

First record of the genus *Tanytydeus* (Acari: Paratydeidae) from South America with description of a new species from the Patagonian forests of Argentina

Marcelo E. Kun  ^a

^a Laboratorio de Zoología, Centro Regional Universitario Bariloche, Universidad Nacional del Comahue, 8400 San Carlos de Bariloche, Provincia de Río Negro, Argentina.

Original research

ABSTRACT

All active stages of *Tanytydeus nothofagi* n. sp. are described from northwestern Patagonian forests in Argentina where it was collected on bare tree bark of *Nothofagus dombeyi*. The genus *Tanytydeus* is recorded from South America for the first time.

Keywords corticolous mites; morphology; *Nothofagus*; systematics; Trombidiformes

Zoobank <http://zoobank.org/09DBD3CE-867E-49BF-8EF4-A11A30598340>

Introduction

The Paratydeidae comprises three genera, *Scolotydaeus* Berlese 1910, *Tanytydeus* Theron *et al.* 1969 and *Neotydeus* Baker 1950, and 20 extant and 2 fossil species, distributed worldwide (Klimov *et al.* 2020). Previous reports of paratydeid mites indicate this group lives in edaphic and arboreal habitats such as litter, moss, rotten wood and under tree bark, but also taking shelter in bird nests (Theron *et al.* 1969; Price 1973; Delfinado & Baker 1974; Seeman & Walter 1999; Dönel *et al.* 2012) or termite nests (Khaustov *et al.* 2019). Species of Paratydeidae with eyes such as those belonging to *Scolotydaeus* apparently thrive on exposed habitats such as bark, moss, or litter while the blind genus *Tanytydeus* is generally found in soil excepting *T. lamington*.

The sickle-shaped chelicera of Paratydeidae could advocate for a predatory way of life, but some mites with a similar shape of chelicerae are suspected to be moss feeders such as the genus *Eustigmaeus* (Stigmaeidae) (Flechtmann 1985).

Only one species, *Scolotydaeus corticicola* Flechtmann, 1992, was previously reported from the Neotropical region (in Brazil). A recent revision of the family Paratydeidae included three new species: *Scolotydaeus uralensis*, *Tanytydeus cubanus* and *T. kethleyi* (Khaustov 2017). More recent work added *T. theroni* from South Africa (Khaustov *et al.* 2019) and two fossil Paratydeidae: *Scolotydaeus vlaskini* and *Tanytydeus pogrebnyaki* from amber of Ukraine (Klimov *et al.* 2020).

This study presents the description of a new species of *Tanytydeus* representing the first record of this genus in South America and the first record of the Paratydeidae from Argentina.

Materials and methods

Bark fragments were obtained from coihue trees, *Nothofagus dombeyi*, from Parque Municipal Llao Llao in three locations, (1) path to the Cerro Llao Llao, (2) path to Lago Escondido, (3)

Received 01 July 2022
Accepted 29 September 2022
Published 04 October 2022

Corresponding author
Marcelo E. Kun 
marcelo.kun@crub.uncoma.edu.ar

Academic editor
Auger, Philippe

<https://doi.org/10.24349/piy2-100q>
ISSN 0044-586X (print)
ISSN 2107-7207 (electronic)


Kun M. E.

Licensed under
Creative Commons CC-BY 4.0

OPEN  ACCESS

How to cite this article Kun M. E. (2022), First record of the genus *Tanytydeus* (Acari: Paratydeidae) from South America with description of a new species from the Patagonian forests of Argentina. *Acarologia* 62(4): 1084-1097.
<https://doi.org/10.24349/piy2-100q>

path to Puente Romano and from Parque Nacional Nahuel Huapi, Villa Los Coihues near the path to Cascada Los Duendes. Mites were extracted during ten days in Tullgren funnels, at 20 °C, cleared one day in Nesbitt's fluid, mounted in Hoyer's medium, dried, measured, identified and drawn with Olympus CH5-260 and Zeiss BX40 microscopes. The latter was equipped with a drawing tube and phase contrast (PH) and Differential Interference Contrast objectives and was used for detailed analysis and PH micrographs. Measurements were made with an ocular eyepiece provided with a grid and calibrated with a stage micrometer. Photos were made with a 12-megapixel Sony Camera model SS adapted to the microscope tube. Drawings were made with nanoCAD 5.0 with micrographs as a background. The notation applied to the body and leg setae follow that of Grandjean's system, overviewed by Kethley (1990) and Norton (1977), respectively, and the palpal setation follows Grandjean (1946).

Ventral idiosomal setal designation follows the epimeral setation of Grandjean (1934). All measurements are given in micrometers (μm). Legs were measured from the base of trochanters to the tip of the tarsi without considering the claws.

The female holotype and 4 paratypes (1 male, 1 tritonymph, 1 deutonymph, and 1 protonymph) are deposited in the Museo Nacional de La Plata and remaining paratypes in the Laboratorio de Zoología del Centro Regional Universitario Bariloche de la Universidad Nacional del Comahue.

