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First records of the marine water mite family Pontarachnidae Koenike, 1910 from New Zealand (Acari: Hydrachnidia), with the description of one new species

Vladimir Pešić[a], Dante Batista-Ribeiro[b], Almir R. Pepato[b], Harry Smit[c]

[a] Department of Biology, University of Montenegro, Cetinjski put b.b., 81000 Podgorica, Montenegro.
[b] Universidade Federal de Minas Gerais, Instituto de Ciências Biológicas, Departamento de Zoologia, Laboratório de Sistemática e Evolução de Ácaros Acariformes, Av. Antônio Carlos, 6627, Pampulha, Belo Horizonte - MG, Brazil.
[c] Naturalis Biodiversity Center, P.O. Box 9517, 2300 RA Leiden, the Netherlands.

Original research

ABSTRACT

Two species of the genus *Litarachna* Walter, 1925 are reported from New Zealand. They are the first representatives of Pontarachnidae from this country, the only water mite family occurring in the marine environment. *Litarachna quinqueseta* Pešić & Smit n. sp. is described as new for science, and *L. amnicola* Cook, 1986 is reported for the first time for New Zealand. Finally, we provide a worldwide key for the genus *Litarachna*.

Keywords marine mites; taxonomy; estuary; systematics; *Litarachna*; key
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Introduction

Pontarachnidae Koenike, 1910 is the only family of Hydrachnidia that occurs in the marine environments, primarily in subtropical and tropical regions. A few species have been described from brackish or maybe even fresh water, but almost always in estuaries or close to the sea (Cook 1986, 1996; Smit 2007; Pešić 2013b). Two species from South Korea are adapted to live in marine interstitial habitats (Pešić 2013a). At the global level, the highest number of pontarachnid species is found in the tropical central Indo-Pacific region (Pešić *et al.* 2012a), suggesting that temperature gradients may play an important role in shaping the diversity of this group. Nothing is known about the life cycle of the species (Cook 1996). In most water mites, the larval stage is parasitic on insects; however, because few insects inhabit marine environments, this stage may be absent or bypassed in pontarachnids (Smit and Alberti 2010). The diet of pontarachnids also remains unknown and requires laboratory studies to determine their food preferences (Pešić *et al.* 2019).

Within the Pontarachnidae two genera are known, i.e. *Pontarachna* Philippi, 1840 and *Litarachna* Walter, 1925. Worldwide 34 *Litarachna* species and 24 *Pontarachna* species are known (Asadi *et al.* 2019, Chatterjee *et al.* 2019; Pešić *et al.* 2012, 2019, 2020; Montes-Ortiz *et al.* 2021). Most *Litarachna* species were described in the 21th century (Figure 1), the same applies to *Pontarachna* (Figure 2). A list of *Litarachna* and *Pontarachna* species can be found in the World Register of Marine Species (WORMS https://www.marinespecies.org/).

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Corresponding author
Vladimir Pešić:
vladopesic@gmail.com

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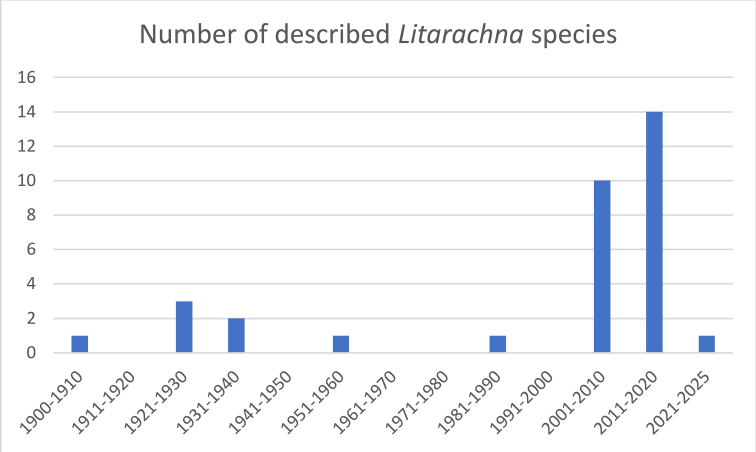

Figure 1 Number of *Litarachna* species described between 1900 and 2025.

This paper provides the first records of the genus *Litarachna* for New Zealand. One species is described as new for science, and one species is reported for the first time for New Zealand. Finally, we provide a worldwide key for the genus.

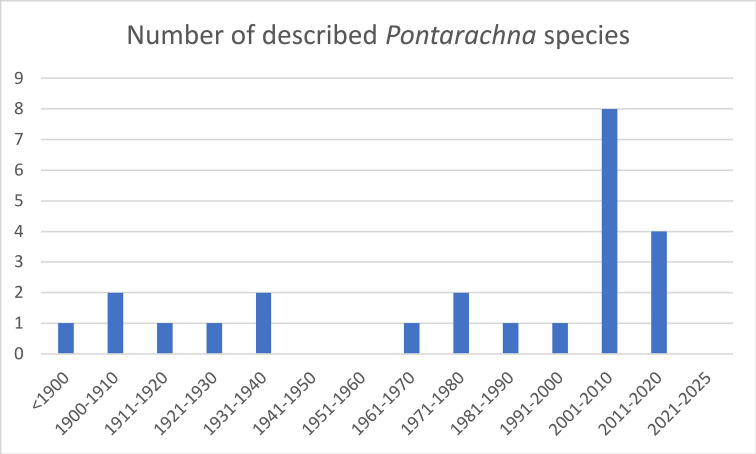

Figure 2 Number of *Pontarachna* species described between 1900 and 2025.

