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An annotated checklist of parasitic lice (Insecta: Phthiraptera) from the Galápagos Islands

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Abstract

We list all described species and subspecies of parasitic lice from the Galápagos Islands, based on literature and specimen records. A total of eight families, 47 genera, and 104 species and subspecies of parasitic lice are listed, of which 26 are new species records and eight are new genus records. Also, we report 17 new host-lice associations. The checklist includes 17 endemic species (16 from birds, one from a mammal), 79 native species and subspecies (78 from birds, one from a mammal), and eight species and subspecies (five from birds, three from mammals) introduced by human agency. Nine species assigned in error to the Galápagos Islands in the literature are discussed and deleted from the fauna. For each valid species and subspecies we give information on its taxonomic history, type material, host associations, geographic distribution, biogeographical status, systematic relationships, and relevant literature references. We also give a brief summary of louse biology, and an account of the history of louse collecting, expeditions, collections, and research relating to Galápagos Islands lice. We include a host-parasite list, and a list of hosts which breed in the Galápagos Islands but without lice recorded from them. Also, we formally designate four lectotypes from the Kellogg Collection.

Key words: Parasitic lice, Phthiraptera, hosts, Galápagos Islands, new records, references, type material, lectotype designations, Kellogg Collection, expeditions, history

INTRODUCTION

The Galápagos Islands (Fig. 1) are world famous for their distinctive plants and animals, and the high degree of endemism of these species. A number of papers dealing with the systematics, distribution and evolution of all Galápagos insects have been published in recent years (e.g. Peck 2001, 2006; Landry & Roque-Albelo 2004, 2010; Pacheco *et al.* 2007; Sinclair 2009; Palma & Price 2010; Heraty & Herrera 2011). Peck (2001) dealt with the “smaller orders” of insects, except the Phthiraptera, the parasitic lice. This paper attempts to fill that gap by listing all valid species of Phthiraptera recorded from the Galápagos Islands, including information on their taxonomic history, type material, host associations, geographic distribution, biogeographical status, systematic relationships, and literature references.

Lice are wingless, dorso-ventrally compressed insects adapted to an obligate ectoparasitic life style on homoeothermic vertebrates, i.e. birds and mammals, only. Their adult length ranges between 1 and 12 mm, with an average of 2 to 4 mm. They spend their complete life cycle in the plumage or in the fur of the host. Females cement their eggs onto the base of feathers or hairs, and after a short incubation period, the first instar nymph hatches. Nymphs shed their skin (moult) three times before reaching the adult stage. Both adults and nymphs of the so-called chewing lice (suborders Amblycera, Ischnocera and Rhynchophthirina) are parasites of mammal and birds, feeding on feathers, skin debris and secretions, and occasionally blood. The so-called sucking lice (Suborder Anoplura) are exclusively mammal parasites and feed on blood (Marshall 1981).

Lice have evolved together with their hosts for such long periods of time that birds and mammals have become adapted to carry quite a number of lice without suffering serious harm. Normal host behavioural activities—such as preening, dusting, grooming, bathing, anting—and physiological traits—such as immune resistance, feather and hair moulting, feather chemistry and toughness—contribute to control the size of louse populations (Johnson & Clayton 2003). However, lice do decrease the health and fitness of the host, especially when their numbers increase due to host illness or malnutrition, or when they transmit microorganisms that cause disease (Clayton, Adams & Bush 2008).

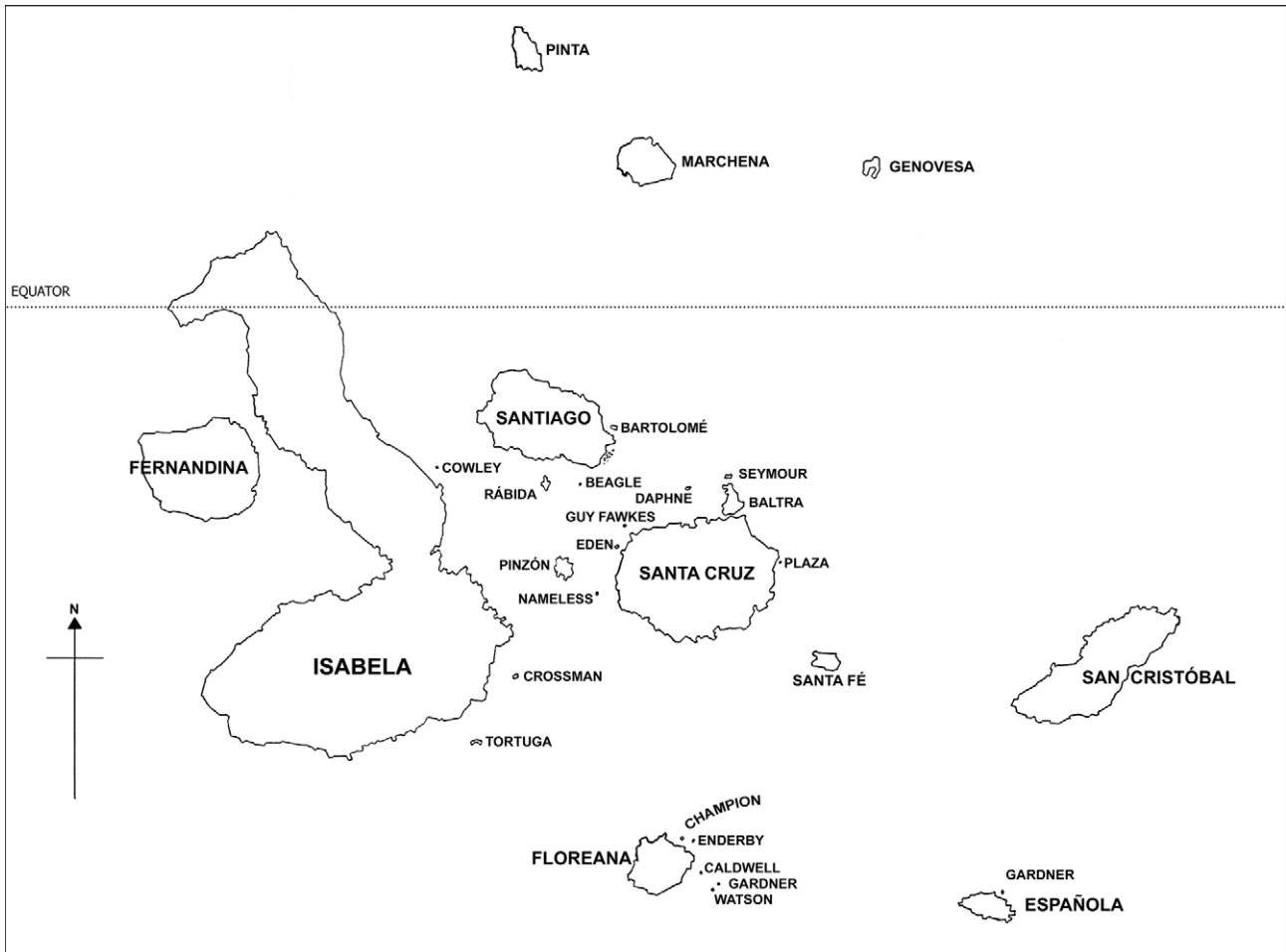


FIGURE 1. Map of the Galápagos Islands.

The phylogenetic relations of lice often parallel those of their hosts and thus louse relationships may help to elucidate the relationships of their hosts, as well as to distinguish closely related host taxa which are otherwise poorly defined (e.g. Page *et al.* 2004; Palma & Price 2004; Hughes *et al.* 2007). However, care must be taken to consider only those louse species well established on a given host, avoiding stragglers and contaminants. Stragglers are lice found occasionally on a host which is not their regular, natural host, having transferred from their original host by natural means (e.g. close contact during feeding, flocking, roosting, predator-prey interaction, phoresis). Contaminants are lice that have been transferred to a host due to human activities, such as placing two dead hosts together in the same container, or two live hosts in the same enclosure, or mixing samples in the laboratory during labelling, slide-mounting, etc. (see Pilgrim & Palma 1982: 2).

In general, a given systematic order of hosts is exclusively parasitised by one or more genera of lice (Price *et al.* 2003: 15). However, there are a number of louse genera more ubiquitous in their host distribution, parasitising more than one host order, such as the genus *Colpocephalum* that includes over 130 species parasitic on birds belonging to 11 orders (Price *et al.* 2003: 96), the genus *Saemundssonina* with over 100 species and subspecies parasitic on members of five bird orders (Price *et al.* 2003: 232), and *Menacanthus* with about 100 species parasitising three bird orders (Price *et al.* 2003: 117).

We compiled this Checklist from an extensive review of the literature and from the examination of over 7,000 specimens held in museum collections. The list comprises all the louse species and subspecies identified in samples collected off hosts from the Galápagos Islands and from reliable literature records, including 26 new records of species and eight new records of genera. Further, we have deleted nine louse species from the Galápagos fauna, which were incorrectly assigned to the archipelago in the literature (see below).

Over 5,000 species of lice have been described worldwide, about 80% of them from birds and 20% from mammals (Price *et al.* 2003; Durden & Musser 1994a). Three of the four suborders comprising the order

Phthiraptera have been recorded in the Galápagos Islands: Amblycera on birds, Ischnocera on birds and one mammal, and Anoplura on mammals. There are 104 species and subspecies of lice listed in this paper (three of them at the generic level only), of which 17 are endemic (occurring only in the Galápagos Islands), 79 are native (occurring in other localities but also occurring naturally in the Galápagos Islands), and 8 were introduced by human agency with their hosts (Table 1). Considering the small number of endemic and native species of mammals living in the Galápagos Islands, it is not surprising that most lice are from birds. At present, there are only one endemic, one native and three introduced louse species recorded from mammals (see below, Host-parasite list and Table 1). Other introduced mammals may also harbour lice, but have not been reported yet (see below: List of breeding hosts without records of lice). Among the birds, most of the louse species are from seabirds, which is a reflection of the great number of marine birds living on an oceanic archipelago, a feature that the Galápagos Islands share with other island groups, such as, for example, New Zealand (Pilgrim & Palma 1982), the Faroe Islands (Palma & Jensen 2005), and Tristan da Cunha (Hänel & Palma 2007). Most of the bird species breeding in the Galápagos Islands have lice recorded from them (48 from a total of 59, or 81.4%; see below, Host-parasite list and List of breeding hosts without records of lice). However, there is a large number of migrant and vagrant bird species (Harris 1989; Castro & Phillips 1996) which still need to be searched for lice.

In comparison to other terrestrial invertebrates, Galápagos lice show a much lower degree of endemism. Peck (2006) reported 54.7% of 486 species of beetles (and eight genera) as endemic, including species introduced by human agency. Considering smaller insect groups, Peck (2001) found that 39.7% of 1,850 species (including introduced species) are endemic, but that endemism increases to 47.2% if the introduced species are not included. Regarding lice, there is no endemic genus in the Galápagos Islands, and only 17 species are endemic from a total of 104 species, a mere 16.3% or 17.7% if we exclude the eight introduced species (Table 1). This low level of endemism is comparable to those found in other oceanic archipelagos such as the Faroe Islands (Palma & Jensen 2005) and Tristan da Cunha (Hänel & Palma 2007), and is correlated to the low number of endemic host species, and a lack of endemic host orders or families.

TABLE 1. Statistics of lice recorded from the Galápagos Islands: numbers of species and subspecies

	Amblycera	Ischnocera		Anoplura	TOTALS
	from birds	from birds	from mammals	from mammals	
Endemic	4	12	0	1	17
Native	29	49	0	1	79
Introduced	2	3	1	2	8
TOTALS	35	64	1	4	104

History of collections and research on Galápagos Islands lice

The first collection of Galápagos lice was made by Robert E. Snodgrass during the *Hopkins Stanford Galapagos Expedition 1898–1899*, and the results were reported by Kellogg & Kuwana (1902). A second, smaller louse collection was made by Rollo Beck in the northern summer of 1901, who visited the islands on board the *Mary Sachs* with the purpose of collecting giant tortoises for Lord Walter Rothschild (Chambers 2004: 213). The results of this second louse collection were published by Kellogg (1903, 1906). Together, these three reports include 62 nominal species and subspecies of lice from the Galápagos Islands, (i.e. excluding those from Clipperton and Revillagigedo Islands) of which 31 were described as new. However, only 25 of the 62 names are still regarded as valid species recorded from the Galápagos Islands, with most of the deleted names being junior synonyms or misidentifications, while a few were incorrectly associated with Galápagos hosts (see below). Also, from the 31 new species and subspecies described by Kellogg & Kuwana (1902) and Kellogg (1903, 1906), only 16 are recognised as valid today.

Junior synonyms and misidentifications are abundant in the literature dealing with lice, but the main problem with the reports by Kellogg & Kuwana (1902) and Kellogg (1906) is the extremely high number of incorrect host-lice associations which these authors included believing that they were natural and representing “an abnormal phase of normal straggling!” (Kellogg & Kuwana 1902: 459; Kellogg 1906: 316). This misunderstanding has been extensively discussed by Thompson (1938b) and Palma (1994b) who presented evidence showing that those incorrect host-lice associations were mainly due to careless collecting of the hosts and their lice. Although there is an explicit statement that birds were not mixed together, we believe that the high number of contaminant records shows that such statement is erroneous. Although straggling of lice between unrelated hosts does occur in natural conditions (e.g. Horning, Palma & Pilgrim 1980: 15; Palma & Jensen 2005: 71), such occurrences are not numerous. Among Galápagos hosts, straggling of lice between a predator (*Buteo galapagoensis*) and one of its preys (*Zenaida galapagoensis*) has been reported by Whiteman *et al.* (2004). Here, we report another example of louse straggling between Galápagos hosts: a single female *Columbicola macrourae*, originally from a specimen of *Zenaida galapagoensis* (the prey), was collected from a specimen of *Asio flammeus* (the predator) on Isla Española during the 1992 Galápagos Expedition, that being the only case of louse straggling from a total of 560 hosts examined for lice during that expedition.

An additional source of errors regarding louse records in Kellogg & Kuwana (1902) and Kellogg (1906) is that they included lice collected from islands which are not part of the Galápagos archipelago, but which they subsequently listed as part of the Galápagos fauna. Lice collected from birds caught on Clipperton Island (e.g. *Menopon singularis* and *Nirmus obtusus* in Kellogg & Kuwana 1902: 468, 485) were mixed with lice from the Galápagos Islands and published records became confused (Palma 1994b). Furthermore, some lice from Guadalupe Island birds were collected but not reported from this island, instead they were incorrectly associated with Galápagos Islands birds (e.g. *Docophorus communis* in Kellogg & Kuwana 1902: 464, and as *Philopterus communis* in Linsley & Usinger 1966: 131; see below under “Species deleted from the Galápagos louse fauna”). Although the title of Kellogg’s (1906) report states that louse records from the Revillagigedo Islands are included, with six species clearly listed from Clarion Island only, Thompson (1939) assigned them incorrectly to the Galápagos Islands (see below under “Species deleted from the Galápagos louse fauna”).

Ferris (1916b, 1921, 1923) recorded three species of sucking lice from the Galápagos Islands, based on material held at the Stanford University Collection—now deposited in the Essig Museum of Entomology, University of California, Berkeley, California, U.S.A.—but without any details about the collector/s or expedition/s which procured the specimens.

The next collection of lice from Galápagos birds was made by William Beebe during the summer of 1923, as part of the *Williams Galápagos Expedition* organised by the New York Zoological Society. The results were published by Ewing (1924), who identified six known species and described two new taxa: one species and one subspecies from two endemic hosts, the flightless cormorant and the blue-footed booby, respectively. Both louse taxa are still valid today.

Harrison (1937), in his report of the lice collected by the *Australasian Antarctic Expedition 1911–1914*, added a short statement recording two lice from a Galápagos penguin that G.F. Ferris had sent him for identification from the Stanford University Collection, but there are no details about the collecting event of those two penguin lice. Thompson (1938b, 1939) listed all the lice recorded from islands in the Pacific Ocean, including those from the Galápagos, but he added no new records.

Brinck (1951) published a short report on one louse species collected from an introduced rat during the 1925 *Norwegian Expedition to the Galápagos Islands*, and included a synopsis of the other sucking lice previously recorded by Ferris (1916b, 1921, 1923). In the same year, Hopkins (1951) clarified the confusion surrounding the identity of the *Brueelia* lice collected by the the *Hopkins Stanford Galapagos Expedition 1898–1899* and described by Kellogg & Kuwana (1902) under various names, establishing several new synonymies and replacing a junior homonym for the species parasitising Galápagos finches.

Timmermann (1952a) and Kéler (1957a,b) each described new endemic louse species from the swallow-tailed gull and the waved albatross respectively, based on specimens from the Meinertzhagen Collection held in the Natural History Museum (London, United Kingdom), but neither gave the date of collection or the name of the expedition or collector who obtained the samples. Ward (1953), while working on a revision of the species of *Saemundssonina* parasitic on terns and studying the original material from the Kellogg Collection, clarified the status of a species described by Kellogg & Kuwana (1902) from erroneous hosts.

Both Timmermann (1960, 1961c, 1962, 1963a,b) and Edwards (1961) revised large collections of lice from petrels and albatrosses, including descriptions of four new species and records of other previously known species from the Galápagos Islands. The collections studied by these authors originated from the Natural History Museum (London) and from bird skins held at the Museum of Comparative Zoology (Harvard University, Cambridge, Massachusetts, U.S.A.).

The first revised list of all the louse species recorded from the Galápagos Islands was compiled by Linsley & Usinger (1966) with the assistance of Theresa Clay (then at the Natural History Museum, London) who checked names and synonymies after studying type specimens from the Kellogg Collection. This list comprises 58 species and 25 genera, of which 44 species are still recognised as valid for the Galápagos Islands today. Linsley (1977) published a supplement to that list, which included five species that either had changed status or had been recorded for the archipelago after 1966.

Some revisions of louse genera at world or regional level include species from the Galápagos Islands, for example: Price & Clay (1972) revision of the genus *Austromenopon* parasitising petrels and albatrosses; Nelson (1972) revision of the genus *Ricinus* from the New World passerines; Price, Clayton & Hellenthal (1999) review of the genus *Physconelloides* from pigeons and doves; and Clayton & Price (1999) review of the genus *Columbicola* from New World pigeons and doves.

A comprehensive survey of all the insect fauna of the Galápagos Islands began in the mid 1980s, under the leadership of the second author of this checklist (Peck 2001, 2006). Lice were intensively collected during the 1992 *Galápagos Expedition*, which lasted 90 days from March to May. About 560 hosts belonging to 61 species of birds and mammals were captured alive, deloused and subsequently released. The 93 species and subspecies of lice collected during this expedition form the basis of this checklist. Other publications dealing with lice collected during the 1992 *Galápagos Expedition* are those by Palma (1994b, 1995, 2011, 2012), Paterson, Palma & Gray (2003), Causton *et al.* (2006), and Palma & Price (2010).

Latest research efforts on lice from the Galápagos Islands have focussed on the ecology, physiology, phylogeny, genetic diversity and coevolution of both endemic birds and their lice. The group led by N.K. Whiteman studied the lice of the Galápagos hawk and the Galápagos dove (Whiteman *et al.* 2004, 2006, 2007, 2009; Whiteman & Parker 2004a,b), while Štefka *et al.* (2011) worked on Galápagos mockingbirds and their parasites.

MATERIALS, METHODS and CONVENTIONS

Collections of Galápagos lice are held primarily in the Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand (MONZ) and in the Kellogg Collection held at the Essig Museum of Entomology, University of California, Berkeley, California, U.S.A. (EMEC). Smaller collections are held in the Natural History Museum, London, United Kingdom (NHML), in the American Museum of Natural History, New York, U.S.A. (AMNH), in the United States National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A. (USNM), and in the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A. (MCZC).

Most of the lice on which this paper is based were collected during the 1992 *Galápagos Expedition*. Birds and mammals were caught alive, with mist-nets in the case of small passerines and seabirds, with live traps in the case of rodents, or by hand in the case of larger birds and goats. The tame nature of most large Galápagos birds facilitated their capture without too many difficulties. Delousing large birds required a minimum of two people working together (Figs 2–3). Hosts were placed individually and one at a time on a white plastic tray or sheet depending on the size of the bird, and a mild insecticide of the kind used to control pet ectoparasites was applied to the plumage or pelage. After 2–3 minutes, the lice were sufficiently knocked down to facilitate their dislodgement and subsequent fall onto the tray, from which they were picked up with a fine, wet brush and fixed in 70% ethanol. Hosts were subsequently released. The lice were later slide-mounted in the laboratory following the technique in Palma (1978). Extreme care was taken to avoid contamination of any louse collected from one host onto another. Thus, the tray or sheet was thoroughly cleaned after each host was processed.

The Kellogg Collection of slides was entirely re-mounted by the senior author, dissolving with warm water the dry glycerol in which the lice were mounted, and then treating and mounting each louse according to the technique in Palma (1978). Kellogg's original labels were detached, cleaned, re-glued, and protected with colourless nail polish. Additional labels, with updated louse identifications and suggested correct host names, were glued to the slides as required.



FIGURE 2. Collecting lice from a blue-footed booby (*Sula nebouxii excisa*) during the 1992 Galápagos Expedition.



FIGURE 3. Collecting lice from a swallow-tailed gull (*Creagrus furcatus*) during the 1992 Galápagos Expedition.

In the checklist, families and genera of lice are listed in alphabetical order within each order and family respectively, and species are listed in alphabetical order within each genus. Taxonomy and nomenclature of chewing lice follow Price *et al.* (2003), except where indicated; those of sucking lice follow Durden (1994). Synonymies for genera and species of lice are not comprehensive. They are restricted to those relevant to the Galápagos louse fauna. In the species synonymies, we use quotation marks “ ” for species or subspecies names which we regard as misidentifications made by the author(s) cited immediately after the names.

Synonymies and references under each louse species are listed in chronological order. Geographic distributions within the Galápagos Islands are given approximately from north to south. The material examined and the Galápagos localities given under each louse species refer to specimens collected from natural, regular hosts, i.e. specimens and locality records resulting from contaminations or straggling have been excluded (see Palma 1994b). Taxonomy, nomenclature, vernacular English names, and sequence of bird taxa follow Dickinson (2003), except where indicated. Names of bird species used by Kellogg & Kuwana (1902) and Kellogg (1906) have been updated according to Dickinson (2003). Scientific and vernacular English names of mammal species were taken from Perry (1984).

The pattern used for *species/subspecies* entries is:

Name of *species/subspecies* author/s, date of publication

Original *name* and reference.

Synonymies and references relevant to Galápagos Islands.

Combinations of *species/subspecies* with various *genera*, and references.

Current *genus* and *species/subspecies* and reference.

Primary type, sex, and repository (reference, if different from the original description).

Type host/s:

Galápagos host/s:

Galápagos locality/ies:

Galápagos reference/s:

Other significant reference/s:

Material examined and repository/ies.

Remarks:

CHECKLIST of LICE

Order **PHTHIRAPTERA** Haeckel, 1896

Phthiraptera Haeckel 1896. *Systemat. Phylog.*: 703.

Suborder **AMBLYCERA** Kellogg, 1896

Amblycera Kellogg, 1896a. *Proc. Calif. Acad. Sci.* 6: 68.

Family **MENOPONIDAE** Mjöberg, 1910

Menoponidae Mjöberg, 1910. *Arkiv Zool.* 6(13): 26. Type genus: *Menopon* Nitzsch, 1818.

Genus ***Actornithophilus*** Ferris, 1916

Actornithophilus Ferris, 1916a. *Canad. Ent.* 48: 303. Type species: *Colpocephalum uniseriatum* Piaget, 1880 = *Actornithophilus uniseriatus* (Piaget, 1880) (by original designation).

Clypeodon Timmermann, 1954a. *Ann. Mag. Nat. Hist.* (ser. 12) 7: 830. Type species: *Colpocephalum incisum* Piaget, 1880 = *Actornithophilus incisus* (Piaget, 1880) (by original designation).

***Actornithophilus bicolor* (Piaget, 1880)**

New record

Colpocephalum bicolor Piaget, 1880: 561, pl. 47, fig. 1.

Actornithophilus bicolor (Piaget, 1880); Hopkins & Clay 1952: 21.

Syntypes ♂♀ lost (Clay 1951a: 176).

Type host: *Arenaria interpres* (Linnaeus, 1758).

Galápagos host: *Arenaria interpres* (Linnaeus, 1758).

Galápagos locality: Isla Genovesa.

Galápagos references: This paper.

Other significant references: Clay (1962: 239, 242, pl. 11, fig. 3); Price *et al.* (2003: 83).

Material examined: 1 female (MONZ).

Remarks: This is the first record of *Actornithophilus bicolor* from the Galápagos Islands, a louse recorded from the two species of *Arenaria* only (Price *et al.* 2003: 83).

***Actornithophilus grandiceps* (Piaget, 1880)**

Colpocephalum grandiceps Piaget, 1880: 558, pl. 46, fig. 7.

Colpocephalum grandiceps Piaget, 1880; Kellogg 1906: 321.

Actornithophilus grandiceps (Piaget, 1880); Thompson 1938b: 207.

Actornithophilus grandiceps (Piaget, 1880); Hopkins & Clay 1952: 21.

Actornithophilus grandiceps (Piaget, 1880); Clay *in* Linsley & Usinger 1966: 127.

Lectotype ♂ in NHML (Clay 1951a: 182).

Type host: *Haematopus ostralegus* Linnaeus, 1758.

Galápagos host: *Haematopus palliatus galapagensis* Ridgway, 1886.

Galápagos localities: Isla Marchena; Isla Santiago; Isla Santa Cruz; Isla Española.

Galápagos references: Kellogg (1906); Kellogg (1908: 56); Thompson (1938b); Linsley & Usinger (1966).

Other significant references: Clay (1962: 226); Palma (1996: 110); Price *et al.* (2003: 83).

Material examined: 4 males (1 pharate) and 7 females (3 samples, MONZ).

Remarks: Kellogg (1906: 321) recorded "*C. grandiceps* Piaget" from *Haematopus galapagensis*. Therefore, this is not a new host-louse association, although Price *et al.* (2003: 289) failed to record *A. grandiceps* under *Haematopus palliatus*. No specimens of this louse species were found in the Kellogg collection. *Actornithophilus grandiceps* is the only species of this genus known from most *Haematopus* species (Price *et al.* 2003: 83).

***Actornithophilus incisus* (Piaget, 1880)**

Colpocephalum incisum Piaget, 1880: 569, pl. 47, fig. 9.

Colpocephalum milleri Kellogg & Kuwana, 1902: 483, pl. 30, fig. 6.

"*Colpocephalum funebre*" Kellogg 1906: 320 (not *Colpocephalum funebre* Kellogg, 1896).

Colpocephalum milleri Kellogg & Kuwana, 1902; Kellogg 1906: 321.

Actornithophilus milleri (Kellogg & Kuwana, 1902); Thompson 1938b: 207.

Actornithophilus incisus (Piaget, 1880); Hopkins & Clay 1952: 22.

Clypeodon incisus (Piaget, 1880); Timmermann 1954a: 830, figs 1c, 2a,b.

Actornithophilus incisus (Piaget, 1880); Clay *in* Linsley & Usinger 1966: 127.

Holotype ♂ in NHML (Clay 1953: 641).

Type host: *Phaethon flavirostris* (Brandt, 1837) = *Phaethon lepturus* Daudin, 1802, in error (see Hopkins & Clay 1952: 22).

Galápagos host: *Anous stolidus galapagensis* Sharpe, 1879.

Galápagos localities: Isla Wolf; Isla Marchena; Isla Fernandina; Isla Isabela; Isla Seymour; Isla Rábida.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 57); Thompson (1938b); Linsley & Usinger (1966).

Other significant references: Timmermann (1954a); Clay (1962: 202, 242); Palma (1996: 111); Price *et al.* (2003: 83).

Material examined: 22 males, 26 females and 15 nymphs (7 samples, EMEC, MONZ).

Remarks: The morphological differences between *Actornithophilus incisus* from *Anous stolidus* (Linnaeus, 1758) and *Actornithophilus ceruleus* (Timmermann, 1954) from *Anous minutus* Boie, 1844 were not detected by Kellogg & Kuwana (1902), who included both louse populations in a single species: *Colpocephalum milleri*.

However, *Anous minutus* is not included in the Galápagos Islands avifauna (Harris 1989: 117; Castro & Phillips 1996: 110).

From the Kellogg Collection, we have identified seven males and 16 females of *A. incisus*, plus three males and three females of *A. ceruleus*. Five of these six specimens of *A. ceruleus* are from Clipperton Island, and the sixth is a male with host and locality recorded as “*Geospiza fuliginosa*, Albermale Id (Galapagos)” (slide 1056 = 1008a, EMEC). This louse is most likely a contaminant from an *Anous minutus* collected on Clipperton Island by the *Hopkins Stanford Galapagos Expedition* in their way to the Galápagos Islands (see Palma 1994b: 269). Several species of Galápagos birds (*Butorides sundevalli*, *Camarhynchus psittacula affinis*, *Geospiza fortis*, *Phaethon aethereus*, *Sula granti*, *Sula nebouxii* and *Zenaida galapagoensis*) recorded by Kellogg & Kuwana (1902: 483) and Kellogg (1906: 321) as hosts for *Colpocephalum milleri* are the result of contaminations from *Anous stolidus galapagensis*. At present, *Anous stolidus* (Linnaeus, 1758) is the only host species of *A. incisus* (Price *et al.* 2003: 83).

***Actornithophilus kilauensis* (Kellogg & Chapman, 1902) New record**

Colpocephalum kilauensis Kellogg & Chapman, 1902: 161, pl. 14, fig. 1.

Colpocephalum kilauense Kellogg & Chapman, 1902; Harrison 1916: 50.

Actornithophilus kilauensis (Kellogg & Chapman, 1902); Hopkins & Clay 1952: 22.

Lectotype ♀ in EMEC (Clay 1962: 224, pl. 4, fig 6).

Type host: *Heteroscelus incanus* (Gmelin, 1789).

Galápagos host: *Heteroscelus incanus* (Gmelin, 1789).

Galápagos locality: Isla Genovesa.

Galápagos references: This paper.

Other significant references: Carriker (1957: 103); Clay (1962: 224, pl. 4, fig 6); Price *et al.* (2003: 85).

Material examined: 2 males, 3 females and 3 nymphs (MONZ).

Remarks: *Actornithophilus kilauensis* is a new louse record for the Galápagos Islands, and a poorly known species which needs to be properly redescribed (Clay 1962: 224). This louse has also been recorded from *Heteroscelus brevipes* (Vieillot, 1816) (Price *et al.* 2003: 83).

Genus ***Ancistrona*** Westwood, 1874

Ancistrona Westwood, 1874. *Thesaurus Ent. Oxon.*: 197. Type species: *Ancistrona procellariae* Westwood, 1874 = *Ancistrona vagelli* (J.C. Fabricius, 1787) (by monotypy).

***Ancistrona vagelli* (J.C. Fabricius, 1787)**

Pediculus vagelli J.C. Fabricius, 1787: 369.

Ancistrona procellariae Westwood, 1874: 197, pl. 37, fig. 4.

Ancistrona gigas Piaget, 1883: 152, pl. 9, fig. 1.

Ancistrona gigas Piaget, 1885 [sic]; Kellogg & Kuwana 1902: 483.

Ancistrona vagelli (J.C. Fabricius, 1787); Thompson 1939: 15.

Ancistrona vagelli (J.C. Fabricius, 1787); Hopkins & Clay 1952: 36.

Neotype ♂ in NHML (Clay & Hopkins (1960: 6).

Type host: *Fulmarus glacialis glacialis* (Linnaeus, 1758).

Galápagos host: *Pterodroma phaeopygia* (Salvin, 1876).

Galápagos locality: Isla Santa Cruz.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 75); Thompson (1939).

Other significant references: Kéler (1952: 209–213, figs 4–5); Clay & Hopkins (1960: 4, figs 1–6); Timmermann (1965: 177–179, figs 114–115, 122); Palma (1996: 113); Palma (1999: 375–378); Price *et al.* (2003: 89).

Material examined: 2 females (2 samples, MONZ).

Remarks: *Pterodroma phaeopygia* is endemic to the Galápagos Islands. Although Dickinson (2003: 74) listed it as the subspecies *Pterodroma phaeopygia phaeopygia*, we regard it as a full species as well as *Pterodroma sandwichensis* (Ridgway, 1884), following Browne *et al.* (1997: 814). Kellogg & Kuwana (1902: 483) recorded “Two immature specimens from an undetermined host” as “*Ancistrona gigas*”, but these specimens could not be found in the Kellogg Collection. *Ancistrona vagelli* has been recorded from a large number of procellariid hosts (Price *et al.* 2003: 89), including *Pterodroma phaeopygia*.

Genus *Austromenopon* Bedford, 1939

Austromenopon Bedford, 1939. *Onderstepoort Jour. Vet. Sci. Animal Ind.* 12(1): 122. Type species: *Menopon crocatum* Nitzsch [*in* Giebel], 1866 = *Austromenopon crocatum* (Nitzsch [*in* Giebel], 1866) (by original designation).

Procellariphaga Eichler, 1949. *Boll. Soc. Ent. Italiana* 79: 12. Type species: *Procellariphaga ossifragae* Eichler, 1949 = *Austromenopon ossifragae* (Eichler, 1949) (by original designation).

***Austromenopon atrofulvum* (Piaget, 1880) New record**

Menopon atrofulvum Piaget, 1880: 483, pl. 39, fig. 2.

Austromenopon atrofulvum (Piaget, 1880); Hopkins & Clay 1952: 47.

Lectotype ♂ in NHML (Clay 1949: 819).

Type host: *Platalea leucorodia* Linnaeus, 1758, in error (see Hopkins & Clay 1952: 47).

Galápagos host: *Anous stolidus galapagensis* Sharpe, 1879.

Galápagos localities: Isla Seymour; Isla Rábida.

Galápagos references: This paper.

Other significant references: Clay (1949: 819); Clay (1959: 163–166, figs 6, 35); Clay & Moreby (1967: 158, fig. 67); Palma (1996: 115); Price *et al.* (2003: 90).

Material examined: 2 males, 2 females and 1 nymph (3 samples, MONZ).

Remarks: This is the first record of *Austromenopon atrofulvum* from the Galápagos Islands. This species is the only *Austromenopon* known from all species of terns (Price *et al.* 2003: 90, 290, 293).

***Austromenopon beckii* (Kellogg, 1906)**

Menopon beckii Kellogg, 1906: 322.

Menopon becki [sic] Kellogg, 1906; Thompson 1938b: 202.

Austromenopon becki [sic] (Kellogg, 1906); Hopkins & Clay 1952: 47.

Austromenopon becki [sic] (Kellogg, 1906); Clay *in* Linsley & Usinger 1966: 127.

Austromenopon beckii (Kellogg, 1906); Price *et al.* 2003: 90.

Holotype ♀ in EMEC.

Type host: *Phaethon aethereus* Linnaeus, 1758.