Results

***Tanytydeus nothofagi* n. sp.**

Zoobank: FA829149-49AE-4839-AEC1-51DEF6314972

Figures 1–10

Description

Female — (Figs. 1–3)

Length of idiosoma 495 (495–525), width 111 (111–157). Body elongated, mauve to grayish purple, with violet pigmented granules sparsely distributed all over striated body (Fig. 1A). Gnathosoma (Fig. 3B) with palptarsus with three eupathidia (*sul*, *ul'* and *ul''*). Subcapitular setae *n* 10 (9–11), slightly longer than *m* 8 (6–8), and *m* longer than *or*_{1–2} 6 (5–6). Triangular ventral lip (labium) present between lateral lips of subcapitulum (Fig. 3C). Chelicerae pyriform and movable digit curved and blade-like with cheliceral setae 9 (9–12). Peritremes linear, widened laterally and hidden medially under anterior margin of prodorsum. Gnathosomal blunt ended setae *ep* 4 (3–4) and *epl* 4 (4–4).

Idiosomal dorsum (Fig. 2B). Prodorsum with linear crista-like shield and 3 pairs of setae: long simple trichobothria *sci*, located on shield margin and simple setae *ve* and *sce*, on striated cuticle, supracoxal peg-like setae, *ep* and *pl* on dorsal palpcoxae and coxae I. Prodorsum lacking eyes but with 1 pair of subcuticular eyespots (Fig. 1A) located between second legs and trichobothrial setae *sci* represented by subdermal dark violet pigmented granules, each granule rounded to elongated 2 to 5 microns diameter. Hysterosoma with 4 transverse dorsal furrows between setal rows C and D, D and E, E and F and H and PS; furrows between E and F and H and PS incomplete not reaching hysterosomal margin. Furrow between setal rows C–D divides hysterosoma into anterior and posterior hysterosomal regions, anterior margin of latter overlaps caudal margin of anterior hysterosomal region. All dorsal setae smooth, pointed. Cupules *im* situated anterolaterally to setae *e* near lateral margin, cupules *ip* situated posteriad setae *f1*, anteromedially to setae *f2*.

Idiosomal venter (Fig. 2A). Ventral setae smooth and pointed. With 4 pairs of aggenital setae and 5 pairs of genital setae, 3 pairs of genital acetabulae, each associated with a pair of acetabular setae *k1*, *k2* and *k3* (Fig. 2C). Cupules *ia* situated laterally to *3a*.

Cupules *ih* situated posterolaterally to setae *ag*₄ near lateral margin of body and anterior to setae *ps*₃. Anal region anteromedially with 1 pair of oval pits. Length of idiosomal setae: *ve* 8

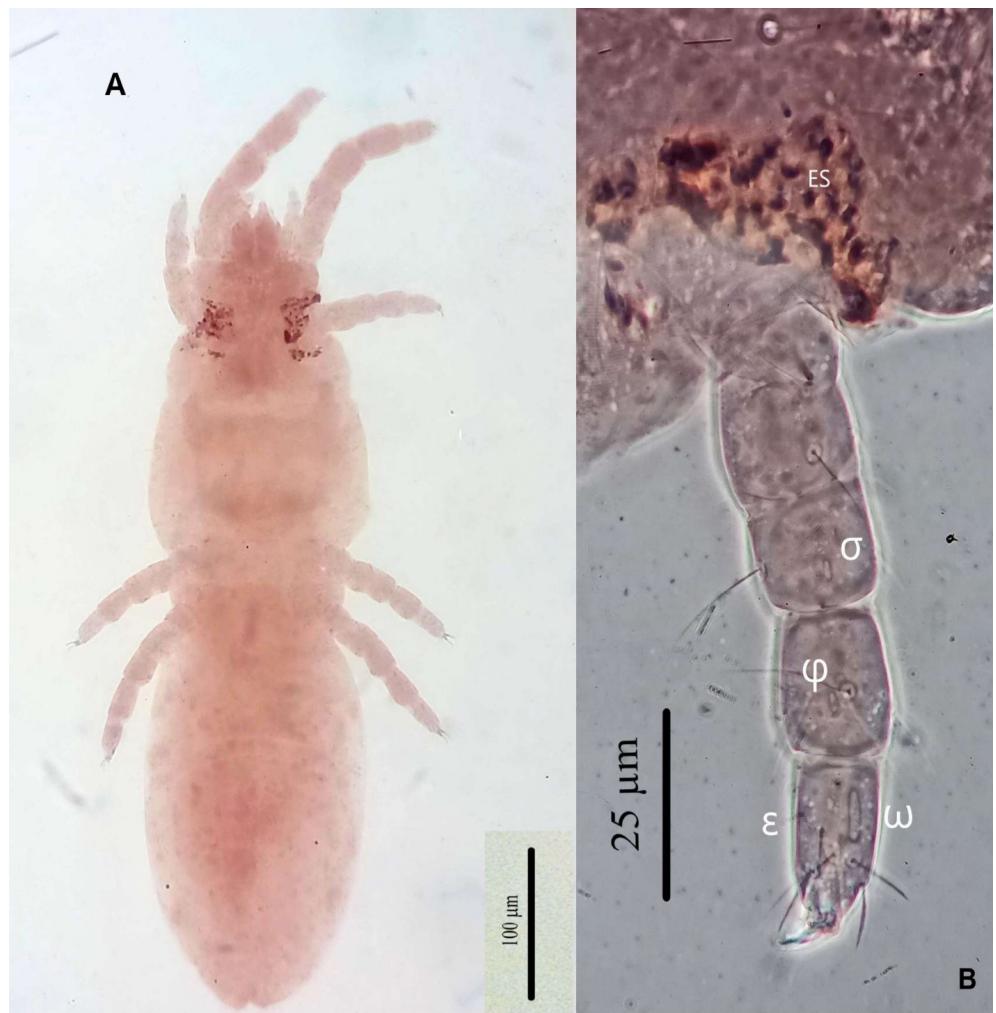


Figure 1 *Tanytydeus nothofagi* n.sp., female. A – micrograph of dorsum; B – Phase contrast micrograph of leg II (ES: eyespot, ω , ϕ , σ : solenidia and ε : spiniform famulus).

