
Numbers of Hawaiian Species for 2003 – 2005¹

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Background

This supplement is the first following a detailed assessment of the numbers of species in the Hawaiian Islands (Eldredge & Evenhuis 2003). The rich biodiversity of the Hawaiian Islands comprises 26,608 species (Table 1). Hawai'i accounts for only about 0.2% of the land area of the United States yet it has 31% of the national federally endangered species and 42% of its endangered birds. Almost 75% of the historically documented extinctions of plants and animals in the United States have occurred in the Hawaiian Islands (Allison & Miller 2000).

Hawaii Biological Survey is continually posting species checklists (terrestrial arthropods, native and alien land and freshwater snails, marine invertebrates, flowering plants, fungi, amphibians, reptiles, birds, and mammals) in searchable interfaces for the Hawaiian biota on our website server [<http://hbs.bishopmuseum.org>]. These are being revised and updated on a regular basis.

Included in this report are the first records of halophilic bacteria from the saline lake at Laysan; addition of algae species following the recently published monographs on the red, green, and brown algae; a review of the revisionary genera of the black coral *Antipatharia*; updating of the scaphopod genera; and numerous new species of insects and crustaceans. Of note are the books: Natural History of Nihoa and Necker (Evenhuis & Eldredge 2004) and Checklist of the Fishes of the Hawaiian Archipelago (Mundy 2005).

Notes on the Taxa

Bacteria

New species *Idiomarina loihiensis*, a halophilic γ -*Proteobacterium* from Loihi Seamount (Donache *et al.* 2003). New species *Psychroflexus tropicus* from the hypersaline lake at Laysan Island in the Northwestern Hawaiian Islands (Donache *et al.* 2004a). The microbial diversity of five lakes, an anchialine pool, and the Lo'ihi submarine volcano were studied and found that each had a distinct prokaryotic community dominated by Bacteria (Donache *et al.* 2004b). New species *Arcobacter halophilus* Donache *et al.* (2005), from Laysan Island, the first obligately halophilic member of the genus.

1. Contribution No. 2006-030 to the Hawaii Biological Survey.

Algae

Identification guide, color-illustrated, for the stream macroalgae of Hawai'i (Sherwood 2004a). Sherwood (2004b) reported 797 species of nonmarine algae (including 378 diatom species) from streams, terrestrial, airborne, taro patches, and hot spring habitats; brackish water forms were excluded. The filamentous diatom *Diprora haenaensis* Main, n.gen. and n.sp. was described (Main 2003). A monograph of the marine green and brown algae included 169 species (107 green, 62 brown) (Abbott & Huisman 2004). Following the publication of the monograph on the red algae (Abbott 1999), the following additions have been made: *Gloiothrichus factalis* Huisman & Kraft is reported from the first time from the island of Hawai'i (and the Pacific) (Huisman & Abbott 2003a); 2 new species (*Liagora donaldiana* and *L. julieae*) were described (Huisman & Abbott 2003b); *Ganonema yoshizaki*, new species, was added (Huisman *et al.* 2004); and the status of *Liagora hawaiiiana* Butters was clarified (Huisman & Abbott 2003c). *Acrosymphyton brainardii* described as new by Vroom & Abbott (2004a); *Scinaia huismanii* also described as new by Vroom & Abbott (2004b); both species are known only from the Northwestern Hawaiian Islands. The total species of marine algae from Hawai'i is 522 species. Morphological variation in the deep ocean-dwelling coccolithophore *Florisphaera profunda* Okada & Honjo [Division Haptophyta] reported from specimens collected at 100–200 m at the Hawaiian Ocean Time series station (Quinn 2005).

Fungi

Metschnikowia santaceciliae, *Candida hawaiiiana*, and *C. kipukae* are described as new species (Lachance *et al.* 2003). *Metschnikowia hamakuensis*, *M. kamakouana*, and *M. maui-nuiana* described as new endemic species (Lachance *et al.* 2005); these 6 new species from the phylum Ascomycota are from yeasts from Hawaiian nitidulid beetles. New species *Candida leandrae* described from a drosophilid fly associated with a Convolvulaceae flower (Ruivo *et al.* 2004). The chytrid fungus *Batrachochytrium dendrobatidis* is reported from the introduced frog *Eleutherodactylus coqui*; this is the first report from wild populations in Hawai'i (Beard & O'Neill 2005). New species *Opegrapha cladoniicola* [Family Roccellaceae] from *Cladonia ochrochlora* from Lāna'i (Ertz & Diederich 2003). New species *Phoma billsii* J. F. White described from soil from a sugarcane field on Maui (Torres *et al.* 2005).

