

*lystemon*, *microcarpa*, *sandwicensis*, *sykesii* (as hybrid: *sykesii xvariegata*), and *variegata*. All were present and positive for *Specularius* at the NTBG in Lawa'i.

Material examined. **KAUAI**: Various series were taken by A.C. Medeiros and associates from NTBG, Lawa'i, 7 Jan 2003, from seeds of various species of *Erythrina* (many ex.; hosts listed at end); Kekaha Road, 7 Jan 2003, ex *E. sandwicensis*, Medeiros (3 ex); same loc., 300 ft [100 m], 7 Jun 2003, *E. sandwicensis*, Arnold & Baynton (7 ex). All in BPBM. **O'AHU**: Mākaha Valley, S side at 240–360 ft [80–120 m], 1 Sep 2001, ex infested seeds in *wiliwili* groves [*Erythrina sandwicensis*] J. Lau, heavy infestation noted; Nanakuli Valley, 70 m, 10 Nov 2001, host on valley floor, seeds showing many exit holes, some occupied by beetles, Lau (2 ex); Waipahu, Village Park, 300 ft [100 m], collected late 2003 to 5 Jan 2004, ex seeds *Erythrina sandwicensis*, 2003 crop, S.L. Montgomery (51 ex) (BPBM). **MAUI**: Maui (E): Pu'u O Kali, ~800 ft [280 m], 15 Jun 2002, ex *Erythrina sandwicensis* seeds, F. & K. Starr collectors (series in HDOA); same loc., 9 Jul 2003, A.C. Medeiros *et al.* (8 ex, BPBM); Kanaio, 28 Jun 2003, ex seeds, *E. sandwicensis*, Medeiros *et al.* (21 ex, BPBM); Kahului Airport, 24 Aug 2003, ex *Erythrina* seeds, F.G. Howarth, F. & K. Starr (2 ex, + 1 larva, BPBM); Maui (W): Kaonohua Gulch, Alaloa subdivision, 9 Apr 2003, ex seeds on *Erythrina sandwicensis*, H. Oppenheimer (BPBM 5 ex, FSCA 4 ex). **KAHO'OLAWE**: Moaulaiki, 23 Sep 2003, degraded dry forest, ex seeds of *Erythrina sandwicensis* (seeds were observed to have eggs on them; adult emergence from seeds: 28 Sep–4 Oct 2003), M. LeGrande (#1343), F. & K. Starr (>20 ex, BPBM). **HAWAII**: Kona, Kaloko Rd, Jul 2003, *E. sandwicensis*, J. Wagner for Medeiros (8 ex, BPBM).

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### New Arthropod Records from Kaho'olawe

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The following contributions include 36 new island records of arthropods located on the island of Kaho'olawe. Of these new records, 4 are endemic and the rest are nonnative. Voucher specimens were collected by the authors, and determined by either the authors or by Mach Fukada. A couple specimens (*Omiodes* spp.) were confirmed by Will Haines. All vouchers are housed in Bishop Museum, Honolulu.

#### Blattodea: Blaberidae

##### *Diploptera punctata* (Eschscholtz)

##### New island record

*Diploptera punctata* (cypress cockroach) was previously known from all the main Hawaiian islands except Kaho'olawe (Nishida 2002). This collection represents a new island record for Kaho'olawe.

Material examined. **KAHO'OLAWE**: Moa'ulanui, under wood pile, 1300 ft [396 m], 16 Oct 2003, Starr, Starr, & Mar 031016-8 (2 specimens).

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***Pycnoscelus indicus* (Fabricius)****New island record**

*Pycnoscelus indicus* (Surinam roach) was previously known from all the Northwestern Hawaiian islands except Lisianski, Gardner Pinnacles, and Necker and from all the main islands except Kaho'olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWA:** Moa'ulanui, under wood pile, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-9* (1 specimen).

**Blattodea: Blattidae*****Periplaneta americana* (Linnaeus)****New island record**

*Periplaneta americana* (American cockroach) was previously known from all the Northwestern Hawaiian islands except Kure atoll and Gardner Pinnacles and from all the main islands except Ni'ihau and Kaho'olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWA:** Moa'ulanui, under wood pile, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-10* (1 specimen).