Galápagos host: *Phaethon aethereus mesonauta* Peters, 1930.

Galápagos localities: Isla Daphne; Isla Santa Cruz; Isla Champion (near Isla Floreana); Isla Española.

Galápagos references: Kellogg (1906); Kellogg (1908: 61); Linsley & Usinger (1966).

Other significant references: Thompson (1938a: 460, figs 2, 3ac); Carriker (1949: 18); Timmermann (1954b: 198, fig. 4); Palma (1996: 115); Price *et al.* (2003: 90).

Material examined: 14 males, 24 females and 36 nymphs (3 samples, MONZ).

Remarks: This is the only *Austromenopon* species known from all species of *Phaethon* (Price *et al.* 2003: 90, 363).

***Austromenopon narboroughi* (Kellogg & Kuwana, 1902)**

(Fig. 4)

Menopon narboroughi Kellogg & Kuwana, 1902: 485, pl. 31, fig. 2.

“*Menopon numerosum*” Kellogg, 1906: 321 (not *Menopon numerosum* Kellogg, 1896).

Menopon narboroughi Kellogg & Kuwana, 1902; Kellogg 1906: 322.

Procellariphaga narboroughi (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 299.

Austromenopon narboroughi (Kellogg & Kuwana, 1902); Clay *in* Linsley & Usinger 1966: 127.

Austromenopon narboroughi (Kellogg & Kuwana, 1902); Price & Clay 1972: 499, figs 51–54.

Syntypes ♂♀ lost (Price & Clay 1972: 499).

Type hosts: *Butorides plumbeus* Ridgway, 1896 = *Butorides sundevalli* (Reichenow, 1877), in error (see Hopkins & Clay 1952: 299), and *Puffinus subalaris* Ridgway, 1897.

Galápagos host: *Puffinus subalaris* Ridgway, 1897.

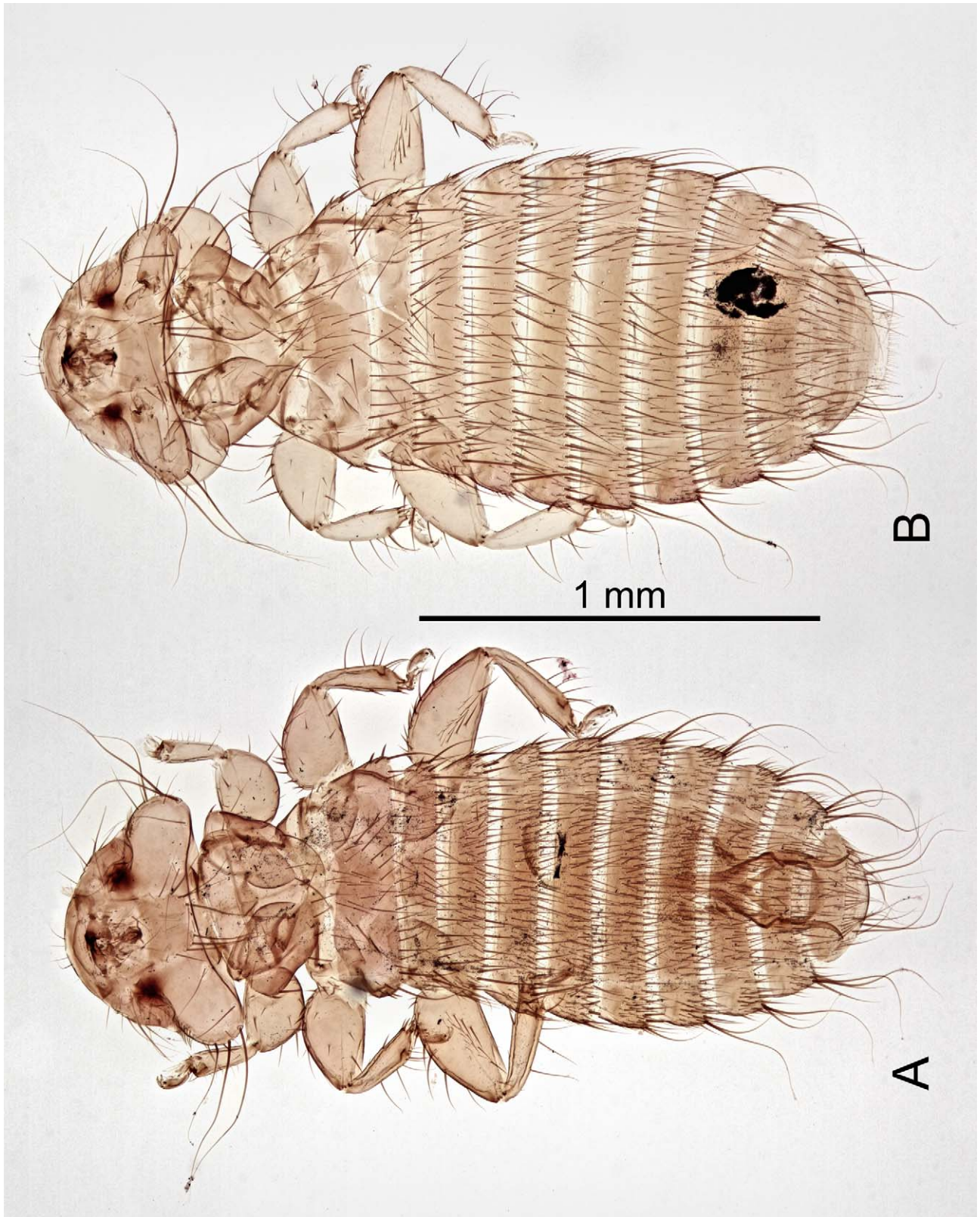


FIGURE 4. *Austromenopon narboroughi* (Kellogg & Kuwana, 1902). A: male. B: female (Host: *Puffinus subalaris*).

Galápagos localities: Isla Darwin; Isla Marchena; Isla Fernandina; Isla Baltra; Isla Plaza; Islo Corona del Diablo (near Isla Floreana); Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 66); Harrison (1916: 41); Thompson (1938b: 204); Linsley & Usinger (1966); Price & Clay (1972).

Other significant references: Timmermann (1965: 174); Price *et al.* (2003: 91).

Material examined: 10 males, 22 females and 27 nymphs (5 samples, EMEC, MONZ).

Remarks: Both *Austromenopon narboroughi* and its host are endemic to the Galápagos Islands. Although Dickinson (2003: 76) listed the host of this louse as *Puffinus lherminieri subalaris*, we regard it as a full species following Austin *et al.* (2004: 859). From the Kellogg Collection, we have identified as *Austromenopon narboroughi* three females reported by Kellogg (1906: 321) as “*Menopon numerosum*” from *Puffinus subalaris*.

***Austromenopon navigans* (Kellogg, 1896)**

Menopon navigans Kellogg, 1896a: 156, pl. 14, figs 4–5.

Menopon navigans Kellogg, 1896; Kellogg 1906: 322.

Procellariophaga navigans (Kellogg, 1896); Hopkins & Clay 1952: 299.

Austromenopon navigans (Kellogg, 1896); Clay in Linsley & Usinger 1966: 127.

Austromenopon navigans (Kellogg, 1896); Price & Clay 1972: 490, figs 13–15, 17.

Austromenopon bulleri Price & Clay 1972: 491, fig. 16.

Syntypes ♂♀ lost (Price & Clay 1972: 491).

Type host: *Phoebastria albatrus* (Pallas, 1769).

Galápagos host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos locality: Isla Española.

Galápagos references: Kellogg (1906: 322); Ewing (1924: 82); Thompson (1938b: 204); Linsley & Usinger (1966).

Other significant references: Timmermann (1965: 166); Price & Clay (1972: 490); Palma (1994a: 64); Palma (1996: 117); Price *et al.* (2003: 91).

Material examined: 9 males, 23 females and 6 nymphs (5 samples, MONZ).

Remarks: Kellogg (1906: 322) reported *A. navigans* from “*Sula variegata*”, but this bird is not a regular, natural host for that louse species. Therefore, although this is not a new louse record for the Galápagos Islands, it represents a new host-lice association. *Austromenopon navigans* has been recorded from several species of small albatrosses now placed in the genera *Thalassarche* and *Phoebastria*, but listed as *Diomedea* by Price *et al.* (2003: 91).

***Austromenopon oceanodromae* Price & Clay, 1972** **New record**

Austromenopon oceanodromae Price & Clay, 1972: 501, figs 49–50.

Austromenopon oceanodromae Price & Clay, 1972; Price *et al.* 2003: 92.

Holotype ♀ in NHML.

Type host: *Oceanodroma hornbyi* (Gray, 1854).

Galápagos hosts: *Oceanodroma tethys tethys* (Bonaparte, 1852); *Oceanodroma castro* (Harcourt, 1851).

Galápagos localities: Isla Plaza; Islote Corona del Diablo (near Isla Floreana); at sea, 70 miles SW from the archipelago.

Galápagos reference: This paper.

Other significant references: Price *et al.* (2003: 92); Palma (2010: 195, 214).

Material examined: 8 males, 13 females and 4 nymphs (6 samples, MONZ).

Remarks: This is the first record of *Austromenopon oceanodromae* from the Galápagos Islands. *Austromenopon oceanodromae* has been recorded from four species of *Oceanodroma*, including the two host species from the Galápagos Islands (Price *et al.* 2003: 92).

***Austromenopon paululum* (Kellogg & Chapman, 1899)** **New record**

Menopon paululum Kellogg & Chapman, 1899: 119, pl. 8, fig. 2.

Procellariophaga paulula (Kellogg & Chapman, 1899); Hopkins & Clay 1952: 299.

Austromenopon piekarskii Timmermann, 1963b: 417, fig. 9.

Austromenopon paululum (Kellogg & Chapman, 1899); Price & Clay 1972: 494, fig. 34.

Lectotype ♀ in EMEC (Price & Clay 1972: 496).

Type host: *Puffinus opisthomelas* Coues, 1864.

Galápagos host: *Puffinus griseus* (Gmelin, 1789).

Galápagos locality: Isla Santa Cruz.

Galápagos reference: This paper.

Other significant references: Timmermann (1963b); Timmermann (1965: 171); Price & Clay (1972); Palma (1996: 117); Price *et al.* (2003: 92).

Material examined: 2 males (1 sample, MONZ).

Remarks: This is the first record of *Austromenopon paululum* from the Galápagos Islands. *Puffinus griseus* is a regular visitor to the Galápagos Islands (Harris 1989: 59). *Austromenopon paululum* has been recorded from a number of *Puffinus* species (Price *et al.* 2003: 92).

***Austromenopon pinguis* (Kellogg, 1896) *sensu lato* New record**

Colpocephalum pingue Kellogg, 1896a: 144, pl. 12, fig. 5.

Procellariphaga pinguis (Kellogg, 1896); Hopkins & Clay 1952: 299.

Austromenopon pingue (Kellogg, 1896); Timmermann 1965: 166.

Austromenopon pinguis (Kellogg, 1896); Price & Clay 1972: 490, figs 10–12.

Lectotype ♀ in EMEC (Price & Clay 1972: 490).

Type host: *Phoebastria albatrus* (Pallas, 1769).

Galápagos host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos locality: Isla Española.

Galápagos reference: This paper.

Other significant references: Timmermann (1965: 166); Price & Clay (1972); Palma (1996: 118); Price *et al.* (2003: 92).

Material examined: 14 males, 12 females and 2 nymphs (5 samples, MONZ).

Remarks: This is the first record of *Austromenopon pinguis* from the Galápagos Islands, and is also a new host-louse association. The material examined from *Phoebastria irrorata* differs in some features from typical *A. pinguis*. However, we do not consider such differences to justify naming a new taxon; hence we qualify the population from *Phoebastria irrorata* as “*sensu lato*”. *Austromenopon pinguis* has been recorded from most species of small albatrosses (listed as species of *Diomedea* by Price *et al.* 2003: 92).

***Austromenopon popellus* (Piaget, 1890)**

Menopon popellus Piaget, 1890: 251, pl. 10, fig. 5.

Procellariphaga popellus (Piaget, 1890); Hopkins & Clay 1952: 299.

Austromenopon popellus (Piaget, 1890); Price & Clay 1972: 491, fig. 24.

Austromenopon popellus (Piaget, 1890); Linsley 1977: 8.

Holotype ♂ in NHML (Clay 1949: 908).

Type host: *Podica senegalensis* (Vieillot, 1817), in error (see Hopkins & Clay 1952: 299).

Galápagos host: *Pterodroma phaeopygia* (Salvin, 1876).

Galápagos locality: Isla Santa Cruz.

Galápagos reference: Price & Clay (1972: 493); Linsley (1977).

Other significant references: Timmermann (1963: 413, fig. 7); Timmermann (1965: 170, fig. 107); Palma (1996: 118); Price *et al.* (2003: 92).

Material examined: 5 males, 6 females and 5 nymphs (2 samples, MONZ).

Remarks: *Pterodroma phaeopygia* is endemic to the Galápagos Islands. Although Dickinson (2003: 74) listed it as the subspecies *Pterodroma phaeopygia phaeopygia*, we regard it as a full species as well as *Pterodroma sandwichensis* (Ridgway, 1884), following Browne *et al.* (1997: 814). *Austromenopon popellus* has been recorded on a large number of procellariid hosts (Price *et al.* 2003: 92), including *Pterodroma phaeopygia*.

***Austromenopon spenceri* Timmermann, 1956 New record**

Austromenopon spenceri Timmermann, 1956: 192, fig. 7

Austromenopon spenceri Timmermann, 1956; Price *et al.* 2003: 92.

Holotype ♂ in Spencer Entomological Collection, Beaty Biodiversity Museum, University of British Columbia, Vancouver, Canada (T.D. Galloway pers. comm. 2012).

Type host: *Phalaropus lobatus* (Linnaeus, 1758).

Galápagos host: *Phalaropus lobatus* (Linnaeus, 1758).

Galápagos locality: Isla Isabela.

Galápagos references: This paper.

Other significant reference: Clay (1959: 165, 167).

Material examined: 1 male and 1 female (1 sample, MONZ).

Remarks: This is the first record of *Austromenopon spenceri* from the Galápagos Islands. Currently, *Phalaropus lobatus* is the only host of this louse species (Price *et al.* 2003: 92), and is a very common visitor to the Galápagos Islands (Harris 1989: 107).

***Austromenopon transversum* (Denny, 1842) New record**

Menopon Transversum [sic] Denny, 1842: 201.

Menopon transversus Denny, 1842: 226, pl. 21, fig. 7.

Austromenopon transversum (Denny, 1842); Hopkins & Clay 1952: 48.

Lectotype ♀ in NHML (Clay (1959: 166).

Type host: *Rissa tridactyla* (Linnaeus, 1758).

Galápagos hosts: *Creagrus furcatus* (Nébourg, 1842); *Larus pipixcan* Wagler, 1831.

Galápagos localities: Isla Genovesa; Isla Seymour; Isla Santa Cruz; Isla Champion (near Isla Floreana).

Galápagos references: This paper.

Other significant references: Timmermann (1954b: 204, fig. 15–16); Timmermann (1957: 97, figs 73–74); Clay (1959: 161, 164, 166–167, figs 15, 19, 21); Clay & Moreby (1967: 158, 169, figs 63, 73); Choe & Kim (1987: 3000, 3002); Palma (1996: 119); Price *et al.* (2003: 93).

Material examined: 11 males, 17 females and 31 nymphs (6 samples, MONZ).

Remarks: This is the first record of *Austromenopon transversum* from the Galápagos Islands, and also a new host-louse association for *Creagrus furcatus*. This louse species is the only *Austromenopon* known from all species of gulls (Price *et al.* 2003: 93, 290).

Genus *Colpocephalum* Nitzsch, 1818

Colpocephalum Nitzsch, 1818. *Germar's Mag. Ent.* 3: 298. Type species: *Colpocephalum zebra* Burmeister, 1838 (by subsequent designation).

Ferrisia Uchida, 1926. *Jour. Coll. Agric. Tokyo* 9: 43. Type species: *Colpocephalum turbinatum* Denny, 1842 (by original designation). Preoccupied by *Ferrisia* Fullaway, 1923.

Neocolpocephalum Ewing, 1933. *Jour. Parasit.* 20: 65. *Nomen novum* for *Ferrisia* Uchida, 1926.

Corvocolpocephalum Conci, 1942. *Boll. Soc. Ent. Italiana* 74: 30. Type species: *Colpocephalum subaequale* “Nitzsch in Burm. 1838” = *Colpocephalum fregili* Denny, 1842 (by original designation).

Liothella Eichler, 1947. *Arkiv Zool.* 39A(2): 15. Type species: *Colpocephalum leptopygos* Nitzsch [*in* Giebel], 1874 (by original designation).

Pelecanigogus Eichler, 1949. *Boll. Soc. Ent. Italiana* 79: 12. Type species: *Colpocephalum eucarenum* “Ntz i. Brm.” (by original designation).

Galliferrisia Ansari, 1951. *Proc. Nat. Inst. Sci. India* 17: 150. Type species: *Galliferrisia tausi* Ansari, 1951 (by original designation).

***Colpocephalum angulaticeps* Piaget, 1880**

Colpocephalum angulaticeps Piaget, 1880: 569, pl. 47, fig. 8.

“*Colpocephalum spineum*” Kellogg & Kuwana, 1902: 484 (not *Colpocephalum spineum* Kellogg, 1899).

“*Colpocephalum unciferum*” Kellogg & Kuwana, 1902: 484 (not *Colpocephalum unciferum* Kellogg, 1896).

“*Colpocephalum unciferum*” Kellogg, 1906: 321 (not *Colpocephalum unciferum* Kellogg, 1896). In part *Colpocephalum angulaticeps*; in part *Colpocephalum turbinatum* Denny, 1842.

Colpocephalum angulaticeps Piaget, 1880; Thompson 1938b: 205.

“*Colpocephalum unciferum*” Clay *in* Linsley & Usinger 1966: 128 (not *Colpocephalum unciferum* Kellogg, 1896). In part *Colpocephalum angulaticeps*; in part *Colpocephalum turbinatum* Denny, 1842.

Colpocephalum angulaticeps Piaget, 1880; Hopkins & Clay 1952: 77.

Colpocephalum angulaticeps Piaget, 1880; Price 1967: 277, figs 12–16.

Lectotype ♀ in NHML (Clay 1951a: 175).

Type host: *Fregata minor* (Gmelin, 1789).

Galápagos host: *Fregata minor ridgwayi* Mathews, 1914.

Galápagos localities: Isla Wolf; Isla Genovesa; Isla Isabela; Isla Seymour; Isla Española.

Galápagos reference: Kellogg & Kuwana (1902); Kellogg (1906); Thompson (1938b: 207).

Other significant reference: Hopkins & Clay (1952: 77); Price (1967); Palma (1996: 121); Price *et al.* (2003: 97).

Material examined: 25 males, 17 females and 2 nymphs (8 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we have identified as *Colpocephalum angulaticeps* one female reported as “*Colpocephalum unciferum*” and four specimens reported as “*Colpocephalum spineum*” by Kellogg & Kuwana (1902: 484), all labelled with incorrect hosts. Also, we have identified as *Colpocephalum angulaticeps* one female reported as “*Colpocephalum unciferum*” from “*Fregata aquila*” by Kellogg (1906: 321).

Colpocephalum angulaticeps has been recorded from two species of *Fregata*, *F. minor* and *F. ariel* (Gray, 1845), while *C. spineum* parasitises the other two species of that genus, *F. aquila* (Linnaeus, 1758) and *F. magnificens* (see Price *et al.* 2003: 97, 102).

***Colpocephalum brachysomum* Kellogg & Chapman, 1902** **New record**

Colpocephalum brachysomum Kellogg & Chapman, 1902: 162, pl. 14, fig. 3.

Colpocephalum brachysomum Kellogg & Chapman, 1902; Hopkins & Clay 1952: 77.

Colpocephalum brachysomum Kellogg & Chapman, 1902; Price & Beer 1963b: 62, fig. 6.

Lectotype ♀ in EMEC (Price & Beer 1963b: 63).

Type host: *Asio flammeus sandwichensis* (Bloxham, 1826).

Galápagos host: *Asio flammeus galapagoensis* (Gould, 1837).

Galápagos locality: Isla Española.

Galápagos references: This paper.

Other significant references: Price & Beer (1963b); Price *et al.* (2003: 97).

Material examined: 6 males, 7 females and 1 nymph (1 sample, MONZ).

Remarks: This is the first record of *Colpocephalum brachysomum* from the Galápagos Islands. *Asio flammeus galapagoensis* is endemic to the Galápagos Islands, but *Colpocephalum brachysomum* also parasitises other hosts (Price *et al.* 2003: 97).

***Colpocephalum heterosoma* Piaget, 1880**

Colpocephalum heterosoma Piaget, 1880: 572, pl. 48, figs 3–4.

Colpocephalum heterosoma Piaget, 1880; Kellogg 1906: 321.

“*Menopon rusticum*” Kellogg, 1906: 322 (not *Menopon rusticum* Giebel, 1874).

“*Myrsidea rustica*” Thompson, 1939: 14 (not *Menopon rusticum* Giebel, 1874).

Colpocephalum heterosoma Piaget, 1880; Price & Beer 1965: 128, figs 89–91.

Colpocephalum heterosoma Piaget, 1880; Clay in Linsley & Usinger 1966: 128.

Lectotype ♂ in NHML (Clay 1951b: 1162).

Type host: *Phoenicopterus ruber roseus* Pallas, 1811.

Galápagos host: *Phoenicopterus ruber ruber* Linnaeus, 1758.

Galápagos localities: Isla Rábida; Isla Santa Cruz.

Galápagos references: Kellogg (1906); Kellogg (1908: 68); Thompson (1938b: 206); Thompson (1939); Linsley & Usinger (1966); Palma & Price (2010: 145).

Other significant references: Price & Beer (1965); Clay (1974: 484); Price *et al.* (2003: 99).

Material examined: 27 males, 29 females and 26 nymphs (4 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we have identified as *Colpocephalum heterosoma* one specimen reported as “*Menopon rusticum*” by Kellogg (1906: 322) from “*Progne modesta*”, which is an incorrect host (Palma & Price 2010: 145). *Colpocephalum heterosoma* has been recorded from at least four species of flamingoes, belonging to three genera (Price *et al.* 2003: 99).

***Colpocephalum occidentale* Price, 1967** **New record**

Colpocephalum occidentale Price, 1967: 276, figs 8–9.

Colpocephalum occidentale Price, 1967; Price *et al.* 2003: 101.

Holotype ♀ in USNM.

Type host: *Pelecanus occidentalis* Linnaeus, 1766.

Galápagos host: *Pelecanus occidentalis urinator* Wetmore, 1945.

Galápagos localities: Isla Santiago; Isla Rábida.

Galápagos references: This paper.

Other significant references: Price *et al.* (2003: 101).

Material examined: 17 males, 16 females and 7 nymphs (4 samples, MONZ).

Remarks: Kellogg & Kuwana (1902: 484) were initially puzzled by a female louse from a warbler finch (*Certhidea*), which they identified as “*Colpocephalum unciferum*” a species originally described from pelicans, but they concluded it was a case of natural straggling; however, we examined that female louse and have identified it as *Colpocephalum angulaticeps*. Furthermore, we examined two female lice reported by Kellogg (1906: 321) as “*Colpocephalum unciferum*”, one from “*Anous stolidus galapagoensis*” and one from “*Fregata aquila*” and have identified them as *Colpocephalum turbinatum* and *Colpocephalum angulaticeps*, respectively (see under those species). Therefore, our record of *Colpocephalum occidentale* is a new record from the Galápagos Islands. However, it is possible that the two female lice reported by Ewing (1924: 82) from “*Pelecanus sp.*” as *Colpocephalum unciferum* Kellogg, 1896 may represent the actual first record of *Colpocephalum occidentale*, but we have not been able to examine those females to confirm their identity. At present, *Pelecanus occidentalis* appears to be the only host of this louse species (Price *et al.* 2003: 101).

***Colpocephalum spineum* Kellogg, 1899**

Colpocephalum spineum Kellogg, 1899: 38, pl. 4, fig. 1.

Colpocephalum spineum Kellogg, 1899; Kellogg 1906: 320.

Colpocephalum spineum Kellogg, 1899; Clay in Linsley & Usinger 1966: 128.

Colpocephalum spineum Kellogg, 1899; Price 1967: 279, fig. 17.

Holotype ♂ lost (Price 1967: 279).

Type host: *Fregata magnificens* Mathews, 1914.

Galápagos host: *Fregata magnificens* Mathews, 1914.

Galápagos localities: Isla Wolf; Isla Santa Cruz; Isla Seymour; Isla Española.

Galápagos references: Kellogg (1906); Kellogg (1908: 58); Linsley & Usinger (1966).

Other significant references: Price (1967); Price *et al.* (2003: 102).

Material examined: 52 males, 32 females and 10 nymphs (4 samples, EMEC, MONZ).

Remarks: Records of “*Colpocephalum spineum*” in Kellogg & Kuwana (1902: 484) are misidentifications of *Colpocephalum angulaticeps*. Records of *Colpocephalum spineum* in Kellogg (1906: 320) are correct, but they are from incorrect hosts with the exception of those from “*Fregata aquila*”. *Colpocephalum spineum* parasitises two species of *Fregata*, *F. aquila* and *F. magnificens* (see Price *et al.* 2003: 102).

***Colpocephalum turbinatum* Denny, 1842**

Colpocephalum turbinatum Denny, 1842: 198, 209, pl. 21, fig. 1.

“*Colpocephalum milleri*” Kellogg, 1906: 321 (not *Colpocephalum milleri* Kellogg & Kuwana, 1902).

“*Colpocephalum unciferum*” Kellogg, 1906: 321 (not *Colpocephalum unciferum* Kellogg, 1896). In part *Colpocephalum turbinatum*; in part *Colpocephalum angulaticeps* Piaget, 1880.

“*Colpocephalum flavescens*” Kellogg, 1906: 321 (not *Colpocephalum flavescens* (Haan, 1829)).

Colpocephalum turbinatum Denny, 1842; Hopkins & Clay 1952: 85.

Colpocephalum turbinatum Denny, 1842; Price & Beer 1963a: 754, figs 49, 53, 57.

“*Colpocephalum flavescens*” Clay in Linsley & Usinger 1966: 128 (not *Colpocephalum flavescens* (Haan, 1829)).

“*Colpocephalum unciferum*” Clay in Linsley & Usinger 1966: 128 (not *Colpocephalum unciferum* Kellogg, 1896). In part *Colpocephalum turbinatum*; in part *Colpocephalum angulaticeps* Piaget, 1880.

Colpocephalum turbinatum Denny, 1842; Price *et al.* 2003: 102.

Syntypes ♀♀ in NHML (Price & Beer 1963a: 756).

Type host: *Columba livia domestica* Gmelin, 1789.

Galápagos host: *Buteo galapagoensis* (Gould, 1837).

Galápagos localities: Isla Pinta; Isla Marchena; Isla Fernandina; Isla Isabela; Isla Pinzón; Isla Santiago; Isla Santa Fé; Isla Española.

Galápagos references: Kellogg (1906); Kellogg (1908: 55); Thompson (1938b: 206); Price & Beer (1963a: 757); Linsley & Usinger (1966); De Vries (1975: 52); Whiteman & Parker (2004a: 942); Whiteman & Parker (2004b: 917); Whiteman *et al.* (2006: 800); Parker, Whiteman & Miller (2006: 629); Whiteman, Kimball & Parker (2007: 4760); Santiago-Alarcón *et al.* (2008: 587); Peters *et al.* (2009b: 910); Sari *et al.* (2012: 3).

Other significant references: Nelson & Murray (1971: 23); Pilgrim (1976: 160); Palma (1996: 123); Price *et al.* (2003: 102).

Material examined: 39 males, 31 females and 8 nymphs (6 samples, MONZ, EMEC).

Remarks: From the Kellogg Collection, we have identified as *Colpocephalum turbinatum* two female lice reported as “*Colpocephalum milleri*” and another female reported as “*Colpocephalum unciferum*” by Kellogg (1906: 321), all associated with incorrect hosts. *Colpocephalum turbinatum* is widespread on a large number of raptors (Price *et al.* 2003: 102), including *Buteo galapagoensis*.

Genus *Cuculiphilus* Uchida, 1926

Subgenus *Cuculiphilus* Uchida, 1926

Cuculiphilus Uchida, 1926. *Jour. Coll. Agric. Tokyo* 9: 47. Type species: *Pediculus fasciatus* Scopoli, 1763 = *Cuculiphilus (Cuculiphilus) fasciatus* (Scopoli, 1763) (by original designation).

Cuculiphilus (Cuculiphilus) snodgrassi (Kellogg & Kuwana, 1902)

Menopon snodgrassi Kellogg & Kuwana, 1902: 486, pl. 31, fig. 3.

Menopon galapagensis Kellogg & Kuwana, 1902: 487, pl. 31, fig. 4.

Menopon galapagense Kellogg & Kuwana, 1902: Harrison 1916: 37.

Cuculiphilus snodgrassi (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 129.

Cuculiphilus (Cuculiphilus) snodgrassi (Kellogg & Kuwana, 1902); Scharf & Price 1965: 549, 554, figs 17, 34.

Cuculiphilus snodgrassi (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 128.

Holotype ♀ lost (Scharf & Price 1965: 549).

Type host: *Coccyzus melacoryphus* Vieillot, 1817.

Galápagos host: *Coccyzus melacoryphus* Vieillot, 1817.

Galápagos locality: Isla San Cristóbal.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 68); Thompson (1938b: 203, 205); Scharf & Price (1965); Linsley & Usinger (1966).

Other significant references: Price *et al.* (2003: 105).

Material examined: None.

Remarks: No specimen of *Cuculiphilus snodgrassi* was available in the Kellogg Collection, and it was not possible to capture any specimen of *Coccyzus melacoryphus* during the 1992 Galápagos Expedition. *Cuculiphilus snodgrassi* parasitises a number of cuculid hosts belonging to several genera (Price *et al.* 2003: 105).

Genus *Eidmanniella* Kéler, 1938

Eidmanniella Kéler, 1938b. *Ann. Mus. Zool. Polon.* 13: 81. Type species: *Menopon brevipalpe* Piaget, 1880 = *Eidmanniella pellucida* (Rudow, 1869) (by original designation).

Eidmanniella albescens (Piaget, 1880)

Menopon albescens Piaget, 1880: 491, pl. 41, fig. 4.

Menopon singularis Kellogg & Kuwana, 1902: 485, pl. 31, fig. 1.

Menopon singularis Kellogg & Kuwana, 1902; Kellogg 1906: 321.

Menopon singulare Kellogg & Kuwana, 1902; Harrison 1916: 44.

Eidmanniella singularis (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 128.

Eidmanniella albescens (Piaget, 1880); Hopkins & Clay 1952: 129.

Eidmanniella albescens (Piaget, 1880); Ryan & Price 1969a: 822, figs 5, 13, 26, 29.

Lectotype ♂ in NHML (Clay 1949: 816).

Type host: *Anous stolidus* (Linnaeus, 1758), in error (see Ryan & Price 1969a: 822).

Galápagos hosts: *Sula granti* Rothschild, 1902; *Sula nebouxii excisa* Todd, 1948.

Galápagos localities: Isla Wolf; Isla Darwin; Isla Genovesa; Isla Seymour; Isla Baltra; Isla Española.

Galápagos references: Kellogg (1906); Kellogg (1908: 68); Thompson (1938b: 205); Emerson (1947: 135); Emerson (1964: 49); Linsley & Usinger (1966); Ryan & Price (1969a: 823).

Other significant references: Palma (1996: 124); Price *et al.* (2003: 107).

Material examined: 38 males, 40 females and 36 nymphs (13 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined ten specimens reported and labelled as “*Menopon singularis*” by Kellogg & Kuwana (1902: 485) and by Kellogg (1906: 321): two syntypes from an incorrect host, and eight specimens from two species of *Sula* (“*Sula variegata*” = *Sula granti*, and *S. nebouxii*) and two incorrect hosts. We have identified them all as *Eidmanniella albescens*, a species known from several species of *Sula* (see Price *et al.* 2003: 107).

Ryan & Price (1969a: 822) erroneously listed “2 ♂ (type-specimens of *M. singularis*), *Anous stolidus*, Galapagos”. The types of *M. singularis* are a female (the lectotype) and a nymph (paralectotype) with the original (type) locality given as “Clipperton Island”, as stated by Kellogg & Kuwana (1902: 485). However, as stated by Emerson (1947: 136), the figure included in Kellogg & Kuwana (1902) represents a male. Clipperton Island is not part of the Galápagos Archipelago but it was visited by the *Hopkins Stanford Galapagos Expedition* in their way to the Galápagos Islands (see Palma 1994b: 269).

Genus ***Fregatiella*** Ryan & Price, 1969

Fregatiella Ryan & Price, 1969b. *Ann. Ent. Soc. Amer.* 62(4): 825. Type species *Menopon aurifasciatum* Kellogg, 1899 = *Fregatiella aurifasciata* (Kellogg, 1899) (by monotypy).

***Fregatiella aurifasciata* (Kellogg, 1899)**

Menopon auri-fasciatum Kellogg, 1899: 43, pl. 4 fig. 5.

“*Menopon fuscofasciatum*” Kellogg, 1906: 321 (not *Menopon fuscofasciatum* Piaget, 1880).

“*Menopon singularis*” Kellogg, 1906: 321 (not *Menopon singularis* Kellogg & Kuwana, 1902).

Menopon aurifasciatum Kellogg, 1899; Harrison 1916: 33.

Eidmanniella aurifasciata (Kellogg, 1899); Hopkins & Clay 1952: 129.

Eidmanniella aurifasciata (Kellogg, 1899); Clay in Linsley & Usinger 1966: 128.

Fregatiella aurifasciata (Kellogg, 1899); Ryan & Price 1969b: 825, figs 1–9.

Holotype ♀ in EMEC (Ryan & Price 1969b: 825).

Type host: *Fregata magnificens* Mathews, 1914.

Galápagos hosts: *Fregata magnificens* Mathews, 1914; *Fregata minor ridgwayi* Mathews, 1914.

Galápagos localities: Isla Wolf; Isla Marchena; Isla Genovesa; Isla Santa Cruz; Isla Seymour; Isla Española.

Galápagos references: Kellogg (1906); Ewing (1924: 82); Thompson (1938b: 202–203); Linsley & Usinger (1966).

Other significant references: Ryan & Price (1969b); Amerson & Emerson (1971: 11, 29); Price *et al.* (2003: 109).

Material examined: 15 males, 15 females and 15 nymphs (3 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined one specimen reported as “*Menopon fuscofasciatum*” and another as “*Menopon singularis*” by Kellogg (1906: 321), and we have identified them as *Fregatiella aurifasciata*; the latter specimen is associated with an incorrect host.

Fregatiella is a new genus record for the Galápagos Islands. However, *F. aurifasciata*, a monotypic species, had already been recorded from the archipelago, although associated with another genus (Clay in Linsley & Usinger 1966: 128). This louse species is known from all species of *Fregata* (see Price *et al.* 2003: 109).

