

Checklist of ectoparasites of birds in New Zealand: additions and corrections

The first checklist of ectoparasites of New Zealand birds was published in a special issue of *Surveillance* by Bishop and Heath in 1998. Since then, new parasite records have emerged and a small number of spelling errors have been found in the original list.

This new list (Table 1) is as complete as it can be within the bounds of current knowledge. The conventions, footnotes, host list, nomenclature and references use the same style as in the original, and this supplementary checklist is intended to be read in conjunction with it.

Table 2 provides an updated list of host/parasite records.

TABLE 1: CHECKLIST OF ECTOPARASITES OF BIRDS IN NEW ZEALAND

Host	Ectoparasite	Reference number and comments
Albatross, Gibson's (<i>Diomedea gibsoni</i>)	<i>Ixodes uriae</i> (tick)	53
Albatross, Northern royal (<i>Diomedea sanfordi</i>)	<i>Ixodes eudyptidis</i> (tick)	53
Blackbird (<i>Turdus merula</i>)	<i>Ornithoica exilis</i> (hippoboscid)	65
Budgerigar (<i>Melopsittacus undulatus</i>)	<i>Ornithoica stipituri</i> (hippoboscid)	54
	<i>Ornithoica exilis</i> (hippoboscid)	62
Canary (<i>Serinus canaria domestica</i>)	<i>Ornithonyssus sylviarum</i> (mite)	56
Cockatiel (<i>Nymphicus hollandicus</i>)	<i>Nymphicilichus perezae</i> (feather mite)	57
	<i>Knemidokoptes</i> sp. (mite)	61
Duck, Mallard (<i>Anas platyrhynchos</i>)	<i>Ixodes anatis</i> (tick)	54
Fernbird, North Island (<i>Bowdleria punctata</i>)	<i>Ornithonyssus bursa</i> (mite)	54
Fowl, Domestic (<i>Gallus gallus</i>)	(a) <i>Kydodites nudus</i>	(a) Spelling correction
	(b) <i>Knemidokoptes</i>	(b) Spelling correction
	(c) <i>Neocnemidocoptes gallinae</i>	(c) Footnote (f) is incorrect; see also Domrow (1992), reference 7, (Bishop & Heath 1998, p14)
	(d) <i>Laminosioptes cisticola</i>	(d) Spelling correction
Gannet, Australasian (<i>Morus serrator</i>)	<i>Carios capensis</i> (tick)	59
	<i>Ixodes uriae</i> (tick)	53
Kakapo (<i>Strigops habroptilus</i>)	(a) <i>Ixodes? kerguelenensis</i> (nymph, tick; labelled as <i>I. pterodromae</i>)	(a) 54
	(b) <i>Ixodes auritulus</i> group (female; tick)	(b) 53
Kiwi, Great spotted (<i>Apteryx haastii</i>)	<i>Ctenocephalides felis felis</i> (flea)	34
Kiwi, Little spotted (<i>Apteryx owenii</i>)	<i>Parapsyllus longicornis</i> (flea)	34; in burrow
Kiwi, North Island brown (<i>Apteryx mantelli</i>)	<i>Pygiopsylla phiola</i> (flea)	53