(8-13), sci 34 (34-38), sce 26 (22-29), c_1 16 (15-22), c_2 42 (47-53), d 21 (15-21), e 14 (13-14), f_1 16 (15-17), f_2 42 (30-42), h_1 23 (22-25), h_2 34 (33-44), ps_1 18 (18-23), ps_2 32 (21-32), ps_3 32 (28-33), ad_1 22 (21-23), ad_2 17 (17-24), ad_3 20 (16-22), $1a$ 23 (23-32), $1c$ 6 (6-11), $1b$ 15 (11-19), $1d$ 8 (7-12), $2c$ 7 (5-9), $2b$ 18 (17-21), $2a$ 27 (27-29), $3a$ 44 (37-45), $3c$ 11 (9-12), $3b$ 23 (21-24), $4a$ 20 (16-20), $4b$ 11 (10-13), ag_1 13 (13-17), ag_2 17 (14-17), ag_3 16 (12-18), ag_4 13 (13-21), g_1 6 (5-6), g_2 7 (6-8), g_3 7 (6-9), g_4 7 (5-7), g_5 5 (5-7).

Legs (Fig. 3A) Length of legs: leg I 139 (124-129), leg II 87 (87-97), leg III 97 (97-106), leg IV 104 (97-116). Solenidia sunken elongate-oval pits (Figs. 1B, 3A). Claws of legs I small and nearly one half as long as claws of legs II-IV. All empodia small, about five times shorter than tarsal claws.

Male — (Figs 4-6)

Length of idiosoma 505, width 149. Gnathosoma, prodorsum, and anal region as in female. Subcapitular setae n 8, slightly longer than m 8, and m longer than or 1-2, 4, cheliceral setae 10, all slightly shorter than in female (Fig. 6B). Gnathosomal blunt ended setae ep 3 and epl 3.

Idiosomal dorsum (Fig. 5B). Hysterosoma with transverse furrow between setal rows H and PS present. Dorsal setae pointed. Cupules im situated anterolaterally to setae e near lateral margin, cupules ip situated anteriad to setae $f1$ and $f2$. Setae $f2$ shorter than in female.