Lichens

Two Hawaiian lichen species recently recognized: *Parmeliella cinerata* (Zahlbr.) P.M. Jorg. and *P. exornata* (Zahlbr.) P.M. Jorg. [Family Pannariaceae] (Jorgensen 2003). Two new endemic species: *Ramalina reptans* and *R. subrotunda* [Family Pamelinaceae] (Kashiwadani *et al.* 2002).

Bryophyta

A recently compiled checklist of the Hawaiian mosses includes a total of 273 named taxa (Staples *et al.* 2004); 14 of these are considered nonindigenous. One additional species, *Bryoerythrophyllum ferruginascens* (Stirt.) Giacom. is added in this HBS records.

Flowering Plants

Tetraplasandra lydgatei (Hillebr.) (Araliaceae) given recognition; the species was previously thought to be *T. oahuensis* (A.Gray) (Motley 2005). The genus *Kadua*, (Rubiaceae) previously considered to be *Hedyotis*, is reported with a list of *Kadua* names, including necessary new combinations and their *Hedyotis* synonyms (Terrell *et al.* 2005). The genus *Radula* (Radulaceae) is revised (So 2005). New species of Hawaiian silversword *Dubautia*

Table 1. Estimates of numbers of known species of Hawaiian biota (based on previous *HBS Records*, including this paper and other papers in this issue of the *Records*.

Taxon	Total	Endemic	NIS
Viruses (not surveyed)			
Bacteria (not surveyed)			
Algae	1359	128+	19+
Other protists	1237	?	?
Fungi (including) lichens	3220	983	12+
Flowering Plants	2868	902	1215
Other plants	637	294	55
Cnidarians	412	113	50
Insects	8282	3903	2814
Other arthropods	995	360	618
Crustaceans	1431	68+	99
Molluscs	2171	1105	133
Annelids	392	87+	47
Echinoderms	309	150	1
Other invertebrates	1776	443	89
Fishes	1253	159	55
Amphibians	6	0	6
Reptiles	30	0	24
Birds	186	65	55
Mammals	44	2	19
Totals	26,608	8762	5311

kalalauensis from northwestern Kaua‘i (Baldwin & Carr 2005). Chromosome counts for 90 collections (67 native Hawaiian angiosperm species and 8 hybrids) are reported (Kiehn 2005). The endemic genus *Schiedea* (Caryophyllaceae), including 34 species is reviewed in a monograph by Wagner *et al.* (2005). New palm species *Dypsis robusta*; not included in species numbers because it is in cultivation (Hodel *et al.* 2005).

Porifera

Two unidentified sponges have been shown to have new metabolites: poipuol from the genus *Hyrtilos* (Sata *et al.* 2005a) and lehalualides from the genus *Plakortis* (Sata *et al.* 2005b) [neither of these genera has been previously reported from Hawaiian waters]. Maldonado *et al.* (2005) reported on the silicon structure of the heretofore unreported sponge *Sericolophus hawaïicus* Tabachnick & Levi (2000).

Cnidaria: Hydrozoa

New species *Crossota millsae* Thuesen (Thuesen 2003). Four species of stylasterid hydrozoans are described from the Northwestern Hawaiian Islands, 3 new species *Disticophora asulcata*, *Stylaster griggi*, *S. infundibuliferus* are described; *Disticophora anceps* Cairns, was collected and known only from the northwestern slope of Laysan Island (Cairns 2005).