Material and methods

Material from the Clive River was collected by AP and HS, material from other locations was collected by AP. Material of the Clive River was fixed in ethanol 96% and Koenike-fluid, material from other locations in ethanol 96%.

The holotype is lodged the National Museum of New Zealand, Wellington (NMNZ), paratypes and non-type material in the New Zealand Arthropod Collection of Landcare Research (NZAC), Auckland and Naturalis Biodiversity Center, Leiden (RMNH).

Morphological nomenclature follows Wiles *et al.* (2002) and Pešić *et al.* (2019). The following abbreviations are used: Cx-I to -IV – first to forth coxae; Cxgl-4 – coxoglandulare 4 ("E4» according to Wiles *et al.* 2002); I-Leg-1 to -6 – first to sixth segments of first leg; n

– number of specimens examined; P1 to P5 – palp segments 1 to 5; V1 to V3 – first to third ventral setae *sensu* Wiles *et al.* (2002); V3 gland – ventral glandularium *sensu* Wiles *et al.* (2002); W1 to W3 – first to third wheel-like acetabula. All measurements are given in µm.

Systematics

Family Pontarachnidae Koenike, 1910

Genus *Litarachna* Walter, 1925

Litarachna amnicola Cook, 1986

Figures 3–4

Material examined — **North Island**. 2/3/0, Clive River at Clive Bridge, Clive, about 1700 m upstream from the sea, floating freshwater macrophytes, 39°34.879″S 176°55.011″E, 20 Feb. 2025, leg. H. Smit (NZAC); 3/13/0, Estuary Clive River, Clive, close to the sea, in a lagoon dammed from the sea by a sandspit, 39°34.422″S 176°55.504″E, 19 Feb. 2025, leg. H.

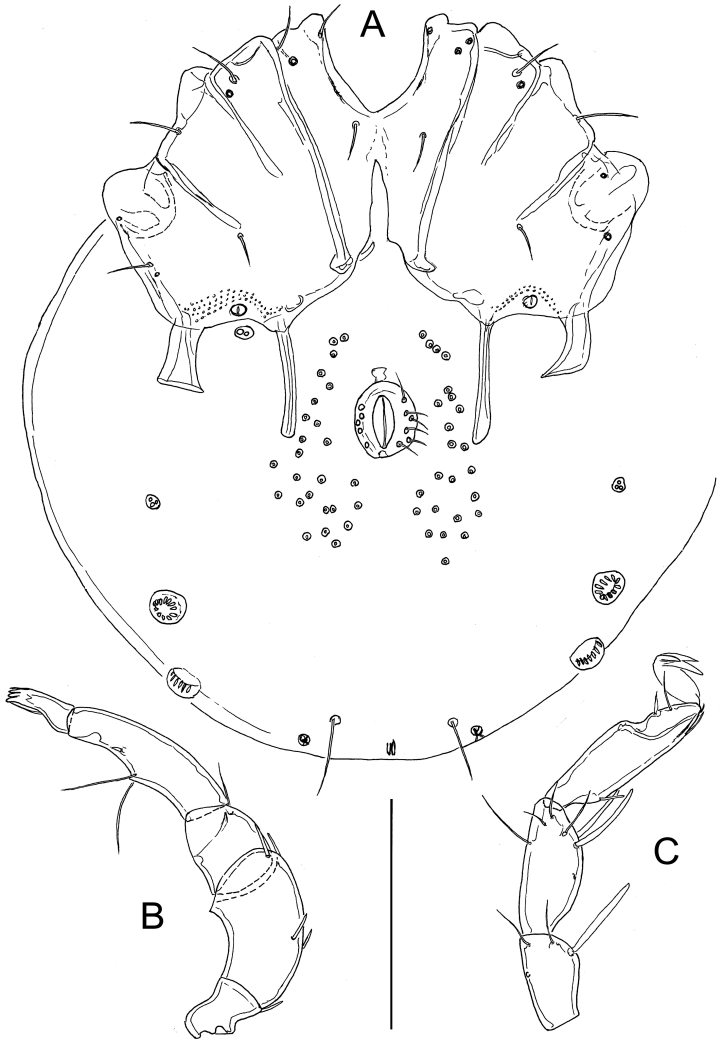

Figure 3 *Litarachna amnicola* Cook, 1986, ♂, Estuary Clive River, New Zealand: A–idiosoma, ventral view; B–palp; C–I-leg-4-6. Scale bar = 100 µm.

Smit, one male and one female dissected and slide mounted (RMNH).

Remarks — Initially, the species was described from the interstital in a river several kilometers from the sea in Tasmania, Australia (Cook 1986). Later on, Pesic & Smit (2009) reported the species from an estuary, also on Tasmania. The latter authors were not 100% sure about the identification. According to Cook (1986), the species has no swimming setae, but the specimens of Pesic and Smit did have swimming setae. Moreover, P2 has a small distoventral extension, not present in Cook's specimens. The specimens from New Zealand also have swimming setae. As the specimens from Pesic and Smit (2009) and from New Zealand match the description of *L. amnicola*, including V3 gland fused with Cx-IV, a rare character in *Litarachna*, we think that all these specimens are conspecific with *L. amnicola*. The swimming setae are rather fragile, and probably lost in Cook's two males.

We found one male from the Clive river estuary that differs by the increased number of setae in the sclerotized ring of the male genital field (5-6 compared to 4 setae in typical specimens of *L. amnicola*). Below we give a description of this specimen. A final decision on the taxonomic position of this specimen requires molecular analysis to assess the possibility that it is a new species within the *L. amnicola* complex.

