



NEW ZEALAND BIOSECURE

Entomology Laboratory

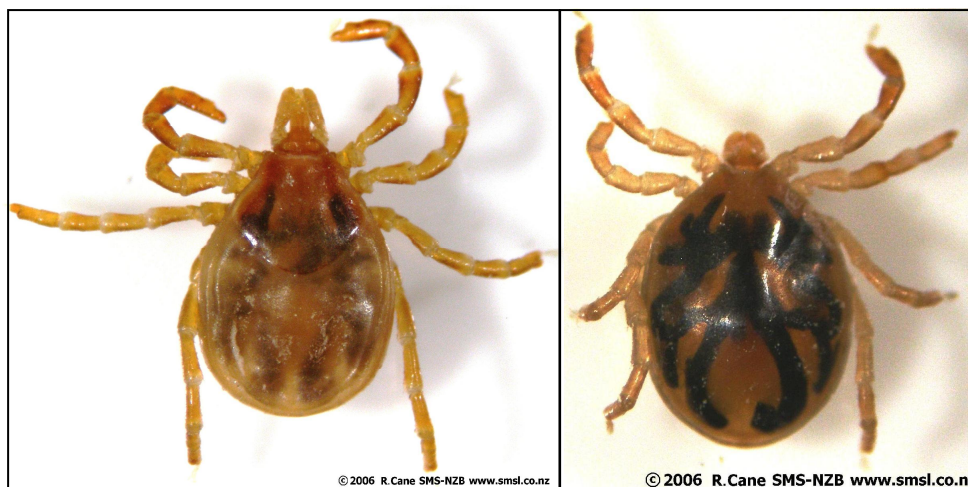


Profile: *Ixodes anatis* Chilton, 1904

Common Name: kiwi tick

Family: Ixodidae

Origin: Endemic



Female

Male

Geographic Distribution: Ashburton, South Island* (Chilton, 1903); Aponga, Orowhana Range and Tangihua Range - North Auckland, New Plymouth – Taranaki* (Dumbleton, 1953); Wanganui* (specimens in New Zealand Arthropod Collection - NZAC); Kaeo, Hukatere, Dargaville, Tangiteroria, Waipoua Forest, Rarewarewa and Trounson Kauri Park – Northland, Little Barrier Island, Tiritiri Matangi Island – Hauraki Gulf, Colville – Coromandel Peninsula, Waimana, Waiohau – Bay of Islands, Clinton Valley – Fiordland, Mason Bay and Port Pegasus – Stewart Island (specimens in Museum of New Zealand (MONZ) Te Papa Tongarewa); Ponui Island, Hauraki Gulf (G. Mackereth, MAFBNZ, unpub. data, 2006); Mosgiel, Otago* (A. Heath, AgResearch, unpubl. data, 2006).

*Specimens collected from bird hosts – do not necessarily reflect the actual geographic distribution of the tick unless found associated with a nesting site. The locations of ticks found on kiwi are more reliable because of the flightless state of the hosts.



Known Hosts: grey duck *Anas superciliosa* (Chilton, 1903), North Island brown kiwi *Apteryx mantelli*, Canada goose *Branta canadensis*[#] (Dumbleton, 1953), mallard duck *Anas platyrhynchos* (A.C.G. Heath, AgResearch, unpubl. data, 2006), Stewart Island brown kiwi *Apteryx australis lawryi* and Southern Tokoeka (Southern Brown or Common kiwi) *Apteryx australis australis* (A.C.G. Heath, paper in draft, 2009; specimens in Te Papa Tongarewa)

Dumbleton (1961) noted the presence of this tick species in cat faeces on Little Barrier Island, presumably the cat had ingested the tick while eating a kiwi.

[#]Specimens could not be accessed/located for verification (noted as British Museum and Cawthron Institute)

Disease Associations: The authors of Jefferies *et al.* (2008) suspect that *Ixodes anatis* may be a vector of *Babesia kiviensis* recently found in brown kiwi.

Taxonomy: Female holotype. Type locality – Ashburton, South Island, New Zealand. Collected May 1903. Deposited in Canterbury Museum (Chilton, 1904). Co-type female in Canterbury Museum (Nuttall, 1916).

Appears to belong to a different group than the other New Zealand *Ixodes* species (Dumbleton, 1963). Possession of a sternal plate (among other characters) puts *Ix. anatis* into the subgenus *Sternalixodes* (Clifford *et al.*, 1973).

Diagnostic Characters:

Female – anal grooves convergent behind anus, scutum broader than long, coxa 1 with external spur, coxae 2-4 without, 2/2 dentition (Dumbleton, 1953), 2nd palpal segment longer than 3rd (Dumbleton, 1963), sternal plate like a truncated triangle (A.C.G. Heath, AgResearch, pers. comm. 2009)

Male - lack of posterior brushes of hairs, median plate longer than wide, no jugular plates, pre-genital plate transverse, sternal plate is transverse and crescent-shaped, external spurs present on first 3 coxae (Dumbleton, 1953; 1963)

Nymph – scutum broader than long, prominent external spur on coxa I, very small spurs on coxae 2&3, dentition 2/2 (Dumbleton, 1953)

Larva - scutum broader than long, widest anteriorly at about ¼ length, coxae 1-3 with external spurs, dentition 2/2, 4 setae across anterior margin of scutum behind neck (Dumbleton, 1953)

Taxonomic Diagrams:

Chilton (1904), Nuttall (1916), Dumbleton (1953; 1963)

Biology:

Only New Zealand tick solely found on land birds.

Seasonality: Collection data ex Chilton (1903), Nuttall (1916), Dumbleton (1953) and specimen data from MONZ Te Papa Tongarewa and NZAC

Stage	J	F	M	A	M	J	J	A	S	O	N	D
Females	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓
Males		✓	✓		✓	✓	✓		✓			
Nymphs	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓
Larvae	✓	✓	✓		✓	✓		✓	✓	✓		✓

References:

CHILTON, C. 1903. A species of *Ixodes* parasitic on the Grey Duck. *Transactions of the New Zealand Institute* XXIV: 201-203.

CLIFFORD, CM, SONENSHINE, DE, KEIRANS, JE, KOHLS, GM. 1973. Systematics of the subfamily Ixodinae (Acarina: Ixodidae).1. The subgenera of *Ixodes*. *Annals of the Entomological Society of America* 66: 489-500.

DUMBLETON, L.J. 1953. *The ticks (Ixodoidea) of the New Zealand Sub-Region*. Department of Scientific and Industrial Research, Wellington. 35pp.

DUMBLETON, L.J. 1963. A synopsis of the ticks (Acarina: Ixodoidea) of New Zealand. *Tuatara* 11(2): 72-78.

HEATH, A.C.G. 1987. A review of the origins and zoogeography of tick-borne disease in New Zealand. *Tuatara* 29(1&2): 19-29.

JEFFERIES, R., DOWN, J., MCINNES, L., RYAN, U., ROBERTSON, H., JAKOB-HOFF, R., and IRWIN, P. 2008. Molecular characterisation of *Babesia kiwiensis* from the Brown kiwi (*Apteryx mantelli*). *Journal of Parasitology* 94 (2): 557-560.

NUTTALL, G.H.F. 1916. Notes on Ticks. IV. Relating to the genus *Ixodes* and including a description of three new species and two new varieties. *Parasitology* 8: 294-337.