Cnidaria: Scyphozoa

New species *Tiburonia granrojo* Matsumoto, Raskoff, & Lindsay in new subfamily Tiburoniinae (Matsumoto *et al.* 2003). Analysis of the introduced jellyfish *Cassiopea* supported at least two independent introductions to the Hawaiian Islands; one from the Indo-Pacific, another from the Atlantic/Red Sea areas (Holland *et al.* 2004). A global phylogeny of the moon jellyfish *Aurelia* reveals at least 16 phylogenetic species; *Aurelia labiata* of some Hawaiian authors should be reconsidered as *Aurelia* sp. 4 as an introduced species (Dawson *et al.* 2005). The well known “box jellyfish” *Carybdea alata* as been revised to become *Alatina moseri* (Mayer) in *Alatina* n. gen. and Alatininae n. subfam. (Gershwin 2005).

Cnidaria: Anthozoa: Antipatharia

New antipatharian family, Myriopathidae, new genus *Myriopathes* Opresko, new combination *M. ulux* [for *Antipathes ulux* Ellis & Solander] (Opresko 2001). New genus, new species *Stauropathes staurocrada* (Opresko 2002). New antipatharian genus *Trissopathes* Opresko, new species *T. pseudotristicha* (Opresko 2003). New antipatharian genus *Acanthopathes* Opresko, new combination *Acanthopathes undulata* [for *Antipathes undulata* van Pesch] (Opresko 2004). New species *Bathypathes seculata*, n. gen. n. sp. *Umbellapathes helioanthes*, new species *Dendropathes bacotaylorae* (Opresko 2005). *Antipathes dichotoma* Pallas, previous reports from Hawai‘i are incorrect, “No specimen has yet been described in the literature from the western Atlantic or the Indo-Pacific that can conclusively be identified as *A. dichotoma*” (Opresko 2003).

Cnidaria: Anthozoa: Scleractinia

Eleven stony coral species reported from the Hawaiian Islands for the first time; 29 range extensions to the Northwestern Hawaiian Islands; the presence of 7 species of *Acropora*, not known from the Main Hawaiian Islands, are recorded from NWHI (Maragos *et al.* 2004).

Cnidaria: Anthozoa: Actiniaria

The sea anemone known in Hawai‘i as *Actiniogeton sesere* should be properly termed *Gyrcactis sesere* (Haddon & Shackleton) (Fautin 2005). New record *Diadumene lineata* (Verrill) reported from Kāne‘ohe Bay and Pearl and Hermes Reef (Zabin *et al.* 2004).

Platyhelminthes

In their color-illustrated book on marine flatworms of the world (Newman & Cannon 2003), they illustrate 6 species from Hawai‘i, 2 of which are new records.

Nematomorpha

The two species previously reported from Hawai‘i have been synonymized with *Gordius robustus* Leidy; two additional species, *Paragordius varius* (Leidy) and new species *Gordionus longistriatus* Schmidt-Rhaesa, are added to those from Hawai‘i (Schmidt-Rhaesa *et al.* 2003; Schmidt-Rhaesa 2004).

Nematoda

Three parasitic species found in Hawaiian specimens of Jackson’s chameleon (*Chamaeleo jacksoni*): *Physaloptera* sp., *Physocephalus* sp., and member of Acuariidae, all nematodes; there are no reports of these species in African chamaeleons; their occurrence in Hawaiian specimens represent an instance of an immigrant host capturing local nematodes (Goldberg *et al.* 2004). New species *Filenchus flagellicaudatus* and *Lelenchus schmitti* [Family Tylenchidae] described from Pēpē‘ōpae bog on Moloka‘i (Bernard 2005).

Acanthocephala

The acanthocephalan parasite *Acanthocephalus bufonis* reported for the first time in the introduced wrinkled frog, *Rana rugosa* (Goldberg *et al.* 2005).

Annelida: Polychaeta

New species *Saccocirrus alanhongi*, *S. oahuensis*, *S. waianaensis* Bailey-Brock, Dreyer, and Brock 2003. Five benthic species ecology detailed (Bailey-Brock *et al.* 2002). The genus *Hydroides* has been revised; Hawai'i now has 5 species: *Hydroides bannerorum* Bailey-Brock; *H. brachyacanthus* Rioja; *H. cruciger* Morch; *H. diramphus* Morch; *H. elegans* (Haswell) (Bastida-Zavala & ten Hove 2003). Name change *Myriaida pachycera* (Augener) for *Myriaida crassirrata* Hartman-Schroder (Nygren 2004). Name change *Pseudobranchiomma punctata* (Treadwell) for *Laonome punctata* Treadwell; replacement name *Sabellastarte spectabilis* (Grube) for *S. indica*, including *S. sanctijosephi* ("may be confined to Red Sea") (Knight-Jones & Mackie 2003). New record *Micropadarke dubia* (Hessle) collected from sewage outfalls (Pleijel & Rouse 2005). New species *Progoniada oahuensis* Barrett & Bailey-Brock (2005).