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Host	Ectoparasite	Reference number and comments
Kiwi, North Island brown (<i>Apteryx mantelli</i>)	<i>Ixodes anatis</i> (tick); erroneously recorded as <i>I. eudyptidis</i> in Bishop & Heath (1998)	
Kiwi, North Island brown (<i>Apteryx mantelli</i>)	(a) <i>Nosopsyllus fasciatus</i> (flea) (b) <i>Pulex irritans</i> (flea)	Both 34
Kiwi, South Island brown (<i>Apteryx australis australis</i>)	<i>Ixodes anatis</i> (tick)	53
Kiwi, Stewart Island brown (<i>Apteryx australis lawryi</i>)	<i>Ixodes anatis</i> (tick)	53
Mollymawk, Buller's (<i>Diomedea bulleri</i>)	(a) <i>Ixodes eudyptidis</i> (tick) (b) <i>Ixodes uriae</i> (tick)	Both 53
Mollymawk, Chatham Island (<i>Thalassarche erimita</i>)	<i>Ixodes eudyptidis</i> (tick)	53
Myna, Common (<i>Acridotheres tristis</i>)	<i>Haemaphysalis longicornis</i> (tick)	53
Noddy, Blue-grey (<i>Procelsterna cerulea albivitta</i>)	<i>Ixodes amersoni</i> (tick)	53, 69
Noddy, Common (<i>Anous stolidus</i>)	<i>Carios capensis</i> (tick)	53
Ostrich (<i>Struthio camelus</i>)	<i>Gabucinia sculpturata</i> (now <i>Struthiopterolichus bicaudatus</i>) (mite)	54, 55, 56, 60
Parakeet, Antipodes Island	<i>Ornithoica stipituri</i> (hippoboscid)	54
Parakeet, Kermadec (<i>Cyanoramphus novaezelandiae cyanurus</i>)	<i>Pseudaloptinus</i> sp. (feather mite)	53 & 54
Parakeet, Red-crowned (<i>Cyanoramphus novaezelandiae novaezelandiae</i>)	<i>Ornithoica exilis</i> (hippoboscid); <i>Myialges</i> (<i>Promyialges</i>) <i>macdonaldi</i> (feather mite; on hippoboscid)	54, See 25 & 64
Penguin, Blue (<i>Eudyptula minor</i>)	(a) <i>Ixodes auritulus</i> group (tick) (b) <i>Ixodes uriae</i> (tick)	Both 53
Penguin, Rockhopper (eastern) (<i>Eudyptes chrysocome filholi</i>)	<i>Ixodes uriae</i> (tick)	53
Penguin, Snares Island (<i>Eudyptes robustus</i>)	<i>Ixodes auritulus</i> group (tick)	53
Penguin, Yellow-eyed (<i>Megadyptes antipodes</i>)	(a) <i>Ixodes eudyptidis</i> (tick) (b) <i>Ixodes auritulus</i> group (tick)	Both 53
Petrel, Black-bellied storm (<i>Fregetta tropica</i>)	<i>Ixodes auritulus</i> group (tick)	53
Petrel, diving, Southern (<i>Pelecanoides urinatrix chathamensis</i>)	(a) <i>Ixodes eudyptidis</i> (tick) (b) <i>Ixodes auritulus</i> group (tick)	Both 53
Petrel, diving, Subantarctic (<i>Pelicanoides urinatrix ?exsul</i>)	<i>Notiopsylla kerguelensis tenuata</i> (flea)	34 & 68

TABLE 1: CHECKLIST OF ECTOPARASITES OF BIRDS IN NEW ZEALAND

Host	Ectoparasite	Reference number and comments
Petrel, Grey (<i>Procellaria cinerea</i>)	Near <i>Ixodes kerguelenensis</i> (tick)	53
Petrel, Grey-faced (<i>Pterodroma macroptera gouldi</i>)	<i>Ixodes auritulus</i> group (tick)	54
Petrel, New Zealand white-faced storm (<i>Pelagodroma marina maa</i>)	<i>Ixodes auritulus</i> group (tick)	53
Petrel, Providence (<i>Pterodroma solandri</i>)	<i>Ixodes eudyptidis</i> (tick)	53
Petrel, White-headed (<i>Pterodroma lessoni</i>)	<i>Ixodes amersoni</i> (tick)	53, 69
Prion, Fairy (<i>Pachyptila turtur</i>)	<i>Ixodes eudyptidis</i> (tick)	53
Robin, North Island (<i>Petroica australis longipes</i>)	<i>Ornithomyia variegata</i> (hippoboscid)	54
Saddleback, North Island (<i>Philesturnus carunculatus rufusater</i>)	(a) <i>Ornithonyssus sylviarum</i> (mite) (b) <i>O. bursa</i> (mite) (c) <i>Dermanyssus</i> sp. (mite)	(a) 53; in nest (b) add reference 58 (c) 58
Saddleback, South Island (<i>Philesturnus carunculatus carunculatus</i>)	<i>Ixodes auritulus</i> group (tick)	53
Shag, Campbell Island (<i>Phalacrocorax campbelli</i>)	<i>Ixodes uriae</i> (tick)	53
Shearwater, Flesh-footed (<i>Puffinus carneipes hullianus</i>)	<i>Ixodes auritulus</i> group (tick)	53
Shearwater, Hutton's (<i>Puffinus huttoni</i>)	<i>Ixodes uriae</i> (tick)	65
Shearwater, Buller's (<i>Puffinus bulleri</i>)	<i>Ixodes auritulus</i> group (tick)	53
Shearwater, Little (<i>Puffinus assimilis</i>)	<i>Carios capensis</i> (tick)	53
Tern, Antarctic (<i>Sterna vittata bethunei</i>)	<i>Ixodes auritulus</i> group (tick)	53
Tern, Caspian (<i>Hydroprogne caspia</i>)	<i>Ixodes eudyptidis</i> (tick)	53
Tropicbird, Red-tailed (<i>Phaeton rubricaudata</i>)	<i>Laminalloptes phaetontis</i> (feather mite) <i>Brephosceles</i> sp. (feather mite) <i>Leptosphyra</i> sp. (feather mite)	53
Tropicbird, White-tailed (<i>Phaeton lepturus dorotheae</i>)	<i>Laminalloptes phaetontis</i> (feather mite) <i>Brephosceles</i> sp. (feather mite)	53
Weka, North Island (<i>Gallirallus australis greyi</i>)	<i>Haemaphysalis longicornis</i> (tick)	53
Weka, Western (<i>Gallirallus australis australis</i>)	<i>Nosopsyllus fasciatus</i>	Spelling correction
Yellowhammer (<i>Emberiza citrinella</i>)	<i>Ornithomyia avicularia</i> , not valid name, use <i>O. nigricornis</i> (hippoboscid)	66, 67