Genus ***Menacanthus*** Neumann 1912

Menopon (Menacanthus) Neumann 1912. *Arch. Parasitol., Paris* 15(3): 354. Type species: *Menopon robustum* Kellogg, 1896 = *Menacanthus robustus* (Kellogg, 1896) (by original designation).

***Menacanthus distinctus* (Kellogg & Chapman, 1899)**

Menopon distinctum Kellogg & Chapman, 1899: 126, pl. 8, fig. 7.

Menacanthus distinctus (Kellogg & Chapman, 1899); Hopkins & Clay 1952: 210.

Menacanthus distinctus (Kellogg & Chapman, 1899); Price 1977: 213, figs 5–6.

Menacanthus distinctus (Kellogg & Chapman, 1899); Sari *et al.* 2012: 3, 6.

Lectotype ♀ in EMEC (Price 1977: 213).

Type host: *Myiarchus cinerascens* (Lawrence, 1851).

Galápagos host: *Myiarchus magnirostris* (Gould, 1838).

Galápagos locality: Isla Pinta.

Galápagos reference: Sari *et al.* (2012).

Other significant references: Price (1977); Price *et al.* (2003: 119).

Material examined: 1 female and 1 nymph (1 sample, MONZ).

Remarks: *Myiarchus magnirostris* is endemic to the Galápagos Islands, but *Menacanthus distinctus* is widespread on a number of tyrannid hosts (Price *et al.* 2003: 119). Sari *et al.* (2012) recorded this louse species from *Myiarchus magnirostris*.

Genus ***Menopon*** Nitzsch, 1818

Menopon Nitzsch, 1818. *Germar's Mag. Ent.* 3: 299. Type species: *Menopon gallinae* (Linnaeus, 1758) (by subsequent designation).

***Menopon gallinae* (Linnaeus, 1758)**

Pediculus gallinae Linnaeus, 1758: 613.

Menopon gallinae (Linnaeus, 1758); Hopkins & Clay 1952: 219.

Menopon gallinae (Linnaeus, 1758); Price *et al.* 2003: 126.

Neotype ♂ in NHML (Clay & Hopkins 1950: 262).

Type host: *Gallus gallus* (Linnaeus, 1758).

Galápagos host: *Gallus gallus* (Linnaeus, 1758).

Galápagos locality: Isla Santa Cruz.

Galápagos references: Causton *et al.* (2006: 141).

Other significant references: Clay & Hopkins (1950: 262, fig 56); Emerson (1954: 225, fig. 8); Emerson (1956: 64, 77, pl. 10, figs 1–3); Palma (1996: 136); Price *et al.* (2003).

Material examined: 48 males, 46 females and 16 nymphs (2 samples, MONZ).

Remarks: Both *Menopon gallinae* and its host have been introduced to the Galápagos Islands by human agency. It is one of the most commonly found louse species on domestic poultry.

Genus ***Myrsidea*** Waterston, 1915

Myrsidea Waterston, 1915. *Entomol. Month. Mag.* 51: 12. Type species: *Myrsidea victrix* Waterston, 1915 (by original designation).

***Myrsidea darwini* Palma & Price, 2010**

(Fig. 5)

“*Menopon incertum*” Kellogg & Kuwana, 1902: 488 (not *Menopon incertum* Kellogg, 1896).

“*Myrsidea incerta*” Clay in Linsley & Usinger, 1966: 128 (not *Myrsidea incerta* (Kellogg, 1896)).

Myrsidea darwini Palma & Price, 2010: 136, figs 1–5.

Holotype ♀ in MONZ.

Type host: *Geospiza fuliginosa* Gould, 1837.

Galápagos hosts: *Geospiza magnirostris* Gould, 1837; *Geospiza fuliginosa* Gould, 1837; *Camarhynchus psittacula habeli* Sclater & Salvin, 1870.

Galápagos localities: Isla Pinta; Isla Marchena; Isla Santa Cruz; Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 64); Thompson (1938b: 203); Linsley & Usinger (1966); Palma & Price (2010); Sari *et al.* (2012: 3).

Other significant references: None.

Material examined: 7 males, 22 females and 19 nymphs (16 samples, MONZ).
Remarks: This louse species and its hosts are endemic to the Galápagos Islands.

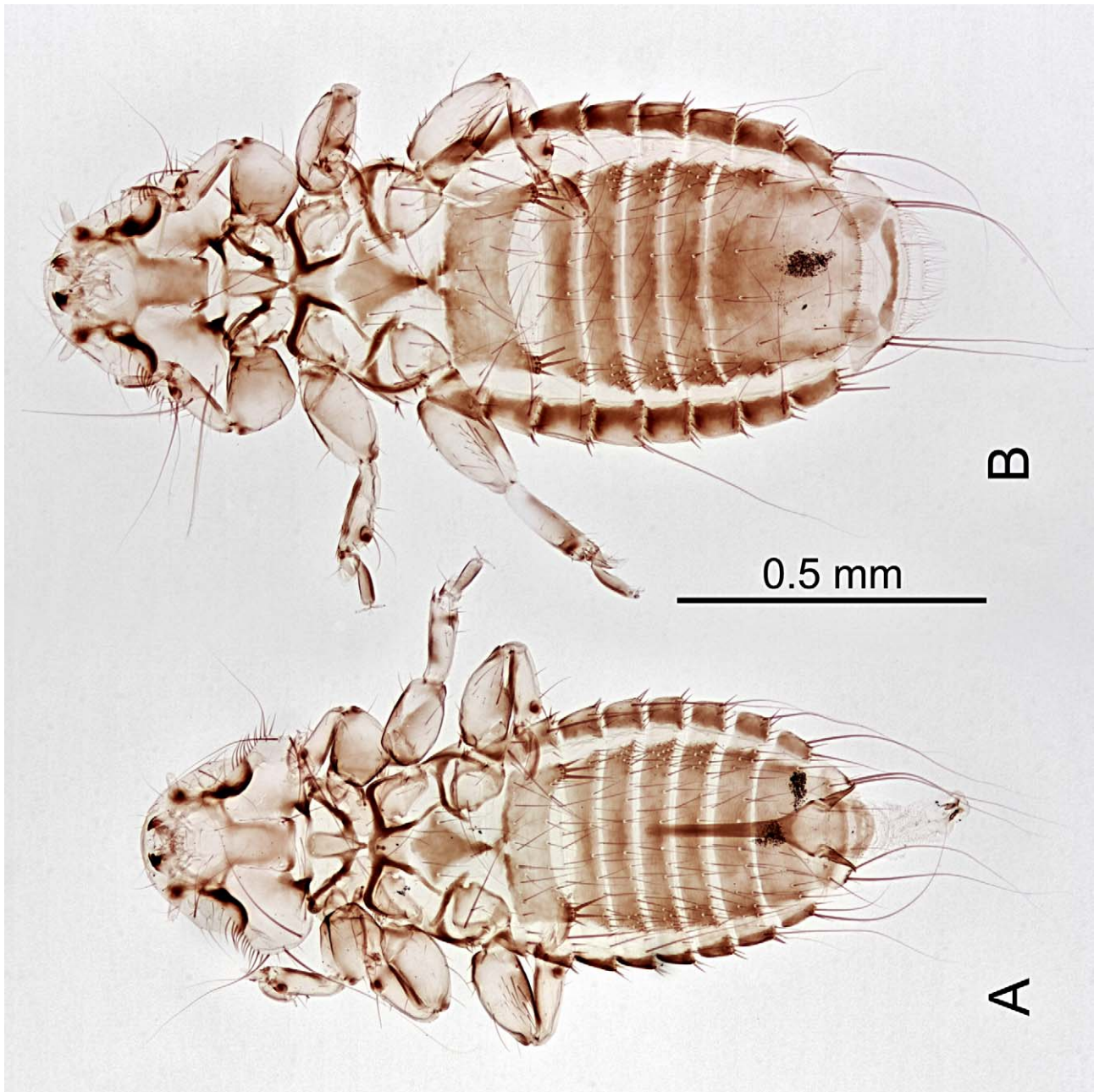


FIGURE 5. *Myrsidea darwini* Palma & Price, 2010. A: male. B: female (Host: *Geospiza fuliginosa*).

***Myrsidea nesomimi nesomimi* Palma & Price, 2010**

“*Menopon incertum*” Kellogg & Kuwana, 1902: 488 (not *Menopon incertum* Kellogg, 1896).

“*Myrsidea incerta*” Clay in Linsley & Usinger, 1966: 128 (not *Myrsidea incerta* (Kellogg, 1896)).

Myrsidea sp.; Parker, Whiteman & Miller 2006: 630.

Myrsidea nesomimi nesomimi Palma & Price, 2010: 138, figs 6–11.

Holotype ♀ in MONZ.

Type host: *Nesomimus macdonaldi* Ridgway, 1890.

Galápagos hosts: *Nesomimus trifasciatus* (Gould, 1837); *Nesomimus macdonaldi* Ridgway, 1890.

Galápagos localities: Isla Champion (near Isla Floreana); Isla Gardner (near Isla Floreana); Isla Española; Isla Gardner (near Isla Española).

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 64); Thompson (1938b: 203); Linsley & Usinger (1966); Parker, Whiteman & Miller (2006); Palma & Price (2010); Štefka *et al.* (2011: 286, 298); Sari *et al.* (2012: 3).

Other significant references: None.

Material examined: 49 males, 37 females and 102 nymphs (24 samples, EMEC, MONZ).

Remarks: This louse subspecies and its hosts are endemic to the Galápagos Islands. From the Kellogg Collection, we examined one male reported and labelled as “*Menopon incertum*” from *Nesomimus macdonaldi* by Kellogg & Kuwana (1902: 488), which we have identified as *Myrsidea nesomimi nesomimi*.

***Myrsidea nesomimi borealis* Palma & Price, 2010**

(Fig. 6)

“*Menopon incertum*” Kellogg & Kuwana, 1902: 488 (not *Menopon incertum* Kellogg, 1896).

“*Menopon incertum*” Kellogg, 1906: 322 (not *Menopon incertum* Kellogg, 1896).

“*Myrsidea incerta*” Clay in Linsley & Usinger, 1966: 128 (not *Myrsidea incerta* (Kellogg, 1896)).

Myrsidea sp.; Parker, Whiteman & Miller 2006: 630.

Myrsidea nesomimi borealis Palma & Price, 2010: 140, fig. 11.

Holotype ♀ in MONZ.

Type host: *Nesomimus parvulus* (Gould, 1837).

Galápagos hosts: *Nesomimus parvulus parvulus* (Gould, 1837); *Nesomimus parvulus barringtoni* Rothschild, 1898; *Nesomimus parvulus personatus* Ridgway, 1890; *Nesomimus parvulus bauri* Ridgway, 1894; *Nesomimus melanotis* (Gould, 1837).

Galápagos localities: Isla Pinta; Isla Marchena; Isla Genovesa; Isla Fernandina; Isla Isabela; Isla Santiago; Isla Rábida; Isla Santa Cruz; Isla Santa Fé; Isla San Cristóbal.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 64); Thompson (1938b: 203); Linsley & Usinger (1966); Parker, Whiteman & Miller (2006); Palma & Price (2010); Štefka *et al.* (2011: 286, 298).

Other significant references: None.

Material examined: 54 males, 53 females and 79 nymphs (14 samples, EMEC, MONZ).

Remarks: This louse subspecies and its hosts are endemic to the Galápagos Islands. From the Kellogg Collection, we examined 27 specimens reported and labelled as “*Menopon incertum*” by Kellogg & Kuwana (1902: 488) and by Kellogg (1906: 322), which we have identified as *Myrsidea nesomimi borealis*. Eight of them are from two species of *Nesomimus*, and the remainder from incorrect hosts.

***Myrsidea ridulosa* (Kellogg & Chapman, 1899)**

Menopon ridulosum Kellogg & Chapman, 1899: 135, pl. 9, fig. 4.

Myrsidea ridulosa (Kellogg & Chapman, 1899); Hopkins & Clay 1952: 233.

Myrsidea ridulosa (Kellogg & Chapman, 1899); Palma & Price, 2010: 143, figs 12–16.

Syntypes probably lost (Palma & Price (2010: 145).

Type host: *Dendroica petechia* (Linnaeus, 1766).

Galápagos host: *Dendroica petechia aureola* (Gould, 1839).

Galápagos localities: Isla Santa Cruz; Isla Floreana.

Galápagos references: Palma & Price (2010); Sari *et al.* (2012: 3).

Other significant reference: Price *et al.* (2003: 131, 352).

Material examined: 3 females and 19 nymphs (6 samples, MONZ).

Remarks: The 22 specimens listed above were collected from six of eight individuals of *Dendroica petechia aureola* searched for lice during the 1992 Galápagos Expedition. At present, *Dendroica petechia* is the only host of *Myrsidea ridulosa* (see Palma & Price 2010: 145).

Genus ***Osborniella*** Thompson, 1948

Osborniella Thompson, 1948d: *Ann. Mag. Nat. Hist.* (ser. 12) 1: 53. Type species: *Colpocephalum crotophagae* Stafford, 1943 = *Osborniella crotophagae* (Stafford, 1943) (by original designation).

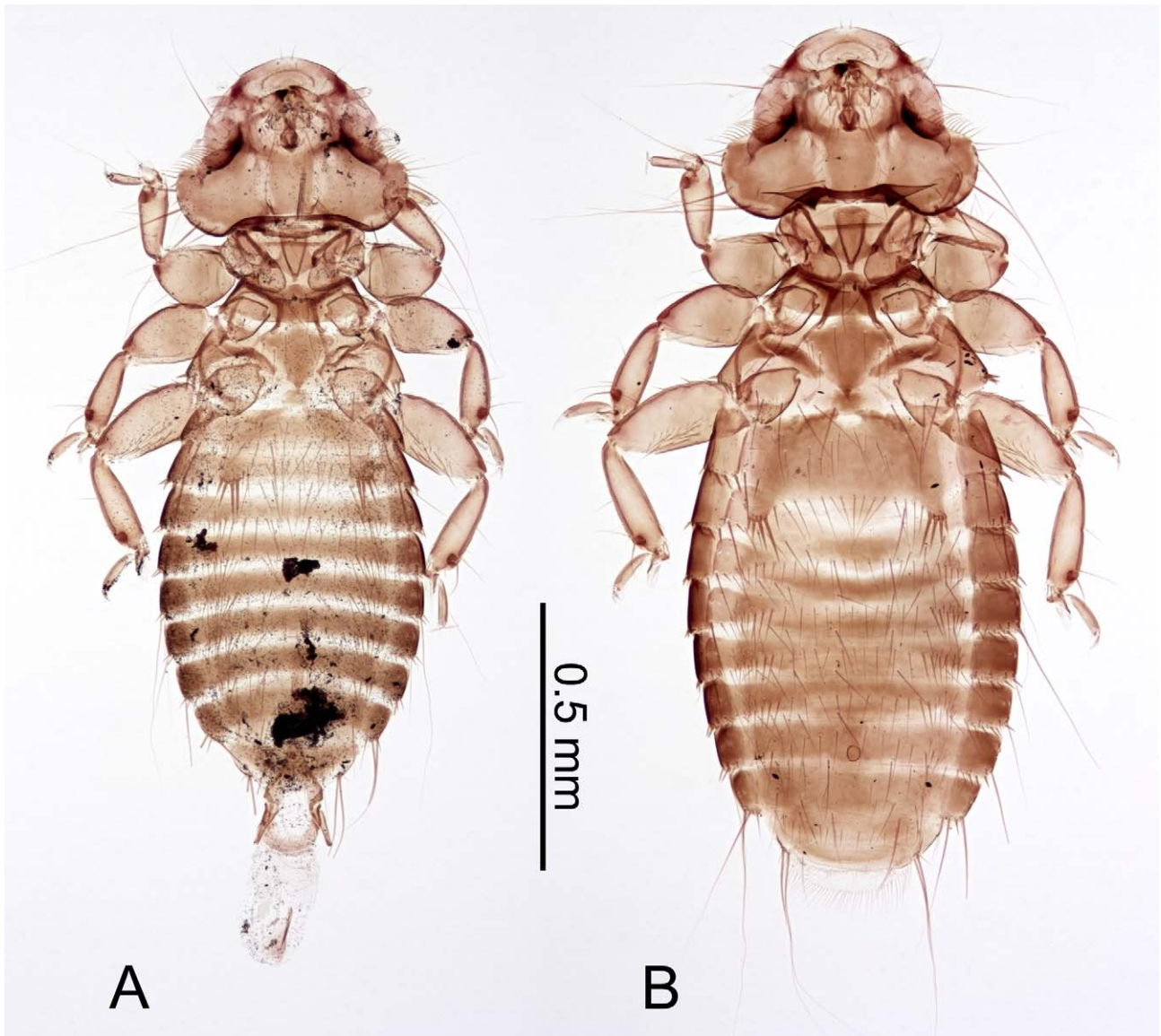


FIGURE 6. *Myrsidea nesomimi borealis* Palma & Price, 2010. A: male. B: female (Host: *Nesomimus parvulus*).

***Osborniella crotophagae* (Stafford, 1943)**

Colpocephalum crotophagae Stafford, 1943: 47, figs 29–36.

Osborniella crotophagae (Stafford, 1943); Hopkins & Clay 1952: 46.

Holotype ♂ in the E.W. Stafford Collection (Thompson 1948d: 55).

Type host: *Crotophaga ani* Linnaeus, 1758.

Galápagos host: *Crotophaga ani* Linnaeus, 1758.

Galápagos localities: Isla Isabela; Isla Pinzón; Isla Santa Cruz.

Galápagos reference: Causton *et al.* (2006: 142).

Other significant references: Thompson (1948d: 55, figs 7–12); Price *et al.* (2003: 134).

Material examined: 22 males and 16 females (3 samples, MONZ).

Remarks: Both *Osborniella crotophagae* and its host have been introduced to the Galápagos Islands by human agency (Castro & Phillips 1996: 114). At present, *Crotophaga ani* is the only host of this louse species (Price *et al.* 2003: 134).

Genus **Piagetiella** Neumann, 1906

Piagetia Picaglia, 1884. *Atti. Soc. Nat. Mat. Modena* (3) 2: 104. Type species: *Piagetia ragazzi* Picaglia, 1884 = *Piagetiella peralis* (Leidy, 1878) (by subsequent designation). Preoccupied by *Piagetia* Ritsema, 1874.

Piagetiella Neumann, 1906. *Bull. Soc. Zool. France* 31: 59. *Nomen novum* for *Piagetia* Picaglia, 1884.

Piagetiella sp.

Piagetiella sp. Parker, Whiteman & Miller (2006: 629).

Galápagos host: *Pelecanus occidentalis urinator* Wetmore, 1945.

Galápagos localities: Isla Fernandina; Isla Isabela; Isla Santiago; Isla Santa Cruz; Isla Floreana; Isla Española.

Galápagos reference: Parker, Whiteman & Miller (2006).

Other significant references: Hopkins & Clay (1952: 291); Price (1970: 389).

Material examined: None. Details not given by Parker, Whiteman & Miller (2006).

Remarks: No specimen of this louse species was collected from 19 specimens of *Pelecanus occidentalis urinator* searched for lice during the 1992 Galápagos Expedition. Several attempts to examine the specimens reported by Parker, Whiteman & Miller (2006) were unsuccessful. Therefore, a species identification could not be achieved.

Genus **Pseudomenopon** Mjöberg, 1910

Pseudomenopon Mjöberg, 1910. *Arkiv Zool.* 6(13): 50. Type species *Menopon tridens* "N." = *Pseudomenopon pilosum* (Scopoli, 1763) (by original designation).

Pseudomenopon scopulacorne (Denny, 1842) New record

Menopon scopulacorne Denny, 1842: 200, 221, pl. 18, fig. 9.

Pseudomenopon scopulacorne (Denny, 1842); Hopkins & Clay 1952: 303.

Syntypes ♀♀ in NHML (Thompson 1937a: 76).

Type host: *Rallus aquaticus* Linnaeus, 1758.

Galápagos host: *Laterallus spilonotus* (Gould, 1841).

Galápagos locality: Isla Santiago.

Galápagos reference: This paper.

Other significant references: Price (1974: 75, figs 10, 12, 20, 25); Price *et al.* (2003: 136).

Material examined: 3 males, 9 females, 7 nymphs, (1 sample, MONZ).

Remarks: *Pseudomenopon scopulacorne* is a new louse record for the Galápagos Islands, and *Pseudomenopon* is a new genus record for the islands. Also, *Ps. scopulacorne* is one of three louse species recorded for the first time from *Laterallus spilonotus* in this paper, although it has been recorded from a number of rallid hosts (Price *et al.* 2003: 136).

Genus **Trinoton** Nitzsch, 1818

Trinoton Nitzsch, 1818. *Germar's Mag. Ent.* 3: 300. Type species: *Liotheum (Trinoton) conspurcatum* Nitzsch, 1818 = *Trinoton anserinum* (J.C. Fabricius, 1805) (by monotypy).

Trinoton querquedulae (Linnaeus, 1758)

Pediculus querquedulae Linnaeus, 1758: 612.

Trinoton lituratum Burmeister, 1838: 441.

Trinoton luridum Burmeister, 1838: 441.

Trinoton lituratum Burmeister, 1838; Kellogg 1906: 320.

Trinoton luridum Burmeister, 1838; Kellogg 1906: 320.

Trinoton lituratum Nitzsch in Burmeister, 1838; Thompson 1939: 14.

Trinoton querquedulae (Linnaeus, 1758); Thompson 1939: 14.

Trinoton lituratum Burmeister, 1838; Clay in Linsley & Usinger 1966: 128.

Trinoton querquedulae (Linnaeus, 1758); Clay in Linsley & Usinger 1966: 128.

Neotype ♀ in NHML (Clay & Hopkins 1950: 244).

Type host: *Anas crecca crecca* Linnaeus, 1758.

Galápagos host: *Anas bahamensis galapagensis* (Ridgway, 1889).

Galápagos localities: Isla Santiago; Isla Santa Cruz.

Galápagos references: Kellogg (1906); Kellogg (1908: 71); Thompson (1939); Linsley & Usinger (1966).

Other significant references: Clay & Hopkins (1950: 243, figs 26–28); Tendeiro (1967: 48, figs 8, 11–18); Palma (1996: 143); Price *et al.* (2003: 139).

Material examined: 5 males, 1 female and 4 nymphs (2 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined one nymph reported and labelled as “*Trinoton lituratum*” by Kellogg (1906: 320), which we have identified as *Trinoton querquedulae* by comparison with identified nymphs from other samples, which included males and females of *T. querquedulae*. This louse species is widespread on a large number of host species of the family Anatidae (Price *et al.* 2003: 139), including *Anas bahamensis* Linnaeus, 1758.

Species incertae sedis

***Menopon albemarlei* Kellogg & Kuwana, 1902**

Menopon albemarlei Kellogg & Kuwana, 1902: 488, pl. 31, fig. 5.

Menopon albemarlei Kellogg & Kuwana, 1902; Thompson 1938b: 202.

Austromenopon albemarlei Kellogg & Kuwana, 1902; Hopkins & Clay 1952: 46.

Austromenopon albemarlei Kellogg & Kuwana, 1902; Clay *in* Linsley & Usinger 1966: 127.

Menopon albemarlei Kellogg & Kuwana, 1902; Price & Clay 1972: 501.

Austromenopon ?albemarlei Kellogg & Kuwana, 1902; Linsley 1977: 8.

Syntypes ♀♀ probably lost (see below).

Type hosts: *Camarhynchus pallidus productus* Ridgway, 1894 and *Geospiza fuliginosa* Gould, 1837, both in error (see Hopkins & Clay 1952: 46).

Galápagos hosts: Unknown.

Galápagos locality: Isla Isabela.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 60); Linsley & Usinger (1966); Linsley (1977); Price & Clay (1972).

Other significant references: None.

Remarks: Considering that (1) the type material of *Menopon albemarlei* could not be located, (2) its type hosts are both erroneous, and (3) its original description is not detailed enough to ascertain even the genus it belongs to, this nominal species must remain as a *nomen dubium* until at least one syntype is found (Price & Clay 1972: 501).

Family **RICINIDAE** Neumann, 1890

Ricinidae Neumann, 1890. *Bull. Soc. d'Hist. Nat.*, Toulouse 24: 55. Type genus: *Ricinus* de Geer, 1778.

Genus ***Ricinus*** de Geer, 1778

Ricinus de Geer, 1778. *Mém. Hist. Ins.* 7: 69. Type species: *Ricinus fringillae* de Geer, 1778 (by subsequent designation).

Physostomum Nitzsch, 1818. *German's Mag. Ent.* 3: 302. Type species: *Ricinus nitidissimus* Nitzsch, 1818 = *Ricinus fringillae* de Geer, 1778 (by subsequent designation).

***Ricinus marginatus* (Children, 1836)**

Liotheum (Physostomum) marginatum Children, 1836: 539.

Physostomum angulatum Kellogg, 1896b: 515, pl. 70, fig. 5.

Physostomum angulatum Kellogg, 1896; Kellogg & Kuwana, 1902: 483.

Ricinus angulatus (Kellogg, 1896); Harrison 1916: 66.

Ricinus marginatus (Children, 1836); Harrison 1916: 67.

Ricinus angulatus (Kellogg, 1896); Clay *in* Linsley & Usinger 1966: 128.

Ricinus marginatus (Children, 1836) *sensu lato*; Nelson 1972: 74, pl. 18, figs 1–5.

Ricinus marginatus (Children, 1836); Linsley 1977: 8.

Ricinus marginatus (Children, 1836); Sari *et al.* 2012: 3, 6.

Lectotype ♀ in NHML (Nelson 1972: 78).

Type host: *Empidonax traillii* (Audubon, 1828).

Galápagos host: *Myiarchus magnirostris* (Gould, 1839).

Galápagos localities: Isla Marchena; Isla Santiago; Isla Fernandina; Isla Isabela; Isla Santa Cruz.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 71); Thompson (1939: 15); Linsley & Usinger (1966); Nelson (1972); Linsley (1977); Sari *et al.* (2012).

Other significant references: Price *et al.* (2003: 249).

Material examined: 1 male, 26 females, 6 nymphs and 18 eggs (16 samples, MONZ).

Remarks: The “young” specimen reported by Kellogg & Kuwana (1902: 483) as *Physostomum angulatum* from *Dendroica petechia aureola* is most likely a contaminant from *Myiarchus magnirostris*. We have searched eight live *D. p. aureola* for lice, but found no *Ricinus* on them. *Ricinus marginatus* is widespread on a number of tyrannid hosts (Price *et al.* 2003: 249), including *Myiarchus magnirostris*.

Suborder **ISCHNOCERA** Kellogg, 1896

Ischnocera Kellogg, 1896a. *Proc. Calif. Acad. Sci.* 6: 63.

Family **PHILOPTERIDAE** Burmeister, 1838

Phloptera Burmeister, 1838. *Handbuch Entomologie* 2(1): 422. Type genus *Phlopterus* Nitzsch, 1818.

Genus **Anaticola** Clay, 1936

Anaticola Clay, 1936. *Proc. Zool. Soc. London* [no volume number]: 617. Type species: *Esthiopterum crassicornis* (Scopoli, 1763) = *Anaticola crassicornis* (Scopoli, 1763) (by original designation).

***Anaticola crassicornis* (Scopoli, 1763) New record**

Pediculus crassicornis Scopoli, 1763: 383.

Esthiopterum crassicornis (Scopoli, 1763); Harrison 1916: 132.

Anaticola crassicornis (Scopoli, 1763); Hopkins & Clay 1952: 32.

Neotype ♂ in NHML (Clay & Hopkins 1951: 19).

Type host: *Anas platyrhynchos platyrhynchos* Linnaeus, 1758.

Galápagos host: *Anas bahamensis galapagensis* (Ridgway, 1889).

Galápagos locality: Isla Santiago.

Galápagos references: This paper.

Other significant references: Clay & Hopkins (1951: 17, figs 23–25); Eichler & Vasjukova (1980: 345, figs 37–42); Palma (1996: 153); Price *et al.* (2003: 143).

Material examined: 1 male and 1 nymph (1 sample, MONZ).

Remarks: *Anaticola crassicornis* is a new louse record for the Galápagos Islands, and *Anaticola* is a new genus record for the islands. This louse species is widespread on a large number of host species (Price *et al.* 2003: 143), including *Anas bahamensis* Linnaeus, 1758.

***Anaticola phoenicopteris* (Coinde, 1859) New record**

Lipeurus phoenicopteris Coinde, 1859: 426.

Esthiopterum phoenicopteris (Coinde, 1859); Harrison 1916: 139 (as junior synonym of *Esthiopterum subsignatum* (Giebel, 1866)).

Anaticola phoenicopteris (Coinde, 1859); Hopkins & Clay 1952: 33.

Types in “Muséum de Lyon” (Coinde 1859: 427).

Type host: *Phoenicopteris ruber roseus* Pallas, 1811.

Galápagos host: *Phoenicopteris ruber ruber* Linnaeus, 1758.

Galápagos locality: Isla Rábida.

Galápagos references: This paper.

Other significant references: Tandan & Brelih (1971: 273, figs 7–8); Clay (1974: 485); Price *et al.* (2003: 144).

Material examined: 39 males, 28 females and 70 nymphs (3 samples, MONZ).

Remarks: *Anaticola phoenicopteri* is a new louse record for the Galápagos Islands, and a species parasitic on several species of flamingoes (Price *et al.* 2003: 144).

Genus *Anatoecus* Cummings, 1916

Anatoecus Cummings, 1916. *Proc. Zool. Soc. London* [no volume number]: 653. Type species: *Anatoecus icterodes* (Nitzsch, 1818) (by original designation).

***Anatoecus dentatus* (Scopoli, 1763) New record**

Pediculus dentatus Scopoli, 1763: 383.

Philoaterus dentatus (Scopoli, 1763); Harrison 1916: 93.

Anatoecus dentatus (Scopoli, 1763); Hopkins & Clay 1952: 35.

Neotype ♂ in NHML (Clay & Hopkins 1951: 17).

Type host: *Anas platyrhynchos platyrhynchos* Linnaeus, 1758.

Galápagos host: *Anas bahamensis galapagensis* (Ridgway, 1889).

Galápagos locality: Isla Santiago.

Galápagos references: This paper.

Other significant references: Clay & Hopkins (1951: 15, figs 21–22); Kéler (1960: 257); Palma (1996: 154); Price *et al.* (2003: 144).

Material examined: 6 males, 12 females and 2 nymphs (1 sample, MONZ).

Remarks: *Anatoecus dentatus* is a new louse record for both the Galápagos Islands and *Anas bahamensis*, but it has been recorded from a very large number of host genera and species (Price *et al.* 2003: 144).

***Anatoecus icterodes* (Nitzsch, 1818)**

Philoaterus (Docophorus) icterodes Nitzsch, 1818: 290.

Docophorus icterodes (Nitzsch, 1818); Kellogg & Kuwana, 1902: 462.

Docophorus icterodes (Nitzsch [*in* Giebel], 1874) [*sic*]; Kellogg 1906: 317.

Philoaterus icterodes Nitzsch, 1818; Harrison 1916: 96 (as junior synonym of *Philoaterus dentatus* (Scopoli, 1763)).

“*Anatoecus dentatus*” Thompson, 1939: 74 (not *Anatoecus dentatus* (Scopoli, 1763)).

Anatoecus icterodes (Nitzsch, 1818); Hopkins & Clay 1952: 35.

Anatoecus icteroides [*sic*] (Nitzsch, 1818); Clay (in Linsley & Usinger 1966: 129).

Neotype ♂ in NHML (Clay & Hopkins 1960: 39, pl. 2, fig. 3).

Type host: *Mergus serrator* Linnaeus, 1758.

Galápagos host: *Anas bahamensis galapagensis* (Ridgway, 1889).

Galápagos localities: Isla Santa Cruz; Isla Santiago.

Galápagos references: Kellogg (1906); Linsley & Usinger (1966).

Other significant references: Clay & Hopkins (1960: 37, figs 59–61); Kéler (1960); Palma (1996: 155); Price *et al.* (2003: 145).

Material examined: 3 males, 3 females (1 sample, MONZ).

Remarks: The record of a single female “*Docophorus icterodes* Nitzsch” in Kellogg & Kuwana (1902: 462) is from an incorrect host from Clipperton Island, but it is likely to be the result of a contamination from a Galápagos host (see Palma 1994b); we examined this female and have identified it as *Anatoecus icterodes*. The material from “Indefatigable Id.” (= Santa Cruz Island) reported by Kellogg (1906: 317) was not found in the Kellogg Collection at EMEC. This louse species is parasitic on a very large number of anatid species belonging to several genera (Price *et al.* 2003: 145), but Kellogg’s (1906: 317) record of *Anatoecus icterodes* (as “*D. icterodes*”) from *Anas bahamensis galapagensis* (as “*Anas versicolor*”) was not included in Price *et al.* (2003), probably because the authors were not aware of the correct identity of the host.

Genus *Ardeicola* Clay, 1936

Ardeicola Clay, 1936. *Proc. Zool. Soc. London* [no volume number]: 615. Type species: *Esthiopterum ardeae* (Linnaeus, 1758) = *Ardeicola ardeae* (Linnaeus, 1758) (by original designation).

***Ardeicola florida* Carriker, 1960** **New record**

Ardeicola florida Carriker, 1960: 318, fig. 2.

Ardeicola florida florida Carriker, 1960; Tuff 1967: 256, figs 29–31.

Ardeicola florida Carriker, 1960; Price *et al.* 2003: 148.

Holotype ♀ in USNM (Emerson 1967: 65).

Type host: *Egretta caerulea* (Linnaeus, 1758).

Galápagos host: *Butorides sundevalli* (Reichenow, 1877).

Galápagos localities: Isla Pinta; Isla Genovesa.

Galápagos references: This paper.

Other significant references: Tuff (1967); Emerson (1972: 22); Price *et al.* (2003).

Material examined: 9 males, 13 females and 3 nymphs (2 samples, MONZ).

Remarks: *Ardeicola* is a new genus record for the Galápagos Islands, and *Ardeicola florida* is a new louse record for both the islands and *Butorides sundevalli*.

***Ardeicola nyctanassa* Tuff, 1967** **New record**

Ardeicola nyctanassa Tuff, 1967: 258, figs 37–39.

Ardeicola nyctanassa Tuff, 1967; Price *et al.* 2003: 149.

Holotype ♂ in USNM.

Type host: *Nyctanassa violacea* (Linnaeus, 1758).

Galápagos host: *Nyctanassa violacea pauper* (Sclater & Salvin, 1870).

Galápagos localities: Isla Genovesa; Isla Española.

Galápagos reference: This paper.

Other significant reference: Emerson (1972: 23); Price *et al.* (2003).

Material examined: 16 males, 10 females and 4 nymphs (4 samples, MONZ).

Remarks: *Ardeicola nyctanassa* is a new louse record for the Galápagos Islands, and *Ardeicola* is a new genus record for the islands. At present, *Nyctanassa violacea* is the only host of *A. nyctanassa* (see Price *et al.* 2003: 149).