Annelida: Oligochaeta

New species *Tubificoides calvescentis* Erseus *et al.* (2005).

Annelida: Hirudinea

New records of introduced leech—*Helobdella europaea* Kutschera, collected in 2003 (Siddall & Budinoff 2005). *Alboglossiphonia weberi* (Blanchard) replacement name for *Glossiphonia weberi* (Siddall *et al.* 2005) in a phylogenetic evaluation of the family Glossiphoniidae.

Mollusca: Gastropoda

New species [Pickworthiidae] *Reynellona bollandi* and *Sansonia alisonae* LeRenard & Bouchet (2003); also reported *Ampullosansonia hyalina* Kase and *Microlitotia hawaiiensis* Kase. Newly reported family Aegiridae with *Aegires exeches* Fahey & Gosliner (2004). New species *Melibe engeli* Gosliner & Smith (2003). *Nassarius olomea* Kay, revalidated from its being synonymized with *N. crebrucostatus* (Kool 2004). New subspecies *Mauritia maculifera hawaiiensis* Heiman (2005). New species, *Conus mcbridei* (Lorenz 2005).

Mollusca: Scaphopoda

Previously reported scaphopod species (Heath 1911) have been revised: *Anatalis phanea* (= *Dentalium phaneum*), *Fissidentalium complexum* (= *Dentalium complexum*), and *Gadila honoluluensis* (= *Cadulus honoluluensis*) (Steiner & Kabat 2001).

Mollusca: Cephalopoda

Generic designation change: *Pteroctopus hoylei* (Berry) for *Berrya hoylei*; *Macrotritopus defilippi* (Verany) for *Octopus defilippi*; *Callistoctopus ornatus* (Gould) for *O. ornatus* (Norman & Hochberg 2005).

Arthropoda: Insecta

Polhemus (2003) reviewed the Heteroptera genus *Orthotylus* (Miridae) and described 21 new species and redescribed 5 species. Sixty species of the native bee of the genus *Hylaeus* (*Nesopromsopsis*) (Hymenoptera) are revised for the Hawaiian Islands including 10 new species (Daly & Magnacca 2003). The *Drosophila mimica* subgroup was revised, including description of 10 new species, and key to subgroup is provided (O'Grady *et al.* 2003). The