TABLE 2: CHECKLIST OF ECTOPARASITES OF BIRDS IN NEW ZEALAND

Ectoparasite	Host
FEATHER MITES	
<i>Brephosceles</i> sp.	Tropicbird, Red-tailed Tropicbird, White-tailed
<i>Laminalloptes phaetontis</i>	Tropicbird, Red-tailed Tropicbird, White-tailed
<i>Leptosphyra</i> sp.	Tropicbird, Red-tailed
<i>Myialges (Promyialges) macdonaldi</i>	Parakeet, Red-crowned (on hippoboscids)
<i>Nymphicilichus perezae</i>	Cockatiel
<i>Pseudoaloptinus</i> sp.	Parakeet, Kermadec
FLEAS	
<i>Ctenocephalides felis felis</i>	Kiwi, Great spotted
<i>Nosopsyllus fasciatus</i>	Kiwi, North Island brown Weka, Western
<i>Notiopsylla kerguelensis tenuata</i>	Petrel, Diving, Subantarctic
<i>Parapsyllus longicornis</i>	Kiwi, Little spotted
<i>Pygiopsylla phiola</i>	Kiwi, North Island brown
<i>Pulex irritans</i>	Kiwi, North Island brown
HIPPOBOSCIDS	
<i>Ornithomyia avicularia</i>	Yellowhammer
<i>Ornithomyia variegata</i>	Robin, North Island
<i>Ornithoica exilis</i>	Blackbird, Budgerigar Parakeet, Red-crowned
<i>Ornithoica stipituri</i>	Budgerigar Parakeet, Antipodes Island
MITES	
<i>Dermanyssus</i> sp.	Saddleback, North island
<i>Knemidokoptes</i> sp.	Cockatiel
<i>Ornithonyssus bursa</i>	Fernbird, North Island Saddleback, North Island
<i>Ornithonyssus sylviarum</i>	Canary Saddleback, North Island
<i>Struthiopterolichus bicaudatus</i>	Ostrich

TABLE 2: CHECKLIST OF ECTOPARASITES OF BIRDS IN NEW ZEALAND

Ectoparasite	Host
TICKS	
<i>Carios capensis</i>	Gannet, Australasian Noddy, Common Shearwater, Little
<i>Haemaphysalis longicornis</i>	Myna, Common Weka, North Island
<i>Ixodes amersoni</i>	Noddy, Blue-grey Petrel, White-headed
<i>Ixodes anatis</i>	Duck, Mallard Kiwi, South Island brown Kiwi, Stewart Island brown
<i>Ixodes auritulus</i> group	Kakapo Penguin, Blue Penguin, Snares Island Penguin, Yellow-eyed Petrel, Black-bellied storm Petrel, diving, southern Petrel, Grey-faced Petrel, New Zealand white-faced storm Saddleback, South Island, Shearwater, Flesh-footed Shearwater, Buller's Tern, Antarctic
<i>Ixodes eudyptidis</i>	Albatross, Northern royal Mollymawk, Buller's Mollymawk, Chatham Island Penguin, Yellow-eyed Petrel, diving, Southern Petrel, Providence Prion, Fairy Tern, Caspian
<i>Ixodes kerguelenensis</i>	Kakapo Petrel, Grey
<i>Ixodes uriae</i>	Albatross, Gibson's Gannet, Australasian Mollymawk, Buller's Penguin, Blue Penguin, Rockhopper (eastern) Shag, Campbell Island Shearwater, Hutton's