Genus *Austrogoniodes* Harrison, 1915

Austrogoniodes Harrison, 1915. *Parasitology* 7: 398. Type species: *Goniodes waterstoni* Cummings, 1914 = *Austrogoniodes waterstoni* (Cummings, 1914) (by original designation).

***Austrogoniodes demersus* Kéler, 1952**

“*Austrogoniodes struthes*” Harrison, 1937: 15 (not *Austrogoniodes struthes* Harrison, 1915).

Austrogoniodes bifasciatus demersus Kéler, 1952: 233, figs 25–29.

Austrogoniodes demersus Kéler, 1952; Hopkins & Clay 1953: 435.

Austrogoniodes demersus Kéler, 1952; Banks & Palma 2003: 74.

Holotype ♀ in the South African Institute for Medical Research, Johannesburg, South Africa.

Type host: *Spheniscus demersus* Meyen, 1834.

Galápagos host: *Spheniscus mendiculus* Sundevall, 1871.

Galápagos localities: Isla Rábida; Isla Española.

Galápagos reference: Harrison (1937); Banks & Palma (2003); Parker, Whiteman & Miller (2006: 629).

Other significant references: Clay (1967: 152, 153, 155, fig. 25); Banks & Paterson (2004); Banks, Palma & Paterson (2005).

Material examined: 225 males, 195 females and 115 nymphs (5 samples, MONZ).

Remarks: The record of “a male and female” *Austrogoniodes struthes* Harrison, 1915 “from *Spheniscus mendiculus*, Galapagos Islands” in Harrison (1937: 15) is most likely the result of a misidentification (Clay 1967: 153). Banks & Palma (2003: 74) recorded the two species of *Spheniscus* listed above as the only known hosts for *Austrogoniodes demersus*.

Genus *Brueelia* Kéler, 1936

Brüelia Kéler, 1936. *Arb. Morph. tax. Ent. Berlin-Dahlem* 3: 257. Type species: *Brüelia rossitensis* Kéler, 1936 = *Brueelia brachythorax* (Giebel, 1874) (by original designation).

Brueelia Kéler, 1936. Price *et al.* 2003: 152.



FIGURE 7. *Brueelia chelydensis* Hopkins 1951. A: male. B: female (Host: *Geospiza conirostris*).

***Brueelia chelydensis* Hopkins 1951**

(Fig. 7)

“*Nirmus vulgatus*” Kellogg & Kuwana, 1902: 474 (not *Nirmus vulgatus* Kellogg, 1896).

Nirmus vulgatus galapagensis Kellogg & Kuwana, 1902: 474. Preoccupied by *Nirmus galapagensis* Kellogg & Kuwana, 1902: 471.

“*Degeeriella vulgata*” Thompson, 1939: 122 (not *Degeeriella vulgata* (Kellogg, 1896)).

Brüelia galapagensis (Kellogg & Kuwana, 1902: 474); Hopkins 1951: 377. Preoccupied by *Brueelia galapagensis* (Kellogg & Kuwana, 1902: 471).

Brüelia chelydensis Hopkins 1951: 377. *Nomen novum* for *Brueelia galapagensis* (Kellogg & Kuwana, 1902: 474).

Brueelia chelydensis Hopkins 1951; Clay in Linsley & Usinger 1966: 129.

“*Brueelia vulgata*” Clay in Linsley & Usinger 1966: 129 (not *Brueelia vulgata* (Kellogg, 1896)).

Lectotype ♀ in EMEC (Hopkins 1951: 377).

Type host: *Geospiza fuliginosa* Gould, 1837.

Galápagos hosts: *Geospiza magnirostris* Gould, 1837; *Geospiza fortis* Gould, 1837; *Geospiza fuliginosa* Gould, 1837; *Geospiza difficilis debilirostris* Ridgway, 1894; *Geospiza conirostris conirostris* Ridgway, 1890; *Camarhynchus psittacula habeli* Sclater & Salvin, 1870; *Camarhynchus psittacula affinis* Ridgway, 1894; *Camarhynchus parvulus parvulus* (Gould, 1837); *Camarhynchus pallidus productus* Ridgway, 1894; *Certhidea olivacea becki* Rothschild, 1898; *Certhidea olivacea olivacea* Gould, 1837.

Galápagos localities: Isla Wolf; Isla Pinta; Isla Marchena; Isla Fernandina; Isla Isabela; Isla Santiago; Isla San Cristóbal; Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 31); Thompson (1939); Hopkins (1951); Linsley & Usinger (1966); Sari *et al.* (2012: 3).

Other significant references: Hopkins & Clay (1952: 54); Price *et al.* (2003: 154).

Material examined: 46 males, 60 females and 2 nymphs (35 samples, EMEC, MONZ).

Remarks: This is an endemic species and one of two *Brueelia* species parasitic on Galápagos finches. From the Kellogg Collection, we have identified 17 males and 30 females as *Brueelia chelydensis* from seven finch species, but only four of them were listed by Price *et al.* (2003: 154), who missed *Camarhynchus parvulus*, *Camarhynchus pallidus* and *Certhidea olivacea*. Our records of *B. chelydensis* from *Geospiza difficilis* and *G. magnirostris* are new host-lice associations. We regard records from other hosts reported by Kellogg & Kuwana (1902: 474–475) as the result of contaminations (see Palma 1994b).

***Brueelia galapagensis* (Kellogg & Kuwana, 1902)**

(Fig. 8)

Docophorus galapagensis Kellogg & Kuwana, 1902: 464, pl. 28, fig. 4.

Nirmus galapagensis Kellogg & Kuwana, 1902: 471, pl. 29, fig. 5. Preoccupied by *Docophorus galapagensis* Kellogg & Kuwana, 1902: 464.

Docophorus galapagensis Kellogg & Kuwana, 1902; Kellogg 1906: 317.

Nirmus galapagensis Kellogg & Kuwana, 1902; Kellogg 1906: 317.

Degeeriella galapagensis (Kellogg & Kuwana, 1902); Harrison 1916: 113.

Philopterus galapagensis (Kellogg & Kuwana, 1902); Thompson 1939: 17.

Brüelia galapagensis (Kellogg & Kuwana, 1902: 464); Hopkins 1951: 375.

Brüelia galapagensis (Kellogg & Kuwana, 1902: 471); Hopkins 1951: 376. Preoccupied by *Brüelia galapagensis* (Kellogg & Kuwana, 1902: 464).

Brueelia galapagensis (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 129.

Brueelia sp.; Parker, Whiteman & Miller 2006: 630.

Lectotype ♂ in EMEC (Hopkins 1951: 375).

Type host: *Geospiza fuliginosa* Gould, 1837, in error (see Remarks).

Galápagos hosts: *Nesomimus parvulus parvulus* (Gould, 1837); *Nesomimus parvulus barringtoni* Rothschild, 1898; *Nesomimus parvulus personatus* Ridgway, 1890; *Nesomimus parvulus bauri* Ridgway, 1894; *Nesomimus trifasciatus* (Gould, 1837); *Nesomimus macdonaldi* Ridgway, 1890; *Nesomimus melanotis* (Gould, 1837).

Galápagos localities: Isla Wolf; Isla Pinta; Isla Marchena; Isla Genovesa; Isla Fernandina; Isla Isabela; Isla Rábida; Isla Santa Cruz; Isla Santa Fé; Isla San Cristóbal; Isla Gardner (near Isla Floreana); Isla Gardner (near Isla Española); Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 14, 25); Thompson (1939: 76); Harrison (1916: 113); Hopkins (1951); Linsley & Usinger (1966); Parker, Whiteman & Miller (2006); Štefka *et al.* (2011: 286); Sari *et al.* (2012: 3).

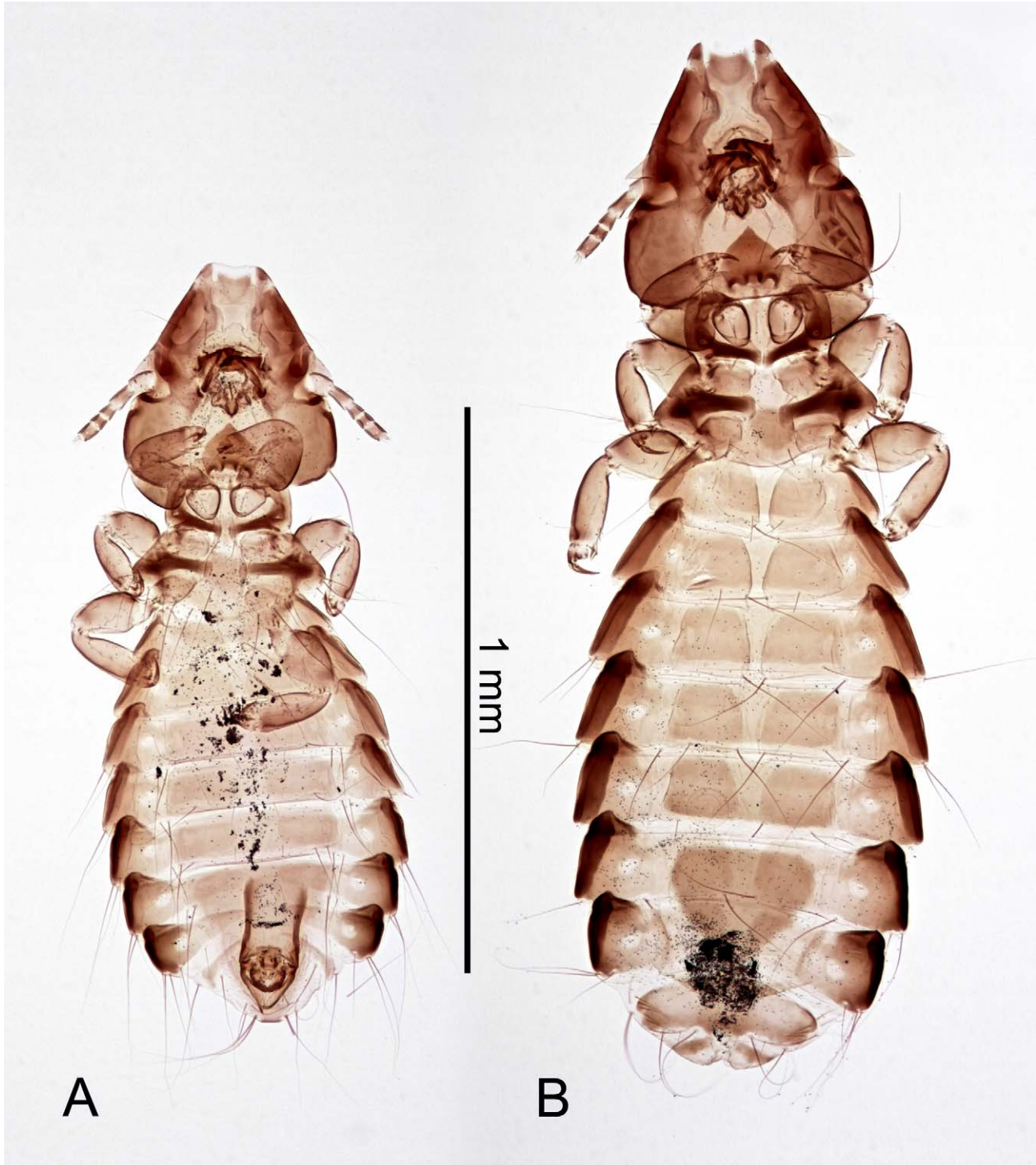


FIGURE 8. *Brueelia galapagensis* (Kellogg & Kuwana, 1902). A: male. B: female (Host: *Nesomimus parvulus*).

Other significant references: Hopkins & Clay (1952: 56); Price *et al.* (2003: 155).

Material examined: 117 males, 126 females and 72 nymphs (35 samples, EMEC, MONZ).

Remarks: This is an endemic species and the only *Brueelia* parasitic on all Galápagos mockingbirds. Hopkins (1951: 375) was misled by the great number of *Brueelia galapagensis* in the Kellogg Collection labelled with names of several finch species as hosts, and designated a lectotype from *Geospiza fuliginosa*. However, extensive collections made during the 1992 Galápagos Expedition and by others from the four species of *Nesomimus* (35 mockingbirds) include *Brueelia galapagensis* only. Furthermore, *B. galapagensis* was not found on any of the 12 species of finch (265 birds) searched for lice during the 1992 Galápagos Expedition. From the Kellogg Collection, we have identified as *Brueelia galapagensis* four males and 10 females from three *Nesomimus* species: *N. parvulus*, *N. macdonaldi* and *N. melanotis*. Records from other hosts reported by Kellogg & Kuwana (1902: 474–475) and Kellogg (1906: 317) are regarded as the result of contaminations (see Palma 1994b). Our record of *B. galapagensis* from *N. trifasciatus* is a new host-lice association. An unfortunate error was made by Price *et al.* (2003: 155) regarding the hosts for *B. galapagensis*: instead of listing *Nesomimus parvulus*, *N. macdonaldi* and *N. melanotis* as recorded hosts, they only listed *N. trifasciatus*, a host not yet recorded from this louse at that time.

***Brueelia interposita* (Kellogg, 1899)**

Nirmus interpositus Kellogg, 1899: 23, pl. 2, fig. 7.

Nirmus interpositus Kellogg, 1899; Kellogg & Kuwana 1902: 475.

Degeeriella interposita (Kellogg, 1899); Harrison 1916: 115.

Brüelia interposita (Kellogg, 1899); Hopkins & Clay (1952: 57).

Brueelia interposita (Kellogg, 1899); Clay in Linsley & Usinger 1966: 129.

Brueelia interposita (Kellogg, 1899); Sari *et al.* 2012: 3, 6, 8.

Lectotype ♀ in EMEC (Carriker 1957: 101, but sex given incorrectly as “male”).

Type host: *Dendroica petechia bryanti* Ridgway, 1873.

Galápagos hosts: *Dendroica petechia aureola* (Gould, 1839); *Geospiza magnirostris* Gould, 1837; *Geospiza fortis* Gould, 1837; *Geospiza fuliginosa* Gould, 1837; *Geospiza difficilis difficilis* Sharpe, 1888; *Geospiza difficilis debiliostris* Ridgway, 1894; *Camarhynchus crassirostris* Gould, 1837; *Camarhynchus psittacula habeli* Sclater & Salvin, 1870; *Camarhynchus psittacula psittacula* Gould, 1837.

Galápagos localities: Isla Pinta; Isla Fernandina; Isla Santiago; Isla Isabela; Isla Santa Cruz, Isla San Cristóbal.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 26); Thompson (1939: 76); Linsley & Usinger (1966); Sari *et al.* (2012).

Other significant references: Thompson (1937b: 441); Hopkins & Clay (1952: 57); Carriker (1957: 101); Cicchino (1983: 293); Price *et al.* (2003: 155).

Material examined: 35 males, 58 females and 12 nymphs (34 samples, EMEC, MONZ).

Remarks: This is one of two *Brueelia* species parasitic on Galápagos finches, but the only species living on Galápagos yellow warblers. Considering the relatively distant taxonomic position of the hosts (see Dickinson 2003: 760, 795) and the presence of *B. interposita* on other non-Galápagos hosts (Price *et al.* 2003: 155), there is a possibility that the *B. interposita* populations living on Galápagos finches originated from Galápagos yellow warblers by successful host colonisation events (see Ewing 1927: 247; Thompson 1937b: 441). Sari *et al.* (2012: 3) reported a single specimen of *B. interposita* from *Myiarchus magnirostris*, which they regarded as a natural straggler from a yellow warbler transported by a hippoboscid fly (Sari *et al.* 2012: 8).

From the Kellogg Collection, we examined eight specimens reported and labelled as “*Nirmus interpositus*” by Kellogg & Kuwana (1902: 475), five of them from *Geospiza fuliginosa*, *G. fortis* and *Camarhynchus crassirostris*, and three from incorrect hosts. Our records of *B. interposita* from *Geospiza magnirostris*, *G. difficilis* and *Camarhynchus psittacula* are new host-lice associations.

Genus ***Columbicola*** Ewing, 1929

Columbicola Ewing, 1929. *Manual External Parasites*: 190. Type species: *Esthiopterum columbae* (Linnaeus, 1758) = *Columbicola columbae* (Linnaeus, 1758) (by original designation).

***Columbicola macrourae* (Wilson, 1941)**

“*Lipeurus baculus*” Kellogg & Kuwana, 1902: 478 (not *Philopterus (Lipeurus) baculus* Nitzsch, 1818).

“*Lipeurus baculus*” Kellogg, 1906: 320 (not *Philopterus (Lipeurus) baculus* Nitzsch, 1818).

“*Columbicola columbae*” Thompson, 1939: 122 (not *Columbicola columbae* (Linnaeus, 1758)).

Esthiopterum (Columbicola) macrourae Wilson, 1941: 262: figs 5–8.

Columbicola macrourae (Wilson, 1941); Hopkins & Clay 1952: 87.

Columbicola ?macrourae (Wilson, 1941); Clay in Linsley & Usinger 1966: 129.

Columbicola macrourae (Wilson, 1941); Clayton & Price 1999: 681, figs 40–41.

Holotype ♂ in the Cornell University Insect Collection, Ithaca, New York, U.S.A.

Type host: *Zenaida macroura carolinensis* (Linnaeus, 1766).

Galápagos host: *Zenaida galapagoensis* Gould, 1839.

Galápagos localities: Isla Pinta; Isla Marchena; Isla Genovesa; Isla Fernandina; Isla Isabela; Isla Santiago; Isla Santa Cruz; Isla Floreana; Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 37); Thompson (1939); Linsley & Usinger (1966); Clayton & Price (1999); Whiteman *et al.* (2004: 1115); Parker, Whiteman & Miller (2006: 629); Santiago-Alarcón *et al.* (2008: 587); Sari *et al.* (2012: 3).

Other significant references: Tendeiro (1965: 145, figs 37–39, photos 40–46, 197); Price *et al.* (2003: 167).

Material examined: 70 males, 66 females and 61 nymphs (26 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined four of the lice reported and labelled by Kellogg & Kuwana (1902: 478) and 21 of the lice reported by Kellogg (1906: 320) as “*Lipeurus baculus*” and have identified them as *Columbicola macrourae*. Only four of those 25 specimens are labelled as from incorrect hosts. *Columbicola macrourae* is widespread on a number of columbid hosts (Price *et al.* 2003: 167), including *Zenaida galapagoensis*.

Genus ***Craspedorrhynchus*** Kéler, 1938

Craspedorrhynchus Kéler, 1938a. *Arb. Morph. tax. Ent. Berlin-Dahlem* 5: 239. Type species: *Docophorus platystomus* Nitzsch, 1818 = *Craspedorrhynchus haematopus* (Scopoli, 1763) (by original designation).

***Craspedorrhynchus* sp.**

“*Docophorus taurocephalus*” Kellogg, 1906: 316 (not *Docophorus taurocephalus* Kellogg, 1896).

“*Philopterus taurocephalus*” Thompson, 1939: 72 (not *Docophorus taurocephalus* Kellogg, 1896).

“*Craspedorrhynchus taurocephalus*” Clay in Linsley & Usinger 1966: 129 (not *Craspedorrhynchus taurocephalus* (Kellogg, 1896)).

Craspedorrhynchus sp.; Whiteman *et al.* 2009: 1380, fig. 7 right.

Galápagos host: *Buteo galapagoensis* (Gould, 1837).

Galápagos localities: Isla Pinta; Isla Marchena; Isla Santiago; Isla Fernandina; Isla Pinzón; Isla Santa Cruz; Isla Santa Fé; Isla Española.

Galápagos references: Kellogg (1906); Linsley & Usinger (1966); Parker, Whiteman & Miller (2006: 629); Whiteman *et al.* (2009: 1377); Sari *et al.* (2012: 3).

Other significant references: Gallego *et al.* (1987: 31); Mey (2001: 121); Price *et al.* (2003: 169).

Material examined: 40 males, 36 females and 32 nymphs (10 samples, EMEC, MONZ).

Remarks: We agree with Whiteman *et al.* (2009: 1380) in leaving this louse population without a species name until a thorough systematic revision of the genus *Craspedorrhynchus* becomes available. From the Kellogg Collection, we examined one female *Craspedorrhynchus* reported and labelled by Kellogg (1906: 316) as “*Docophorus taurocephalus*” from an incorrect host.

Genus ***Degeeriella*** Neumann, 1906

Nirmus Nitzsch, 1818. *Germar's Mag. Ent.* 3: 291. Type species: “*Degeeriella discocephalus* N.” = *Degeeriella discocephalus* (Burmeister, 1838) (by subsequent designation). Preoccupied by *Nirmus* Hermann, 1804.

Degeeriella Neumann, 1906. *Bull. Soc. Zool. France* 31: 59. *Nomen novum* for *Nirmus* Nitzsch, 1818.

***Degeeriella regalis* (Giebel, 1866)**

Nirmus regalis Giebel, 1866: 364.

Nirmus curvilineatus Kellogg & Kuwana, 1902: 470, pl. 29, fig. 4.

“*Nirmus fuscus*“ Kellogg, 1906: 318 (not *Nirmus fuscus* Nitzsch [in Giebel], 1861).

Degeeriella curvilineata (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 112.

Degeeriella regalis (Giebel, 1866); Hopkins & Clay 1952: 113.

Degeeriella regalis regalis (Giebel, 1866); Clay 1958: 186, figs 6, 39, 56, 80, 81, 121, 130–137, pl. 5 fig. 1.

Degeeriella regalis (Giebel, 1866); Clay in Linsley & Usinger 1966: 129.

Neotype ♂ in NHML (Clay 1958: 189, pl. 5, fig. 1).

Type host: *Milvus milvus milvus* (Linnaeus, 1758).

Galápagos host: *Buteo galapagoensis* (Gould, 1837).

Galápagos localities: Isla Pinta; Isla Marchena; Isla Fernandina; Isla Santiago; Isla Isabela; Isla Pinzón; Isla Santa Fé; Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 23, 25); Thompson (1939: 75); Clay (1958: 189); Linsley & Usinger (1966); De Vries (1975: 52); Whiteman & Parker (2004a: 942); Whiteman & Parker (2004b: 917); Whiteman *et al.* (2006: 800); Parker, Whiteman & Miller (2006: 629); Whiteman, Kimball & Parker (2007: 4760); Santiago-Alarcón *et al.* (2008: 587); Peters *et al.* (2009a: 910); Sari *et al.* (2012: 3).

Other significant references: Palma (1996: 173); Price *et al.* (2003: 174).

Material examined: 90 males, 68 females and 27 nymphs (6 samples EMEC, MONZ).

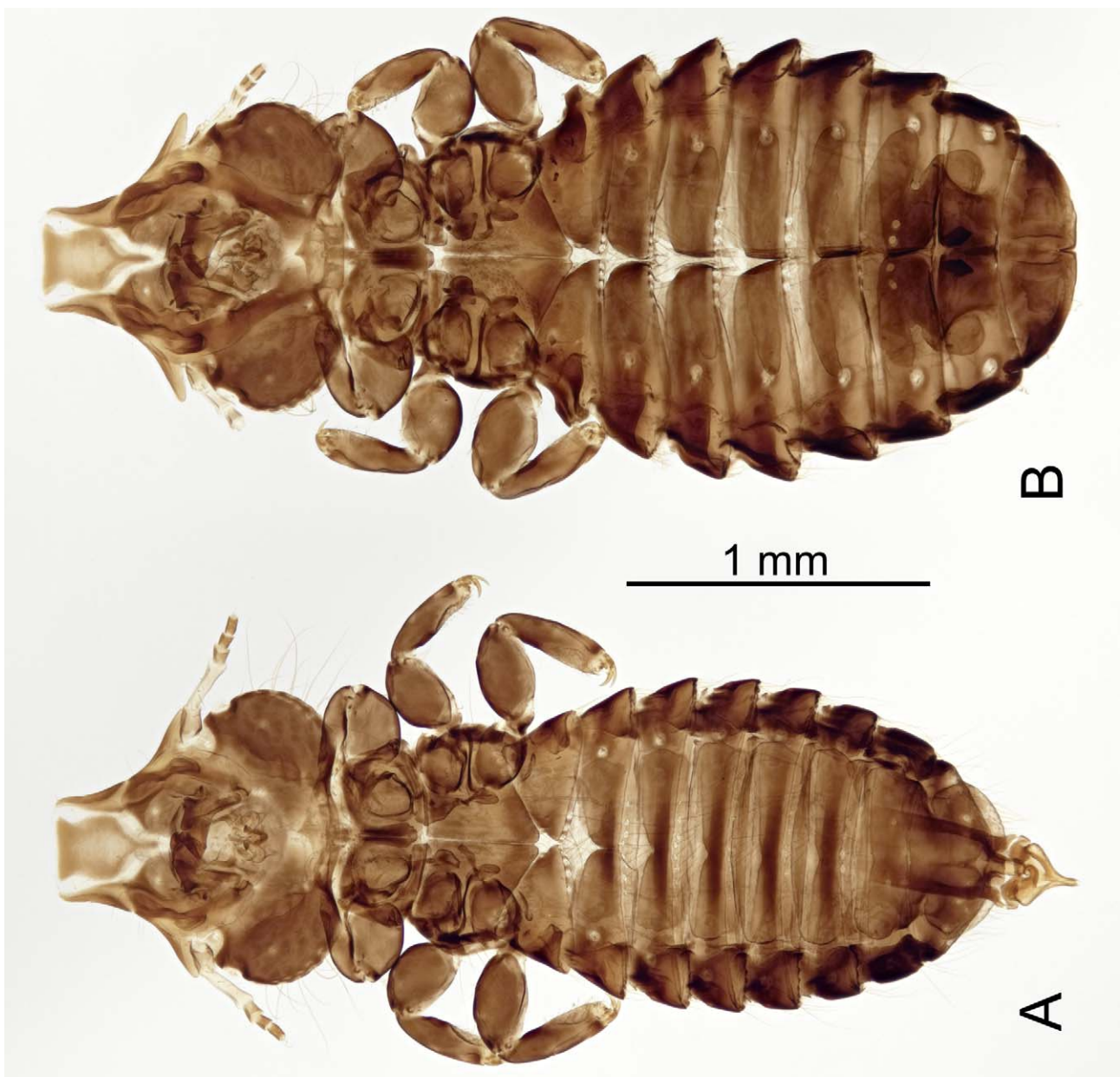


FIGURE 9. *Docophoroides levequei* Timmermann, 1963. A: male. B: female (Host: *Phoebastria irrorata*).

Remarks: From the Kellogg Collection, we examined the type specimens of *Nirmus curvilineatus*, both from incorrect hosts, and six of the specimens reported by Kellogg (1906: 318) as “*Nirmus fuscus*”, and have identified them as *Degeeriella regalis*. This louse species has been recorded from a number of raptors (Price *et al.* 2003: 175), including *Buteo galapagoensis*.

Genus ***Docophoroides*** Giglioli, 1864

Docophoroides Giglioli, 1864. *Quart. Jour. Sci.* 4: 21. Type species: *Philoaterus brevis* Dufour, 1835 = *Docophoroides brevis* (Dufour, 1835) (by monotypy).

Eurymetopus Taschenberg, 1882. *Nova Acta Leop.-Carol.* 44: 182. Type species: *Lipeurus taurus* Nitzsch, 1866 = *Docophoroides brevis* (Dufour, 1835) (by subsequent designation). Preoccupied by *Eurymetopus* Schönherr, 1840.

***Docophoroides levequei* Timmermann, 1963**

(Fig. 9)

“*Eurymetopus brevis*” Kellogg & Kuwana, 1902: 482 (not *Philoaterus brevis* Dufour, 1835).

“*Docophoroides brevis*” Thompson, 1939: 213 (not *Docophoroides brevis* (Dufour, 1835)).

Docophoroides lévêquei Timmermann, 1963b: 158, figs 1–3.

“*Docophoroides ?brevis*” Clay in Linsley & Usinger 1966: 130 (not *Docophoroides brevis* (Dufour, 1835)).

Docophoroides levequei Timmermann, 1963b; Clay in Linsley & Usinger 1966: 130.

Holotype ♂ in NHML.

Type host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos locality: Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 51); Thompson (1939); Timmermann (1963b); Linsley & Usinger (1966); Timmermann (1965: 87, figs 22, 25).

Other significant references: Palma (1994a: 65); Price *et al.* (2003: 176).

Material examined: 18 males, 13 females and 36 nymphs (6 samples, MONZ).

Remarks: *Docophoroides levequei* is a louse species endemic to the Galápagos Islands. From the Kellogg Collection, we examined the male reported by Kellogg & Kuwana (1902: 482) as “*Eurymetopus brevis*” from *Arenaria interpres*, and have identified it as *Docophoroides levequei*. Furthermore, we agree with Kellogg & Kuwana (1902: 482) in regarding that male as a straggler from an albatross.

Genus ***Episbates*** Thompson, 1935

Episbates Thompson, 1935b. *Ann. Mag. Nat. Hist.* (ser. 10) 16: 485. Type species: *Philoaterus pederiformis* Dufour, 1835 = *Episbates pederiformis* (Dufour, 1835) (by original designation).

***Episbates pederiformis* (Dufour, 1835) New record**

Philoaterus pederiformis Dufour, 1835: 676, pl. 21, fig. 4.

Esthiopterum pederiforme (Dufour, 1835); Harrison 1916: 139.

Episbates pederiformis (Dufour, 1835); Thompson 1935b: 486, fig. 1.

Neotype ♂ in NHML (Thompson 1948c: 667).

Type host: *Diomedea exulans* Linnaeus, 1758.

Galápagos host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos locality: Isla Española.

Galápagos references: This paper.

Other significant references: Harrison (1937: 27); Clay (1940a: 298); Thompson (1948c: 661, text figs 1–8, pl. 19); Hopkins & Clay (1952: 131); Timmermann (1961c: 44, figs 12–13); Timmermann (1965: 103, fig. 41, pl. 10, fig. 4); Palma (1996: 176); Price *et al.* (2003: 178).

Material examined: 32 males, 34 females and 51 nymphs (5 samples, MONZ).

Remarks: Timmermann (1961c: 44) listed two specimens of *Episbates pederiformis* from *Phoebastria irrorata* (as *Diomedea irrorata*) but did not specify any locality for them. *Episbates* is a new genus record for the Galápagos Islands and *E. pederiformis* is a new louse record for the islands. Price *et al.* (2003: 178) listed a number of albatross species as hosts of this louse.

Genus **Fulicoffula** Clay & Meinertzhagen, 1938

Fulicoffula Clay & Meinertzhagen, 1938. *Entomologist* 71: 279. Type species: “*Esthiopterum luridum* (Denny)” = *Fulicoffula lurida* (Nitzsch, 1818) (by original designation).

***Fulicoffula obstinata* Carriker, 1953 sensu lato** **New record**

Fulicoffula obstinata Carriker, 1953: 158, figs 7–9.

Fulicoffula obstinata Carriker, 1953; Hopkins & Clay 1955: 181.

Holotype ♂ in USNM (Emerson 1967: 83).

Type host: *Laterallus albigularis albigularis* (Lawrence, 1861).

Galápagos host: *Laterallus spilonotus* (Gould, 1841).

Galápagos locality: Isla Santiago.

Galápagos reference: This paper.

Other significant references: Price *et al.* (2003: 181).

Material examined: 3 males, 4 females and 1 nymph (2 samples, MONZ).

Remarks: *Fulicoffula obstinata* is a new louse record for the Galápagos Islands, and *Fulicoffula* is a new genus record for the islands. The material examined from *Laterallus spilonotus* differs in some features from typical *F. obstinata*. However, we do not consider such differences to justify naming a new taxon; hence we qualify the population from *Laterallus spilonotus* as “*sensu lato*”. *Fulicoffula obstinata* is one of three louse species recorded for the first time from *Laterallus spilonotus* in this paper.

Genus **Goniodes** Nitzsch, 1818

Goniodes Nitzsch, 1818. *Germar's Mag. Ent.* 3: 293. Type species: *Goniodes pavonis* (Linnaeus, 1758) (by subsequent designation).

***Goniodes dissimilis* Denny, 1842**

Goniodes dissimilis Denny, 1842: 57, 162, pl. 12, fig. 6.

Goniodes dissimilis Denny, 1842; Hopkins & Clay 1952: 153.

Goniodes dissimilis Denny, 1842; Price *et al.* 2003: 184.

Neotype ♀ in NHML (Clay 1940b: 65).

Type host: *Gallus gallus* (Linnaeus, 1758).

Galápagos host: *Gallus gallus* (Linnaeus, 1758).

Galápagos locality: Isla Santa Cruz.

Galápagos reference: Causton *et al.* (2006: 142).

Other significant references: Clay (1940b: 62, figs 41–43); Emerson (1956: 64, 69, pl. 3, figs 1–3); Palma (1996: 181); Price *et al.* (2003).

Material examined: 6 males, 1 female and 10 nymphs (2 samples, MONZ).

Remarks: Both *Goniodes dissimilis* and its host have been introduced to the Galápagos Islands by human agency.

Genus **Halipeurus** Thompson, 1936

Halipeurus Thompson, 1936. *Ann. Mag. Nat. Hist.* (ser. 10) 18: 40. Type species: *Lipeurus angusticeps* Piaget, 1880 (by original designation).

Synnautes Thompson, 1936. *Ann. Mag. Nat. Hist.* (ser. 10) 18: 43. Type species: *Lipeurus pelagicus* Denny, 1842 (by original designation).

Halipeurus Thompson, 1936; Palma 2011: 16.

***Halipeurus attenuatus* Edwards, 1961**

“*Lipeurus limitatus*” Kellogg & Kuwana, 1902: 476 (not *Lipeurus limitatus* Kellogg, 1896a).

“*Lipeurus diversus*” Kellogg & Kuwana, 1902: 476 (not *Lipeurus diversus* Kellogg, 1896a).

“*Lipeurus diversus*” Kellogg, 1906: 318 (not *Lipeurus diversus* Kellogg, 1896). In part *Halipeurus attenuatus*; in part *Halipeurus noctivagus* Timmermann, 1960.

“*Lipeurus languidus*” Kellogg 1906: 319 (not *Lipeurus languidus* Kellogg & Kuwana, 1902). In part *Halipeurus attenuatus* Edwards, 1961; in part *Halipeurus noctivagus* Timmermann, 1960; in part *Halipeurus pelagicus* (Denny, 1842).

“*Lipeurus limitatus*” Kellogg, 1906: 319 (not *Lipeurus limitatus* Kellogg, 1896). In part *Halipeurus attenuatus*; in part *Halipeurus noctivagus* Timmermann, 1960.
“*Halipeurus diversus*” Thompson, 1939: 123 (not *Halipeurus diversus* (Kellogg, 1896a)). In part *Halipeurus attenuatus*; in part *Halipeurus noctivagus* Timmermann, 1960.
Halipeurus (Halipeurus) attenuatus Edwards, 1961: 148, figs 3M–7M.
Halipeurus attenuatus Edwards, 1961: Clay in Linsley & Usinger 1966: 130.
“*Halipeurus diversus*” Clay in Linsley & Usinger 1966: 130 (not *Lipeurus diversus* Kellogg, 1896).