Morphology — **Male** — Idiosoma 338 long and 270 wide. First coxal plates fused medially; suture line Cx-I/II complete, suture line Cx-II/III and Cx-III/IV incomplete; gnathosomal bay 43 long; coxal field 137 long and 230 wide. Lateral apodemes of Cx-IV shorter than medial apodemes, the latter extending beyond anterior margin of genital field (Figure 3A). Genital field consisting of a sclerotized ring, 33 long and 27 wide, with five to six pairs of setae, about 25 pairs of perigenital setae free in integument around the sclerotized ring. A pair of small

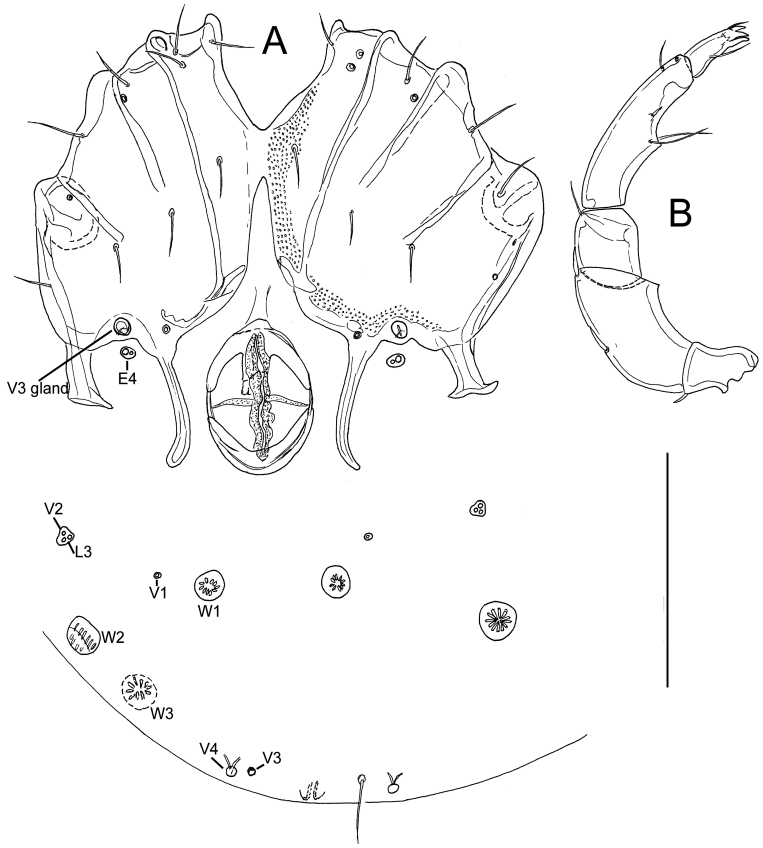

Figure 4 *Litarachna amnicola* Cook, 1986, ♀, Estuary Clive River, New Zealand: A–idiosoma, ventral view; B–palp. Scale bar = 100 µm. Terminology after Wiles *et al.* (2002).

platelets with Cxgl-4 (E4 according to Wiles *et al.* 2002) and associated setae placed between the posterior lateral and medial apodemes of Cx-IV; the large glandularia-like structure (V3 gland according to Wiles *et al.* 2002) fused with Cx-IV. Posterior to the genital field a pair of platelets with three pores and two pairs of large wheel-like acetabula, with many radiating spokes. Excretory pore unsclerotized, near the posterior idiosoma margin. Dorsal length/height of palp segments: P1, 16/16; P2, 69/34; P3, 29/30; P4, 77/23; P5, 28/13; dorsal length P5/P4 ratio 0.9; P2 with small ventrodistal peg-like projection; ventral margin of P4 with a strongly developed setal tubercle (Figure 3B). Dorsal lengths of I-Leg-3–6: 38, 44, 59, 77; dorsal lengths of IV-Leg: 44, 39, 56, 84, 98, 119. Number of swimming setae: II-Leg-5, 1; III-Leg-4, 1; III-Leg-5, 2; IV-Leg-4, 1; IV-Leg-5, 2.

In addition, we provide a description of a female collected together with above described male.

Female — Similar to male except in the shape of genital field (Figure 4A). Idiosoma 373 long and 297 wide. Gnathosomal bay 47 long; coxal field 142 long and 244 wide. Medial apodemes of Cx-IV extending to the posterior margin of genital field; genital field 66 long, pre- and post-genital sclerites bowed, pre-genital sclerite 45 wide, post-genital sclerite 46 wide. Dorsal length/height of palp segments: P1, 17/16; P2, 70/33; P3, 26/28; P4, 78/23; P5, 30/11. Chelicera 167 long. Dorsal lengths of I-Leg: 39, 36, 42, 42, 58, 75; dorsal lengths of IV-Leg: 59, 44, 56, 88, 100, 116. Swimming setae as in male.

Figure 5 Clive River at Clive Bridge, Clive, North Island. Photo by Harry Smit.

Litarachna quinqueseta Pešić & Smit n. sp.

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Figures 6–7

Material examined — Holotype, male, **North Island**, Tawharanui Peninsula, Tawharanui Regional Park, collected from intertidal rocky shore algae, 36°22′44.8″S 174°48′31″E, 6 Dec. 2022, leg. A. Pepato, dissected and slide mounted (NMNZ). Paratypes: 1/2/1, same data as the holotype, all slide mounted; 1/1/1, Tanogio, Tangoio beach, collected from intertidal rocky shore algae, 39°20′13″S 176°55′28″E, 9 Dec. 2022, leg. A. Pepato & P.B. Klimov, all slide mounted (RMNH).