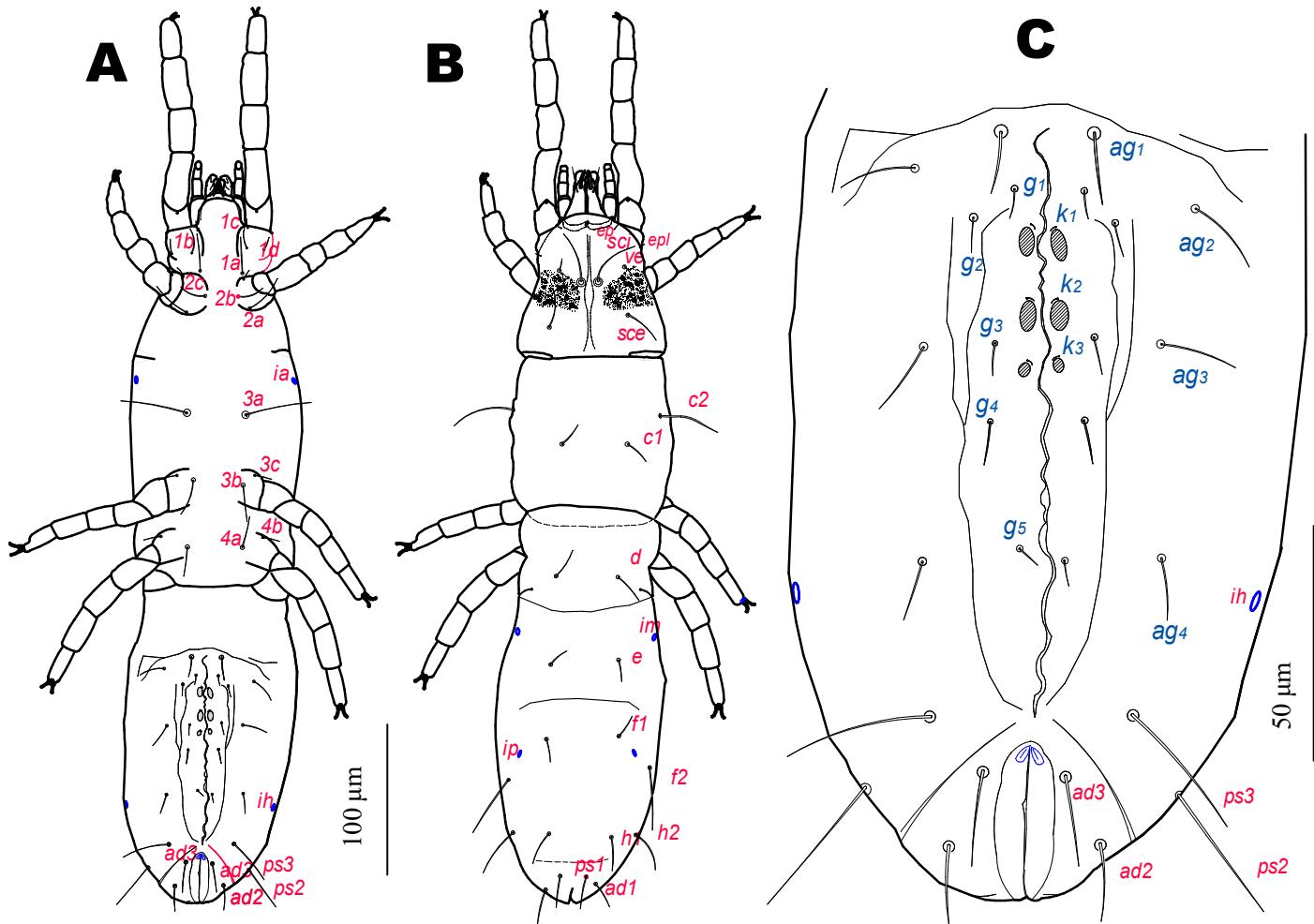


Figure 2 *Tanytydeus nothofagi* n.sp., female. A – venter; B – dorsum; C – genital region.

Idiosomal venter (Fig. 5A). Setae *ps2* shorter than in female. Genital area with 6 pairs of aggenital setae and 9 pairs of genital setae, 3 pairs of genital acetabulae with, near each, 1 pair of acetabular setae, *k1*, *k2* and *k3* (Fig. 5C) and 10 pairs of eugenital setae, *eu7* and *eu8* with alveoli coalescent (Fig. 6A).

Length of idiosomal setae: *ve10*, *sci* 36, *sce* 27, *c₁* 15, *c₂* 44, *d* 14, *e* 15, *f₁* 16, *f₂* 27, *h₁* 25,

Table 1 *Tanytydeus nothofagi* n.sp., female. Leg setation.

Leg	Tr	Fe	Ge	Ti	Ta
I	0	3/5	7 (1)	8 (1)	14 (2)
		<i>bv'',l₁',d₁,</i> (<i>v</i>),(<i>l</i>), <i>d</i>	(<i>l₁</i>),(<i>v</i>),(<i>l</i>), <i>d</i> , <i>σ</i>	(<i>l₁</i>), <i>d</i> ,(<i>v</i>), <i>k,l'ζ,l'',φ</i>	(<i>pv</i>),(<i>ftζ</i>),(<i>a</i>), <i>s,p,l''</i> ,(<i>pζ</i>),(<i>tcζ</i>),(<i>u</i>), <i>ω₁</i> , <i>ω₂</i>
II	1	3	2 (1)	4 (1)	6 (2)
	<i>v'</i>	<i>bv'',l',d</i>	<i>l',l'',σ</i>	<i>v'',v',d,l',φ</i>	<i>tc',tc'',p',p'',u',u'',E,ω</i>
III	1	3	2	3 (1)	5
	<i>v'</i>	<i>ev',v',d</i>	<i>v',d</i>	<i>v',v',d,φ</i>	<i>tc',tc'',p',u',u''</i>
IV	0	3	1	3	5
		<i>ev',v',d</i>	<i>v'</i>	<i>v',v'',d</i>	<i>tc',p',p'',u',u''</i>