**Coleoptera: Anthribidae*****Araecerus levipennis* Jordan****New island record**

*Araecerus levipennis* (koa haole seed weevil) was previously known from Midway Atoll and all the main islands except Ni'ihau and Kaho'olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWA:** LZ1, on *Leucaena leucocephala*, 1300 ft [396 m], 23 Sep 2003, *Starr, Starr, Abbott, LeGrande, & Busby 030923-14* (1 specimen); Lua Makika, vegetation sweeps, 1400 ft [425 m], 29 Mar 2004, *Starr, Starr, & Abbott 040329-1* (11 specimens).

**Coleoptera: Bostrichidae*****Xylopsocus castanoptera* (Fairmaire)****New island record**

*Xylopsocus castanoptera* was previously known from Kaua'i, O'ahu, Moloka'i, and Hawai'i (Nishida 2002).

*Material examined.* **KAHO'OLAWA:** Keanakeiki, vegetation sweeps, 10 ft [3 m], 15 Oct 2003, *Starr, Starr, King, Tokishi, & Busby 031015-13* (1 specimen); Moa'ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-12* (1 specimen).

**Coleoptera: Bruchidae*****Acanthoscelides obtectus* (Say)****New island record**

*Acanthoscelides obtectus* (bean weevil) was previously known from the islands of Ni'ihau, Kaua'i, O'ahu, and Maui.

*Material examined.* **KAHO'OLAWA:** Hakio'awa gulch, on rock, 200 ft [60 m], 23 Sep 2003, *Starr, Starr, Abbott, LeGrande, & Busby 030923-15* (1 specimen); LZ1, beaten from *Tamarix aphylla*, 1300 ft [396 m], 23 Sep 2003, *Starr, Starr, Abbott, LeGrande, & Busby 030923-16* (2 specimens); LZ1, beaten from *Chenopodium oahuense*, 1300 ft [396 m], 23 Sep 2003, *Starr, Starr, Abbott, LeGrande, & Busby 030923-17* (6 specimens); Moa'ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr & Starr 031016-11* (5 specimens); Lua Makika, vegetation sweeps, 1400 ft [427 m], 29 Mar 2004, *Starr & Starr 040329-2* (1 specimen).

***Mimosestes nubigens* (Motschulsky)****New island record**

*Mimosestes nubigens* (bean weevil) was previously known from Midway Atoll, Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i (Nishida 2002).

*Material examined.* **KAHO'OLAWA:** Lua Kealialalo, near LZ quail, from *Prosopis pallida* pods, 850 ft [259 m], 23 Sep 2003, *Starr, Starr, Abbott, LeGrande, & Busby 030923-18* (1 specimen).

***Stator limbatus* (Horn)****New island record**

*Stator limbatus* (bean weevil) was previously known from Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Moa‘ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-13* (1 specimen).

***Stator pruininus* (Horn)**

**New island record**

*Stator pruininus* (pruinose bean weevil) was previously known from Midway atoll, Ni‘ihau, Kaua‘i, O‘ahu, Moloka‘i, Maui, and Hawai‘i (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Moa‘ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-14* (2 specimens); Lua Makika, vegetation sweeps, 1400 ft [425 m], 29 Mar 2004, *Starr, Starr, & Abbott 040329-3* (1 specimen).

**Coleoptera: Carabidae**

***Notiobia purpurascens* (Bates)**

**New island record**

*Notiobia purpurascens* was previously known from O‘ahu, Maui, and Hawai‘i (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Hakio‘awa gulch, on ground, 200 ft [60 m], 23 Sep 2003, *Starr, Starr, Abbott, LeGrande, & Busby 030923-19* (1 specimen); Moa‘ulanui, under wood pile, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-15* (1 specimen); Kaukaupapa, near wetland, vegetation sweeps, 10 ft [3 m], 26 Feb 2004, *Starr, Starr, & Higashino 040216-2* (1 specimen).

**Coleoptera: Cleridae**

***Tillus notatus* Klug**

**New island record**

*Tillus notatus* was previously known from Kaua‘i, O‘ahu, and Maui (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Kaukaupapa, vegetation sweeps, 10 ft [3 m], 15 Oct 2003, *Starr, Starr, King, Tokishi, & Busby 031015-14* (1 specimen).

**Coleoptera: Coccinellidae**

***Brumoides suturalis* (Fabricius)**

**New island record**

*Brumoides suturalis* (three-striped lady beetle) was previously known from Ni‘ihau and O‘ahu (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Honokanaia, 10 ft [3 m], 14 Oct 2003, *Starr, Starr, & King 031014-7* (1 specimen); Kaukaupapa, on *Gossypium tomentosum*, 10 ft [3 m], 15 Oct 2003, *Starr, Starr, King, Tokishi, & Busby 031015-15* (1 specimen).

