Hemidactylus garnotii, Lepidodactylus moestus from Oceania (Goldberg & Bursey, 2002), and Leptodactylus aureolineatus from the Philippines (Goldberg & Bursey, 2001a). There is one additional report for Hemidactylus frenatus from Guam (Goldberg et al., 1998). Prevalence: 2/60 (3%); mean intensity: 2.0 ± 1.4: range 1–3; infection site, small intestine.

Material examined: O'AHU (BPBM H408; USNPC 101876).

Nematoda: Pharyngodonidae
Spauligodon hemidactylus Bursey & Goldberg  New host record
Spauligodon hemidactylus was originally described from the large intestine of the gecko Hemidactylus frenatus from American Samoa by Bursey & Goldberg (1996), who also reported it from H. frenatus collected in Hawai‘i, Fiji, Guam, Marshall Islands, Palau, Philippines, Samoa, Solomon Islands, Society Islands, Vanuatu, and Thailand. It was also reported in H. frenatus from Hawai‘i by Hanley et al. (1998) and Goldberg & Bursey (2000a). It is currently known only from lizards. Other hosts include Hemidactylus platyurus, Gehyra mutilata, H. garnotii, Hemiphyllodactylus typus and Lepidodactylus lugubris (Goldberg et al., 1998, 2005; Goldberg & Bursey, 2001a, 2002; Matsuo & Oku, 2002). Prevalence: 2/60 (3%); mean intensity: 1.0, infection site large intestine.

Material examined: O'AHU (BPBM H408; USNPC 101877).

Nematoda: Spirocercidae
Physocophalus sp. (larvae)  New host record
Adults of Physocophalus have been found in the stomachs of swine, horses, cattle, and rabbits: infective larvae have been recovered from dung beetles and are found in terrestrial vertebrates which have ingested infected beetles (Anderson, 2000). Larvae of Physocophalus sp. were first reported from Hawai‘i in Hemidactylus frenatus, H garnotii, and Lepidodactylus lugubris by Brown et al. (1995). Hanley et al. (1998) provided a second report for H. frenatus and there is a third report for this host (Goldberg & Bursey 2000a). Other lizards from Hawaii harboring this species include Anolis carolinensis, Gehyra mutilata, and Lampropholis delicata (Goldberg et al., 2004). Prevalence: 21/60 (35%); mean intensity: 12.6 ± 10.8 SD: range 1–32, infection site, stomach wall.

Material examined: O'AHU (BPBM H409; USNPC 101878).
Pentastomida: Cephalobaenidae

*Raillietiella frenatus* Ali, Riley & Self  
**New host record**

*Raillietiella frenatus* was originally described from the lungs of *Hemidactylus frenatus* collected in Malaysia by Ali et al. (1981), who reported it from the same host from the Philippine Islands, South Vietnam, Taiwan, and Thailand. *Raillietiella frenatus* was first reported in *H. frenatus* and *Lepidodactylus lugubris* from Hawai‘i by Brown et al. (1995). Goldberg & Bursey (1997) provided a second report for *L. lugubris*. It was subsequently reported in both hosts by Hanley et al. (1998). Goldberg & Bursey (2000a) provided a third report for *H. frenatus* and a first report for *Anolis sagrei* (Goldberg & Bursey, 2000b). It is known only from lizard hosts, which include *Hemidactylus platyurus*, *Gehyra mutilata*, *Gekko monarhucus*, *Japalura swinhonis*, and *Mabuya longicaudata* from Indonesia and Taiwan (Ali et al., 1981; Matsuo & Oku, 2002). Prevalence: 19/60 (32%); mean intensity: 3.7 ± 3.5 SD; range 1–14, infection site: lung.

**Material examined:** O‘AHU (BPBM H410; USNPC 101879).

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Literature Cited