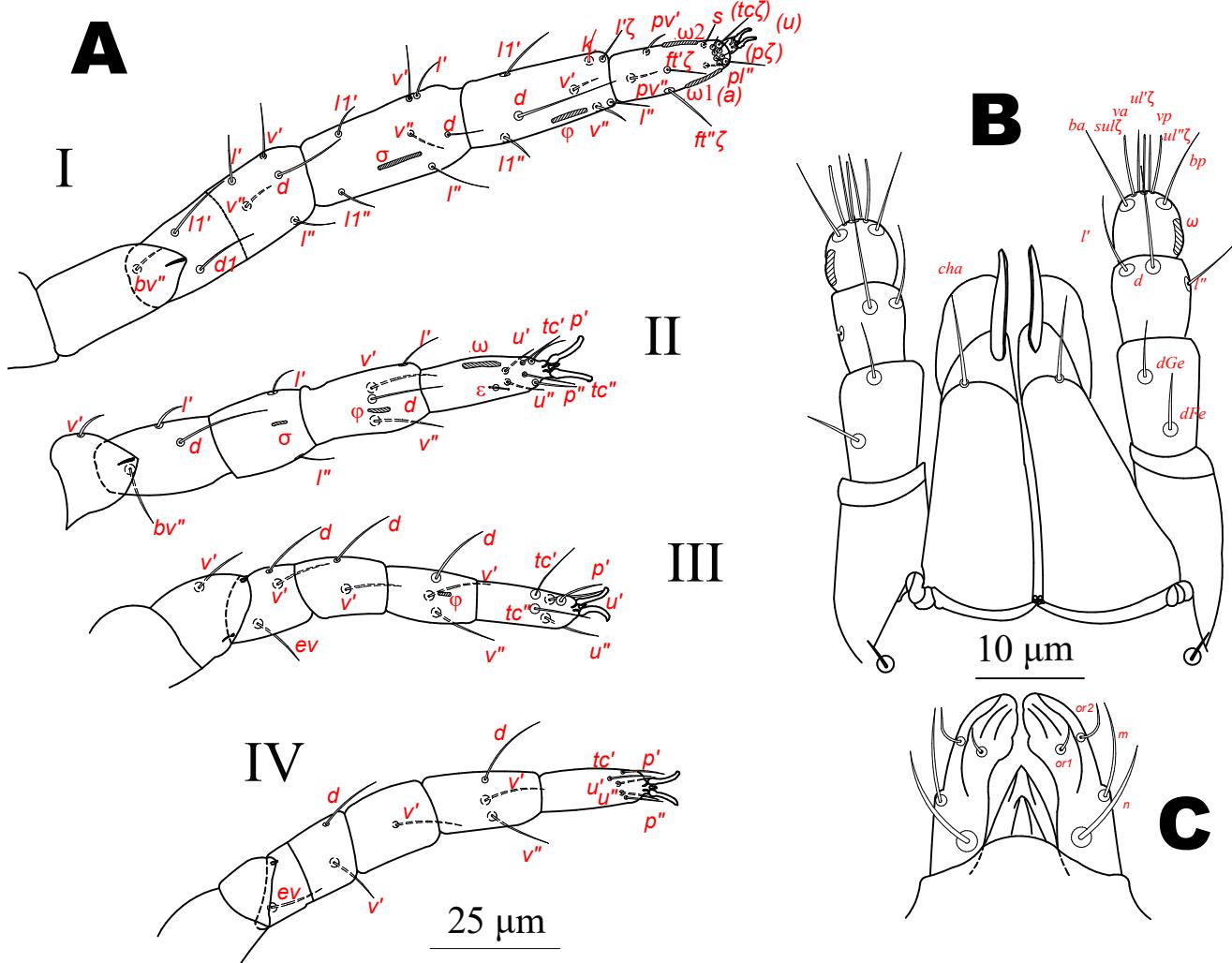


Figure 3 *Tanytydeus nothofagi* n.sp., female. A – legs; B – gnathosoma in dorsal view; C – subcapitulum.

h_2 32, ps_1 23, ps_2 21, ps_3 35, ad_1 19, ad_2 20, ad_3 17, $1a$ 30, $1c$ 5, $1b$ 16, $1d$ 9, $2c$ 7, $2b$ 21, $2a$ 31, $3a$ 42, $3c$ 12, $3b$ 26, $4a$ 15, $4b$ 18, ag_1 6, ag_2 8, ag_3 9, ag_4 10, ag_5 11, ag_6 15, g_1 5, g_2 6, g_3 8, g_4 5, g_5 4, g_6 6, g_7 7, g_8 4, g_9 5.

Legs (Length of legs: leg I 149, leg II 101, leg III 106, leg IV 116. Leg setation as in female (Table 1).

Larva — (Fig. 7)

Length of idiosoma 313, width 86. Body color and pigmentation as in female. Subcapitular setae n (3), m (4), and or_1 (3), or_2 absent. Cheliceral setae 7. Gnathosomal blunt ended setae $ep\ 2$ and $epl\ 2$.

Idiosomal dorsum. Prodorsum as in female. Hysterosoma with furrow between setal rows C and D present. Cupules *ia* situated anteriad to setae *c₂*.

Idiosomal venter. Claparède organs between coxae I and II. Genital area without setae only represented by a sinuate middle slit between two flanking parallel linear folds.

Length of idiosomal setae: ve 7, sci 29, sce 28, c_1 14, c_2 39, d 13, e 13, f_1 22, f_2 30, h_1 22, h_2 25, ps_1 9, ps_2 7, ps_3 6, la 24, lc 1, lb 3, $2a$ 17, $3a$ 35, $3b$ 19.

Legs (Fig. 8). Length of legs: leg I 120, leg II 75, leg III 73. Legs with empodium thinner, about one fifth longer than tarsal claws (Fig. 7C).

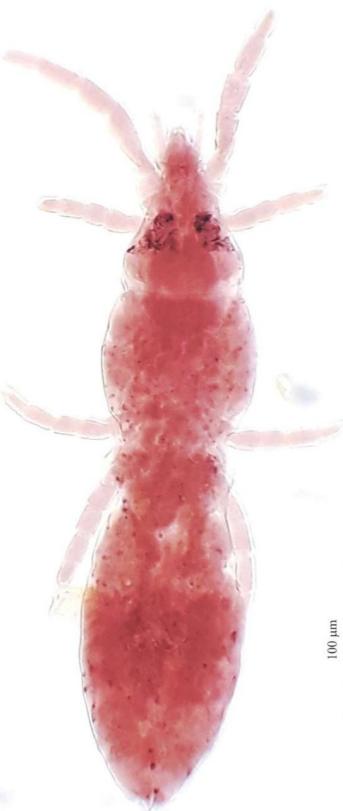


Figure 4 Micrograph of *Tanytydeus nothofagi* n. sp., male dorsal view.

Protonymph — (Fig. 8)

Length of idiosoma 404, width 114. Body color and pigmentation, gnathosoma and prodorsum as in female. Subcapitular setae n 8, m 7, and or_{1-2} 5, cheliceral setae 12. Gnathosomal blunt ended setae ep 3, epl 3.

Idiosomal dorsum (Fig. 8B). Hysterosoma with incomplete furrows not reaching hysterosomal margin between the E and F and F and PS setal rows present.

Idiosomal venter (Fig. 8A) Genital area with 1 pair of aggenital setae and 1 pair of genital acetabulae with near each a pair of acetabular setae k . Length of idiosomal setae: ve 13, sci 28, sce 21, c_1 13, c_2 40, d 12, e 11, f_1 17, f_2 31, h_1 20, h_2 26, ps_1 18, ps_2 11, ps_3 15, ad_1 4, ad_2 6, ad_3 6, la 24, lc 4, lb 12, ld 8, $2b$ 15, $2a$ 19, $3a$ 35, $3b$ 18, g_1 10.