Diagnosis — Sclerotized ring of male genital field with five setae; P5 distinctly shortened, dorsal length P5/P4 ratio 0.31-0.38; chelicera with a straight, pointed claw.

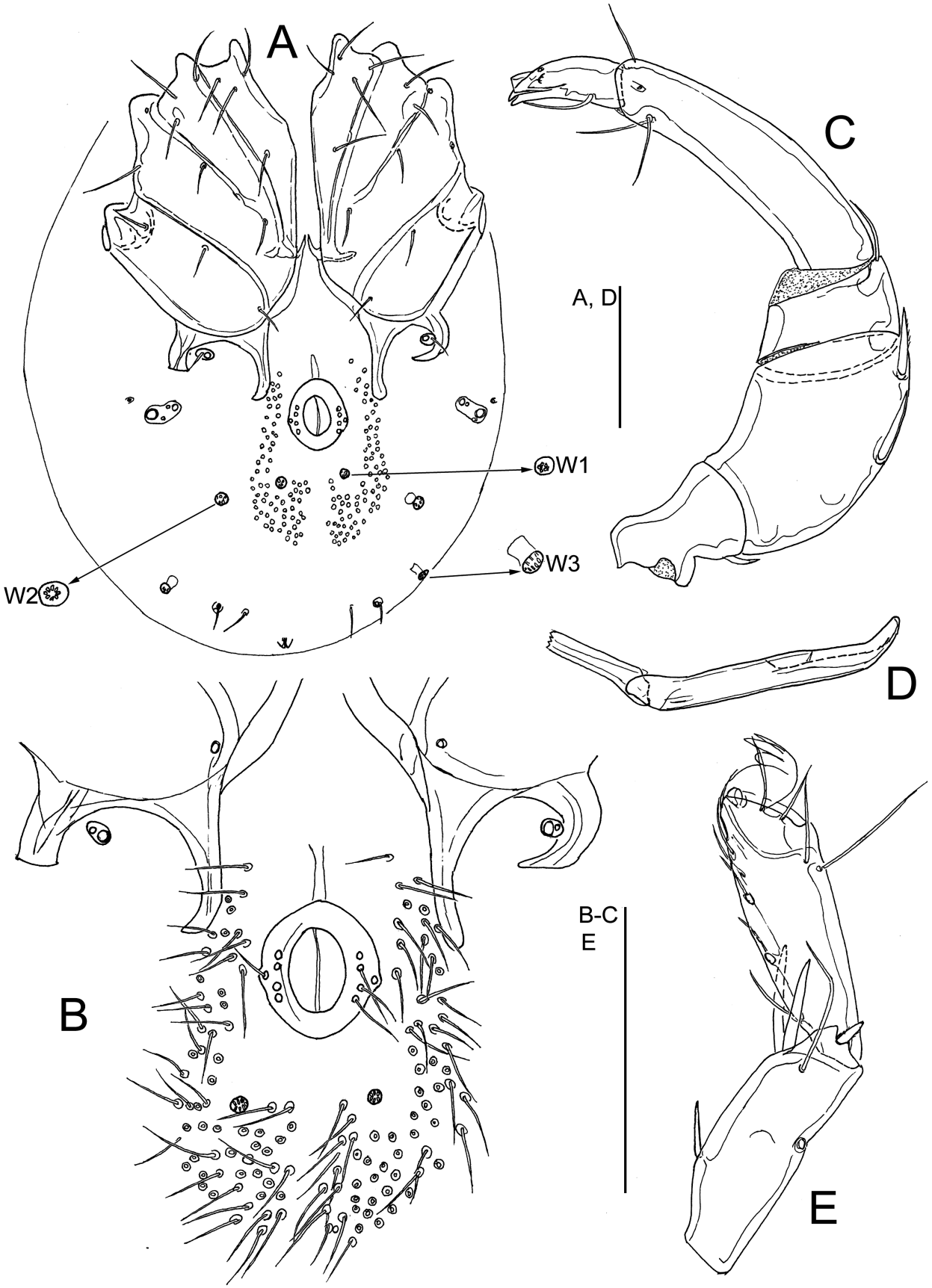

Figure 6 *Litarachna quinqueseta* **n. sp.**, ♂ holotype, Tawharanui, New Zealand: A–idiosoma, ventral view; B–genital field; C–palp; D–chelicera (anterior part of claw lacking); E–I-Leg-5 and -6. Scale bar = 100 µm. W1, W2 and W3 are "wheel-like acetabula".

Description — General features — Cx-I separated medially; suture lines Cx-I/II and Cx-III/IV complete, suture line Cx-II/III incomplete; posterior margin of Cx-IV with two pairs of apodemes of moderate length, the medial longer than the lateral ones; a pair of small platelets with Cxgl-4 and associated setae free in the integument between the posterior apodemes of Cx-IV; posterior to the genital field a pair of platelets with three pores and a glandularium-like structure, and three pairs of small wheel-like acetabula, with relatively few radiating spokes; excretory pore unsclerotized, near posterior end of idiosoma (Figures 6A, 7A). P4 slightly bowed, shorter than P2+3, ventral margin without a tubercle. Chelicera with a straight, pointed claw. Number of swimming setae: I-Leg-5, 1 (short; as illustrated in Figure 6E) II-Leg-5, 1; III-Leg-4, 1; III-Leg-5, 1; IV-Leg-4, 1; IV-Leg-5, 2. Male: Medial apodemes of Cx-IV extending beyond the anterior margin of genital field, genital field consisting of a sclerotized ring with five pairs of setae, one seta more laterally than the four other setae; many perigenital setae (60-70 pairs) free in the integument around the genital field (Figure 6B). Female: Medial apodemes of Cx-IV extending to the posterior margin of genital field, pre- and post-genital sclerites bowed (Figure 7A).