Holotype ♂ in MCZC.

Type host: *Puffinus subalaris* Ridgway, 1897.

Galápagos host: *Puffinus subalaris* Ridgway, 1897.

Galápagos localities: Isla Darwin; Isla Wolf; Isla Fernandina; Isla Española; Isla Santa Cruz; Islote Corona del Diablo (near Isla Floreana); Isla Plaza.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 38, 41); Edwards (1961); Linsley & Usinger (1966).

Other significant references: Timmermann (1965: 146); Price *et al.* (2003: 187); Palma (2011: 16).

Material examined: 27 males, 39 females and 7 nymphs (8 samples, EMEC, MONZ, MCZC).

Remarks: This louse species and its host are endemic to the Galápagos Islands. Although Dickinson (2003: 76) listed the host of this louse as *Puffinus lherminieri subalaris*, we regard it as a full species following Austin *et al.* (2004: 859). From the Kellogg Collection, we examined one female reported by Kellogg (1906: 319) as “*Lipeurus languidus*” from *Puffinus subalaris*, and have identified it as *Halipeurus attenuatus*.

***Halipeurus diversus* (Kellogg, 1896) New record**

Lipeurus diversus Kellogg, 1896a: 123, pl. 8, figs 3–4.

Esthiopterum diversum (Kellogg, 1896); Harrison 1916: 133.

Halipeurus diversus (Kellogg, 1896); Hopkins & Clay 1952: 163.

Halipeurus (Halipeurus) diversus (Kellogg, 1896); Edwards, 1961: 142, figs 3F–7F.

Halipeurus diversus (Kellogg, 1896); Palma 2011: 32.

Syntypes ♂♀ in USNM and EMEC (Emerson 1961: 251; Palma 2011: 32).

Type host: *Puffinus opisthomelas* Daudin, 1802, in error (see Hopkins & Clay 1952: 163).

Galápagos host: *Puffinus griseus* (Gmelin, 1789).

Galápagos locality: Isla Santa Cruz.

Galápagos references: This paper.

Other significant references: Timmermann (1961a: 408, fig. 6); Edwards (1961); Timmermann (1965: 142, fig. 83); Palma (1996: 184); Palma (2011: 32).

Material examined: 2 females and 1 nymph (1 sample, MONZ).

Remarks: This is the first record of *Halipeurus diversus* from the Galápagos Islands. *Puffinus griseus* is a regular visitor to the Galápagos Islands (Harris 1989: 59). Palma (2011: 32) recorded this louse species from six species of *Puffinus*, including *P. griseus*.

***Halipeurus noctivagus* Timmermann, 1960**

Lipeurus diversus var. *major* Kellogg & Kuwana, 1902: 477 (not *Lipeurus major* Piaget, 1880).

“*Lipeurus diversus*” Kellogg, 1906: 318 (not *Lipeurus diversus* Kellogg, 1896a). In part *Halipeurus noctivagus*; in part *Halipeurus attenuatus* Edwards, 1961.

“*Lipeurus languidus*” Kellogg, 1906: 319 (not *Lipeurus languidus* Kellogg & Kuwana, 1902). In part *Halipeurus noctivagus* Timmermann, 1960; in part *Halipeurus attenuatus* Edwards, 1961; in part *Halipeurus pelagicus* (Denny, 1842).

“*Lipeurus limitatus*” Kellogg, 1906: 319 (not *Lipeurus limitatus* Kellogg, 1896a). In part *Halipeurus noctivagus*; in part *Halipeurus attenuatus* Edwards, 1961.

“*Halipeurus diversus*” Thompson, 1939: 123 (not *Halipeurus diversus* (Kellogg, 1896a)). In part *Halipeurus noctivagus*; in part *Halipeurus attenuatus* Edwards, 1961.

Halipeurus noctivagus Timmermann, 1960: 331, fig. 13, 16b.

Halipeurus (Halipeurus) intermedius Edwards, 1961: 151, figs 3S–7S.

Halipeurus (Halipeurus) noctivagus Timmermann, 1960; Timmermann, 1965.

Halipeurus intermedius Edwards, 1961; Clay in Linsley & Usinger 1966: 130.

Halipeurus noctivagus Timmermann, 1960; Linsley 1977: 9.

Halipeurus noctivagus Timmermann, 1960; Palma 2011: 41, fig. 53.

Holotype ♂ in NHML.

Type host: *Pterodroma phaeopygia* (Salvin, 1876).

Galápagos host: *Pterodroma phaeopygia* (Salvin, 1876).

Galápagos localities: Isla Isabela; Isla Santa Cruz.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 38); Timmermann (1960); Timmermann (1965: 151, fig. 92); Edwards (1961); Linsley & Usinger (1966); Linsley (1977); Palma (2011: 42).

Other significant reference: Price *et al.* (2003: 188).

Material examined: 22 males, 19 females and 23 nymphs (5 samples, EMEC, MONZ, NHML, AMNH).

Remarks: *Pterodroma phaeopygia* is endemic to the Galápagos Islands. Although Dickinson (2003: 74) listed it as the subspecies *Pterodroma phaeopygia phaeopygia*, we regard it as a full species as well as *Pterodroma sandwichensis* (Ridgway, 1884), following Browne *et al.* (1997: 814). From the Kellogg Collection, we examined one female reported by Kellogg (1906: 319) as “*Lipeurus languidus*” from “*Fulmarus* sp.”, and have identified it as *Halipeurus noctivagus*. It is not possible to determine what species of petrel that “*Fulmarus* sp.” actually referred to, but it is unlikely that it was any of the two species of *Fulmarus*, although the southern fulmar, *Fulmarus glacialoides* (Smith, 1840), has been recorded once in the Galápagos Islands (Castro & Phillips 1996: 67). Palma (2011: 42) recorded *Halipeurus noctivagus* from three species of *Pterodroma*, including *Pt. phaeopygia*.

***Halipeurus pelagicus* (Denny, 1842)**

Lipeurus pelagicus Denny, 1842: 58, 173, pl. 14, fig. 2.

Lipeurus languidus Kellogg & Kuwana, 1902: 475, pl. 29, fig. 8.

Lipeurus exiguus Kellogg & Kuwana, 1902: 479, pl. 30, fig. 2.

Lipeurus languidus Kellogg & Kuwana, 1902; Kellogg 1906: 319. In part *Halipeurus pelagicus* (Denny, 1842); in part *Halipeurus attenuatus* Edwards, 1961; in part *Halipeurus noctivagus* Timmermann, 1960.

Lipeurus exiguus Kellogg & Kuwana, 1902; Kellogg 1906: 319. In part *Halipeurus pelagicus*; in part *Halipeurus attenuatus* Edwards, 1961.

Esthiopteryx pelagicum (Denny, 1842); Harrison 1916: 139.

Synnautes pelagicus (Denny, 1842); Thompson 1939: 209.

Halipeurus pelagicus (Denny, 1842); Hopkins & Clay 1952: 164.

Halipeurus (Synnautes) pelagicus (Denny, 1842); Edwards, 1961: 155, figs 3V–7V.

Halipeurus pelagicus (Denny, 1842); Clay in Linsley & Usinger 1966: 130.

Halipeurus pelagicus (Denny, 1842); Palma 2011: 27, figs 7, 23, 25, 33, 48.

Lectotype ♀ in NHML (Palma 2011: 29).

Type host: *Hydrobates pelagicus* (Linnaeus, 1758).

Galápagos hosts: *Oceanites gracilis galapagoensis* Lowe, 1921; *Oceanodroma tethys tethys* (Bonaparte, 1852); *Oceanodroma castro* (Harcourt, 1851).

Galápagos localities: Isla Darwin; Isla Wolf; Isla Isabela; Isla Fernandina; Isla Plaza; Isote Corona del Diablo (near Isla Floreana).

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 39, 41); Ewing (1924: 84); Thompson (1939); Edwards (1961); Linsley & Usinger (1966); Palma (2011: 28).

Other significant references: Timmermann (1961a: 413, figs 9–10); Timmermann (1965: 153, fig. 94, pl. 7, figs 3–4); Palma (1996: 186); Price *et al.* (2003: 188).

Material examined: 43 males, 34 females and 69 nymphs (12 samples, EMEC, MONZ).

Remarks: This species was placed in the subgenus *Synnautes* Thompson, 1936 in many publications, but Palma (2011: 16) has synonymised *Synnautes* under the nominate subgenus *Halipeurus*. Palma (2011: 28) recorded *Halipeurus pelagicus* from nine species of storm petrels, including the three Galápagos hosts listed above. From the Kellogg Collection, we examined the lectotype male, one paralectotype female and one paralectotype male of *Lipeurus languidus*, plus five specimens reported by Kellogg (1906: 319) as “*Lipeurus languidus*” from *Oceanites gracilis*, and we have identified them as *Halipeurus pelagicus*.

***Halipeurus pelagodromae* Palma, 2011**

Halipeurus pelagodromae Palma, 2011: 11, figs 6, 22, 24, 26–27, 32, 47, 63.

Holotype ♂ in MONZ.

Type host: *Pelagodroma marina maoriana* Mathews, 1912.

Galápagos host: *Pelagodroma marina maoriana* Mathews, 1912.

Galápagos locality: 100 miles S.W. of the Galápagos Islands.

Galápagos reference: Palma (2011: 15).

Other significant references: None.

Material examined: 1 female (MONZ).

Remarks: *Pelagodroma marina maoriana* is an occasional visitor to the Galápagos Islands (Harris 1989: 60).

Genus ***Harrisoniella*** Bedford, 1929

Harrisoniella Bedford, 1929. *15th Annual Rep. Director Veterinary Services*: 529. Type species: *Lipeurus ferox* Giebel, 1867 = *Harrisoniella ferox* (Giebel, 1867) (by subsequent designation).

Diomedicola Kéler, 1957b. *Beitr. zur Entomol.* 7(3/4): 496. Type species: *Lipeurus ferox* Giebel, 1867 = *Harrisoniella ferox* (Giebel, 1867) (by original designation).

***Harrisoniella ferox* (Giebel, 1867)**

Lipeurus ferox Giebel, 1867: 195.

Esthiopterum ferox (Giebel, 1867); Harrison 1916: 134 (as junior synonym of “*Esthiopterum diomedeeae* Fabricius”).

“*Harrisoniella diomedeeae*” Thompson, 1939: 210 (not *Harrisoniella diomedeeae* (Fabricius, 1775)).

Harrisoniella ferox (Giebel, 1867); Hopkins & Clay 1952: 165.

Diomedicola irroratae Kéler, 1957b: 508, figs 3C, 10C.

Harrisoniella irroratae (Kéler, 1957); Timmermann 1965: 95, figs 29B, 30C.

Harrisoniella ferox (Giebel, 1867); Palma & Pilgrim 1984: 149, figs 1–3, 7, 11, 15, 23.

Neotype ♂ in the South African Institute for Medical Research, Johannesburg, South Africa (Palma & Pilgrim 1984: 150).

Type host: *Thalassarche melanophris* (Temminck, 1828).

Galápagos host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos locality: Isla Española.

Galápagos references: Thompson (1939); Timmermann (1965); Palma & Pilgrim (1984: 150).

Other significant references: Kéler (1957b); Palma (1996: 187); Price *et al.* (2003: 188).

Material examined: 15 males, 23 females and 124 nymphs (8 samples, MONZ, NHML).

Remarks: The association between *Phoebastria irrorata* and *Harrisoniella ferox* is unexpected, considering that *H. ferox* is otherwise found on species of the genus *Thalassarche* Reichenbach, 1853, formerly placed as a subgenus of *Diomedea* Linnaeus, 1758, and now also including *Thalassogeron* Ridgway, 1884 (see Palma & Pilgrim 1984: 163; Dickinson 2003: 72).

Genus ***Lipeurus*** Nitzsch, 1818

Lipeurus Nitzsch, 1818. *Germar's Mag. Ent.* 3: 292. Type species: *Pediculus caponis* Linnaeus, 1758 = *Lipeurus caponis* (Linnaeus, 1758) (by subsequent designation).

***Lipeurus caponis* (Linnaeus, 1758)**

Pediculus caponis Linnaeus, 1758: 614.

Lipeurus caponis (Linnaeus, 1758); Hopkins & Clay 1952: 192.

Lipeurus caponis (Linnaeus, 1758); Price *et al.* 2003: 194.

Neotype ♂ in NHML (Clay & Hopkins 1950: 263).

Type host: *Gallus gallus* (Linnaeus, 1758).

Galápagos host: *Gallus gallus* (Linnaeus, 1758).

Galápagos locality: Isla Santa Cruz.

Galápagos reference: Causton *et al.* (2006: 142).

Other significant references: Clay (1938: 111, figs 1, 2a–b, 3a); Emerson (1956: 64, 69, pl. 5, figs 1–3); Palma (1996: 190); Price *et al.* (2003).

Material examined: 22 males, 23 females and 26 nymphs (1 sample, MONZ).

Remarks: Both *Lipeurus caponis* and its host have been introduced to the Galápagos Islands by human agency.

Genus *Paraclisis* Timmermann 1965

Paraclisis Timmermann 1965. *Abhandl. Verhandl. Naturwiss. Ver. Hamburg, N.F. 8 (Supplement)*: 96. Type species: *Pediculus diomedeeae* J.C. Fabricius, 1775 = *Paraclisis diomedeeae* (J.C. Fabricius, 1775) (by original designation).

Paraclisis miriceps (Kellogg & Kuwana, 1902)

Lipeurus miriceps Kellogg & Kuwana, 1902: 480, pl. 30, fig. 4.

Esthiopterum miriceps (Kellogg & Kuwana, 1902); Harrison 1916: 138 (as junior synonym of *Esthiopterum giganticola* (Kellogg, 1896)).

“*Perineus confidens*” Thompson, 1939: 210 (not *Perineus confidens* (Kellogg, 1899)).

Perineus miriceps (Kellogg & Kuwana, 1902); Clay 1940a: 304, figs 3b, 5c, 6b.

Harrisoniella miriceps (Kellogg & Kuwana, 1902); Kéler 1957a: 290, figs 2D, 4.

Paraclisis miriceps (Kellogg & Kuwana, 1902); Timmermann 1965: 103, figs 33D, 34b, 36, 39c.

Perineus miriceps (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 131.

Paraclisis miriceps (Kellogg & Kuwana, 1902); Price *et al.* 2003: 205.

Holotype ♂ presumed lost (see below).

Type host: *Geospiza fuliginosa* Gould, 1837 in error (see Hopkins & Clay 1952: 278).

Galápagos host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos locality: Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 42); Thompson (1939); Clay (1940a); Kéler (1957a); Linsley & Usinger (1966).

Other significant references: Timmermann (1965); Pilgrim & Palma (1982: 7); Price *et al.* (2003).

Material examined: 70 males, 135 females and 41 nymphs (5 samples, MONZ).

Remarks: The single male (the holotype) described by Kellogg & Kuwana (1902: 480) was not located in the EMEC or in other collections holding Kellogg material; therefore, it is presumed lost. In addition to the population of *Paraclisis miriceps* parasitising *Phoebastria irrorata* in the Galápagos Islands, there have been a number of records of this louse species from *Macronectes giganteus* (Gmelin, 1789) in New Zealand (Pilgrim & Palma 1982: 7).

Genus *Pectinopygus* Mjöberg, 1910

Pectinopygus Mjöberg, 1910. *Arkiv Zool.* 6(13): 95. Type species *Lipeurus pullatus* Nitzsch, 1866 = *Pectinopygus bassani* (O. Fabricius, 1780) (by original designation).

Epiplecanus Thompson, 1935a. *Ann. Mag. Nat. Hist.* (ser. 10) 16: 149. Type species: *Lipeurus forficulatus* Nitzsch, 1866 = *Pectinopygus forficulatus* (Nitzsch, 1866) (by original designation).

Epifregata Thompson, 1935a. *Ann. Mag. Nat. Hist.* (ser. 10) 16: 150. Type species: *Lipeurus gracilicornis* Piaget, 1880 = *Pectinopygus gracilicornis* (Piaget, 1880) (by original designation).

Philichthyophaga Thompson, 1935a. *Ann. Mag. Nat. Hist.* (ser. 10) 16: 150. Type species: *Lipeurus brevicornis* Denny, 1842 = *Pectinopygus brevicornis* (Denny, 1842) (by original designation).

Pectinopygus annulatus (Piaget, 1880)

Lipeurus annulatus Piaget, 1880: 340, pl. 27, fig. 10.

Lipeurus potens Kellogg & Kuwana, 1902: 477, pl. 30, fig. 1.

Lipeurus potens Kellogg & Kuwana, 1902; Kellogg, 1906: 319. In part *Pectinopygus annulatus*; in part *Pectinopygus minor* (Ewing, 1924); in part *Pectinopygus sulae* (Rudow, 1869); in part *Pectinopygus gracilicornis gracilicornis* (Piaget, 1880).

Esthiopterum annulatum (Piaget, 1880); Harrison 1916: 130.

Pectinopygus annulatus (Piaget, 1880); Hopkins & Clay 1952: 268.

Pectinopygus annulatus (Piaget, 1880); Clay in Linsley & Usinger 1966: 130. In part *Pectinopygus annulatus*; in part *Pectinopygus minor* (Ewing, 1924).

Pectinopygus annulatus (Piaget, 1880); Price *et al.* 2003: 207.

Lectotype ♂ in NHML (Clay 1973: 219).

Type host: *Sula leucogaster* (Boddaert, 1783).

Galápagos hosts: *Sula granti* Rothschild, 1902.

Galápagos localities: Isla Darwin; Isla Wolf; Isla Genovesa; Isla Seymour.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 43); Linsley & Usinger (1966).

Other significant references: Thompson (1948b); Clay (1964: 14); Amerson & Emerson (1971: 10, 24); Clay (1973: 219); Ledger (1980: 131); Palma (1996: 198); Price *et al.* (2003).

Material examined: 47 males, 51 females and 74 nymphs (9 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined the lectotype male of *Lipeurus potens* and have identified it as *Pectinopygus annulatus*. Also, we examined many specimens labelled and reported by Kellogg (1906: 319) as “*Lipeurus potens*” from several host species, and have identified them as four species of *Pectinopygus*, as listed in the synonymy above. The host recorded as “*Sula variegata*” for “*Lipeurus potens*” in Kellogg (1906: 319) is now known as *Sula granti*. *Pectinopygus annulatus* has been recorded from a number of *Sula* species (Price *et al.* 2003: 207).

***Pectinopygus gracilicornis fregatiphagus* (Eichler, 1943)**

Lipeurus gracilicornis var. *major* Kellogg, 1899: 30, pl. 3, fig. 3. Preoccupied by *Lipeurus major* Piaget, 1880: 346.

Lipeurus gracilicornis major Kellogg, 1899; Kellogg 1906: 319.

Esthiopterum majus (Kellogg, 1899); Harrison 1916: 138.

Epifregata fregatiphaga Eichler, 1943: 59. *Nomen novum* for *Lipeurus gracilicornis* var. *major* Kellogg, 1899.

Pectinopygus fregatiphagus (Eichler, 1943); Hopkins & Clay 1952: 269.

Pectinopygus fregatiphagus (Eichler, 1943); Clay in Linsley & Usinger 1966: 130.

Pectinopygus fregatiphagus (Eichler, 1943); Price *et al.* 2003: 208.

Lectotype ♂ in EMEC (Carriker 1957: 102).

Type host: *Fregata magnificens* Mathews, 1914.

Galápagos host: *Fregata magnificens* Mathews, 1914.

Galápagos localities: Isla Wolf; Isla Seymour; Isla Santa Cruz; Isla Española.

Galápagos references: Kellogg (1906); Kellogg (1908: 40); Linsley & Usinger (1966).

Other significant references: Carriker (1957: 102); Emerson (1958: 513); Price *et al.* (2003: 208).

Material examined: 22 males, 14 females and 51 nymphs (3 samples, MONZ).

Remarks: We regard this taxon as a subspecies because the differences between the populations of *Pectinopygus* from *Fregata magnificens* and *Fregata minor* refer to dimensions only. Therefore, in this case, we do not follow Price *et al.* (2003: 208).

***Pectinopygus gracilicornis gracilicornis* (Piaget, 1880)**

Lipeurus gracilicornis Piaget, 1880: 309, pl. 25, fig. 6.

Lipeurus potens Kellogg & Kuwana, 1902; Kellogg, 1906: 319. In part *Pectinopygus gracilicornis gracilicornis*; in part *Pectinopygus minor* (Ewing, 1924); in part *Pectinopygus annulatus* (Piaget, 1880); in part *Pectinopygus sulae* (Rudow, 1869).

Esthiopterum gracilicorne (Piaget, 1880); Harrison 1916: 135.

Esthiopterum gracilicornis (Piaget, 1880); Ferris 1932: 61, figs 13a-e.

Pectinopygus (*Epifregata*) *gracilicornis* (Piaget, 1880); Thompson 1939: 212.

Pectinopygus (*Epifregata*) *gracilicornis* (Piaget, 1880); Guimarães 1945: 185, fig. 14.

Pectinopygus gracilicornis (Piaget, 1880); Hopkins & Clay 1952: 269.

Pectinopygus gracilicornis (Piaget, 1880); Price *et al.* 2003: 208.

Lectotype ♂ in NHML (Clay 1973: 221).

Type host: *Fregata minor* (Gmelin, 1789).

Galápagos host: *Fregata minor ridgwayi* Mathews, 1914.

Galápagos localities: Isla Genovesa; Isla Seymour; Isla Española.

Galápagos references: Kellogg (1906); Kellogg (1908: 43); Thompson (1939).

Other significant references: Ferris (1932); Guimarães (1945); Clay (1973: 221); Palma (1996: 199).

Material examined: 50 males, 9 females and 48 nymphs (5 samples, EMEC, MONZ).

Remarks: We regard this taxon as a subspecies because the differences between the populations of *Pectinopygus* from *Fregata magnificens* and *Fregata minor* refer to dimensions only. Therefore, in this case, we do not follow Price *et al.* (2003: 208). From the Kellogg Collection, we examined many specimens labelled and reported by Kellogg (1906: 319) as "*Lipeurus potens*" from several host species, and have identified them as four species of *Pectinopygus*, as listed in the synonymy above.

***Pectinopygus minor* (Ewing, 1924)**

"*Nirmus fuscomarginatus*" Kellogg, 1906: 318 (not *Nirmus fuscomarginatus* Denny, 1842).

Lipeurus potens Kellogg & Kuwana, 1902; Kellogg, 1906: 319. In part *Pectinopygus minor*; in part *Pectinopygus annulatus* (Piaget, 1880); in part *Pectinopygus sulae* (Rudow, 1869); in part *Pectinopygus gracilicornis gracilicornis* (Piaget, 1880).

"*Lipeurus helleri*" Kellogg, 1906: 319 (not *Lipeurus helleri* Kellogg & Kuwana, 1902). In part *Pectinopygus minor*; in part *Quadriceps birostris* (Giebel, 1874); in part *Quadriceps separatus* (Kellogg & Kuwana, 1902).

Esthiopterum potens var. *minor* Ewing, 1924: 84.

Pectinopygus (*Pectinopygus*) *minor* (Ewing, 1924); Thompson 1939: 211.

Pectinopygus minor (Ewing, 1924); Hopkins & Clay 1952: 270.

Pectinopygus annulatus (Piaget, 1880); Clay in Linsley & Usinger 1966: 130. In part *Pectinopygus minor*; in part *Pectinopygus annulatus* (Piaget, 1880).

Pectinopygus minor (Ewing, 1924); Price *et al.* 2003: 208.

Holotype ♂ in USNM.

Type host: *Sula nebouxii excisa* Todd, 1948.

Galápagos host: *Sula nebouxii excisa* Todd, 1948.

Galápagos localities: Isla Seymour; Isla Baltra; Isla Rábida; Islote Corona del Diablo (near Isla Floreana); Isla Española.

Galápagos references: Kellogg (1906); Kellogg (1908: 24, 40, 43); Ewing (1924); Thompson (1939); Linsley & Usinger (1966).

Other significant reference: Price *et al.* (2003).

Material examined: 46 males, 22 females and 122 nymphs (12 samples, EMEC, MONZ).

Remarks: At present, this louse species and its host are endemic to the Galápagos Islands, although the population of *Sula nebouxii nebouxii* Milne-Edwards, 1882, extending from the coast of California to Perú, may also harbour *Pectinopygus minor*. From the Kellogg Collection, we examined many specimens labelled and reported by Kellogg (1906: 319) as "*Lipeurus potens*" from several host species, and have identified them as four species of *Pectinopygus*, as listed in the synonymy above. Also, we examined two other specimens: a female labelled and reported by Kellogg (1906: 318) as "*Nirmus fuscomarginatus*" from *Nesomimus parvulus* and a male labelled and reported by Kellogg (1906: 319) as "*Lipeurus helleri*" from *Sula nebouxii*, and have identified them as *Pectinopygus minor*.

***Pectinopygus nannopteri* (Ewing, 1924)**

(Fig. 10)

Esthiopterum nannopteri Ewing, 1924: 82, fig. 12.

Pectinopygus (*Philichthyophaga*) *nannopteri* (Ewing, 1924); Thompson 1939: 213.

Pectinopygus (*Philichthyophaga*) *nannopteri* (Ewing, 1924); Thompson 1940: 429, figs 1–8.

Pectinopygus nannopteri (Ewing, 1924); Hopkins & Clay 1952: 270.

Pectinopygus nannopteri (Ewing, 1924); Clay in Linsley & Usinger 1966: 131.

Pectinopygus sp.; Parker, Whiteman & Miller 2006: 629.

Holotype ♀ in USNM.

Type host: *Phalacrocorax harrisi* Rothschild, 1898.

Galápagos host: *Phalacrocorax harrisi* Rothschild, 1898.

Galápagos localities: Isla Fernandina; Isla Isabela.

Galápagos references: Ewing (1924); Thompson (1939, 1940); Linsley & Usinger (1966); Parker, Whiteman & Miller (2006).

Other significant references: Timmermann (1964: 279); Price *et al.* (2003: 208).

Material examined: 17 males, 20 females and 16 nymphs (7 samples, MONZ).

Remarks: This louse species and its host are endemic to the Galápagos Islands. The host species has sometimes been placed in the monotypic genus *Nannopterum* Sharpe, 1899 (e.g. Harris 1989: 74; Castro & Phillips 1996: 80).



FIGURE 10. *Pectinopygus nannopteri* (Ewing, 1924). A: male. B: female (Host: *Phalacrocorax harrisi*).

Pectinopygus occidentalis* Thompson, 1948*New record**

Pectinopygus (*Epipelicanus* [sic]) *occidentalis* Thompson, 1948a: 318, figs 1–9.

Pectinopygus occidentalis Thompson, 1948; Hopkins & Clay 1952: 270.

Pectinopygus occidentalis Thompson, 1948; Price *et al.* 2003: 208.

Holotype ♀ in NHML.

Type host: *Pelecanus occidentalis occidentalis* Linnaeus, 1766.

Galápagos host: *Pelecanus occidentalis urinator* Wetmore, 1945.

Galápagos localities: Isla Santiago; Isla Rábida.

Galápagos references: This paper.

Other significant references: Clay (1961: 58); Price *et al.* (2003: 208).

Material examined: 8 males, 16 females and 71 nymphs (4 samples, MONZ).

Remarks: This is the first record of *Pectinopygus occidentalis* from the Galápagos Islands. *Pelecanus occidentalis* is the only host species known for this louse species (Price *et al.* 2003: 208).

***Pectinopygus sulae* (Rudow, 1869)**

Lipeurus sulae Rudow, 1869: 43.

Lipeurus helleri Kellogg & Kuwana, 1902: 479, pl. 30, fig. 3.

Lipeurus potens Kellogg & Kuwana, 1902; Kellogg, 1906: 319. In part *Pectinopygus sulae*; in part *Pectinopygus gracilicornis gracilicornis* (Piaget, 1880); in part *Pectinopygus minor* (Ewing, 1924); in part *Pectinopygus annulatus* (Piaget, 1880).

Esthiopterum sulae (Rudow, 1869); Harrison 1916: 142.

Esthiopterum helleri (Kellogg & Kuwana, 1902); Ewing 1924: 82.

Pectinopygus (*Pectinopygus*) *sulae* (Rudow, 1869); Thompson 1939: 211.

Pectinopygus sulae (Rudow, 1869); Hopkins & Clay 1952: 269.

Pectinopygus sulae (Rudow, 1869); Clay *in* Linsley & Usinger 1966: 131.

Neotype ♂ in NHML (Clay & Hopkins (1955: 67).

Type host: *Sula leucogaster plotus* (Forster, 1844).

Galápagos host: *Sula sula websteri* Rothschild, 1898.

Galápagos localities: Isla Darwin; Isla Wolf; Isla Genovesa.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 40, 43); Ewing (1924); Thompson (1939); Linsley & Usinger (1966).

Other significant references: Clay & Hopkins (1955: 64, figs 5–7); Clay (1964: 14); Amerson & Emerson (1971: 10, 25); Clay (1973: 222); Palma (1996: 200); Price *et al.* (2003: 209).

Material examined: 149 males, 124 females and 332 nymphs (7 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined the lectotype male of *Lipeurus helleri* and have identified it as *Pectinopygus sulae*. Also, we examined many specimens labelled and reported by Kellogg (1906: 319) as “*Lipeurus potens*” from several host species, and have identified them as four species of *Pectinopygus*, as listed in the synonymy above. *Pectinopygus sulae* has been recorded from three *Sula* species (Price *et al.* 2003: 209).

Genus *Perineus* Thompson, 1936

Perineus Thompson, 1936. *Ann. Mag. Nat. Hist.* (ser. 10) 18: 41. Type species: *Lipeurus nigrolimbatus* Giebel, 1874 = *Perineus nigrolimbatus* (Giebel, 1874) (by original designation).

***Perineus oblongus* Kéler, 1957**

(Fig. 11)

Perineus oblongus Kéler, 1957b: 523, figs 27–28.

Perineus oblongus Kéler, 1957; Clay *in* Linsley & Usinger 1966: 131.

Perineus oblongus Kéler, 1957; Palma & Pilgrim 1988: 580, figs 6, 13, 19, 23, 34, 38, 46, 51.

Holotype ♂ in NHML.

Type host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos host: *Phoebastria irrorata* (Salvin, 1883).

Galápagos locality: Isla Española.

Galápagos references: Kéler (1957b); Linsley & Usinger (1966); Göllner-Scheiding (1973: 40); Palma & Pilgrim (1988).

Other significant references: Timmermann (1965: 111, fig. 47); Pilgrim & Palma (1979: 177); Price *et al.* (2003: 212).

Material examined: 64 males, 50 females and 10 nymphs (7 samples, MONZ, NHML).

Remarks: At present, *Perineus oblongus* is endemic to the Galápagos Islands, although the population of *Phoebastria irrorata* breeding on Isla La Plata, near the coast of Ecuador, may also harbour this louse.



FIGURE 11. *Perineus oblongus* Kéler, 1957. A: male. B: female (Host: *Phoebastria irrorata*).

Genus ***Philoceanus*** Kellogg, 1903

Philoceanus Kellogg, 1903. *Biol. Bull. Wood's Hole* 5: 87. Type species: *Philoceanus becki* Kellogg, 1903 (by monotypy).

***Philoceanus becki* Kellogg, 1903**

Philoceanus becki Kellogg, 1903: 88, figs 1–2.

Nirmus separatus Kellogg & Kuwana, 1902; Kellogg, 1906: 317. In part *Philoceanus becki*; in part *Nirmus separatus* Kellogg & Kuwana, 1902.

Philoceanus becki Kellogg, 1903; Kellogg 1906: 320.

Philoceanus becki Kellogg, 1903; Hopkins & Clay 1952: 279.

Philoceanus becki Kellogg, 1903; Clay in Linsley & Usinger 1966: 131.

Philoceanus becki Kellogg, 1903; Timmermann 1961b: 536, fig. 3.

Syntypes ♂♀ presumed lost (see below).

Type host: *Oceanodroma tethys tethys* (Bonaparte, 1852).

Galápagos hosts: *Oceanodroma tethys tethys* (Bonaparte, 1852); *Oceanodroma castro* (Harcourt, 1851).

Galápagos localities: Isla Wolf; Isla Plaza; Islote Corona del Diablo (near Isla Floreana).

Galápagos references: Kellogg (1903, 1906); Kellogg (1908: 29, 50); Thompson (1939: 213); Linsley & Usinger (1966).

Other significant references: Timmermann (1961b); Timmermann (1965: 161, fig. 96); Price *et al.* (2003: 212).

Material examined: 10 males, 20 females and 15 nymphs (7 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined one female labelled and reported by Kellogg (1906: 317) as “*Nirmus separatus*” from “*Oceanodroma cryptoleneura*” (= *Oceanodroma castro*) and we have identified it as *Philoceanus becki*. None of the specimens (syntypes) mentioned by Kellogg (1903: 88) were located in the EMEC or in other collections holding Kellogg material; therefore, they are presumed lost. The two Galápagos hosts listed above are the only known hosts for *Philoceanus becki* (see Price *et al.* 2003: 212).

Genus ***Philopterus*** Nitzsch, 1818

Philopterus Nitzsch, 1818. *Germer's Mag. Ent.* 3: 281, 288. Type species: *Philopterus (Docophorus) ocellatus* “Nitzsch” = *Philopterus ocellatus* (Scopoli, 1763) (by subsequent designation).

Docophorus Nitzsch, 1818. *Germer's Mag. Ent.* 3: 289. Type species: *Philopterus (Docophorus) ocellatus* (Scopoli, 1763) (by subsequent designation).

***Philopterus breviformis* (Kellogg & Kuwana, 1902)**

Docophorus breviformis Kellogg & Kuwana, 1902: 463, pl. 28, fig. 3.

“*Docophorus insulicola*” Kellogg & Kuwana, 1902: 467, ♀ from *Geospiza fuliginosa* (not *Docophorus insulicola* Kellogg & Kuwana, 1902: 466).

Docophorus breviformis Kellogg & Kuwana, 1902; Kellogg 1906: 317.

Philopterus breviformis (Kellogg & Kuwana, 1902); Harrison 1916: 89.

Philopterus breviformis (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 131.

Philopterus breviformis (Kellogg & Kuwana, 1902); Price *et al.* 2003: 212.

Lectotype ♂ in EMEC (designated below).

Type host: *Progne modesta* Gould, 1838.

Galápagos host: *Progne modesta* Gould, 1838.

Galápagos localities: Isla Isabela; Isla Santa Cruz.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 11); Ewing (1924: 82); Thompson (1939: 16); Linsley & Usinger (1966).

Other significant references: Hopkins & Clay (1952: 281); Price *et al.* (2003).

Material examined: 5 males, 10 females and 2 nymphs (2 samples, EMEC).