Legs (Fig. 8C) Length of legs: leg I 121, leg II 82, leg III 94, leg IV 104. Claws of legs

Table 2 *Tanytydeus nothofagi* n.sp., larva. Leg setation.

Leg	Tr	Fe	Ge	Ti	Ta
I	0	6	6 (1)	8 (1)	12 (1)
		bv'' , d_1 , v' , (l) , d	l_1' , (v) , (l) , d , σ	$(l_1), d$, (v) , k , (l) , φ	(pv) , (ft) , s , p , l'' , (p) , (tc) , (u) , ω
II	0	3	2 (1)	4 (1)	5 (2)
		bv'' , l' , d	(l) , σ	(v) , d , l' , φ	(tc) , p' , (u) , E , ω
III	0	3	2	3 (1)	4
		ev' , v' , d	v' , d	(v) , d , φ	(tc) , (u)

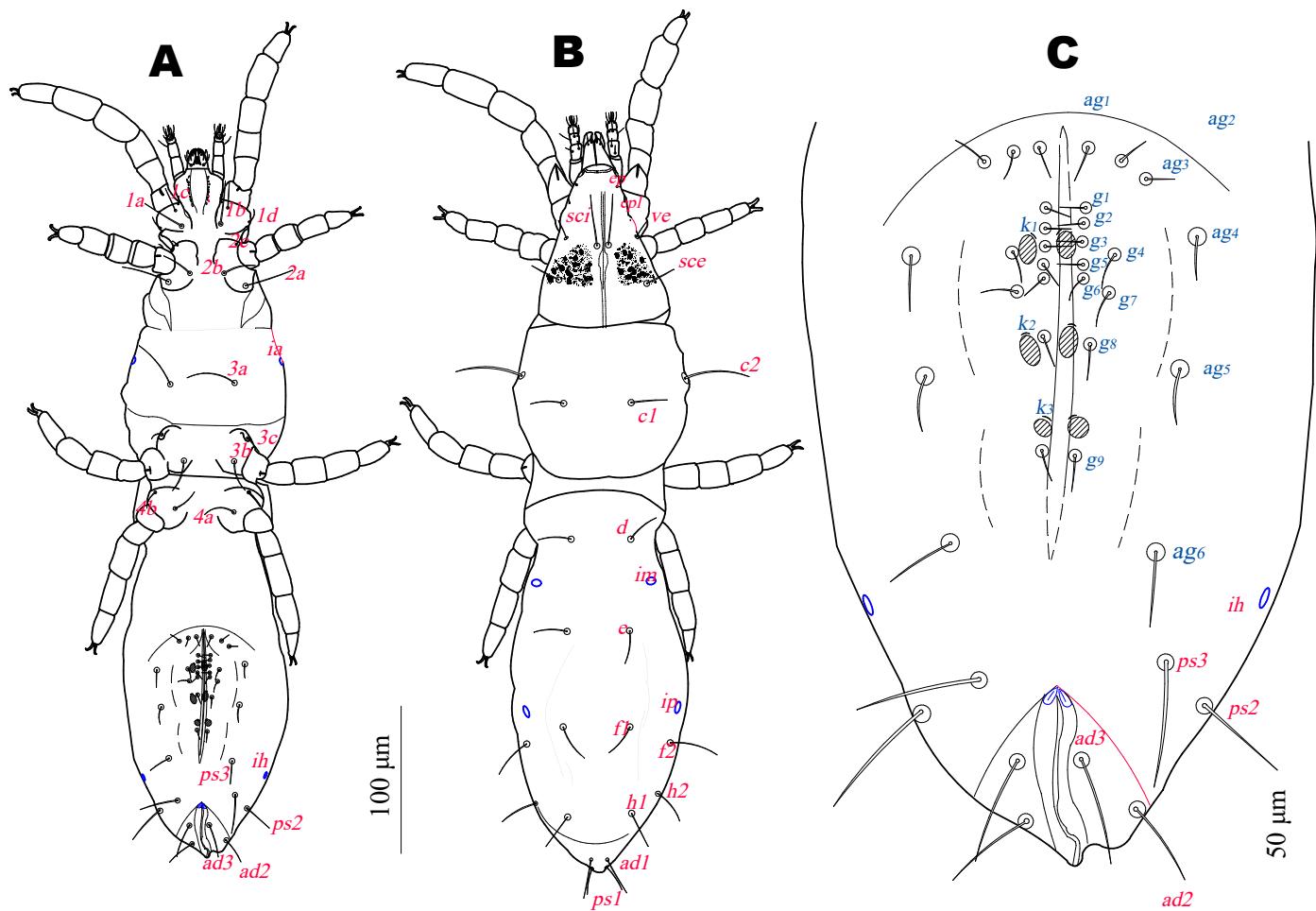


Figure 5 *Tanytydeus nothofagi* n.sp., male. A – venter; B – dorsum; C – genital region.

I small, almost one-half length of claws of legs II - IV. Empodia of leg IV longer and slender than tarsal claws, remaining empodia shorter than tarsal claws.

Deutonymph — (Fig. 9)

Length of idiosoma 425, width 121. Body color and pigmentation, gnathosoma and prodorsum as in female. Subcapitular setae *n* 9, *m* 6, and *or*₁₋₂ 6-7. Cheliceral setae 11.