***Coelophora inaequalis* (Fabricius)**

**New island record**

*Coelophora inaequalis* (common Australian lady beetle) was previously known from Kure and Midway Atolls, Nihoa, and all the main islands except Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Honokanaia, grass sweeps, 15 ft [5 m], 16 Feb 2004, *Starr, Starr, & Higashino 040216-3* (2 specimens); Kaukaupapa, vegetation sweeps, 10 ft [3 m], 16 Feb 2004, *Starr, Starr, & Higashino 040216-4* (1 specimen); Lua Makika, vegetation sweeps, 1400 ft [425 m], 29 Mar 2004, *Starr, Starr, & Abbott 040329-4* (2 specimens).

***Curinus coeruleus* (Mulsant)**

**New island record**

*Curinus coeruleus* (dark blue lady beetle) was previously known from Midway Atoll and all the main islands except Moloka‘i and Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Lua Makika, 1400 ft [425 m], 29 Mar 2004, *Starr, Starr, & Abbott 040329-5* (6 specimens).

***Rodolia cardinalis* (Mulsant)**

**New island record**

*Rodolia cardinalis* (vedalia beetle) was previously known from Midway Atoll and all the main islands except Moloka‘i and Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWÉ:** Kaukaupapa, vegetation sweeps, 10 ft [3 m], 15 Oct 2003, *Starr, Starr, King, Tokishi, & Busby 031015-16* (1 specimen).

***Scymnus loewii* Mulsant**

**New island record**

*Scymnus loewii* (Scymnus lady beetle) was previously known from all the Northwestern Hawaiian Islands except Midway atoll and Gardner Pinnacles and all the main islands except Kaho'olawe.

*Material examined.* **KAHO'OLAWÉ:** Pu'u Moa'ulaiki, on ground, 1200 ft [365 m], 22 Sep 2003, *Starr, Starr, Abbott, LeGrande, & Busby 030922-15* (1 specimen); Honokanaia, beaten from *Hibiscus tiliaceus*, 25 ft [8 m], 14 Oct 2003, *Starr, Starr, & King 031014-8* (7 specimens); Kaukaupapa, vegetation sweeps, 10 ft [3 m], 15 Oct 2003, *Starr, Starr, King, Tokishi, & Busby 031015-17* (1 specimen); Lua Makika, vegetation sweeps, 1400 ft [425 m], 29 Mar 2004, *Starr, Starr, & Abbott 040329-6* (4 specimens).

**Coleoptera: Chrysomellidae**

***Diachus auratus* (Fabricius)**

**New island record**

*Diachus auratus* (bronze leaf beetle) was previously known from Midway Atoll and all the main islands except Lāna'i and Kaho'olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWÉ:** Kaukaupapa, vegetation sweeps, 10 ft [3 m], 15 Oct 2003, *Starr, Starr, King, Tokishi, & Busby 031015-18* (1 specimen); Lua Makika, vegetation sweeps, 1400 ft [425 m], 29 Mar 2004, *Starr, Starr, & Abbott 040329-7* (3 specimens).

**Coleoptera: Nitidulidae**

***Urophorus humeralis* (Fabricius)**

**New island record**

*Urophorus humeralis* (sap beetle) was previously known from Kaua'i, O'ahu, Lāna'i, and Maui (Nishida 2002).

*Material examined.* **KAHO'OLAWÉ:** Moa'ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-16* (1 specimen).

**Dermaptera: Carcinophoridae**

***Euborellia annulipes* (Lucas)**

**New island record**

*Euborellia annulipes* (ring-legged earwig) was previously known from all the Northwestern Hawaiian Islands except Lisianski and Gardner Pinnacles and all the main islands except Ni'ihau and Kaho'olawe.

*Material examined.* **KAHO'OLAWÉ:** Gunfire range, under wood pile, 600 ft [200 m], 30 Mar 2004, *Starr, Starr, & Abbott 040330-2* (1 specimen).

***Euborellia eteronoma* (Borelli)**

**New island record**

*Euborellia eteronoma* (Hawaiian earwig) was previously known from all the Northwestern Hawaiian Islands except Midway and Kure atolls, Necker, and Nihoa and all the main islands except Ni'ihau and Kaho'olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWÉ:** Gunfire range, under wood pile, 600 ft [200 m], 30 Mar 2004, *Starr, Starr, & Abbott 040330-3* (2 specimens).