Remarks: This louse species and its host are endemic to the Galápagos Islands. From the Kellogg Collection, we examined the “lectotype” male, seven “paralectotypes” and four additional specimens of *Docophorus breviformis*, all from the type host. Also, we examined three further females of *Philopterus breviformis*, two labelled and reported by Kellogg & Kuwana (1902: 463, 467) as *Docophorus breviformis* from *Geospiza*

fortis, and one as “*Docophorus insulicola*” from *Geospiza fuliginosa*. We regard these latter females as contaminants.

One label of the “lectotype” slide of *Docophorus breviformis* reads “T. Clay det. / LECTOTYPE ♂”. However, we have been unable to find the formal published designation of this specimen as the lectotype. Therefore, we herewith designate the male on Kellogg Collection slide 1105a “fig-d” as the lectotype of *Docophorus breviformis*, with the remaining 9 specimens from *Progne modesta* (2 males, 5 females and 2 nymphs on slides 1136, 1145a, 1150a,b, 1153) as paralectotypes, all deposited in EMEC.

***Philoaterus insulicola* (Kellogg & Kuwana, 1902)**

Docophorus insulicola Kellogg & Kuwana, 1902: 466, pl. 28, fig. 6.

Philoaterus insulicola (Kellogg & Kuwana, 1902); Harrison 1916: 97.

Philoaterus insulicola (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 131.

Philoaterus insulicola (Kellogg & Kuwana, 1902); Price *et al.* 2003: 214.

Lectotype ♂ in EMEC (Carriker 1957: 97).

Type host: *Certhidea olivacea olivacea* Gould, 1837.

Galápagos hosts: *Pyrocephalus rubinus nanus* Gould, 1839; *Certhidea olivacea olivacea* Gould, 1837.

Galápagos localities: Isla Pinta; Isla Isabela.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 15); Thompson (1939: 18); Carriker (1957: 97); Sari *et al.* (2012: 3).

Other significant references: Hopkins & Clay (1952: 284); Price *et al.* (2003: 214).

Material examined: 6 males, 8 females and 6 nymphs (3 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined the lectotype male and five paralectotypes of *Docophorus insulicola*. Kellogg & Kuwana (1902) reported three passerine hosts for this louse species, including the two hosts given above and *Geospiza fuliginosa*. Carriker (1957: 97) designated the male lectotype from *Certhidea olivacea* arguing that specimens from *Pyrocephalus rubinus* (as *Pyrocephalus intercedens*) and *Geospiza fuliginosa* “must be considered as ‘stragglers’ from *Certhidea*, the true host”, and that additional *Philoaterus* females from *Pyrocephalus rubinus* were “very different from Kellogg’s figure of *insulicola*”. We agree with Carriker (1957) in that *Geospiza fuliginosa* is not a natural host for *Philoaterus insulicola*. However, we disagree with Carriker’s (1957) statement that *Pyrocephalus rubinus* is not a natural host for *Ph. insulicola* because we have identified four males and four females, collected by the 1992 Galápagos Expedition from *Pyrocephalus rubinus*, as *Philoaterus insulicola*. Furthermore, we are unable to confirm *Certhidea olivacea* as a natural host for this louse because we did not collect any louse from our examination of six birds of this species. Price *et al.* (2003: 214) incorrectly listed the three original passerine hosts of *Philoaterus insulicola* as type hosts, not realising that Carriker’s (1957) designation of a lectotype had made *Certhidea olivacea* the only type host.

Genus ***Physconelloides*** Ewing, 1927

Physconelloides Ewing, 1927. *Jour. Wash. Acad. Sci.* 17: 94. Type species: *Physconelloides ceratoceps* Ewing, 1927 (by original designation).

***Physconelloides galapagensis* (Kellogg & Kuwana, 1902)**

Goniocotes galapagensis Kellogg & Kuwana, 1902: 481, pl. 30, fig. 5.

Goniocotes galapagensis Kellogg & Kuwana, 1902; Kellogg 1906: 320.

Physconelloides galapagensis (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 291.

Physconelloides galapagensis (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 131.

Physconelloides galapagensis (Kellogg & Kuwana, 1902); Price, Clayton & Hellenthal 1999: 196, figs 1–7.

Syntypes ♂♀ presumed lost (see below).

Type hosts: *Camarhynchus pallidus productus* Ridgway, 1894; *Geospiza fuliginosa* Gould, 1837 and *Oceanites gracilis* (Elliot, 1859), all in error (see Price, Clayton & Hellenthal 1999: 198).

Galápagos host: *Zenaida galapagoensis* Gould, 1839.

Galápagos localities: Isla Pinta; Isla Marchena; Isla Genovesa; Isla Fernandina; Isla Isabela; Isla Santiago; Isla Santa Cruz; Isla Floreana; Isla Española.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 33); Thompson (1939: 15); Thompson (1950: 274); Emerson (1960a: 124); Linsley & Usinger (1966); Price, Clayton & Hellenthal (1999); Johnson, Adams & Clayton (2001: 864); Whiteman *et al.* (2004: 1115); Parker, Whiteman & Miller (2006: 629); Santiago-Alarcón *et al.* (2008: 587); Sari *et al.* (2012: 3).

Other significant references: Tendeiro (1980: 136); Price *et al.* (2003: 218).

Material examined: 46 males, 40 females and 56 nymphs (19 samples, MONZ).

Remarks: Both *Physconelloides galapagensis* and its host are endemic to the Galápagos Islands. Kellogg (1906: 320) reported *Zenaida galapagoensis* (as *Nesopelia galapagoensis*) as a host for *Physconelloides galapagensis*, and three other bird species that are incorrect hosts for this louse. None of the specimens (syntypes) mentioned by Kellogg & Kuwana (1902: 481) were located in the EMEC or in other collections holding Kellogg material; therefore, they are presumed lost.

Genus *Quadriceps* Clay & Meinertzhagen, 1939

Quadriceps Clay & Meinertzhagen, 1939. *Ann. Mag. Nat. Hist.* (ser. 11) 4: 453. Type species: *Degeeriella vanelli* (Denny, 1842) = *Quadriceps charadrii hospes* (Nitzsch [in Giebel], 1866) (by original designation).

Koeniginirmus Eichler, 1940. *Zool. Anz.* 130: 101. Type species: “*Koeniginirmus punctatus* (Nitzsch in Burmeister, 1838)” = *Quadriceps punctatus* (Burmeister, 1838) (by original designation).

Haematophagus Timmermann, 1950. *Fauna Islandica* 2: 1, 2. Type species: *Quadriceps haematopi* (Denny, 1842 = *Quadriceps auratus* (Haan, 1829) (by original designation).

Proneptis Timmermann, 1953. *Bombus* 78/79: 331. Type species: *Proneptis semifissa* (Nitzsch [in Giebel], 1866) = *Quadriceps semifissus* (Nitzsch [in Giebel], 1866) (by original designation).

Chadriceps Złotorzycka, 1967. *Polskie Pismo Entomol.* 37(4): 728. Type species: *Pediculus hiaticulae* O. Fabricius, 1780 = *Quadriceps hiaticulae* (O. Fabricius, 1780) (by original designation).

Anousceps Złotorzycka, 1967. *Polskie Pismo Entomol.* 37(4): 730. Type species: *Nirmus separatus* Kellogg & Kuwana, 1902 = *Quadriceps separatus* (Kellogg & Kuwana, 1902) (by original designation).

Himantophagus Złotorzycka, 1967. *Polskie Pismo Entomol.* 37(4): 733. Type species: *Nirmus hemichrous* Nitzsch [in Giebel], 1866 = *Quadriceps hemichrous* (Nitzsch [in Giebel], 1866) (by original designation).

Laminonirmus Złotorzycka, 1967. *Polskie Pismo Entomol.* 37(4): 754. Type species: *Nirmus ornatus* Grube, 1851 = *Quadriceps ornatus* (Grube, 1851) (by original designation).

Quadriceps auratus (Haan, 1829)

Philopterus (*Docophorus*) *auratus* Haan, 1829: 310, pl. 5, fig. 9.

“*Nirmus galapagensis*” Kellogg 1906: 317 (not *Nirmus galapagensis* Kellogg & Kuwana, 1902).

Degeeriella aurata (Lyonet [sic], 1829); Harrison 1916: 109.

Quadriceps auratus (Haan, 1829); Hopkins & Clay 1952: 309.

Haematophagus auratus (Haan, 1829); Złotorzycka 1967: 748, pl. 10, figs 1–4.

Quadriceps auratus (Haan, 1829); Palma 1995: 219.

Neotype ♀ in NHML (Hopkins 1949: 31, pl 1, fig. 2).

Type host: *Haematopus ostralegus* Linnaeus, 1758.

Galápagos host: *Haematopus palliatus galapagensis* Ridgway, 1886.

Galápagos localities: Isla Marchena; Isla Santiago.

Galápagos references: Kellogg (1906); Palma (1995).

Other significant references: Hopkins (1949: 29); Clay (1981: 936, figs 4, 12, 14, 17–18, 20, 22); Palma (1996: 209); Price *et al.* (2003: 223).

Material examined: 4 males and 4 females (2 samples, MONZ).

Remarks: From the Kellogg Collection, we examined one female labelled and reported by Kellogg (1906: 317) as “*Nirmus galapagensis*” from “*Geospiza fortis*”, which we have identified as *Quadriceps auratus*. This louse species has been recorded from most *Haematopus* species (Price *et al.* 2003: 223).

***Quadriceps birostris* (Giebel, 1874)**

Nirmus birostris Giebel, 1874: 174.

Nirmus gloriosus Kellogg & Kuwana, 1902: 467, pl. 29, fig. 1.

Nirmus gloriosus Kellogg & Kuwana, 1902; Kellogg, 1906: 317.

“*Lipeurus helleri*” Kellogg, 1906: 319 (not *Lipeurus helleri* Kellogg & Kuwana, 1902). In part *Quadriceps birostris*; in part *Pectinopygus minor* (Ewing, 1924); in part *Quadriceps separatus* (Kellogg & Kuwana, 1902).

Degeeriella birostris (Giebel, 1874); Harrison 1916: 109.

Degeeriella gloriosa (Kellogg & Kuwana, 1902); Harrison 1916: 114.

Quadriceps birostris (Giebel, 1874); Hopkins & Clay 1952: 309.

Quadriceps birostris (Giebel, 1874); Clay in Linsley & Usinger 1966: 131.

Quadriceps birostris (Giebel, 1874); Palma 1995: 220.

Types probably lost (Palma 1996: 210).

Type host: *Sterna fuscata* Linnaeus, 1766.

Galápagos host: *Sterna fuscata crissalis* (Lawrence, 1872).

Galápagos locality: Isla Darwin.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 25); Thompson (1939: 75); Linsley & Usinger (1966); Palma (1995).

Other significant references: Timmermann (1952b: 76, figs 4–5; 1957: 71, pl. 9, figs a–b); Palma (1994b: 268); Palma (1996: 210); Price *et al.* (2003: 223).

Material examined: 9 males and 11 females (8 samples, EMEC), but see Remarks.

Remarks: From the Kellogg Collection, we examined eight males and 11 females labelled and reported by Kellogg & Kuwana (1902: 467–468) as “*Nirmus gloriosus*” from a number of hosts, and we have identified them as *Quadriceps birostris*. Twelve of those lice, including the lectotype of *Nirmus gloriosus*, are recorded from “*Sterna fuliginosa*” (= *Sterna fuscata*), but their locality is Clipperton Island, not the Galápagos Islands. The remainder are recorded from incorrect hosts, from Galápagos localities. In addition, we examined one male labelled as “*Lipeurus helleri*” from “*Sula fuliginosa*” but reported by Kellogg (1906: 319) from *Sterna fuliginosa*, collected at Lat. 1°N, Long. 93°W, near Isla Darwin, where *Sterna fuscata* breeds (Harris 1989: 118; Castro & Phillips 1996: 110). We have identified that male louse as *Quadriceps birostris*. At present, *Sterna fuscata* is the only known host of this louse species (Price *et al.* 2003: 223).

***Quadriceps charadrii hospes* (Nitzsch [in Giebel], 1866)**

Nirmus hospes Nitzsch [in Giebel], 1866: 371.

Degeeriella hospes (Nitzsch [in Giebel], 1866); Harrison 1916: 115.

Quadriceps hospes (Nitzsch [in Giebel], 1866); Hopkins & Clay 1952: 312.

Quadriceps charadrii hospes (Nitzsch [in Giebel], 1866); Złotorzycka 1967: 712, pl. 1, fig. 1; pl. 2, fig. 1; pl. 3, fig. 1.

Quadriceps charadrii hospes (Nitzsch [in Giebel], 1866); Palma 1995: 219.

Quadriceps hospes (Nitzsch [in Giebel], 1866); Price *et al.* 2003: 224.

Types probably lost (Palma 1996: 211).

Type host: *Pluvialis squatarola* (Linnaeus, 1758).

Galápagos host: *Pluvialis squatarola* (Linnaeus, 1758).

Galápagos locality: Isla Santa Cruz.

Galápagos reference: Palma (1995).

Other significant references: Timmermann (1957: 56); Złotorzycka (1967); Palma (1996: 211); Price *et al.* (2003).

Material examined: 5 males and 5 females (1 sample, MONZ).

Remarks: *Pluvialis squatarola* is a regular migrant to the Galápagos Islands (Harris 1989: 91; Castro & Phillips 1996: 106) and the only known host of *Quadriceps charadrii hospes*. We regard this louse as a subspecies, instead of a full species as listed by Price *et al.* (2003), because a comparison of samples of *Q. charadrii charadrii* (ex *Pluvialis apricaria* (Linnaeus, 1758)) and *Q. charadrii hospes* showed that differences are subtle, and mainly refer to dimensions.

***Quadriceps connexus* (Kellogg & Mann, 1912)**

Nirmus connexus Kellogg & Mann, 1912: 13.

Degeeriella connexa (Kellogg & Mann, 1912); Harrison 1916: 110.

Quadriceps connexus (Kellogg & Mann, 1912); Hopkins & Clay 1952: 310.

Chadriceps connexus (Kellogg & Mann, 1912); Złotorzycka 1967: 728, pl. 6, figs 2, 4.

Quadriceps connexus (Kellogg & Mann, 1912); Palma 1995: 219.

Lectotype ♂ in EMEC (Carriker 1957: 99).

Type host: *Phalaropus lobatus* (Linnaeus, 1758).

Galápagos host: *Phalaropus lobatus* (Linnaeus, 1758).

Galápagos locality: Isla Isabela.

Galápagos reference: Palma (1995).

Other significant references: Timmermann (1957: 66); Złotorzycka (1967); Price *et al.* (2003: 223).

Material examined: 7 males and 3 females (1 sample, MONZ).

Remarks: *Phalaropus lobatus* is a common migrant to the Galápagos Islands (Harris 1989: 107; Castro & Phillips 1996: 103), and the only known host of *Quadriceps connexus* (see Price *et al.* 2003: 223).

***Quadriceps hemichrous* (Nitzsch [in Giebel], 1866)**

Nirmus hemichrous Nitzsch [in Giebel], 1866: 372.

Degeeriella hemichroa (Nitzsch [in Giebel], 1866); Harrison 1916: 114.

Quadriceps hemichrous (Nitzsch [in Giebel], 1866); Hopkins & Clay 1952: 311.

Quadriceps hemichrous (Nitzsch [in Giebel], 1866); Timmermann 1954c: 169, fig. 8.

Himantophagus hemichrous (Nitzsch [in Giebel], 1866); Złotorzycka 1967: 734.

Quadriceps hemichrous (Nitzsch [in Giebel], 1866); Palma 1995: 219.

Neotype ♂ in NHML (Timmermann 1954c: 170).

Type host: *Himantopus himantopus himantopus* (Linnaeus, 1758).

Galápagos host: *Himantopus himantopus mexicanus* (Statius Müller, 1776).

Galápagos locality: Isla Santa Cruz.

Galápagos reference: Palma (1995).

Other significant references: Timmermann (1954c; 1957: 65); Złotorzycka (1967); Palma (1996: 211); Price *et al.* (2003: 224).

Material examined: 1 male (MONZ).

Remarks: *Himantopus himantopus mexicanus* is a common resident on lagoons of the Galápagos Islands (Harris 1989: 107; Castro & Phillips 1996: 105), and one of several hosts listed for this louse species by Price *et al.* (2003: 224).

***Quadriceps obtusus* (Kellogg & Kuwana, 1902)**

Nirmus obtusus (Kellogg & Kuwana, 1902: 468, pl. 29, fig. 2).

Degeeriella obtusa (Kellogg & Kuwana, 1902); Harrison 1916: 119.

Degeeriella conformis Blagoveshtchensky, 1940: 56, 84, fig. 14.

Quadriceps conformis (Blagoveshtchensky, 1940); Hopkins & Clay 1952: 310.

Quadriceps obtusus (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 314.

Koeniginirmus (*Koeniginirmus*) *obtusus* (Kellogg & Kuwana, 1902); Złotorzycka 1967: 774.

Quadriceps obtusus (Kellogg & Kuwana, 1902); Palma 1994b: 273.

Holotype ♀ in EMEC (Palma 1994b: 268).

Type host: *Sterna fuscata crissalis* (Lawrence, 1872), in error (see Palma 1994b: 271).

Galápagos host: *Heteroscelus incanus* (Gmelin, 1789).

Galápagos locality: Isla Genovesa.

Galápagos references: Palma (1994b: 268; 1995: 219).

Other significant references: Hopkins & Timmermann (1954: text-fig. 10, pl. 2, figs 13–14); Timmermann (1957: 63, fig. 35.6); Złotorzycka (1967: 713, pl. 4, fig. 4); Price *et al.* (2003: 225).

Material examined: 11 males and 8 females (1 sample, MONZ).

Remarks: Price *et al.* (2003: 226) listed *Heteroscelus incanus* as one of two regular host of this louse species. From the Kellogg Collection, we examined the female holotype of *Quadriceps obtusus*, which originated from

Clipperton Island, not the Galápagos Islands (Palma 1994b). Both, Kellogg (1908: 27) and Thompson (1939: 120) incorrectly listed this species as from the Galápagos Islands.

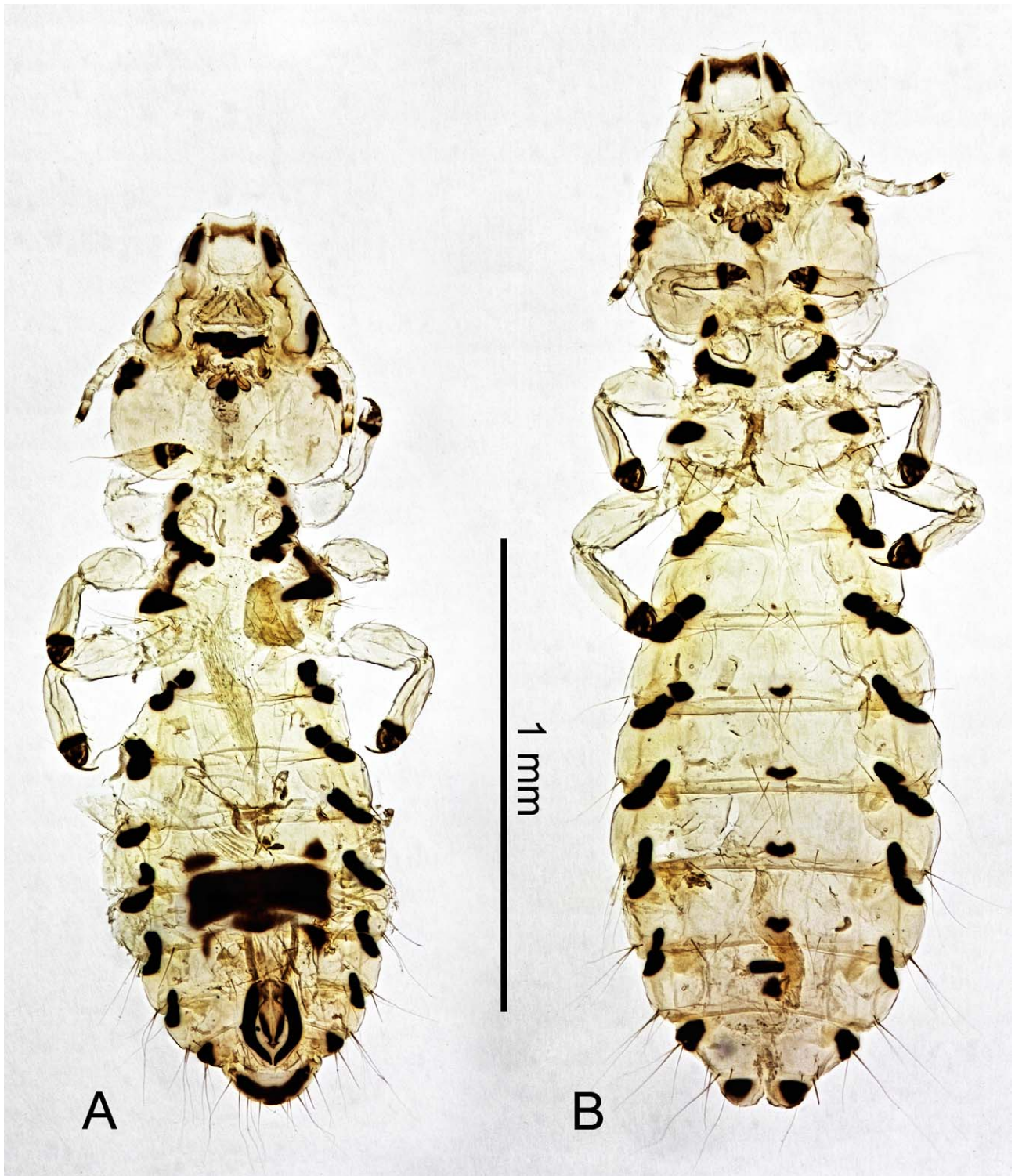


FIGURE 12. *Quadriceps paludicola* (Kellogg & Kuwana, 1902). A: male. B: female (Host: *Creagrus furcatus*).

***Quadriceps paludicola* (Kellogg & Kuwana, 1902)**

(Fig. 12)

Nirmus paludicola Kellogg & Kuwana, 1902: 469, pl. 29, fig. 3.

Degeeriella paludicola (Kellogg & Kuwana, 1902); Harrison 1916: 120.

Quadriceps paludicola (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 314.
Quadriceps ernstmayri Timmermann, 1952a: 216, text-fig. 3, pl. 12.
Quadriceps ernstmayri Timmermann, 1952; Hopkins & Clay 1953: 443.
Quadriceps ernstmayri Timmermann, 1952; Timmermann 1957: 69, text-fig. 43, pl. 6, fig. d.
Quadriceps paludicola (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 131.
Quadriceps paludicola (Kellogg & Kuwana, 1902); Złotorzycka 1967: 727.
Koeniginirmus (Laminonirmus) ernstmayri (Timmermann, 1952); Złotorzycka 1967: 757.
Quadriceps paludicola (Kellogg & Kuwana, 1902); Palma 1995: 218.

Holotype ♀ in EMEC (Palma 1995: 218).

Type host: *Butorides sundevalli* (Reichenow, 1877), in error (see Palma 1995: 219).

Galápagos host: *Creagrus furcatus* (Nébox, 1842).

Galápagos localities: Isla Genovesa; Isla Isabela; Isla Seymour; Isla Champion (near Isla Floreana).

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 28); Thompson (1939: 121); Timmermann (1952; 1957); Linsley & Usinger (1966); Palma (1994b: 271); Palma (1995).

Other significant references: Timmermann (1971: 151); Price *et al.* (2003: 226).

Material examined: 51 males, 40 females and 30 nymphs (9 samples, EMEC, MONZ, NHML).

Remarks: *Quadriceps paludicola* is so far endemic to the Galápagos Islands, but *Creagrus furcatus* is not, as this gull also breeds on Malpelo Island (Dickinson 2003: 149), located about 500 km west of the Colombian mainland. From the Kellogg Collection we examined the holotype of *Nirmus paludicola*. Also, we examined five paratypes of *Quadriceps ernstmayri* held in the NHML.

***Quadriceps punctatus felix* (Giebel, 1874)**

(Fig. 13)

Nirmus felix Giebel, 1874:

Degeeriella felix (Giebel, 1874); Harrison 1916: 112.

Quadriceps felix (Giebel, 1874); Hopkins & Clay 1952: 311.

Quadriceps punctatus felix (Giebel, 1874); Timmermann 1952a: 211, figs 1–2a.

Koeniginirmus (Koeniginirmus) felix felix (Giebel, 1874); Złotorzycka 1967: 749.

Quadriceps punctatus felix (Giebel, 1874); Palma 1995: 220.

Types probably lost (Palma & Pilgrim 1984: 150).

Type host: *Larus heermanni* Cassin, 1852.

Galápagos host: *Larus fuliginosus* Gould, 1841

Galápagos localities: Isla Genovesa; Isla Marchena; Isla Santa Cruz.

Galápagos reference: Palma (1995).

Other significant references: Timmermann (1952; 1957: 70, pl. 6, fig. c); Price *et al.* (2003: 226).

Material examined: 27 males, 34 females and 1 nymph (5 samples, MONZ).

Remarks: *Larus fuliginosus* is an endemic gull to the Galápagos Islands (Harris 1989: 114; Castro & Phillips 1996: 107), and one of two hosts listed by Price *et al.* (2003: 224) for this louse subspecies.

***Quadriceps punctatus lingulatus* (Waterston, 1914)**

Nirmus punctatus lingulatus Waterston, 1914: 285.

Degeeriella lingulata (Waterston, 1914); Harrison 1916: 116.

Quadriceps lingulatus (Waterston, 1914); Hopkins & Clay 1952: 313.

Quadriceps punctatus lingulatus (Waterston, 1914); Timmermann 1952a: 214, fig. 2c.

Koeniginirmus (Koeniginirmus) lingulatus lingulatus (Waterston, 1914); Złotorzycka 1967: 750.

Quadriceps punctatus lingulatus (Waterston, 1914); Palma 1995: 220.

Syntypes ♂♀ in the South African Museum, Cape Town, South Africa (Palma 1996: 213).

Type host: *Larus hartlaubii* Bruch, 1853.

Galápagos host: *Larus pipixcan* Wagler, 1831.

Galápagos localities: Isla Floreana; Isla Santa Cruz.

Galápagos reference: Palma (1995).



FIGURE 13. *Quadriceps punctatus felix* (Giebel, 1874). Male (Host: *Larus fuliginosus*).

Other significant references: Timmermann (1952; 1957: 70); Palma (1996: 213); Price *et al.* (2003: 227).

Material examined: 23 males, 21 females and 1 nymph (2 samples, MONZ).

Remarks: Within a comprehensive study of the *Quadriceps* lice from gulls, Timmermann (1952) demoted this louse to the subspecies level. *Larus pipixcan* and three other gull species are listed by Price *et al.* (2003: 227) as hosts for this louse subspecies.

***Quadriceps ridgwayi* (Kellogg, 1906)**

Nirmus ridgwayi Kellogg, 1906: 317.

Degeeriella ridgwayi (Kellogg, 1906); Harrison 1916: 122.

Quadriceps ridgwayi (Kellogg, 1906); Hopkins & Clay 1952: 316.

Quadriceps ridgwayi [sic] (Kellogg, 1906); Clay *in* Linsley & Usinger 1966: 131.

Quadriceps ridgwayi (Kellogg, 1906); Palma 1995: 221.

Lectotype ♂ in EMEC (Palma 1996: 214).

Type host: *Haematopus palliatus galapagensis* Ridgway, 1886.

Galápagos host: *Haematopus palliatus galapagensis* Ridgway, 1886.

Galápagos localities: Isla Marchena; Isla Santiago; Isla Santa Cruz.

Galápagos references: Kellogg (1906); Kellogg (1908: 29); Thompson (1939: 121); Linsley & Usinger (1966); Palma (1995).

Other significant references: Timmermann (1971: 158); Clay (1981: 936); Palma (1996: 214); Price *et al.* (2003: 227).

Material examined: 11 males, 15 females and 2 nymphs (3 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined the male lectotype and three female paralectotypes of *Quadriceps ridgwayi*. *Haematopus palliatus galapagensis* and four other oystercatcher species are listed by Price *et al.* (2003: 227) as hosts for this louse species.

***Quadriceps semifissus* (Nitzsch [*in* Giebel], 1866)**

Nirmus semifissus Nitzsch [*in* Giebel], 1866: 372.

Degeeriella semifissa (Nitzsch [*in* Giebel], 1866); Harrison 1916: 123.

Quadriceps semifissa mexicana Carriker, 1944: 99, pl. 5, figs 8–9.

Quadriceps mexicanus Carriker, 1944; Hopkins & Clay 1952: 313.

Quadriceps semifissus (Nitzsch [*in* Giebel], 1866); Hopkins & Clay 1952: 316.

Proneptis semifissa (Nitzsch [*in* Giebel], 1866); Timmermann 1954c: 166, figs 3–5.

Proneptis semifissa mexicana (Carriker, 1944); Złotorzycka 1967: 732.

Proneptis semifissa semifissa (Nitzsch [*in* Giebel], 1866); Złotorzycka 1967: 733, pl. 7, fig. 1; pl. 8, fig. 1.

Quadriceps semifissus (Nitzsch [*in* Giebel], 1866); Palma 1995: 220.

Types probably lost (Palma 1996: 215).

Type host: *Himantopus himantopus himantopus* (Linnaeus, 1758).

Galápagos host: *Himantopus himantopus mexicanus* (Stadius Müller, 1776).

Galápagos locality: Isla Santa Cruz.

Galápagos reference: Palma (1995).

Other significant references: Timmermann (1954c; 1957: 76, figs 48–50); Timmermann (1971: 165, fig. 10); Palma (1996: 215); Price *et al.* (2003: 227).

Material examined: 1 male and 1 female (1 sample, MONZ).

Remarks: This louse species is widespread on members of the Recurvirostridae (Price *et al.* 2003: 227). *Himantopus himantopus mexicanus* is a common resident on lagoons of the Galápagos Islands (Harris 1989: 107; Castro & Phillips 1996: 105).

***Quadriceps separatus* (Kellogg & Kuwana, 1902)**

Nirmus separatus Kellogg & Kuwana, 1902: 472, pl. 29, fig. 6.

Nirmus gloriosus emarginatus Kellogg & Chapman, 1902: 159.

Nirmus separatus Kellogg & Kuwana, 1902: Kellogg 1906: 317. In part *Nirmus separatus*; in part *Philoceanus becki* Kellogg, 1903.

“*Lipeurus helleri*” Kellogg, 1906: 319 (not *Lipeurus helleri* Kellogg & Kuwana, 1902). In part *Quadriceps separatus*; in part *Pectinopygus minor* (Ewing, 1924); in part *Quadriceps birostris* (Giebel, 1874).

Degeeriella emarginata (Kellogg & Chapman, 1902); Harrison 1916: 112.
Degeeriella separata (Kellogg & Kuwana, 1902); Harrison 1916: 123.
Quadriceps separatus (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 316
Quadriceps separatus (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 131.
Anousceps separatus (Kellogg & Kuwana, 1902); Złotorzycka 1967: 731.
Quadriceps separatus (Kellogg & Kuwana, 1902); Palma 1995: 221.

Lectotype ♂ in EMEC (Palma 1996: 215).

Type host: *Geospiza conirostris* Ridgway, 1890, in error (see Palma 1994b: 270).

Galápagos host: *Anous stolidus galapagensis* Sharpe, 1879.

Galápagos localities: Isla Wolf; Isla Marchena; Isla Seymour; Isla Rábida.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 29); Thompson (1939: 121); Linsley & Usinger (1966); Palma (1994b: 268; 1995).

Other significant references: Ferris (1932: 69, figs 19a–e); Timmermann (1952b: 73, figs 1–2; 1957: pl. 9, figs c–d); Amerson & Emerson (1971: 18, 25); Palma (1996: 215); Price *et al.* (2003: 227).

Material examined: 90 males, 89 females and 10 nymphs (6 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined the lectotype of *Nirmus separatus* from *Geospiza conirostris*, and seven paralectotypes all associated with incorrect hosts (see Palma 1994b: 270). Also, we examined five specimens labelled and reported by Kellogg (1906: 319) as “*Lipeurus helleri*” and three specimens labelled and reported by Kellogg (1906: 317) as “*Nirmus separatus*”, all from *Anous stolidus galapagensis*, and have identified them as *Quadriceps separatus*. At present, *Anous stolidus* is the only host of this louse species (Price *et al.* 2003: 227).

***Quadriceps strepsilaris* (Denny, 1842)**

Nirmus strepsilaris Denny, 1842: 135, pl. 11, fig. 4.

Nirmus lepidus Kellogg & Kuwana, 1902: 473, pl. 29, fig. 7.

Degeeriella lepida (Kellogg & Kuwana, 1902); Harrison 1916: 116.

Degeeriella strepsilaris (Denny, 1842); Harrison 1916: 124.

Quadriceps lepidus (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 312.

Quadriceps strepsilaris (Denny, 1842); Hopkins & Clay 1952: 317.

Quadriceps strepsilaris (Denny, 1842); Clay in Linsley & Usinger 1966: 132.

Quadriceps strepsilaris (Denny, 1842); Palma 1995: 221.

Holotype or Syntype ♀ in NHML (Thompson 1937a: 80).

Type host: *Arenaria interpres* (Linnaeus, 1758).

Galápagos host: *Arenaria interpres* (Linnaeus, 1758).

Galápagos localities: Isla Genovesa; Isla Fernandina.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1908: 26); Thompson (1939: 76); Linsley & Usinger (1966); Palma (1994b: 270; 1995).

Other significant references: Timmermann (1950: 2, fig. 2); Złotorzycka (1967: 724, pl. 1, fig. 3; pl. 2, fig. 2; pl. 3, fig. 4); Amerson & Emerson (1971: 15, 20); Price *et al.* (2003: 228).

Material examined: 1 female (MONZ).

Remarks: From the Kellogg Collection, we examined the lectotype male and two paralectotypes of *Nirmus lepidus*, all associated with incorrect hosts and one paralectotype labelled as from Clipperton Island (see Palma 1994b: 270), and have confirmed that they are *Quadriceps strepsilaris*. Price *et al.* (2003: 228) listed this louse species from both species of *Arenaria*.

Genus *Rallicola* Johnston & Harrison, 1911

Subgenus *Rallicola* Johnston & Harrison, 1911

Rallicola Johnston & Harrison, 1911. *Proc. Linn. Soc. New South Wales* 36(2): 324. Type species: “*Oncophorus attenuatus* N.” = *Rallicola* (*Rallicola*) *ortygometrae* (Schrank, 1781) (by original designation).

Rallicola (Rallicola) sp.**New record**

Galápagos host: *Laterallus spilonotus* (Gould, 1841).

Galápagos locality: Isla Santiago.

Galápagos reference: This paper.

Other significant references: Emerson (1955).

Material examined: 1 male and 1 female (1 sample, MONZ).

Remarks: *Rallicola* is a new genus record for the Galápagos Islands. We leave this louse population without a species name until a thorough systematic revision of the subgenus *Rallicola (Rallicola)* parasitising species of the order Gruiformes becomes available. *Rallicola* sp. is one of three louse species recorded for the first time from *Laterallus spilonotus* in this paper.