Hawaiian species of *Rhyncogonus* (Coleoptera) are revised, treating 47 species 15 proposed as new (Samuelson 2003). Wang & Messing (2002) reported *Diachasmimorpha kraussii* and *Fopius arisanus* [Hymenoptera] as introduced parasitic species effecting established parasitism. New mosquito record: *Anopheles (Anopheles) punctipennis* (Say) reported for first time on O'ahu, additional trapping indicated the populations of this species have not become established (Furumizo *et al.* 2005). New mosquito record: *Aedes (Finlaya) japonicus japonicus* (Theobald) has become established on the island of Hawai'i (Larish & Savage 2005). The phylogeny and age of diversification of the *Drosophila planitibia* species group reported (Bonacum *et al.* 2005). New species *Encarsia dispersa* [Hymenoptera] described (Polaszek *et al.* 2004). Polhemus (2004) described 34 new species of *Orthorylus* [Heteroptera, Miridae] from the Hawaiian Islands. Invasive leafhopper *Sophonia orientalis* (Matsamura) identified (Webb & Viraktamath 2004). New record: *Hydroptila icona* Mosely and corrected identification: *Cheumatopsyche analis* (Banks) for *C. pettiti* (Banks) [Trichoptera] (Flint *et al.* 2003). New species *Xenasteia hardyi* and *X. lansburyi* [Diptera] (Ismay 2003). New genera and species *Anele ulia* and *Nanixipha nahoa* [Orthoptera] (Otte *et al.* 2003). New ant records: *Solenopsis* sp. and *Pheidole moerens* Wheeler [Hymenoptera] (Gruner *et al.* 2003). New record *Ulus hirsutus* Champion [Coleoptera] (Steiner 2003). New record *Thambemyia* sp. [Diptera] reported from Nihoa (Evenhuis 2003). New records *Libnotes* n. sp. nr. *trukensis* Alexander [Diptera], *Leiophron* sp., *Asecodes* sp., *Aphanomerus rufescens* Perkins, *Zolotarewskyia* sp., *Trimorus* sp. [Hymenoptera], *Ectopsocidae briggsi* McLachlan, *Haplophallus* sp. [Psocoptera] found associated with 'ōhi'a lehua (*Metrosideros polymorpha*) (Gruner 2004). Evenhuis (2004) gave a checklist of the families Limoniidae, Tipulidae, and Ulidiidae [Diptera], resulting in 7 new combinations. In a review work, Ewing (2004) placed the endemic *Nesopetinus* and *Nesopeplus* in the genus *Prosopeus* [Coleoptera Nitidulidae] creating 55 new combinations. New records *Phenolia (Aethinodes) attenuata* (Reiter) and *Stelidota geminata* (Say) [Coleoptera] (Ewing & Cline 2004). Ewing & Cline (2005) provided a key to the adventive sap beetles [Nitidulidae] in Hawai'i. Two new records: *Dufouriellus ater* (Puton) and *Xylocoris (Arrostelus) flavipes* (Reuter) and one re-identification of *Macrotrachelia nigronitens* (Stål) for previously introduced *M. thripiformis* Champion [Heteroptera] (Lattin 2005). Chandler (2005) revised *Cyclodinus* [Coleoptera] reporting *C. mundulus* from Hawai'i. Eight species of *Hypergonatopus* [Hymenoptera] are transferred to *Cheiloneurus*; *C. americanus* synonymized with *C. flaccus* (Walker) (Guerrieri & Viggiani 2004). New species *Sigmatineurum puleloai* [Diptera] described from Moloka'i (Englund & Evenhuis 2005). Evenhuis (2005) reviewed the endemic genus *Eurynogaster* [Dolichopodidae], establishing 4 new genera, 30 new combinations, and 1 new specific synonymy. New species *Hyposmocoma molluscivora* [Lepidoptera], the larvae of which feeds on native land snails (Rubinoff & Haines 2005).

Arthropoda: Crustacea

The cladoceran *Latonopsis australis* Sars is reported for the first time since 1905 (Korovchinsky 2001). New ostracod *Semicytherura challengerae* (Wilkinson & Williams 2004). New isopod species *Synidotea oahu* Moore (2004). New record *Nematopagurus kosiensis* McLaughlin (McLaughlin 2004). New species [Solenoceridae] *Hymenopenaeus fallax* [for *Haliporus equalis* auct not Rathbun] (Crosnier & Dall 2004). New combination *Marratha angusta* (Rathbun) [for *Cycloxanthops angustus*]; *Jacforus cavatus* (Rathbun) [for *Cycloxanthops cavatus*] (Ng & Clark 2003). New combination *Acantholobulus pacificus* (Edmondson) [for *Panopeus pacificus*]. New combination *Parascytoleptus tridens* (Rathbun) [for *Axius (Paraxius) tridens*] (Kensley 2003). *Furtipodia gemma* n. gen., n. sp.; new combination *Furtipodia petrosa* (Klunzinger) [for *Daldorfia horrida* of Hoover] (Tan & Ng