ADDITIONAL REFERENCES

- 55 Hirst S. Notes on Acari parasitic on birds, with descriptions of two new species. *Annals and Magazine of Natural History* (9)6, 121, 1920.
- 56 McKenna PB. Register of new host-parasite records. *Surveillance* 28(1), 4–5, 2001.
- 57 Mirinov SV, Galloway TD. *Nymphilichus perezae* gen. nov., a new feather mite (Astigmata: Pterolichidae) from the cockatiel, *Nymphicus hollandicus* (Psittaciformes: Coccyzidae). *Journal of the Royal Society of New Zealand* 32, 1–6, 2002.
- 58 Stamp RK, Brunton DH, Walter B. Artificial nest box use by the North Island saddleback: effects of nest box design and mite infestations on nest site selection and reproductive success. *New Zealand Journal of Zoology* 29, 285–92, 2002.
- 59 Austin FJ. Johnston Atoll virus (Quarantifil group) from *Ornithodoros capensis* (Ixodoidea: Argasidae) infesting a gannet colony in New Zealand. *American Journal of Tropical Medicine and Hygiene* 27(5), 1045–48, 1978.
- 60 Halliday RB. *Struthiopterolichus bicaudatus* (Gervais) (Acari: Pterolichidae): a feather mite pest of the ostrich. *Australian Veterinary Journal* 84, 68–69, 2006.
- 61 McKenna PB. Register of new host-parasite records. *Surveillance* 30(1), 12–13, 2003.
- 62 MAF IDC, Biosecurity New Zealand, Lincoln, collection.
- 63 Atyeo WT, Peterson PC. The feather mite genus *Laminalloptes* (Proctophyllodidae: Alloptinae). *Journal of the Kansas Entomological Society* 40, 447–58, 1967.
- 64 Fain AA. Review of the Family Epidermoptidae Trouessart Parasitic on the Skin of Birds (Acarina: Sarcoptiformes), Parts I & II. *Koninklijke Vlaamse Academie voor Wetenschappen, Letteren en Schone Kunsten van België (Wetenschappen)* 27(84), 1–176 + ix; 5–144, 1965.
- 65 TD Galloway collection, University of Manitoba, Canada.
- 66 Maa TC. A taxonomic revision of the Hippoboscidae (Diptera) of Tasmania, Australia. *Journal of the Taiwan Museum* 39, 83–92, 1986.
- 67 Macfarlane RP, Andrew IG, Sinclair BJ, Harrison RA, Dugdale JS, Boothroyd IKG, Toft R, Marshall SA, Johns PM, Forsyth DJ, Matile L, Holder P, Oliver HA. Checklist of New Zealand Diptera. http://www.ento.org.nz/diptera_checklist.htm, 2006.
- 68 Pilgrim RLC. Larvae of the genus *Notiopsylla* (Siphonaptera: Pygiopsyllidae) with a key to their identification. *Journal of Medical Entomology* 35, 362–76, 1998.
- 69 Kohls, GM. A new sea bird tick, *Ixodes amersoni*, from Phoenix Island (Acarina: Ixodidae). *Journal of Medical Entomology* 3, 38–40, 1966.

CORRECTION TO REFERENCE

For reference 13, Astigmata, *not* Astimata.

NOTES

Ixodes pterodromae is now *I. kerguelenensis*.

Ornithodoros capensis is now *Carios capensis*.

The name “*Ixodes auritululus* group” is now used for both *I. auritululus* and *I. a. zealandicus*.

In the list of host names in Bishop & Heath (1998), *Pelecanoides u. urinatrix* should be Petrel, diving, Northern.

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