Genus **Saemundssonina** Timmermann, 1936Subgenus **Saemundssonina** Timmermann, 1936

Saemundssonina Timmermann, 1936 (April). *Zool. Anz.* 114: 97. Type species: *Philoaterus gonothorax* (Giebel, 1874) = *Saemundssonina (Saemundssonina) lari* (O. Fabricius, 1780) (by original designation).

Hastaephorus Kéler, 1936 (November). *Arb. Morph. tax. Ent. Berlin-Dahlem* 3: 261. Type species: *Docophorus alpinus* (Giebel, 1874) = *Saemundssonina (Saemundssonina) tringae* (O. Fabricius, 1780) (by original designation).

Saemundssonina (Saemundssonina) albemarlensis (Kellogg & Kuwana, 1902)

“*Docophorus melanocephalus*” Kellogg & Kuwana, 1902: 462 (not *Docophorus melanocephalus* Burmeister, 1838). In part *Saemundssonina (Saemundssonina) albemarlensis*; in part *Saemundssonina (Saemundssonina) remota* Timmermann, 1951.

Docophorus albemarlensis Kellogg & Kuwana, 1902: 465, pl. 28, fig. 5.

Docophorus albemarlensis Kellogg & Kuwana, 1902; Kellogg 1906: 316.

“*Docophorus melanocephalus*” Kellogg, 1906: 316 (not *Docophorus melanocephalus* Burmeister, 1838). In part *Saemundssonina (Saemundssonina) albemarlensis*; in part *Saemundssonina (Saemundssonina) creagrusa* Palma, 2012.

Philoaterus albemarlensis (Kellogg & Kuwana, 1902); Harrison 1916: 87.

Saemundssonina albemarlensis (Kellogg & Kuwana, 1902); Thompson 1939: 72.

“*Saemundssonina melanocephala*” Thompson, 1939: 73 (not *Saemundssonina melanocephala* (Burmeister, 1838)). In part *Saemundssonina (Saemundssonina) albemarlensis*; in part *Saemundssonina (Saemundssonina) creagrusa* Palma, 2012.

Saemundssonina albemarlensis (Kellogg & Kuwana, 1902); Hopkins & Clay 1952: 329 (as junior synonym of *Saemundssonina phaëtona* (Osborn, 1890)).

Saemundssonina petersi Ward, 1955: 90, fig. 1b,d,f.

Saemundssonina albemarlensis (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 132.

Saemundssonina (Saemundssonina) albemarlensis (Kellogg & Kuwana, 1902); Price *et al.* 2003: 232.

Lectotype ♂ in EMEC (designated below).

Type host: *Camarhynchus psittacula affinis* Ridgway, 1894, in error (see Emerson 1972: 154).

Galápagos host: *Sterna fuscata crissalis* (Lawrence, 1872).

Galápagos locality: Isla Darwin.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 10); Thompson (1939); Ward (1955: 91); Linsley & Usinger (1966).

Other significant references: Emerson (1972: 154); Ward & Downey (1973: 395); Price *et al.* (2003: 232).

Material examined: 3 males, 8 females and 1 nymph (3 samples, EMEC).

Remarks: From the Kellogg Collection, we examined the “lectotype” male and the “paralectotype” female of *Docophorus albemarlensis*, both from an incorrect host (see above). In addition to the material examined quoted above—recorded by Kellogg (1906: 316) as *Docophorus albemarlensis* and *D. melanocephalus* from *Sterna fuscata* (as *Sterna fuliginosus*)—we examined and identified as *Saemundssonina (S.)*

albemarlensis eight males and six females reported by Kellogg & Kuwana (1902: 462) and Kellogg (1906: 316) from incorrect hosts. At present, *Sterna fuscata* is the only host of this louse species (Price *et al.* 2003: 232).

One label of the “lectotype” slide of *Docophorus albemarlensis* reads “T. Clay det. / LECTOTYPE ♂”. However, we have been unable to find the formal published designation of this specimen as the lectotype. Therefore, we herewith designate the male on Kellogg Collection slide 1103c “fig-d” as the lectotype of *Docophorus albemarlensis*, and the remaining female on slide 1065a, as a paralectotype, both contaminants on *Camarhynchus psittacula affinis* and deposited in EMEC.

***Saemundssonina (Saemundssonina) creagrusa* Palma, 2012**

(Fig. 14)

“*Docophorus lari*” Kellogg & Kuwana, 1902: 463 (not *Docophorus lari* Denny, 1842 = *Saemundssonina (Saemundssonina) lari* (O. Fabricius, 1780)).

“*Docophorus peristictus*” Kellogg 1906: 316 (not *Docophorus peristictus* Kellogg & Kuwana, 1902 = *Saemundssonina (Saemundssonina) platygaster* (Denny, 1842)).

“*Docophorus melanocephalus*” Kellogg, 1906: 316 (not *Docophorus melanocephalus* Burmeister, 1838). In part *Saemundssonina (Saemundssonina) creagrusa*; in part *Saemundssonina (Saemundssonina) albemarlensis* (Kellogg & Kuwana, 1902).

“*Docophorus lari*” Kellogg, 1906: 317 (not *Docophorus lari* Denny, 1842 = *Saemundssonina (Saemundssonina) lari* (O. Fabricius, 1780)).

“*Saemundssonina gonothorax*” Thompson, 1939: 73 (not *Docophorus gonothorax* Giebel, 1874 = *Saemundssonina (Saemundssonina) lari* (O. Fabricius, 1780)).

“*Saemundssonina melanocephala*” Thompson, 1939: 73 (not *Saemundssonina melanocephala* (Burmeister, 1838)). In part *Saemundssonina (Saemundssonina) creagrusa*; in part *Saemundssonina (Saemundssonina) albemarlensis* (Kellogg & Kuwana, 1902).

“*Saemundssonina peristictus*” Thompson, 1939: 73 (not *Saemundssonina peristicta* (Kellogg & Kuwana, 1902) = *Saemundssonina (Saemundssonina) platygaster* (Denny, 1842)).

“*Saemundssonina lari*” Clay in Linsley & Usinger, 1966: 132 (not *Saemundssonina (Saemundssonina) lari* (O. Fabricius, 1780)).

Saemundssonina (Saemundssonina) creagrusa Palma, 2012: 41, figs 7, 9–10, 13, 19.

Holotype ♂ in MONZ.

Type host: *Creagrus furcatus* (Nébox, 1842).

Galápagos host: *Creagrus furcatus* (Nébox, 1842).

Galápagos localities: Isla Darwin; Isla Genovesa; Isla Seymour; Isla Champion (near Isla Floreana).

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 15); Thompson (1939); Linsley & Usinger (1966); Palma (2012).

Other significant references: None.

Material examined: 29 males, 17 females and 2 nymphs (9 samples, EMEC, MONZ).

Remarks: *Saemundssonina (Saemundssonina) creagrusa* is so far endemic to the Galápagos Islands, but *Creagrus furcatus* is not, as this gull also breeds on Malpelo Island (Dickinson 2003: 149), located about 500 km west of the Colombian mainland. From the Kellogg Collection, we have identified as *Saemundssonina (S.) creagrusa* one male reported by Kellogg & Kuwana (1902: 463) as “*Docophorus lari*” and four specimens reported by Kellogg (1906: 316) as “*Docophorus melanocephalus*”, all from the type host. In addition, we examined two specimens of *S. (S.) creagrusa* reported by Kellogg (1906: 316) as “*Docophorus peristictus*” from an incorrect host.

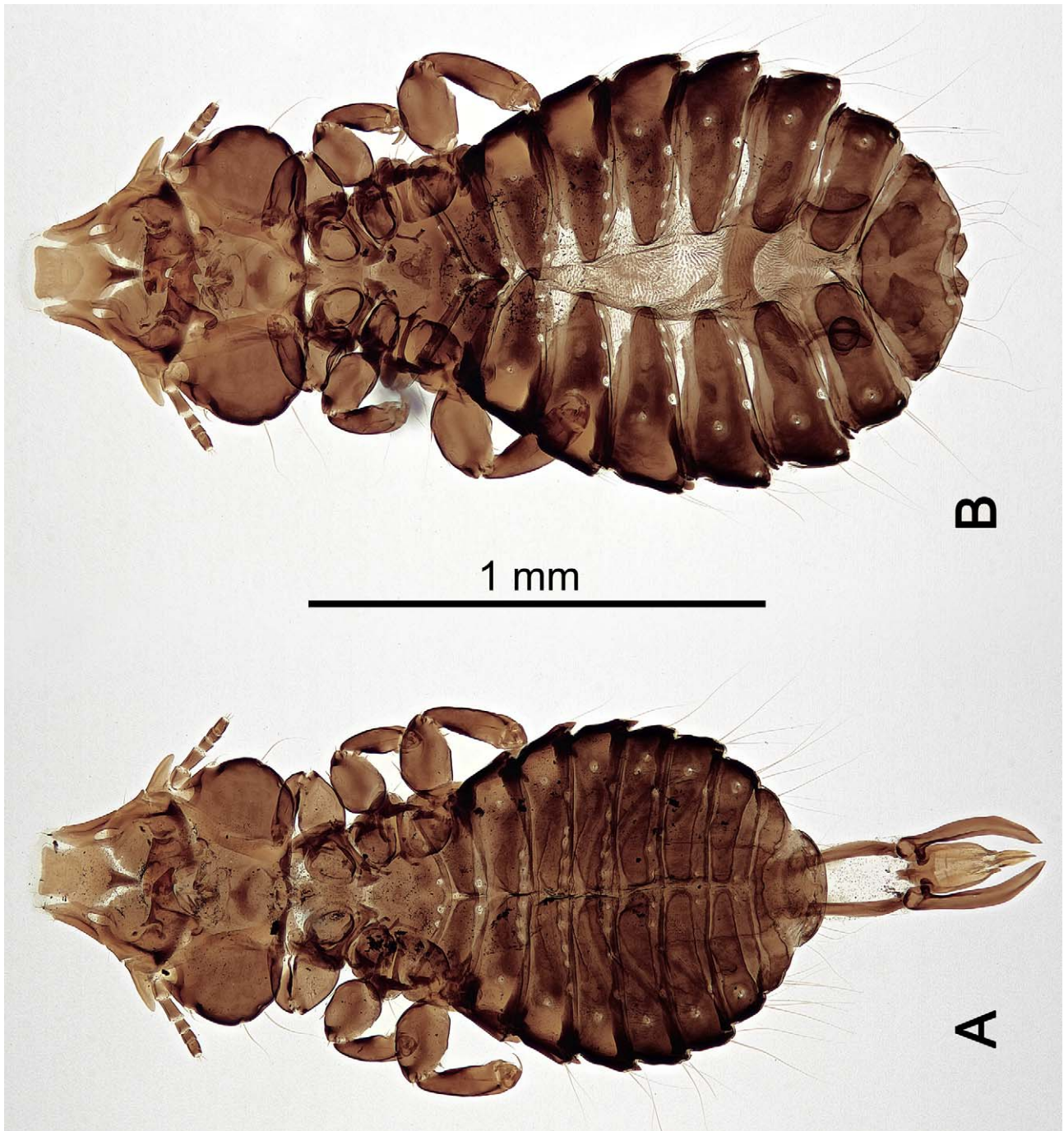


FIGURE 14. *Saemundssonina (Saemundssonina) creagrusa* Palma, 2012. A: male. B: female (Host: *Creagrus furcatus*).

***Saemundssonina (Saemundssonina) haematopi* (Linnaeus, 1758)**

New record

Pediculus haematopi Linnaeus, 1758: 613.

Docophorus acanthus Giebel, 1874: 101.

Philopterus acanthus (Giebel, 1874); Cummings 1916: 677, fig. 24.

Hastaephorus acanthus (Giebel, 1874); Kéler 1936: 263, figs 2b, 2d.

Saemundssonina acantha (Giebel, 1874); Hopkins & Clay 1952: 328 (as junior synonym of *Saemundssonina haematopi* (Linnaeus, 1758)).

Saemundssonina haematopi (Linnaeus, 1758); Hopkins & Clay 1952: 331.

Saemundssonina (Saemundssonina) haematopi (Linnaeus, 1758); Price *et al.* 2003: 234.

Neotype ♂ in NHML (Clay & Hopkins 1950: 260).

Type host: *Haematopus ostralegus ostralegus* Linnaeus, 1758.

Galápagos host: *Haematopus palliatus galapagensis* Ridgway, 1886.

Galápagos locality: Isla Marchena.

Galápagos references: This paper.

Other significant references: Cummings (1916); Kéler (1936); Clay & Hopkins (1950: 259); Timmermann (1957: 37, fig. 5); Timmermann (1971: 158); Clay (1981: 933, figs 2, 6, 8, 10); Palma (1996: 221); Price *et al.* (2003).

Material examined: 2 males, 2 females and 3 nymphs (1 sample, MONZ).

Remarks: Although the host *Haematopus palliatus galapagensis* is endemic to the Galápagos Islands, *Saemundssonina* (*S.*) *haematopi* has been recorded on several species of *Haematopus* (Price *et al.* 2003: 234), including *H. palliatus*.

***Saemundssonina* (*Saemundssonina*) *lari* (O. Fabricius, 1780)**

New record

Pediculus lari O. Fabricius, 1780: 219.

Philopterus lari (O. Fabricius, 1780); Harrison 1916: 97 (as junior synonym of *Philopterus gonothorax* Giebel, 1871 [sic]).

Saemundssonina lari (O. Fabricius, 1780); Hopkins & Clay 1952: 332.

Saemundssonina lari lari (O. Fabricius, 1780); Clay & Hopkins 1954: 249, figs 37–39.

Saemundssonina (*Saemundssonina*) *lari* (O. Fabricius, 1780); Price *et al.* 2003: 234.

Neotype ♂ in NHML (Clay & Hopkins 1954: 249).

Type host: *Larus hyperboreus* Gunnerus, 1767.

Galápagos host: *Larus pipixcan* Wagler, 1831.

Galápagos locality: Isla Floreana.

Galápagos references: This paper.

Other significant references: Clay & Hopkins (1954: 248); Timmermann (1957: 42, figs 9, 12); Palma (1996: 222); Price *et al.* (2003: 234).

Material examined: 1 female (MONZ).

Remarks: This is a very common louse species parasitic on a wide range of gull hosts (Price *et al.* 2003: 234), including *Larus pipixcan*. Records of “*Docophorus lari*” in Kellogg & Kuwana (1902: 463) and Kellogg (1906: 317) refer to *Saemundssonina* (*Saemundssonina*) *creagrusa* (see above).

***Saemundssonina* (*Saemundssonina*) *phaetona* (Osborn, 1890)**

Docophorus phaetonus Osborn, 1890: 189.

Docophorus phaetonus Osborn, 1899 [sic]; Kellogg 1906: 316.

Philopterus phaethonus [sic] (Osborn, 1899 [sic]); Harrison 1916: 101.

Saemundssonina phaëtonus (Howard [sic], 1890); Thompson 1939: 74.

Saemundssonina phaëtona (Osborn, 1890); Hopkins & Clay 1952: 334.

Saemundssonina phaetona (Osborn, 1890); Clay in Linsley & Usinger 1966: 132.

Saemundssonina (*Saemundssonina*) *phaetona* (Osborn, 1890); Price *et al.* 2003: 236.

Syntype ♂ in USNM (D.G. Furth and F.W. Shockley pers. comm. 2012).

Type host: *Phaethon aethereus mesonauta* Peters, 1930.

Galápagos host: *Phaethon aethereus mesonauta* Peters, 1930.

Galápagos locality: Isla Wolf; Isla Daphne; Isla Santa Cruz; Isla Española.

Galápagos reference: Kellogg (1906); Thompson (1939); Linsley & Usinger (1966).

Other significant references: Timmermann (1955: 516); Timmermann (1957: pl. 2, fig. a); Price *et al.* (2003: 236).

Material examined: 7 males, 24 females and 5 nymphs (5 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined 29 specimens and confirmed their species identification as reported by Kellogg (1906: 316). Price *et al.* (2003: 236) listed *Phaethon aethereus* Linnaeus, 1758 as the only host of *Saemundssonina* (*Saemundssonina*) *phaetona*.

***Saemundssonina* (*Saemundssonina*) *platycephalus* (Kellogg & Kuwana, 1902)**

Docophorus platycephalus Kellogg & Kuwana, 1902: 461, pl. 28, fig. 1.

Docophorus breviformis Kellogg & Kuwana, 1902: 463. In part *Saemundssonina* (*Saemundssonina*) *platycephalus*; in part *Philopterus breviformis* (Kellogg & Kuwana, 1902).

Docophorus platycephalus Kellogg & Kuwana, 1902; Kellogg 1906: 316.

Philoaterus platycephalus (Kellogg & Kuwana, 1902); Harrison 1916: 102.

Saemundssonina platycephalus (Kellogg & Kuwana, 1902); Clay *in* Linsley & Usinger 1966: 132.

Saemundssonina (*Saemundssonina*) *platycephalus* (Kellogg & Kuwana, 1902); Price *et al.* 2003: 236.

Lectotype ♂ in EMEC (Clay & Moreby 1967: 165).

Type host: *Oceanites gracilis galapagoensis* Lowe, 1921.

Galápagos host: *Oceanites gracilis galapagoensis* Lowe, 1921.

Galápagos localities: Isla Wolf; Isla Isabela.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 18); Thompson (1939: 71); Linsley & Usinger (1966).

Other significant references: Price *et al.* (2003: 236).

Material examined: 1 male and 5 females (3 samples, EMEC).

Remarks: From the Kellogg Collection, we examined the lectotype male and two paralectotype females of *Docophorus platycephalus*, as well as three females reported by Kellogg (1906: 316) from Wenman Island (= Isla Wolf). In addition, we examined one female from an incorrect host and one male from “*Actitis macularia*” reported by Kellogg & Kuwana (1902: 463) as “*Docophorus breviformis*”, which we identified as *Saemundssonina* (*Saemundssonina*) *platycephalus*. Price *et al.* (2003: 236) listed two regular hosts for *Saemundssonina* (*Saemundssonina*) *platycephalus*, including *Oceanites gracilis* (Elliot, 1859).

***Saemundssonina* (*Saemundssonina*) *platygaster* (Denny, 1842)**

Docophorus platygaster Denny, 1842: 44, 83, pl. 2, fig. 5.

Docophorus peristictus Kellogg & Kuwana, 1902: 462, pl. 28, fig. 2.

Philoaterus peristictus (Kellogg & Kuwana, 1902); Harrison 1916: 101.

Philoaterus platygaster (Denny, 1842); Harrison 1916: 102.

Saemundssonina peristictus (Kellogg & Kuwana, 1902); Thompson 1939: 73.

Saemundssonina platygaster (Denny, 1842); Hopkins & Clay 1952: 335.

Saemundssonina peristicta (Kellogg & Kuwana, 1902); Ward 1953: 203.

Saemundssonina platygaster (Denny, 1842); Clay *in* Linsley & Usinger 1966: 132.

Saemundssonina (*Saemundssonina*) *platygaster* (Denny, 1842); Price *et al.* 2003: 236.

Syntypes probably lost (Thompson 1937a: 78).

Type host: *Charadrius hiaticula* Linnaeus, 1758.

Galápagos hosts: Unconfirmed, possibly *Arenaria interpres* (Linnaeus, 1758), *Actitis macularius* (Linnaeus, 1766), and/or *Charadrius semipalmatus* Bonaparte, 1825 (see Ward 1953: 203).

Galápagos localities: Isla Isabela; Isla Santa Fé.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906: 316); Kellogg (1908: 18); Thompson (1939); Harrison (1916: 101); Ward (1953); Linsley & Usinger (1966).

Other significant references: Timmermann (1969a: 233); Palma (1996: 224); Price *et al.* (2003).

Material examined: 2 females (2 samples, EMEC).

Remarks: From the Kellogg Collection, we examined six specimens from the type material of *Docophorus peristictus*: two females from Galápagos Islands hosts, plus two males and two females from Clipperton and Guadalupe Islands. These specimens were remounted and identified by Ward (1953) as *Saemundssonina* (*Saemundssonina*) *platygaster*. This louse species has not been collected again from any Galápagos host, although it has been recorded from a large number of charadriiform species (Price *et al.* 2003: 236), including the three Galápagos hosts listed above.

***Saemundssonina* (*Saemundssonina*) *remota* Timmermann, 1951**

New record

“*Docophorus melanocephalus*” Kellogg & Kuwana, 1902: 462 (not *Docophorus melanocephalus* Burmeister, 1838). In part *Saemundssonina* (*Saemundssonina*) *remota*; in part *Saemundssonina* (*Saemundssonina*) *albemarlensis* (Kellogg & Kuwana, 1902).

Saemundssonina lobaticeps remota Timmermann, 1951: 142.

Saemundssonina remota Timmermann, 1951; Hopkins & Clay 1953: 445.

Saemundssonina (*Saemundssonina*) *remota* Timmermann, 1951; Price *et al.* 2003: 237.

Holotype ♂ in NHML.

Type host: *Anous stolidus stolidus* (Linnaeus, 1758).

Galápagos host: *Anous stolidus galapagensis* Sharpe, 1879.

Galápagos localities: Isla Fernandina; Isla Rábida.

Galápagos reference: Kellogg & Kuwana (1902).

Other significant references: Ward & Downey (1973: 395); Palma (1996: 223); Price *et al.* (2003: 237).

Material examined: 3 males, 2 females and 2 nymphs (2 samples, EMEC, MONZ).

Remarks: From the Kellogg Collection, we examined two males and one female reported by Kellogg & Kuwana (1902: 462) as “*Docophorus melanocephalus*”. The two males from “*Sterna fuliginosa*”—incorrectly recorded as “male and female” by Kellogg & Kuwana (1902: 462)—are from Clipperton Island, while the female from “*Anous galapagensis*” is from Isla Fernandina. We have identified these three lice as *Saemundssonina* (*Saemundssonina*) *remota*. Considering that Kellogg & Kuwana (1902) failed to recognise their material as a different louse species, we regard *Saemundssonina* (*Saemundssonina*) *remota* as a “new record” from the Galápagos Islands. Price *et al.* (2003: 237) listed two regular hosts for *Saemundssonina* (*Saemundssonina*) *remota*, including *Anous stolidus*.

Subgenus *Puffinoecus* Eichler, 1949

Puffinoecus Eichler, 1949. *Boll. Soc. Ent. Italiana* 79: 12. Type species: *Puffinoecus peusi* Eichler, 1949 = *Saemundssonina* (*Puffinoecus*) *peusi* (Eichler, 1949) (by original designation).

Saemundssonina (*Puffinoecus*) *minor* (Kellogg & Kuwana, 1902)

Docophorus validus var. *minor* Kellogg & Kuwana, 1902: 460.

Docophorus validus minor Kellogg & Kuwana, 1902; Kellogg 1906: 316.

Philopterus minor (Kellogg & Kuwana, 1902); Harrison 1916: 99.

Saemundssonina spec.; Timmermann 1957: 47, fig. 20.

Saemundssonina minor (Kellogg & Kuwana, 1902); Clay in Linsley & Usinger 1966: 132.

Puffinoecus minor (Kellogg & Kuwana, 1902); Martín-Mateo 1996: 54, figs 1G, 3B–5B, 6C, 7B.

Saemundssonina (*Puffinoecus*) *minor* (Kellogg & Kuwana, 1902); Price *et al.* 2003: 235.

Lectotype ♂ in EMEC (designated below).

Type host: *Puffinus subalaris* Ridgway, 1897.

Galápagos host: *Puffinus subalaris* Ridgway, 1897.

Galápagos localities: Isla Darwin; Isla Fernandina; Isla Isabela; Isla Santa Cruz; Isla Plaza.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 20); Thompson (1939: 71); Timmermann (1957); Linsley & Usinger (1966); Martín-Mateo (1996: 55).

Other significant references: Timmermann (1965: 81); Mey (1989: 54); Price *et al.* (2003).

Material examined: 19 males, 13 females and 6 nymphs (8 samples, EMEC, MONZ).

Remarks: This louse species and its host are endemic to the Galápagos Islands. Although Dickinson (2003: 76) listed the host of this louse as *Puffinus lherminieri subalaris*, we regard it as a full species following Austin *et al.* (2004: 859).

In the original description of *Docophorus validus minor*, Kellogg & Kuwana (1902: 460–461) only mention “Four specimens, male and female, from *Puffinus subalaris* from Narboro, and one male and one female from *Nesomimus carringtoni* from Barrington.”. However, in the Kellogg Collection we found and examined the “lectotype” male and 12 putative “paralectotypes” with same host and locality data as above, as well as 15 further specimens reported by Kellogg (1906: 316). It would appear as if Kellogg & Kuwana (1902) missed listing all the specimens available to them.

One label of the “lectotype” slide of *Docophorus validus minor* reads “T. Clay det. / LECTOTYPE ♂”. However, we have been unable to find the formal published designation of this specimen as the lectotype. Therefore, we herewith designate the male on Kellogg Collection slide 1048b as the lectotype of *Docophorus validus minor*, with the remaining 9 specimens from *Puffinus subalaris* (4 males, 3 females and 2 nymphs on slides 1040a,b, 1048a,d,c, 1075b,c) as paralectotypes, all deposited in EMEC.

Timmermann (1957: fig. 20) depicted the male genitalia of a louse from “*assimilis* Galapagos” which agree with the male genitalia of *Saemundssonina* (*Puffinoecus*) *minor*. The host of this louse has sometimes been referred to as the subspecies *Puffinus assimilis subalaris* (see e.g. Hellmayr & Conover 1948: 73).

Genus *Strigiphilus* Mjöberg, 1910

Strigiphilus Mjöberg, 1910. *Arkiv Zool.* 6(13): 132. Type species: *Docophorus heterocerus* Nitzsch, 1861 = *Strigiphilus goniodicerus* Eichler, 1949 (by original designation).

***Strigiphilus cursor* (Burmeister, 1838) New record**

Docophorus cursor Burmeister, 1838: 426.

Docophorus cursor Nitzsch, Giebel's, 1874 [sic]; Kellogg 1906: 317.

Philopterus cursor (Nitzsch, in Burmeister, 1838) [sic]; Harrison 1916: 92.

Strigiphilus cursor (Burmeister, 1838); Hopkins & Clay 1952: 339.

Syntypes probably lost (Hopkins 1949: 32).

Type host: *Asio flammeus flammeus* (Pontoppidan, 1763).

Galápagos host: *Asio flammeus galapagoensis* (Gould, 1837).

Galápagos locality: Isla Santiago.

Galápagos references: Kellogg (1906)?; Thompson (1939: 17); this paper.

Other significant references: Carriker (1966: 85); Clay (1966: 841, fig. 15); Price *et al.* (2003: 239).

Material examined: 4 males (1 sample, MONZ).

Remarks: The record of *Strigiphilus cursor* in Kellogg (1906: 317; as *D. cursor*) is actually from Clarion Island, which is not part of the Galápagos Islands. Thompson (1939: 17) incorrectly added “Galapagos Is.,” probably because of the host identity. However, considering the high level of contaminations that occurred within the louse collections reported by Kellogg (1906) (see Palma 1994b), it is possible that the lice actually originated from a Galápagos owl. Even if Kellogg's material did not originate from the Galápagos, the 1992 *Galápagos Expedition* confirmed the presence of this louse species on a Galápagos owl. *Strigiphilus* is a new genus record for the Galápagos Islands, and *S. cursor* should also be regarded as a new record for the archipelago. At present, *Asio flammeus* is the only host species of *Strigiphilus cursor* (Price *et al.* 2003: 239).

Genus *Trabeculus* Rudow, 1866

Trabeculus Rudow, 1866. Type species: *Oncophorus schillingi* Rudow, 1866 = *Trabeculus schillingi* (Rudow, 1866) (by monotypy).

Giebelia Kellogg, 1896a. *Proc. Calif. Acad. Sci.* 6: 137. Type species: *Giebelia mirabilis* Kellogg, 1896 = *Trabeculus mirabilis* (Kellogg, 1896) (by monotypy).

***Trabeculus fuscoclypeatus* (Johnston & Harrison, 1912) *sensu lato* New record**

Philopterus fuscoclypeatus Johnston & Harrison, 1912: 368, fig. 4.

Giebelia fuscoclypeata (Johnston & Harrison, 1912); Harrison 1916: 144.

Trabeculus fuscoclypeatus (Johnston & Harrison, 1912); Hopkins & Clay 1952: 349.

Trabeculus fuscoclypeatus (Johnston & Harrison, 1912); Timmermann 1959: 491, fig. 5.

Holotype Nymph in MONZ (Palma, Lovis & Tither 1989: 45).

Type host: *Pterodroma neglecta neglecta* (Schlegel, 1863).

Galápagos host: *Pterodroma phaeopygia* (Salvin, 1876).

Galápagos locality: Isla Santa Cruz.

Galápagos references: This paper.

Other significant references: Timmermann (1959: 491, fig. 5); Timmermann (1965: 129, fig. 69); Price *et al.* (2003: 244).

Material examined: 68 males, 53 females and 23 nymphs (3 samples, MONZ).

Remarks: *Pterodroma phaeopygia* is endemic to the Galápagos Islands. Although Dickinson (2003: 74) listed it as the subspecies *Pterodroma phaeopygia phaeopygia*, we regard it as a full species as well as *Pterodroma sandwichensis* (Ridgway, 1884), following Browne *et al.* (1997: 814). The material examined from *Pterodroma phaeopygia* differs in some features from typical *Trabeculus fuscoclypeatus*. However, we do

not consider that such differences justify naming a new taxon; hence we qualify the samples from *Pt. phaeopygia* as “*sensu lato*”.

This is the first record of *Trabeculus fuscoelypeatus* from the Galápagos Islands, and a new host-louse association for *Pterodroma phaeopygia*. Four other species of *Pterodroma* are listed in Price *et al.* (2003: 244) as hosts of this louse species.

***Trabeculus mirabilis* (Kellogg, 1896)**

Giebelia mirabilis Kellogg, 1896a: 138, pl. 11, figs 7–8.

Giebelia mirabilis Kellogg, 1896; Kellogg & Kuwana, 1902: 482.

Giebelia mirabilis Kellogg, 1896; Kellogg 1906: 320.

Trabeculus mirabilis (Kellogg, 1896); Hopkins & Clay 1952: 349.

Trabeculus mirabilis (Kellogg, 1896); Clay in Linsley & Usinger 1966: 132.

Lectotype ♂ in EMEC (designated below).

Type host: *Puffinus opisthomelas* Coues, 1864.

Galápagos host: *Puffinus subalaris* Ridgway, 1897.

Galápagos localities: Isla Wolf; Isla Isabela.

Galápagos references: Kellogg & Kuwana (1902); Kellogg (1906); Kellogg (1908: 34); Thompson (1939: 213); Linsley & Usinger (1966).

Other significant references: Timmermann (1959: 496, fig. 8); Timmermann (1965: 132, fig. 72); Palma (1996: 229); Price *et al.* (2003: 245).

Material examined: 3 females (2 samples, EMEC).

Remarks: *Puffinus subalaris* is endemic to the Galápagos Islands. Although Dickinson (2003: 76) listed the host of this louse as *Puffinus lherminieri subalaris*, we regard it as a full species following Austin *et al.* (2004: 859). No specimen of *Trabeculus* was collected from five specimens of *Puffinus subalaris* searched for lice during the 1992 Galápagos Expedition. From the Kellogg Collection, we examined the two females reported by Kellogg & Kuwana (1902: 482), and one female of the material reported by Kellogg (1906: 320), all from *Puffinus subalaris*, and identified them as *Trabeculus mirabilis*. Price *et al.* (2003: 245) listed four species of *Puffinus* as hosts of *T. mirabilis* including *Puffinus subalaris*, but cited as “*P. lherminieri*”.

For the original description of *Giebelia mirabilis*, Kellogg (1896: 138) examined “Four males and five females ...”. As no lectotype has been selected yet, we herewith designate the male on Kellogg Collection slide 139 “fig’d” as the lectotype of *Giebelia mirabilis*, with the remaining seven specimens from *Puffinus opisthomelas* (2 males and 5 females on slides 139, 140a, 498a, 502a, 507a, 512a) as paralectotypes, all deposited in EMEC.

Genus ***Vernoniella*** Guimarães, 1942

Vernonia Guimarães, 1936. *Rev. Mus. Paulista*. 20: 221. Type species: *Lipeurus macgregori* Kellogg, 1899 = *Vernoniella macgregori* (Kellogg, 1899) (by original designation). Preoccupied by *Vernonia* Buchanan White, 1878.

Vernoniella Guimarães, 1942. *Pap. Avulsos Dep. Zool. São Paulo* 2: 133. *Nomen novum* for *Vernonia* Guimarães, 1936.

***Vernoniella guimaraesi* Thompson, 1948**

Vernoniella guimaraesi Thompson, 1948d: 49, figs 1–6.

Vernoniella guimaraesi Thompson, 1948d; Hopkins & Clay 1952: 361.

Vernoniella guimaraesi Thompson, 1948d; Causton *et al.* 2006: 142.

Holotype ♀ in NHML.

Type host: *Crotophaga ani* Linnaeus, 1758.

Galápagos host: *Crotophaga ani* Linnaeus, 1758.

Galápagos localities: Isla Isabela; Isla Pinzón; Isla Santa Cruz.

Galápagos reference: Causton *et al.* (2006).

Other significant references: Thompson (1948d); Price *et al.* (2003: 246).

Material examined: 28 males, 20 females and 3 nymphs (3 samples, MONZ).

Remarks: Both *Vernoniella guimarãesi* louse and its host have been introduced to the Galápagos Islands by human agency (Castro & Phillips 1996: 114). At present, *Crotophaga ani* is the only host of this louse species (Price *et al.* 2003: 246).

Family **TRICHODECTIDAE** Kellogg, 1896

Trichodectidae Kellogg, 1896a. *Proc. Calif. Acad. Sci.* 6: 63. Type genus: *Trichodectes* Nitzsch, 1818.

Genus ***Bovicola*** Ewing, 1929

Subgenus ***Bovicola (Bovicola)*** Ewing, 1929

Bovicola Ewing, 1929. *Manual External Parasites*: 121, 123, 193. Type species: *Trichodectes caprae* Gurlt, 1843 = *Bovicola (Bovicola) caprae* (Gurlt, 1843) (by original designation).

***Bovicola (Bovicola) caprae* (Gurlt, 1843)**

Trichodectes caprae Gurlt, 1843: 3, pl. 1, fig. 2.

Bovicola caprae (Gurlt, 1843); Hopkins 1942: 452.

Damalinia caprae (Gurlt, 1843); Hopkins & Clay 1952: 103.

Bovicola (Bovicola) caprae (Gurlt, 1843); Price *et al.* 2003: 253.

Bovicola sp. Whiteman *et al.* (2004: 1116).

Syntypes probably lost (J. Weigner pers. comm., Freien Universität, Berlin).

Type host: *Capra hircus* (Linnaeus, 1758).

Galápagos host: *Capra hircus* (Linnaeus, 1758).

Galápagos locality: Isla Santiago.