Measurements — **Male (holotype)** — Idiosoma 434 long and 331 wide; coxal field 211 long and 263 wide; sclerotized ring of genital field 48 long and 42 wide. Dorsal length/height of palp segments: P1, 25/22; P2, 94/54; P3, 33/47; P4, 109/27; P5, 41/17; dorsal length P5/P4 ratio 0.38. Chelicera 295 long, basal segment 194 long; gnathosoma 134 long.

Dorsal lengths of I-Leg: 47, 39, 55, 63, 89, 108; dorsal lengths of IV-Leg-2-6: 58, 64, 100, 122, 128.

Female (n = 1) — Idiosoma 533 long and 403 wide; coxal field 242 long and 323 wide; genital field 79 long, pre-genital sclerite 61 wide, post-genital sclerite 56 wide. Dorsal length/height of palp segments: P1, 25/25; P2, 117/66; P3, 42/56; P4, 142/31; P5, 44/19; dorsal length P5/P4 ratio 0.31. Chelicera 336 long, claw 147 long; gnathosoma 163 long.

Dorsal lengths of I-Leg-2-6: 50, 70, 72, 98, 113; dorsal lengths of IV-Leg-3-6: 77, 116, 141, 147.

Deutonymph — As in adults but lacking a genital field. Idiosoma 291 long and 225 wide. Coxal field 127 long and 184 wide. Gnathosoma 94 long; chelicera 181 long; palp as in adults.

Etymology — The specific epithet is derived from the Latin *quinque* (five) and setae, referring tothe presence of five setae on the sclerotized ring of male genital field.

Remarks — In regard to the shape of the genital field (in male a patch with perigenital setae distinctly longer than wide, not widened posteriorly) and palp (P4 being much shorter than P2+3 but distinctly longer than P2, P5 shorter than half of P4, not stylet-like), the new species from New Zealand resembles *L. thetis* Pešić & Smit, 2016. The latter species was originally, established by Pešić & Smit (2016) as a new name for populations from the Sea of Japan (Uchida, 1935) and from South Korea, which were originally assigned by Pešić *et al.* (2008) to *L. denhami*. Recently, *L. thetis* was reported from Hainan Island, China (Li *et al.*, 2025).

The new species can be separated from *L. thetis* in having five pairs (four on a medial row and one lateral of this row) of setae in sclerotized ring of male genital field (four pairs of setae in *L. thetis*) and P5 distinctly shortened, dorsal length P5/P4 ratio 0.31-0.38 (in *L. thetis* and P5 nearly half as long as P4). Moreover, *Litarachna quinqueseta* **n. sp**. is unique and can be separated from all other species of the genus by the shape of chelicera with a straight pointed claw.

Discussion

So far, water mites of the marine family Pontarachnidae have not been recorded from New Zealand. In this study we report two pontarachnid species, one of them described as new to science. All specimens were collected on the North Island. The North Island possesses a warm temperate climate characterized by mild winters and subtropical summer conditions. In contrast, the South Island experiences a cold temperate climate with precipitation distributed

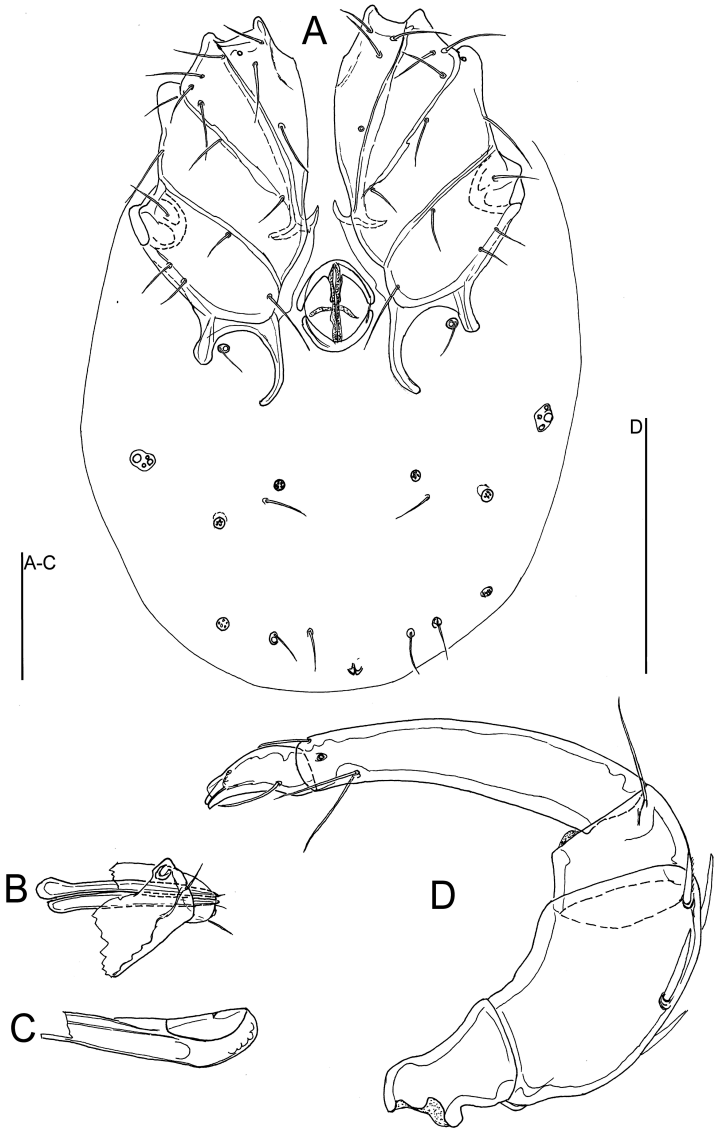

Figure 7 *Litarachna quinqueseta* **n. sp.**, ♀ holotype, Tawharanui, New Zealand: A–idiosoma, ventral view; B–gnathosoma (posterior part damaged) with cheliceral claws; C–chelicera, basal segment (slightly damaged); D–palp. Scale bar = 100 µm.

relatively evenly throughout the year, though rainfall typically reaches its annual minimum during the winter (Willis *et al.* 2007).