2003). New record *Sicyonia truncata* (Kubo) (Crosnier 2003). *Atoportunus pluto* new genus, new species (Ng & Takeda 2003). *Lewindroma unidentata* (Ruppell) new combination [for *Dromidia unidentata hawaiiensis* Edmondson]; *Stebbingdromia plumosa* (Lewinsohn) new combination [for *Dromidiopsis plumosa* Lewinsohn] (Guinot & Tavares 2003). *Lambrachaeus ramifer* Alcock, transferred from Majidae to Parthenopidae in n. subfam. Lambrachaeinae (Ng & McLay 2003). Revision of Trapeziidae, in Hawai'i, *Trapezia intermedia* Miers; *T. rufopunctata* (Herbst); *T. tigrina* Eydoux & Souleyet newly reported from Hawai'i (Castro *et al.* 2004). New species *Hymenopenaeus fallax* [Solenoceridae] (Crosnier & Dall 2004). Amphipod new combination *Liagoceradocus lonomaka* (Barnard) to *Hadzia lonomaka* (Barnard) (Sawicki *et al.* 2004). New species *Ethusina isolata* [Dorippidae, Ethusinae] (Castro 2005). *Pontonia medipacifica* Edmondson [Palaemonidae] n. comb. with n. gen. *Cainonia medipacifica* (Edmondson) (Bruce 2004). Mitochondrial DNA sequencing of introduced barnacle, *Chthamalus proteus*, confirms a multigeographical origin for Pacific populations and indicates that introductions have occurred at more than one locality (Zardus & Hadfield 2005). Hawaiian specimens of the alpheid shrimp *Alpheus gracilipes* Stimpson reevaluated and it and 5 others are now recognized (Nomura & Anker 2005). Two new species of ostracods: *Parasterope pacifica* and *Bruuniella beta* from Johnston Atoll (Kornicker & Harrison-Nelson 2005). New species of copepod *Tarybis shuheiella* (Ferrari & Markhaseva 2005). New species of benthopelagic copepod *Rythubis heptneri* (Markhaseva & Ferrari 2005).

Arthropoda: Araneae

Gillespie (2003) described 4 new species of *Tetragnatha* (Tetragnathidae) from Hawai'i. New gen., n. sp. *Tropizodium molokai* and *T. trispinosum* (Suman), transferred from genus *Zodarium* (Jocque & Churchill 2005).

Arthropoda: Acari

New species *Piona lapointei* collected from artificial lentic freshwater habitats (Smith & Cook 2004).

Arthropoda: Chilopoda

New record *Tygarrup javanicus* Attems considered an introduced species (Bonato *et al.* 2004).

Arthropoda: Pentastomida

New record, *Raillietiella indica* Gedoeist from the marine toad *Bufo marinus*; new host record, formally known only from *B. melanostictus* (Barton & Riley 2004).

Chordata: Pisces

James (2003) and Wright (2003) recorded a single specimen of the mottled eel, *Anguilla marmorata*, from a pond on Maui; the specimen was probably an introduction or, less likely, a waif. Harold & Lancaster (2003) established that *Argyripnus brocki* Strusaker is a Hawaiian endemic species, describing specimens identified as *A. brocki* from other localities as the new species, *Argyripnus pharos* Harold & Lancaster. *Centropyge fisheri* (Snyder) is no longer considered an endemic Hawaiian species because Pyle (2003) and Schindler & Scheidewind (2004) synonymized the Indo-Pacific *Centropyge flavicauda* Fraser-Brunner with it; the latter authors also included *C. acanthops* (Norman) of the western Indian Ocean as a junior synonym. An individual of the South Seas Devil, *Chrysiptera taupou* (Jordan & Seale), was photographed in about 1–2 m at Hanauma Bay, O'ahu in late 2002 (Scott 2003); this was likely an aquarium release because of the great distance of Hawai'i from the natu-