**Diptera: Syrphidae**

***Allograptia exotica* (Wiedemann)**

**New island record**

*Allograptia exotica* (syrphid fly) was previously known from Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i (Nishida 2002).

*Material examined.* **KAHO'OLAWÉ:** Moa'ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-17* (1 specimen).

***Simosyrphus grandicornis* (Macquart)**

**New island record**

*Simosyrphus grandicornis* (hover fly) was previously known from all the Northwestern Hawaiian islands except Lisianski, Laysan, Gardner Pinnacles, and Necker and from all the main islands except Ni‘ihau, Lāna‘i, and Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Kaukaikapapa, vegetation sweeps, 10 ft [3 m], 16 Feb 2004, *Starr, Starr, & Higashino 040216-5* (8 specimens).

**Embiidina: Ologotomidae**

***Oligotoma saundersii* (Westwood)**

**New island record**

*Oligotoma saundersii* (Saunders embiid, webspinner) was previously known from all the Northwestern Hawaiian Islands except Kure Atoll, Lisianski, French Frigate Shoals, and Gardner Pinnacles, and all the main islands except Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Moa‘ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-18* (1 specimen).

**Heteroptera: Lygaeidae**

***Graptostethus manillensis* (Stål)**

**New island record**

*Graptostethus manillensis* (woodrose bug) was previously known from all the main islands except Moloka‘i and Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Honokanaia, beaten from *Hibiscus tiliaceus*, 25 ft [8 m], 14 Oct 2003, *Starr, Starr, & King 031014-9* (3 specimens).

**Heteroptera: Pentatomidae**

***Nezara viridula* (Linnaeus)**

**New island record**

*Nezara viridula* (southern green stink bug) was previously known from all the main islands except Ni‘ihau and Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Lua Makika, vegetation sweeps, 1400 ft [425 m], 29 Mar 2004, *Starr, Starr, & Abbott 040329-8* (1 specimen).

***Oechalia pacifica* (Stål)**

**New island record**

*Oechalia pacifica* (Hawaiian stink bug) was previously known from all the main islands except Ni‘ihau and Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Moa‘ulanui, picked from *Tamarix aphylla*, 1300 ft [396 m], 29 Mar 2004, *Starr, Starr, & Abbott 040329-9* (6 specimens).

**Homoptera: Cicadellidae**

***Planiocephalus flavicosta* (Stål)**

**New island record**

*Planiocephalus flavicosta* (leafhopper) was previously known only from the island of O‘ahu (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Honokanaia, swept from *Cenchrus ciliaris*, 10 ft [3 m], 14 Oct 2003, *Starr, Starr, & King 031014-10* (2 specimens).

**Hymenoptera: Evaniidae**

***Evania appendigaster* (Linnaeus)**

**New island record**

*Evania appendigaster* (larger ensign wasp) was previously known from Midway Atoll, Ni‘ihau, O‘ahu, Maui, and Hawai‘i (Nishida 2002; Howarth *et al.*, 2002).

*Material examined.* **KAHO‘OLAWE:** Moa‘ulanui, on water tank, 1400 ft [425 m], 30 Mar 2004, *Starr, Starr, & Abbott 040330-4* (1 specimen).

**Hymenoptera: Vespidae**

***Pachodynerus nasidens* (Latreille)**

**New island record**

*Pachodynerus nasidens* (wasp) was previously known from Midway Atoll and all the main islands except Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWA:** Moa'ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-19* (1 specimen).

**Isoptera: Kalotermitidae**

*Cryptotermes brevis* (Walker)

**New island record**

*Cryptotermes brevis* (drywood termite) was previously known from Midway Atoll, Lisianski, Laysan, and French Frigate Shoals and all the main islands except Kaho'olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWA:** Moa'ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-20* (1 specimen).

**Lepidoptera: Crambidae**

*Omiodes continuatalis* (Wallengren)

**New island record**

*Omiodes continuatalis* was previously known from all the main islands except Ni'ihau and Kaho'olawe. This species is a generalist on grasses and is one of the more common *Omiodes* species found in the main islands, even though it was previously thought to be extinct (W. Haines, pers. comm.).