Most of the 54 known species of pontarachnid mites are found in subtropical and tropical regions, much fewer species are known from cold temperate zones (e.g., Northwest Pacific) (see Pešić *et al.* 2012 for discussion). Large parts of the world, e.g. major parts of the temperate and tropical Atlantic Ocean, still have no reported data on pontarachnid mites, indicating the need for a more extensive sampling campaign to gain a clearer insight into the diversity and distribution of this globally neglected group of marine meiofauna.

Key to the *Litarachna* species of the world

Gonopore surrounded by a sclerotized ring bearing a few pairs of setae, few to many perigenital setae free in the surrounding integument . . . . . Males
Genital field with well-developed pre-and postgenital sclerites . . . . . Females

Key to the males

Males are unknown for *Litarachna enigmatica* Pešić, Durucan & Chatterjee, 2018, *L. gracilis* Pešić, 2013, *L. haleioides* Smit, 2016, *L. minuta* Pešić, Chatterjee & Marshall, 2013, *L. sabangensis* K.O. Viets, 1984 and *L. triangularis* Smit, 2009.

1. P2 without a ventral extension 2
— P2 with a ventral extension 19

2(1) P4 with ventral setal tubercles 3
— P4 without ventral setal tubercles 15

P2 without a ventral extension, P4 with setal tubercles

3(2) Sclerotized ring of genital field with two pairs of setae . . . . . *Litarachna guadeloupensis* Pešić, Chatterjee & Schizas, 2020 (Caribbean Sea, Guadeloupe)
— Sclerotized ring of genital field with more than two pairs of setae 4

4(3) Ocular pigment absent; sclerotized ring with three pairs of setae . . . . . *Litarachna lukai* Pešić, 2013 (Yellow Sea, South Korea)
— Ocular pigment present; sclerotized ring with four pairs of setae 5

5(4) Cx-I fused medially 6
— Cx-I separated medially 11

6(5) Genital field with more than 15 pairs of perigenital setae 7
— Genital field with 2-5 pairs of perigenital setae 8

7(6) Genital field with about 20 pairs of perigenital setae, V3 gland fused with Cx-IV . . . . . *Litarachna amnicola* Cook, 1986 (Tasmania, New Zealand)
— Genital field with about 50 pairs of perigenital setae, V3 gland not fused with Cx-IV . . . . . *Litarachna caribica* Pešić, Chatterjee & Schizas, 2008 (Caribbean Sea, Netherlands Antilles; Pacific Ocean, Panama)

8(6) Genital field with five pairs of perigenital setae, P4 near setal tubercles a peg-like seta . . . . . *Litarachna lopezae* Pešić, Chatterjee, Alfaro & Schizas, 2014 (Caribbean Sea, Puerto Rico)
— Genital field with 2-3 pairs of perigenital setae, P4 without peg-like seta 9

9(8) Genital field with three pairs of perigenital setae, V3 gland on one platelet with Cxgl-4 . . . . . *Litarachna degiustii* Cook, 1958 (Caribbean Sea, Bahamas, Curaçao)
— Genital field with 2-3 pairs of perigenital setae, V3 gland and Cxgl-4 separated 10

10(9) Wheel-like acetabula very large (maximum diameter > 15 µm), genital field wider than long . . . . . *Litarachna indica* Pešić, Chatterjee & Ingole, 2012 (Arabian Sea, India)
— Wheel-like acetabula smaller, genital field longer than wide . . . . . *Litarachna brasiliensis* Smit, 2007 (Brazil)

11(5) Medial posterior apodemes of Cx-IV a hammer-shaped, genital field with four pairs of perigenital setae . . . . *Litarachna marshalli* Wiles, Chatterjee & De Troch, 2002 (South Africa)
— Medial posterior apodemes of Cx-IV regular, not a hammer-shaped, genital field with more than four pairs of perigenital setae 12

12(11) Cxgl-4 on the same platelet with V3 gland . . . . . *Litarachna duboscqi* Walter, 1925 (Mediterranean Sea, Black Sea)
— Cxgl-4 separated from V3 gland 13

13(12) V3 gland and Cxgl-4 between posterior apodemes of Cx-IV, genital field with about ten pairs of perigenital setae 14
— V3 gland and Cxgl-4 not between posterior apodemes of Cx-IV, posteriorly to posterolateral apodeme of Cx-IV, genital field with about 25-35 pairs of perigenital setae . . . . . *Litarachna sagamiensis* Moto & Abé, 2013 (Japan)

14(13) Medial apodemes of Cx-IV short, not reaching anterior margin of genital field . . . . . *Litarachna antalyaensis* Pešić, Durucan & Chatterjee, 2018 (Mediterranean Sea, Türkiye)
— Medial apodemes of Cx-IV longer, extending beyond the anterior margin of genital field . . . . . *Litarachna hongkongensis* Smit, 2002 (South China Sea, China)