Table 3 *Tanytydeus nothofagi* n.sp., protonymph. Leg setation.

Leg	Tr	Fe	Ge	Ti	Ta
I	0	2/4	6 (1)	8 (1)	14 (2)
		<i>bv</i> ”, <i>d</i> ₁ , <i>v</i> ’, (<i>l</i>), <i>d</i>	(<i>l</i> ₁), (<i>v</i>), <i>l</i> ’, <i>d</i> , <i>σ</i>	(<i>l</i> ₁), <i>d</i> , (<i>v</i>), <i>k</i> , <i>l</i> ’ <i>ζ</i> <i>l</i> ”, <i>φ</i>	(<i>pv</i>), (<i>fl</i> ”), (<i>a</i>), <i>s</i> , <i>p</i> ”, (<i>p</i> ”), (<i>tc</i> ”), (<i>u</i>), <i>ω</i> ₁ , <i>ω</i> ₂
II	1	3	2 (1)	4 (1)	6 (2)
		<i>v</i> ’	<i>bv</i> ”, <i>l</i> ’, <i>d</i>	(<i>l</i>), <i>σ</i>	(<i>tc</i>), (<i>p</i>), (<i>u</i>), <i>ɛ</i> , <i>ω</i>
III	1	3	2	2 (1)	5
		<i>v</i> ’	<i>ev</i> ”, <i>v</i> ’, <i>d</i>	<i>l</i> ’, <i>v</i> ’	(<i>tc</i>), (<i>u</i>), <i>p</i> ”
IV	0	0	1	2	3
			<i>v</i> ’	<i>v</i> ’, <i>d</i>	<i>tc</i> ”, (<i>u</i>)

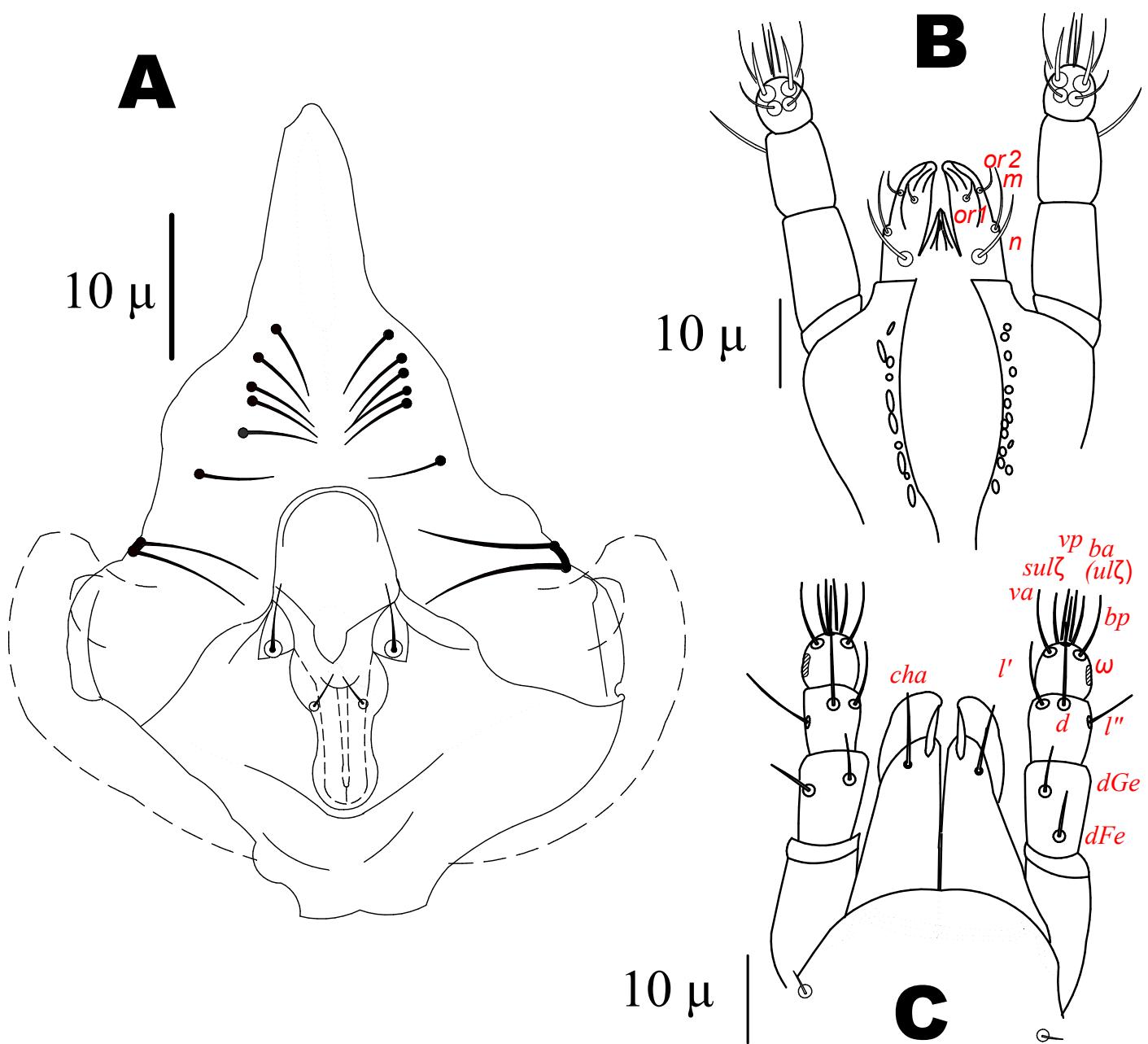


Figure 6 *Tanytydeus nothofagi* n.sp., male. A – genital area; B – subcapitulum; C – dorsal gnathosoma.