*Material examined.* **KAHO'OLAWA:** Honokania, basecamp, came to light at night, associated grasses in vicinity include *Sporobolus virginicus*, *Cenchrus ciliaris*, and *Chloris* spp., 15 ft [5 m], 16 Feb 2004, *Starr & Starr 040216-1* (1 specimen).

*Omiodes demaratalis* (Walker)

**New island record**

*Omiodes demaratalis* (Hawaiian grass leaf roller moth) was previously known from all the main islands except Lāna'i and Kaho'olawe (Nishida 2002). It is now also known from Kaho'olawe where it was found at Hakio'awa, near the coast, on *Sporobolus virginicus* ('aki'aki) that had been planted a few years prior for restoration purposes. Numerous (dozens) *O. demaratalis* flushed from the large patch of *S. virginicus* as we walked through sweeping with the net. This species is known to use grasses such as *Digitaria* sp. and *Panicum* sp., species which are abundant on Kaho'olawe.

*Material examined.* **KAHO'OLAWA:** Hakio'awa, coastal strand, swept from *Sporobolus virginicus*, 10 ft [3 m], 30 Mar 2004, *Starr, Starr, & Tokishi 040330-1* (4 specimens).

**Lepidoptera: Lycaenidae**

*Lampides boeticus* (Linnaeus)

**New island record**

*Lampides boeticus* (bean butterfly) was previously known from Necker, Nihoa, and all the main islands except Kaho'olawe (Nishida 2002).

*Material examined.* **KAHO'OLAWA:** Road to Pu'u Moa'ulaiki, swept from *Macropitium* sp., 1200 ft [365 m], 30 Mar 2004, *Starr, Starr, & Tokishi 040330-5* (2 specimens).

**Lepidoptera: Noctuidae**

*Eublemma accedens* (Felder & Rogenhofer)

**New island record**

*Eublemma accedens* ('uhaloa moth) was previously known from all the main islands except Ni'ihau, Lāna'i, and Kaho'olawe (Nishida 2002; Howarth *et al.* 2002). On Kaho'olawe it is common from sea level to the summit.

*Material examined.* **KAHO'OLAWA:** Honokanaia, basecamp, KIRC hut, at light, 25 ft [8 m], 19 Jan 2004, *Starr, Starr, & Higashino 040119-1* (1 specimen); Honokanaia, basecamp, KIRC hut, at light, 25 ft [8 m], 16 Feb 2004, *Starr, Starr, & Higashino 040216-6* (1 specimen).

**Lepidoptera: Sphingidae**

*Agrius cingulata* (Fabricius)

**New island record**

*Agrius cingulata* (sweet potato hornworm) was previously known from Midway Atoll, Laysan, and all the main islands except for Kaho'olawe.

*Material examined.* **KAHO‘OLAWE:** Honokanaia, basecamp, KIRC hut, on floor, collected by L. Abbott, 25 ft [8 m], 28 Dec 2004, *Starr, Starr, & Abbott 041228-1* (1 specimen).

#### Orthoptera: Acrididae

*Schistocerca nitens* (Thunberg)

#### New island record

*Schistocerca nitens* (vagrant grasshopper) was previously known from Necker, Nihoa, and all the main islands except Ni‘ihau and Kaho‘olawe (Nishida 2002).

*Material examined.* **KAHO‘OLAWE:** Moa‘ulanui, vegetation sweeps, 1300 ft [396 m], 16 Oct 2003, *Starr, Starr, & Mar 031016-21* (1 specimen).

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#### First record of coral crabs of the family Tetraliidae (Crustacea: Brachyura) from the Hawaiian Islands<sup>1</sup>

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Brachyuran crabs of the family Tetraliidae Castro *et al.* 2004, which comprises the genera *Tetralia* Dana and *Tetraloides* Galil are obligate symbionts of species of *Acropora*, scleractinian corals of circumtropical distribution. Tetraliids were formerly grouped with species of *Trapezia* Dana and other coral crabs in the family Trapeziidae Miers. All 8 described species of tetraliids are restricted to the Indo-West Pacific region (see Castro *et al.* 2004). Although 6 species of *Trapezia* are known from the Hawaiian Islands (Castro 1998), tetraliids have never been recorded from the archipelago until their recent discovery among collections made at French Frigate Shoals under the auspices of the Northwestern Hawaiian Islands Rapid Assessment and Monitoring Program 2000 (NOW-RAMP 2000). The family had been previously recorded anywhere *Acropora* occurs

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