P2 without a ventral extension, P4 without setal tubercles

15(2) Chelicera with a straight, pointed claw . . . *Litarachna quinqueseta* **n. sp**. (New Zealand)
— Chelicera with a curved claw 16

16(15) Sclerotized ring with two pairs of setae, medial apodemes of Cx-IV very short . . . . . *Litarachna muratsezgini* Pešić, Durucan & Zawal, 2019 (Mediterranean Sea, Türkiye)
— Sclerotized ring with four pairs of setae, medial apodemes of Cx-IV much longer 17

17(16) P3 dorsally longer than high, P4 much shorter than P2+3, but noticeably longer than P2, P5 very slender, stylet-like, about four times long as the distal height of P4 . . . . . *Litarachna denhami* (Lohmann, 1909) (Western Australia, South Africa, India, Egypt, New Guinea)
— P3 proximally as high as long or higher, P4 shorter than P2+3 but a little longer than P2, P5 less slender, about twice as long as the distal height of P4 18

18(17) P5 shorter than ½ of P4, P4 ventral setae not at the same level, patch of perigenital setae longer than wide, posteriorly not widened . . . . . *Litarachna thetis* Pešić & Smit, 2016 (South Korea, Japan, China)
— P5 longer than ½ of P4, P4 ventral setae at the same level, patch of perigenital setae wide as long, posteriorly widened . . . . . *Litarachna communis* Walter, 1925 (Mediterranean Sea, Black Sea)

P2 with a ventral extension

19(1) P4 without ventral setal tubercles 20
— P4 with ventral setal tubercles 24

P2 with a ventral extension, P4 without setal tubercles

20(19) Genital field with two pairs of perigenital setae, P4 with a minute denticle-like extension near ventral setae . . . . . *Litarachna kamui* Uchida, 1935 (Japan)
— Genital field with many perigenital setae, P4 without a minute denticle-like extension near ventral setae 21

21(20) Genital field lying posterior to apodemes of Cx-IV, patch of perigenital setae extending almost to posterior idiosoma margin . . . . . *Litarachna muelleri* Smit, 2008 (Malaysia)
— Genital field lying between apodemes of Cx-IV, patch of perigenital setae not extending far beyond genital field 22

22(21) Medial apodemes of Cx-IV long, extending beyond posterior margin of genital field, palp long (P2 170, P4 162) ..... *Litarachna halei* (Womersley, 1937) (Western and southern Australia)
— Medial apodemes of Cx-IV shorter, extending not or just beyond posterior margin of genital field, palp shorter (P2 < 70, P4 < 90) 23

23(22) Sclerotized ring with 2–3 setae on each side ..... *Litarachna bruneiensis* Pešić, Chatterjee, Marshall & Pavićević, 2011 (Brunei Darussalam)
— Sclerotized ring with four pairs of setae on each side ..... *Litarachna belicensis* Montes-Ortiz, Goldschmidt, Vásquez-Yeomans & Elías-Gutiérrez, 2021 (Carribean Sea, Belize)

P2 with a ventral extension, P4 with setal tubercles

24(19) P4 without a peg-like setae near setal tubercles 25
— P4 with a peg-like seta near setal tubercles 26

25(24) Medial apodemes of Cx-IV very long, much longer than lateral apodemes; V3 gland and Cxgl -4 between posterior apodemes of Cx-IV ..... *Litarachna cawthorni* Wiles, Chatterjee & De Troch, 2002 (Kenya)
— Medial apodemes of Cx-IV little longer than lateral apodemes; V3 gland and Cxgl-4 not between posterior apodemes of Cx-IV ..... *Litarachna curtipalpis* Smit, 2003 (Western Australia, Singapore, China)

26(24) V3 gland fused with Cx-IV 27
— V3 gland not fused with Cx-IV ..... *Litarachna smiti* Pešić, Chatterjee & Ahmed Abada, 2008 (Red Sea, Saudi Arabia)

27(26) Medial apodemes of Cx-IV longer, extending to the posterior margin of genital field ..... *Litarachna bartschae* Smit, 2003 (Western Australia, Brunei Darussalam, Singapore)
— Medial apodemes of Cx-IV short, reaching anterior margin of genital field ..... *Litarachna madagascariensis* Pešić, 2013 (Madagascar)

Key to the females

Females are unknown of the following species: *Litarachna guadeloupensis*.

1 Postgenital sclerite with a pair of wheel-like acetabula ..... *Litarachna enigmatica* Pešić, Durucan & Chatterjee, 2018 (Mediterranean Sea, Türkiye)
— Postgenital sclerite without a pair of wheel-like acetabula 2

2(1) P2 without a ventral extension 3
— P2 with a ventral extension 20

3(2) P4 with ventral setal tubercles 4
— P4 without ventral setal tubercles 16

P2 without ventral extension, P4 with setal tubercles

4(3) Cx-I medially fused 5
—Cx-I medially separated 11

5(4) V3 gland fused with Cxgl-4, medial apodemes of Cx-IV extending to posterior margin of genital field ..... *Litarachna degiustii*

—V3 gland separated from Cxgl-4, medial apodemes of Cx-IV shorter, extending not or only slightly beyond posterior margin of genital field 6

6(7) V3 gland fused with Cx-IV 7
— V3 gland not fused with Cx-IV 9

7(6) Lateral apodemes of Cx-IV indistinct, Cxgl-4 fused with Cx-IV . . . . . *Litarachna minuta* Pešić, Chatterjee & Marshall, 2013 (Brunei Darussalam)
— Lateral apodemes of Cx-IV distinct, Cxgl-4 not fused with Cx-IV 8