Galápagos reference: Whiteman *et al.* (2004: 1117); Causton *et al.* (2006: 142).

Other significant references: Hopkins (1942: 452); Werneck (1950: 60); Clay & Hopkins (1955: 70); Emerson & Price (1975: 59, figs 193–196); Barker (1996: 232).

Material examined: 31 males, 42 females and 24 nymphs (4 samples, MONZ).

Remarks: Both *Bovicola (Bovicola) caprae* and its host have been introduced to the Galápagos Islands and to many other localities around the world, by human agency.

Suborder **ANOPLURA** Leach, 1815

Anoplura Leach, 1815.

Family **ECHINOPHTHIRIIDAE** Enderlein, 1904

Echinophthiriidae Enderlein, 1904. *Zool. Anz.* 28: 136. Type genus: *Echinophthirius* Giebel, 1874.

Genus ***Antarctophthirus*** Enderlein, 1906

Antarctophthirus Enderlein, 1906. *Zool. Anz.* 29: 661. Type species: *Antarctophthirus ogmorhini* Enderlein, 1906 (by original designation).

***Antarctophthirus microchir* (Trouessart & Neumann, 1888)**

Echinophthirius microchir Trouessart & Neumann, 1888: 80, figs a–c.

Antarctophthirus microchir (Trouessart & Neumann, 1888); Durden & Musser 1994a: 7.

Antarctophthirus microchir (Trouessart & Neumann, 1888); Dailey, Ellin & Parás 2005: 614.

Syntypes ♂♀ probably lost (Enderlein 1906: 665; Kim, Pratt & Stojanovich 1986: 46; M.S. Leonardi pers. comm. 2012).

Type host: *Phocarctos hookeri* (Gray, 1844).

Galápagos host: *Zalophus californianus wollebaeki* Silvertsen, 1953.

Galápagos localities: Isla Fernandina; Isla Española; Isla Floreana; Isla San Cristóbal.

Galápagos reference: Dailey, Ellin & Parás (2005).

Other significant references: Enderlein (1906: 663, figs 3–4); Ferris (1934: 489, figs 285–286); Harrison (1937: 10); Kim, Pratt & Stojanovich (1986: 46, pl. 2); Durden & Musser (1994a); Barker (1996: 236); Leonardi *et al.* (2009: 1086, figs 1–7).

Material examined: None. Dailey, Ellin & Parás (2005: 614) reported “Forty-two lice” in 10 samples.

Remarks: This louse species parasitises several species of the family Otariidae (Durden & Musser (1994b: 140–141).

Family **HOPLOPLEURIDAE** Ewing, 1929

Hoplopleuridae Ewing, 1929. *Manual External Parasites*: 133. Type genus: *Hoplopleura* Enderlein, 1905 (as Hoplopleurinae).

Genus ***Hoplopleura*** Enderlein, 1905

Hoplopleura Enderlein, 1905. *Zool. Anz.* 28: 221. Type species: *Haematopinus acanthopus* (Burmeister, 1839) = *Hoplopleura acanthopus* (Burmeister, 1839) (by original designation).

***Hoplopleura nesoryzomydis* Ferris, 1921**

“*Hoplopleura quadridentata*” Ferris, 1916b: 116, figs 9b, 11c, 12 (not *Hoplopleura quadridentata* Neumann, 1909).

Hoplopleura nesoryzomydis Ferris, 1921: 90, fig. 53A.

Hoplopleura nesoryzomydis Ferris, 1921; Clay in Linsley & Usinger 1966: 132.

Hoplopleura nesoryzomydis Ferris, 1921; Durden & Musser (1994a: 30).

Holotype ♀ in EMEC.

Type host: *Nesoryzomys narboroughi* Heller, 1904.

Galápagos hosts: *Nesoryzomys narboroughi*; *Nesoryzomys indefessus* (Thomas, 1899).

Galápagos localities: Isla Fernandina; Isla Santa Cruz.

Galápagos references: Ferris (1916b); Ferris (1921); Ferris (1951: 127, 138); Linsley & Usinger (1966); Durden & Musser (1994a).

Other significant reference: Durden & Musser (1994b: 162).

Material examined: 33 males, 25 females and 47 nymphs (9 samples, MONZ).

Remarks: This louse species and its hosts are endemic to the Galápagos Islands.

Family **PEDICULIDAE** Leach, 1817

Pediculidae Leach, 1817. *Zool. Miscellany*: 3: 64. Type genus: *Pediculus* Linnaeus, 1758.

Genus ***Pediculus*** Linnaeus, 1758

Pediculus Linnaeus, 1758. *Systema Naturae* 10: 610. Type species: *Pediculus humanus* (Linnaeus, 1758) (by subsequent designation).

***Pediculus humanus capitis* de Geer, 1778**

Pediculus humanus capitis de Geer, 1778: 67, pl. 1, figs 6–7.

Pediculus humanus capitis de Geer, 1778; Causton *et al.* 2006: 142.

Status, sex and location of types unknown.

Type host: *Homo sapiens* Linnaeus, 1758.

Galápagos host: *Homo sapiens* Linnaeus, 1758.

Galápagos locality: Isla Santa Cruz.

Galápagos reference: Causton *et al.* (2006).

Other significant references: Ferris (1935: 543, figs 306–327, pls I–III); Kim, Pratt & Stojanovich (1986: 150, pl. 48); Durden & Musser (1994a: 50); Barker (1996: 245).

Material examined: 1 female and 1 nymph (1 sample, MONZ).

Remarks: A louse introduced to the Galápagos Islands with its human hosts.

Family **POLYPLACIDAE** Fahrenholz, 1912

Polyplacinae Fahrenholz, 1912. *Jahrb. Niedersächs. Zool. Ver. Hannover* 2–4: 58. Type genus: *Polyplax* Enderlein, 1904.

Genus ***Polyplax*** Enderlein, 1904

Polyplax Enderlein, 1904. *Zool. Anz.* 28: 139, 142. Type species: *Polyplax spinulosa* (Burmeister, 1839) (by original designation).

***Polyplax spinulosa* (Burmeister, 1839)**

Pediculus spinulosus Burmeister, 1839: species 8, unnumbered page.

Polyplax spinulosa (Burmeister, 1839); Ferris 1923: 188: fig. 119 ♂.

Polyplax spinulosa (Burmeister, 1839); Clay in Linsley & Usinger 1966: 132.

Polyplax spinulosa (Burmeister, 1839); Durden & Musser 1994a: 73.

Types probably lost (Kim, Pratt & Stojanovich 1986: 206).

Type host: *Rattus norvegicus* (Berkenhout, 1769).

Galápagos host: *Rattus rattus* (Linnaeus, 1758).

Galápagos locality: Isla Floreana.

Galápagos references: Ferris (1923); Brinck (1951: 246); Linsley & Usinger (1966); Peck *et al.* (1998: 224); Causton *et al.* (2006: 142).

Other significant reference: Kim, Pratt & Stojanovich (1986: 206, pl. 75); Durden & Musser (1994a); Barker (1996: 246).

Material examined: None. Brinck (1951: 246) examined “17 specimens”.

Remarks: Both *Polyplax spinulosa* and its host have been introduced to the Galápagos Islands by human agency.

Species deleted from the Galápagos louse fauna

“*Colpocephalum subaequale* Nitzsch in Burmeister, 1838”

Kellogg (1906: 321) recorded “*Colpocephalum subaequale* Nitzsch” from three hosts at Clarion Island only. However, Thompson (1938b: 207) incorrectly added “Galapagos Is.” as a locality for this louse species, which is now a junior synonym of *Colpocephalum fregili* Denny, 1842 (Price *et al.* 2003: 102). Therefore, we delete “*Colpocephalum subaequale* Nitzsch” from the louse fauna of the Galápagos Islands.

***Docophoroides irroratae* Timmermann, 1962**

Docophoroides irroratae Timmermann, 1962, described from *Phoebastria irrorata*, is a junior synonym of *Docophoroides ferrisi* Harrison, 1937 (Palma 1994a: 65). Furthermore, the type specimens of *Docophoroides irroratae* are contaminants from *Phoebastria nigripes* Audubon, 1839 (see Palma 1994a: 66). Therefore, we delete *Docophoroides irroratae* from the louse fauna of the Galápagos Islands. Linsley (1977: 9) spelt the species name incorrectly as “*Docophoroides irroratus*”.

***Harrisoniella copei* Timmermann, 1969**

Palma & Pilgrim (1984: 160) listed as “Stragglers or contaminants” two females of *Harrisoniella copei* Timmermann, 1969b from *Phoebastria irrorata* [as *Diomedea irrorata*], Galápagos Islands, without a date, and deposited in the Meinertzhagen Collection held at the Natural History Museum in London, United Kingdom. Palma (1994a: 66), while discussing the origin of the types of *Docophoroides irroratae* Timmermann, 1962, concluded that the two females of *H. copei* labelled as from “Galápagos Is” had been “accidentally transferred from a specimen of *Diomedea nigripes* to one of *Diomedea irrorata* by human agency”. Therefore, we delete *Harrisoniella copei* from the louse fauna of the Galápagos Islands.

***Naubates fuliginosus* (Taschenberg, 1882)**

Kellogg (1906: 319) recorded “*Lipeurus fuliginosus* Taschenberg” from *Sula websteri* at Clarion Island only. However, Thompson (1939: 211) incorrectly added “Galapagos Is.” as a locality for this louse species. Therefore, we delete *Naubates fuliginosus* from the louse fauna of the Galápagos Islands. Palma & Pilgrim (2002: 24, 27) examined the specimen reported by Kellogg (1906: 319) and identified it as a female of *Naubates* (*Naubates*) *harrisoni* Bedford, 1930, concluding that it was a contaminant from a species of *Puffinus*.

***Paraclisis confidens* (Kellogg, 1899)**

Kéler (1957a: 286) listed 20 specimens of *Paraclisis confidens* (Kellogg, 1899) [as *Harrisoniella confidens*] from “*Diomedea irrorata* Salvin, Galapagos, Coll. Meinertzhagen Nr. 8179 (3 MP)” and eight specimens with same data but “Nr 8180/1 (1 MP)”. Slide data associated with the type specimens of *Docophoroides irroratae* and with two females of *Harrisoniella copei* from *Phoebastria irrorata* (see above under these species) are identical to data given by Kéler (1957a: 286) for the *Paraclisis confidens* discussed here. We conclude that all these lice are stragglers or contaminants from *Phoebastria nigripes* (see also Palma 1994a: 66). Therefore, we delete *Paraclisis confidens* from the louse fauna of the Galápagos Islands.

***Philopterus communis* Nitzsch, 1818**

Kellogg & Kuwana (1902: 464) reported “*Docophorus communis* Nitzsch” based on their identification of one male and one female from two species of *Geospiza* from the Galápagos Islands. From the Kellogg Collection, we examined the female, which is not *Philopterus citrinellae* (Schrank, 1776), the senior synonym of *Philopterus communis* Nitzsch, 1818 (see Palma & Price 2006: 2). In addition, we examined a third louse, another female *Philopterus* from the Kellogg Collection, also identified as “*Docophorus communis* Nitzsch” by Kellogg, but not reported in his papers because the host and locality are “Guadalupe House finch, Guadalupe Id”; this female is identical to the female reported from *Geospiza*. In their way to the Galápagos Islands, the *Hopkins Stanford Galapagos Expedition* visited Guadalupe Island where birds and lice were collected, but these records were not included in any publication (Palma 1994b: 269). One of those birds was a Guadalupe house finch (*Carpodacus mexicanus amplus* Ridgway, 1876) collected on 5 November 1898, and now kept as a preserved specimen in the collection of the California Academy of Sciences under the registration number CAS 83083/85. It is most likely that this bird was the host of all three *Philopterus* lice mentioned above. Therefore, we delete the species *Philopterus communis* Nitzsch, 1818—also listed by Clay (in Linsley & Usinger 1966: 131)—from the louse fauna of the Galápagos Islands. Thompson (1939: 72) listed “*Philopterus subflavescens* (Geoffroy)” “Galapagos Is.” as a senior synonym of *Docophorus communis* Nitzsch, but Hopkins & Clay (1952: 288) regarded “*subflavescens* . . . Geoffroy” as “not a name but a descriptive phrase”.

***Philopterus corvi* (Osborn, 1896)**

Kellogg (1906: 317) recorded “*Docophorus corvi* Osborn” from *Corvus* sp. at Clarion Island only. However, Thompson (1939: 17) incorrectly added “Galapagos Is.” as a locality for this louse species, which is now known as *Philopterus osborni* Edwards, 1952 (Price *et al.* 2003: 213). Therefore, we delete “*Philopterus corvi* Osborn” from the louse fauna of the Galápagos Islands.

***Philopterus domesticus* (Kellogg, 1896)**

Kellogg (1906: 317) reported *Docophorus domesticus* Kellogg, 1896b from *Progne modesta* as a new record from “Indefatigable Id.” (= Santa Cruz Island). That record was listed again by Thompson (1939: 17) but as “*Philopterus domesticus* (Kellogg)”. Carriker (1957: 96) compared the type specimens of *Docophorus domesticus* Kellogg, 1896 against “A series of slides labelled *D. domesticus*, later collected from *Progne modesta*, Indefatigable Id.” and concluded that the latter were “not the same as the types of *domesticus*”, but he gave no alternative species identification for the Galápagos specimens. Notwithstanding Carriker’s statement, Clay (in Linsley & Usinger

1966: 131) listed *Philoaterus domesticus* (Kellogg, 1896) as a species from the Galápagos Islands. Although we have not been able to examine the original material recorded by Kellogg (1906: 317), we accept Carriker's (1957: 96) statement that the specimens from *Progne modesta* are not *Philoaterus domesticus* (Kellogg, 1896) and, therefore, we delete this species from the louse fauna of the Galápagos Islands.

***Philoaterus syrnia* (Packard, 1872)**

Kellogg (1906: 317) recorded "*Docophorus speotyti* Osborn" from *Speotyto* sp. without giving any locality. However, Thompson (1939: 72) listed that species as a junior synonym of "*Philoaterus syrnia* (Packard)" and added "Galapagos Is.?" as a locality for it. Since no species of *Speotyto* has ever been recorded from the Galápagos Islands (Harris 1989: 121; Castro & Phillips 1996: 115), we delete "*Philoaterus syrnia* (Packard)" from the louse fauna of the archipelago.

HOST-LOUSE LIST

- ◆ Denotes louse species which are endemic to the Galápagos Islands.
- ♣ Denotes louse species which are new records from the Galápagos Islands.
- Denotes a new host-louse association.
- ε Denotes host species or subspecies which are endemic to the Galápagos Islands.
- ♥ Denotes host species or subspecies which breed on the Galápagos Islands, but not endemic.
- ♠ Denotes host species or subspecies which are vagrant or migrant to the Galápagos Islands.
- * Denotes host species which have been introduced into the Galápagos Islands by human agency.

AVES

GALLIFORMES

PHASIANIDAE

Red junglefowl

- * ♥ *Gallus gallus* (Linnaeus, 1758)
- Goniodes dissimilis* Denny, 1842
- Lipeurus caponis* (Linnaeus, 1758)
- Menopon gallinae* (Linnaeus, 1758)

ANSERIFORMES

ANATIDAE

- ε *Anas bahamensis galapagensis* (Ridgway, 1889) Galápagos white-cheeked pintail
- ♣ *Anaticola crassicornis* (Scopoli, 1763)
- ♣● *Anatoecus dentatus* (Scopoli, 1763)
- Anatoecus icterodes* (Nitzsch, 1818)
- Trinoton querquedulae* (Linnaeus, 1758)

SPHENISCIFORMES

SPHENISCIDAE

- ε *Spheniscus mendiculus* Sundevall, 1871 Galápagos penguin
- Austrogoniodes demersus* Kéler, 1952

PROCELLARIIFORMES

DIOMEDEIDAE

- ♥ *Phoebastria irrorata* (Salvin, 1883) Waved albatross
- *Austromenopon navigans* (Kellogg, 1896)
- ♣● *Austromenopon pinguis* (Kellogg, 1896) *sensu lato*
- ◆ *Docophoroides levequei* Timmermann, 1963

- Episbates pederiformis* (Dufour, 1835)
Harrisoniella ferox (Giebel, 1867)
Paraclisis miriceps (Kellogg & Kuwana, 1902)
 ♦ *Perineus oblongus* Kéler, 1957

PROCELLARIIDAE

ε *Pterodroma phaeopygia* (Salvin, 1876) Galápagos dark-rumped petrel

- Ancistrona vagelli* (J.C. Fabricius, 1787)
Austromenopon popellus (Piaget, 1890)
Halipeurus noctivagus Timmermann, 1960

♣• *Trabeculus fuscoclypeatus* (Johnston & Harrison, 1912) *sensu lato*

ε *Puffinus subalaris* Ridgway, 1897 Galápagos shearwater

- ♦ *Austromenopon narboroughi* (Kellogg & Kuwana, 1902)
 ♦ *Halipeurus attenuatus* Edwards, 1961
 ♦ *Saemundssonina (Puffinoecus) minor* (Kellogg & Kuwana, 1902)
Trabeculus mirabilis (Kellogg, 1896)

♣ *Puffinus griseus* (Gmelin, 1789) Sooty shearwater

- ♣ *Austromenopon paululum* (Kellogg & Chapman, 1899)
 ♣ *Halipeurus diversus* (Kellogg, 1896)

HYDROBATIDAE

ε *Oceanites gracilis galapagoensis* Lowe, 1921 Galápagos white-vented storm petrel

- Halipeurus pelagicus* (Denny, 1842)
Saemundssonina (Saemundssonina) platycephalus (Kellogg & Kuwana, 1902)

ε *Oceanodroma tethys tethys* (Bonaparte, 1852) Galápagos wedge-rumped storm petrel

- ♣ *Austromenopon oceanodromae* Price & Clay, 1972
Halipeurus pelagicus (Denny, 1842)
Philoceanus becki Kellogg, 1903

♥ *Oceanodroma castro* (Harcourt, 1851) Band-rumped storm petrel

- ♣ *Austromenopon oceanodromae* Price & Clay, 1972
Halipeurus pelagicus (Denny, 1842)
Philoceanus becki Kellogg, 1903

PHOENICOPTERIFORMES

PHOENICOPTERIDAE

♥ *Phoenicopus ruber ruber* Linnaeus, 1758 Greater flamingo

- Colpocephalum heterosoma* Piaget, 1880
 ♣ *Anaticola phoenicopteri* (Coinde, 1859)

CICONIIFORMES

ARDEIDAE

ε *Nyctanassa violacea pauper* (Sclater & Salvin, 1870) Galápagos yellow-crowned night heron

- ♣ *Ardeicola nyctanassa* Tuff, 1967

ε *Butorides sundevalli* (Reichenow, 1877) Lava heron

- ♣• *Ardeicola florida* Carriker, 1960

PHAETHONTIFORMES

PHAETHONTIDAE

- ♥ *Phaethon aethereus mesonauta* Peters, 1930 Red-billed tropicbird
Austromenopon beckii (Kellogg, 1906)
Saemundssonina (Saemundssonina) phaetona (Osborn, 1890)

PELECANIFORMES

FREGATIDAE

- ♥ *Fregata magnificens* Mathews, 1914 Magnificent frigatebird
Colpocephalum spineum Kellogg, 1899
Fregatiella aurifasciata (Kellogg, 1899)
Pectinopygus gracilicornis fregatiphagus (Eichler, 1943)

- ♥ *Fregata minor ridgwayi* Mathews, 1914 Great frigatebird
Colpocephalum angulaticeps Piaget, 1880
Fregatiella aurifasciata (Kellogg, 1899)
Pectinopygus gracilicornis gracilicornis (Piaget, 1880)

PELECANIDAE

- ε *Pelecanus occidentalis urinator* Wetmore, 1945 Galápagos brown pelican
♣ *Colpocephalum occidentalis* Price, 1967
Piagetiella sp.
♣ *Pectinopygus occidentalis* Thompson, 1948

SULIDAE

- ε *Sula nebouxii excisa* Todd, 1948 Galápagos blue-footed booby
Eidmanniella albescens (Piaget, 1880)
Pectinopygus minor (Ewing, 1924)

- ♥ *Sula granti* Rothschild, 1902 Nazca booby
Eidmanniella albescens (Piaget, 1880)
Pectinopygus annulatus (Piaget, 1880)

- ♥ *Sula sula websteri* Rothschild, 1898 Red-footed booby
Pectinopygus sulae (Rudow, 1869)

PHALACROCORACIDAE

- ε *Phalacrocorax harrisi* Rothschild, 1898 Flightless cormorant
♦ *Pectinopygus nannopteri* (Ewing, 1924)

FALCONIFORMES

ACCIPITRIDAE

- ε *Buteo galapagoensis* (Gould, 1837) Galápagos hawk
Colpocephalum turbinatum Denny, 1842
Craspedorrhynchus sp.
Degeeriella regalis (Giebel, 1866)

GRUIFORMES

RALLIDAE

- ε *Laterallus spilonotus* (Gould, 1841) Galápagos rail
♣♣ *Fulicoffula obstinata* Carriker, 1953
♣♣ *Pseudomenopon scopulacorne* (Denny, 1842)
♣♣ *Rallicola (Rallicola)* sp.

CHARADRIIFORMES

HAEMATOPODIDAE

- ε *Haematopus palliatus galapagensis* Ridgway, 1886 Galápagos oystercatcher
Actornithophilus grandiceps (Piaget, 1880)
Quadriceps auratus (Haan, 1829)
Quadriceps ridgwayi (Kellogg, 1906)
♣ *Saemundssonina* (*Saemundssonina*) *haematopi* (Linnaeus, 1758)

RECURVIROSTRIDAE

- ♥ *Himantopus himantopus mexicanus* (Statius Müller, 1776) Black-winged stilt
Quadriceps hemichrous (Nitzsch [*in* Giebel], 1866)
Quadriceps semifissus (Nitzsch [*in* Giebel], 1866)

CHARADRIIDAE

- ♣ *Pluvialis squatarola* (Linnaeus, 1758) Grey plover
Quadriceps charadrii hospes (Nitzsch [*in* Giebel], 1866)

SCOLOPACIDAE

- ♣ *Heteroscelus incanus* (Gmelin, 1789) Wandering tattler
♣ *Actornithophilus kilauensis* (Kellogg & Chapman, 1902)
Quadriceps obtusus (Kellogg & Kuwana, 1902)

- ♣ *Arenaria interpres* (Linnaeus, 1758) Ruddy turnstone
♣ *Actornithophilus bicolor* (Piaget, 1880)
Quadriceps strepsilaris (Denny, 1842)

- ♣ *Phalaropus lobatus* (Linnaeus, 1758) Red-necked phalarope
♣ *Austromenopon spenceri* Timmermann, 1956
Quadriceps connexus (Kellogg & Mann, 1912)

Undetermined host

Saemundssonina (*Saemundssonina*) *platygaster* (Denny, 1842)

LARIDAE

- ε *Larus fuliginosus* Gould, 1841 Lava gull
Quadriceps punctatus felix (Giebel, 1874)

- ♣ *Larus pipixcan* Wagler, 1831 Franklin's gull
♣ *Austromenopon transversum* (Denny, 1842)
Quadriceps punctatus lingulatus (Waterston, 1914)
♣ *Saemundssonina* (*Saemundssonina*) *lari* (O. Fabricius, 1780)

- ♥ *Creagrus furcatus* (Nébox, 1842) Swallow-tailed gull
♣• *Austromenopon transversum* (Denny, 1842)
♦ *Quadriceps paludicola* (Kellogg & Kuwana, 1902)
♦ *Saemundssonina* (*Saemundssonina*) *creagrusa* Palma, 2012

- ♥ *Sterna fuscata crissalis* (Lawrence, 1872) Sooty tern
Quadriceps birostris (Giebel, 1874)
Saemundssonina (*Saemundssonina*) *albemarlensis* (Kellogg & Kuwana, 1902)

- ε *Anous stolidus galapagensis* Sharpe, 1879 Galápagos brown noddy
Actornithophilus incisus (Piaget, 1880)

- ♣ *Austromenopon atrofulvum* (Piaget, 1880)
- Quadriceps separatus* (Kellogg & Kuwana, 1902)
- ♣ *Saemundssonina (Saemundssonina) remota* Timmermann, 1951

COLUMBIFORMES

COLUMBIDAE

- ε *Zenaida galapagoensis* **Gould, 1839** **Galápagos dove**
- Columbicola macrourae* (Wilson, 1941)
- ♦ *Physconelloides galapagensis* (Kellogg & Kuwana, 1902)

CUCULIFORMES

CUCULIDAE

- ♥ *Coccyzus melacoryphus* **Vieillot, 1817** **Dark-billed cuckoo**
- Cuculiphilus (Cuculiphilus) snodgrassi* (Kellogg & Kuwana, 1902)

- * ♥ *Crotophaga ani* **Linnaeus, 1758** **Smooth-billed ani**
- Osborniella crotophagae* (Stafford, 1943)
- Vernoniella guimaraesi* Thompson, 1948

STRIGIFORMES

STRIGIDAE

- ε *Asio flammeus galapagoensis* (**Gould, 1837**) **Galápagos short-eared owl**
- ♣ *Colpocephalum brachysomum* Kellogg & Chapman, 1902
- ♣ *Strigiphilus cursor* (Burmeister, 1838)

PASSERIFORMES

TYRANNIDAE

- ε *Pyrocephalus rubinus nanus* **Gould, 1839** **Galápagos vermilion flycatcher**
- ♦ *Philopterus insulicola* (Kellogg & Kuwana, 1902)

- ε *Myiarchus magnirostris* (**Gould, 1838**) **Galápagos flycatcher**
- Menacanthus distinctus* (Kellogg & Chapman, 1899)
- Ricinus marginatus* (Children, 1836)

HIRUNDINIDAE

- ε *Progne modesta* **Gould, 1838** **Galápagos martin**
- ♦ *Philopterus breviformis* (Kellogg & Kuwana, 1902)

MIMIDAE

- ε *Nesomimus parvulus parvulus* (**Gould, 1837**) **Galápagos mockingbird**
- ♦ *Brueelia galapagensis* (Kellogg & Kuwana, 1902)
- ♦ *Myrsidea nesomimi borealis* Palma & Price, 2010

- ε *Nesomimus parvulus barringtoni* **Rothschild, 1898** **Galápagos mockingbird**
- ♦ *Brueelia galapagensis* (Kellogg & Kuwana, 1902)
- ♦ *Myrsidea nesomimi borealis* Palma & Price, 2010

- ε *Nesomimus parvulus personatus* **Ridgway, 1890** **Galápagos mockingbird**
- ♦ *Brueelia galapagensis* (Kellogg & Kuwana, 1902)
- ♦ *Myrsidea nesomimi borealis* Palma & Price, 2010

ε *Nesomimus parvulus bauri* **Ridgway, 1894** Galápagos mockingbird
♦ *Brueelia galapagensis* (Kellogg & Kuwana, 1902)
♦ *Myrsidea nesomimi borealis* Palma & Price, 2010

ε *Nesomimus trifasciatus* (**Gould, 1837**) Charles mockingbird
♦• *Brueelia galapagensis* (Kellogg & Kuwana, 1902)
♦ *Myrsidea nesomimi nesomimi* Palma & Price, 2010

ε *Nesomimus macdonaldi* **Ridgway, 1890** Hood mockingbird
♦ *Brueelia galapagensis* (Kellogg & Kuwana, 1902)
♦ *Myrsidea nesomimi nesomimi* Palma & Price, 2010

ε *Nesomimus melanotis* (**Gould, 1837**) Chatham mockingbird
♦ *Brueelia galapagensis* (Kellogg & Kuwana, 1902)
♦ *Myrsidea nesomimi borealis* Palma & Price, 2010

PARULIDAE

♥ *Dendroica petechia aureola* (**Gould, 1839**) Yellow warbler
Brueelia interposita (Kellogg, 1899)
Myrsidea ridulosa (Kellogg & Chapman, 1899)

EMBERIZIDAE

ε *Geospiza magnirostris* **Gould, 1837** Large ground finch
♦• *Brueelia chelydensis* Hopkins 1951
• *Brueelia interposita* (Kellogg, 1899)
♦ *Myrsidea darwini* Palma & Price, 2010

ε *Geospiza fortis* **Gould, 1837** Medium ground finch
♦ *Brueelia chelydensis* Hopkins 1951
Brueelia interposita (Kellogg, 1899)

ε *Geospiza fuliginosa* **Gould, 1837** Small ground finch
♦ *Brueelia chelydensis* Hopkins 1951
Brueelia interposita (Kellogg, 1899)
♦ *Myrsidea darwini* Palma & Price, 2010

ε *Geospiza difficilis difficilis* **Sharpe, 1888** Sharp-beaked ground finch
• *Brueelia interposita* (Kellogg, 1899)

ε *Geospiza difficilis debilirostris* **Ridgway, 1894** Sharp-beaked ground finch
♦• *Brueelia chelydensis* Hopkins 1951
• *Brueelia interposita* (Kellogg, 1899)

ε *Geospiza conirostris conirostris* **Ridgway, 1890** Large cactus finch
♦ *Brueelia chelydensis* Hopkins 1951

ε *Camarhynchus crassirostris* **Gould, 1837** Vegetarian finch
Brueelia interposita (Kellogg, 1899)

ε *Camarhynchus psittacula habeli* **Slater & Salvin, 1870** Large tree finch
♦ *Brueelia chelydensis* Hopkins 1951
• *Brueelia interposita* (Kellogg, 1899)
♦ *Myrsidea darwini* Palma & Price, 2010

- ε *Camarhynchus psittacula affinis* Ridgway, 1894 Large tree finch
 ♦ *Brueelia chelydensis* Hopkins 1951
- ε *Camarhynchus psittacula psittacula* Gould, 1837 Large tree finch
 • *Brueelia interposita* (Kellogg, 1899)
- ε *Camarhynchus parvulus parvulus* Gould, 1837 Small tree finch
 ♦ *Brueelia chelydensis* Hopkins 1951
- ε *Camarhynchus pallidus productus* Ridgway, 1894 Woodpecker finch
 ♦ *Brueelia chelydensis* Hopkins 1951
- ε *Certhidea olivacea becki* Rothschild, 1898 Warbler-finch
 ♦ *Brueelia chelydensis* Hopkins 1951
- ε *Certhidea olivacea olivacea* Gould, 1837 Warbler-finch
 ♦ *Brueelia chelydensis* Hopkins 1951
 ♦ *Philopterus insulicola* (Kellogg & Kuwana, 1902)

MAMMALIA

CARNIVORA

PINNIPEDIA

OTARIDAE

- ε *Zalophus californianus wollebaeki* Silvertsen, 1953 Galápagos sea lion
Antarctophthirus microchir (Trouessart & Neumann, 1888)

RODENTIA

MYOMORPHA

MURIDAE

- * ♥ *Rattus rattus* (Linnaeus, 1758) Black rat
Polyplax spinulosa (Burmeister, 1839)

CRICETIDAE

- ε *Nesoryzomys narboroughi* Heller, 1904 Fernandina rice rat
 ♦ *Hoplopleura nesoryzomydis* Ferris, 1921

- ε *Nesoryzomys indefessus* (Thomas, 1899) Santa Cruz rice rat
 ♦ *Hoplopleura nesoryzomydis* Ferris, 1921

ARCTIODACTYLA

BOVIDAE

- * ♥ *Capra hircus* (Linnaeus, 1758) Feral goat
Bovicola (Bovicola) caprae (Gurlt, 1843)

PRIMATES

HOMINIDAE

- * ♥ *Homo sapiens* Linnaeus, 1758 Human
Pediculus humanus capitis de Geer, 1778

**LIST OF BIRDS AND MAMMALS WHICH BREED IN THE GALÁPAGOS ISLANDS, BUT WITHOUT
RECORDS OF LICE FROM THE ISLANDS**

- ε Denotes host species or subspecies which are endemic to the Galápagos Islands.
♥ Denotes host species or subspecies which breed on the Galápagos Islands, but are not endemic.
* Denotes host species which have been introduced into the Galápagos Islands by human agency.

AVES

CICONIIFORMES

ARDEIDAE

- | | |
|--|---|
| ε <i>Ardea herodias cognata</i> Bangs, 1903
♥ <i>Ardea alba egretta</i> Gmelin, 1789
♥ <i>Bubulcus ibis ibis</i> (Linnaeus, 1758)
♥ <i>Butorides striata striata</i> (Linnaeus, 1758) | Galápagos great blue heron
Great egret
Cattle egret
Striated heron |
|--|---|

GRUIFORMES

RALLIDAE

- | | |
|---|--|
| ♥ <i>Neocrex erythrops erythrops</i> Sclater, 1867
♥ <i>Gallinula chloropus pauxilla</i> Bangs, 1915 | Painted-billed crane
Common moorhen |
|---|--|

COLUMBIFORMES

COLUMBIDAE

- | | |
|---------------------------------------|-------------|
| * ♥ <i>Columba livia</i> Gmelin, 1789 | Rock pigeon |
|---------------------------------------|-------------|

STRIGIFORMES

STRIGIDAE

- | | |
|---|--------------------|
| ε <i>Tyto alba punctatissima</i> (Gray, 1838) | Galápagos barn owl |
|---|--------------------|

PASSERIFORMES

EMBERIZIDAE

- | | |
|---|--|
| ε <i>Geospiza scandens</i> (Gould, 1837)
ε <i>Camarhynchus pauper</i> Ridgway, 1890
ε <i>Camarhynchus heliobates</i> (Snodgrass & Heller, 1901) | Common cactus finch
Medium tree finch
Mangrove finch |
|---|--|

MAMMALIA

CARNIVORA

PINNIPEDIA

OTARIIDAE

- | | |
|---|--------------------|
| ε <i>Arctocephalus galapagoensis</i> Heller, 1904 | Galápagos fur seal |
|---|--------------------|

FISSIPEDIA

CANIDAE

- | | |
|--|-----------|
| * ♥ <i>Canis familiaris</i> Linnaeus, 1758 | Feral dog |
|--|-----------|

FELIDAE

- | | |
|---------------------------------------|-----------|
| * ♥ <i>Felis catus</i> Linnaeus, 1758 | Feral cat |
|---------------------------------------|-----------|

RODENTIA

MYOMORPHA

MURIDAE

- | | |
|--|-------------|
| * ♥ <i>Mus musculus</i> Linnaeus, 1758 | House mouse |
|--|-------------|

CRICETIDAE

ε *Oryzomys bauri* (Allen, 1892)

Santa Fé rice rat

CAVIIDAE

* ♥ *Cavia porcellus* (Linnaeus, 1758)

Guinea pig

ARCTIODACTYLA

BOVIDAE

* ♥ *Bos taurus* Linnaeus, 1758

Cattle

* ♥ *Ovis aries* Linnaeus, 1758

Sheep

SUIDAE

* ♥ *Sus scrofa* Linnaeus, 1758

Feral pig

PERISSODACTYLA

EQUIDAE

* ♥ *Equus caballus* Linnaeus, 1758

Horse

* ♥ *Equus asinus* Linnaeus, 1758

Feral Donkey

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