ral range of the species and the popularity of this aggressive species in the aquarium trade. The introduced snakehead identified in the past as *Channa striata* (Bloch) has been reidentified as *C. maculata* (Lacépède); the true *C. striata* is present in Hawai'i only in enclosed aquaculture facilities and has not been recorded in the wild (Tummons 2003; Courtenay *et al.* 2004). The *Asterorhombus* species previously recorded from the Hawaiian Islands was described as *A. filifer* Hensley & Randall and is an Indo-Pacific species (Hensley & Randall 2003). A single silvertip shark, *Carcharhinus albimarginatus* (Rüppell) was recorded from the south shore of O'ahu (Ford *et al.* 2004) and was probably a waif; the species has been mentioned previously in the literature on Hawaiian fishes but without confirmed records. Ho & Shao (2004) described a new species of deep-sea anglerfish, *Oneirodes pietschi*, from north of Necker Island. Sakai & Nakabo (2004) clarified the taxonomy of chubs previously identified as *Kyphosus bigibbus* Lacépède, describing 2 new species, *K. hawaiiensis* and *K. pacificus*, but Randall (2004) asserted that the latter species had previously been described and named as *K. sandwicensis* Sauvage. Mundy & Parrish (2004) documented the occurrence of the callanthiid *Grammatonotus macrophthalmus* Katayama, Yamamoto & Yamakawa in the Hawaiian Islands, recorded previously in an overlooked publication (Fujii 1986). Burrige (2004) documented that *Cheilodactylus (Goniistius) vittatus* Garrett is an endemic Hawaiian species, describing Southern Hemisphere specimens previously identified as that taxon as a new species, *C. francisi* Burrige; Burrige & White (2000) had previously demonstrated from a genetic analysis that *Goniistius* should be elevated to a full genus. Randall & Ford (2004) recorded a single powderblue tang, *Acanthurus leucosternon* Bennett, off the Honolulu Airport, and stated that this was undoubtedly an aquarium release. Ballauer & Settlemier (2004) documented the occurrence of the spotted-face surgeonfish *Acanthurus maculiceps* (Ahl) on the Kona coast of Hawai'i Island; these records could have been of waifs. Greenfield & Randall (2004) described *Cabillus caudimacula*, a species previously recorded from the Hawaiian Islands as *C. tongarevae* Fowler or *Cabillus* species and *Pleurosicya larsonae*, previously recorded only as *Pleurosicya* species; both are Hawaiian endemic species as thus far known. Greenfield & Randall (2004) also recorded as *Favonigobius* species from O'ahu and suggested that this was likely a nonindigenous species introduced from a ship source. Greenfield & Randall (2004) reidentified the goby previously recorded from the Hawaiian Islands as *Fasigobius neophytes*, *Fusibogius* species, or *Coryphopterus* species as *C. duospilus* Hoese & Reader; ichthyologists disagree as to whether *Fusigobius* should be recognized as distinct form *Coryphopterus*. Thacker (2004), Randall & Greenfield (2001), and Greenfield & Randall (2004) recognized 2 goby species in the genus *Gnatholepis* in the Hawaiian Islands, but from genetic analysis Thacker (2004) concluded that Randall & Greenfield's (2001) *G. cauerensis hawaiiensis* is conspecific with *G. scapulostigma* Herre, and that their *G. anjerensis* (Bleeker) is replaced by the Hawaiian Islands sister species, *G. knighti* Jordan & Evermann; differences in methodology and presentation of results in the two papers indicate that further evaluation of this problem is needed. New record *Lophotus guntheri* Johnson recorded from Johnston Atoll, not recorded from the Hawaiian islands (Craig *et al.* 2004). New record *Lepidorhynchus denticulatus* Richardson collected in the stomach of an unidentified squid (Iwamoto 2005). New record *Antennarius maculatus* (Desjardins) reported without location (Randall 2005). New record *Symphysanodon katayama* Anderson reported from the stomach of *Epinephalus* (Anderson & Springer 2005). New species *Symbolophorus reversus* (Gago & Ricord 2005) collected near Kure. New records *Apterichtus klazingai* and *Ichthyapus vulturis* [Ophichthidae] (McCosker & Randall 2005). The checklist of fishes of the Hawaiian Archipelago contains information on all species found along the shores and in open ocean water (Mundy 2005).

Chordata: Reptilia

New record *Chamaeleo calyptus* Dumeril & Dumeril from Maui (Kraus & Duvall 2004). The potential consequences of the impacts of the coqui frog detailed (Beard & Pitt 2005). The detailed behavior of the introduced green anole *Anolis carolinensis* reported in comparing it to species in its native range (Michael 2005).

Chordata: Aves

The white tern *Gygis microrhyncha* Saunders, reported from the Hawaiian island for the first time, found dead in April 1924 following a storm and probably should be considered a storm-driven migrant; this report is also a new record for the United States (Olson 2005). New fossil species of koa-finches *Rhodacanthis forfex* and *R. litotes* James & Olson, 2005 described from Quaternary fossil sites (James & Olson 2005).

Chordata: Mammalia

Sightings of dwarf (*Kogia sima*) and pygmy (*K. breviceps*) sperm whales in the wild are uncommon; numerous sightings between 2002 and 2003 are reported (Baird 2005)

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