8(7) P4 near setal tubercles a peg-like seta . . . . . *Litarachna lopezae*
— P4 without peg-like seta . . . . . *Litarachna amnicola*

9(6) Anterior pregenital sclerite arrow-shaped . . . . . *Litarachna brasiliensis*
— Anterior pregenital sclerite more rounded 10

10(9) Wheel-like acetabula very large . . . . . *Litarachna indica*
— Wheel-like acetabula smaller . . . . . *Litarachna caribica*

11(4) V3 gland and Cxgl-4 fused . . . . . *Litarachna duboscqi*
— V3 gland and Cxgl-4 separated 12

12(11) Medial apodemes long, extending well beyond posterior margin of genital field 13
— Medial apodemes short, extending not or only slightly beyond posterior margin of genital field 14

13(12) V3 gland and Cxgl-4 between posterior apodemes of Cx-IV . . . . . *Litarachna hongkongensis*
— V3 gland and Cxgl-4 not between posterior apodemes of Cx-IV, located posteriorly to posterolateral apodeme of Cx-IV . . . . . *Litarachna sagamiensis*

14(12) Anterior and posterior genital sclerite touching . . . . . *Litarachna marshalli*
— Anterior and posterior genital sclerites not touching 15

15(14) Ocular pigment absent; medial and lateral apodemes of Cx-IV or equal length . . . . . *Litarachna lukai*
— Ocular pigment present; medial apodemes of Cx-IV longer than lateral apodemes . . . . . *Litarachna antalyaensis*

P2 without ventral extension, P4 without setal tubercles

16(3) Chelicera with a straight, pointed claw . . . . . *Litarachna quinqueseta* **n. sp.**
— Chelicera with a curved claw 17

17(16) Medial apodemes of Cx-IV broad, shorter than the lateral ones . . . . . *Litarachna muratsezgini*
— Medial apodemes of Cx-IV longer than the lateral ones 17

18(17) P3 dorsally longer than high, P4 much shorter than P2+3, but noticeably longer than P2, P5 very slender, stylet-like, about four times long as the distal height of P-4 . . . . . *Litarachna denhami*
— P3 proximally as high as long or higher, P4 shorter than P2+3 but a little longer than P2, P5 less slender, about twice as long as the distal height of P4 19

19(18) P5 shorter than ½ of P4, P4 ventral setae not at the same level ..... *Litarachna thetis*
— P5 longer than ½ of P4, P4 ventral setae at the same level..... *Litarachna communis*

P2 with a ventral extension

20(2) Ocular pigment absent; genital field very long, P4 with a small ventral peg-like seta ....
..... *Litarachna gracilis* Pešić, 2013 (Yellow Sea, South Korea)
— Ocular pigment present; genital field not very long, but if long, P4 without a peg-like seta .
.....21

21(20) P4 without seta tubercles 22
— P4 with setal tubercles 28

P2 with a ventral extension, P4 without seta tubercles

22(21) Genital sclerites forming a complete ring 23
— Genital sclerites not forming a complete ring.....27

23(22) Medial apodemes of Cx-IV long, more than three times as long as lateral apodeme ....
.....*Litarachna halei*
— Medial apodeme less long, less than two times as long as lateral apodeme.....24

24(23) Medial and lateral apodeme of Cx-IV of same length.....*Litarachna muelleri*
— Medial apodeme of Cx-IV distinctly longer than lateral apodeme 25

25(24) Most anterior pair of wheel-like acetabula (W1) lying close to medial apodeme of Cx-IV and distanced from each other .....*Litarachna bruneiensis*
— Most anterior pair of wheel-like acetabula lying distanced from medial apodeme of Cx-IV and lying much closer to each other 26

26(25) Ventral extension of P2 relatively small ..... *Litarachna belicensis*
— Ventral extension of P2 relatively large .... *Litarachna triangularis* Smit, 2009 (Singapore)

27(22) Genital field very long (2.5 times long as wide), P4 with a minute denticle-like extension near ventral setae ..... *Litarachna kamui*
— Genital field short, P4 without a minute denticle-like extension near ventral setae .....
.....*Litarachna haleioides* Smit, 2016 (Eastern Australia)

P2 with a ventral extension, P4 with setal tubercles

28(21) P4 with a peg-like seta near setal tubercles 29
— P4 without a peg-like seta near setal tubercles 31

29(28) V3 gland fused with Cx-IV 30
— V3 gland not fused with Cx-IV ..... *Litarachna smiti*

30(29) Anterior and posterior genital sclerite distanced, medial apodemes of Cx-IV long, extending well beyond posterior margin of genital field.....*Litarachna bartschae*
— Anterior and posterior genital sclerite less distanced, medial apodemes of Cx-IV less long, just extending beyond posterior margin of genital field .....
.....*Litarachna madagascariensis* Pešić, 2013 (Madagascar)

31(28) Suture lines of Cx-III/IV complete.....*Litarachna cawthorni*
— Suture lines of Cx-III/IV incomplete 32

32(31) Pregenital sclerite broad, ventral extension of P2 short, triangular . . . . . *Litarachna curtipalpis*
— Pregenital sclerite narrow, sickle-shaped, ventral extension of P2 longer, more slender . . . . . *Litarachna sabangensis* K.O. Viets, 1984 (Philippines)

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ORCID

Vladimir Pešić https://orcid.org/0000-0002-9724-345X
Dante Batista-Ribeiro https://orcid.org/0000-0002-7503-0488
Almir R. Pepato https://orcid.org/0000-0002-2944-4209
Harry Smit https://orcid.org/0000-0002-0376-6808

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