Peritremes as in female. Gnathosomal blunt ended setae *ep 3*, *epl 3*.

Idiosomal dorsum (Fig. 9B). Hysterosoma with furrows between rows of setae C and D and H and PS. The latter incomplete not reaching hysterosomal margin. Cupules *im* situated anterolaterally to setae *e* near lateral margin, cupules *ip* situated as in female.

Idiosomal venter (Fig. 9A). Ventral setae smooth and pointed. Genital area with 2 pairs of aggenital setae, 2 pairs of genital setae and 2 pairs of genital acetabulae, near each a pair of acetabular setae *k*. Cupules *ia* and *ih* situated as in female. Anal region with two anterior oval pits. Length of idiosomal setae: *ve* 9, *sci* 33, *sce* 22, *c₁* 14, *c₂* 50, *d* 13, *e* 12, *f₁* 17, *f₂* 31, *h₁* 25, *h₂* 33, *ps₁* 23, *ps₂* 18, *ps₃* 20, *ad₁* 16, *ad₂* 14, *ad₃* 14, *1a* 25, *1b* 6, *1c* 12, *1d* 7, *2b* 18, *2c* 7, *2a*

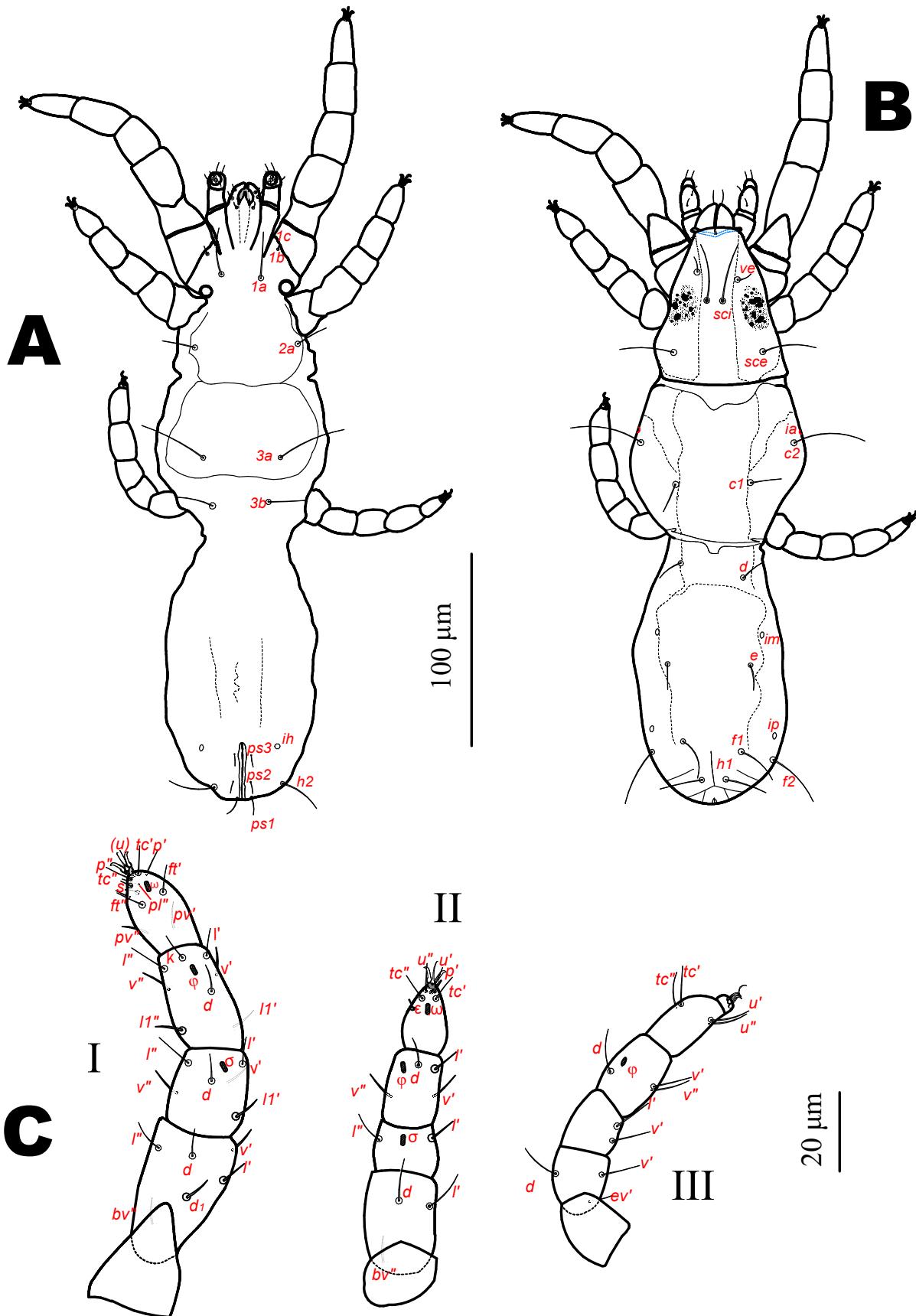


Figure 7 *Tanytydeus nothofagi* n.sp., larva. A – venter; B – dorsal; C – Legs.

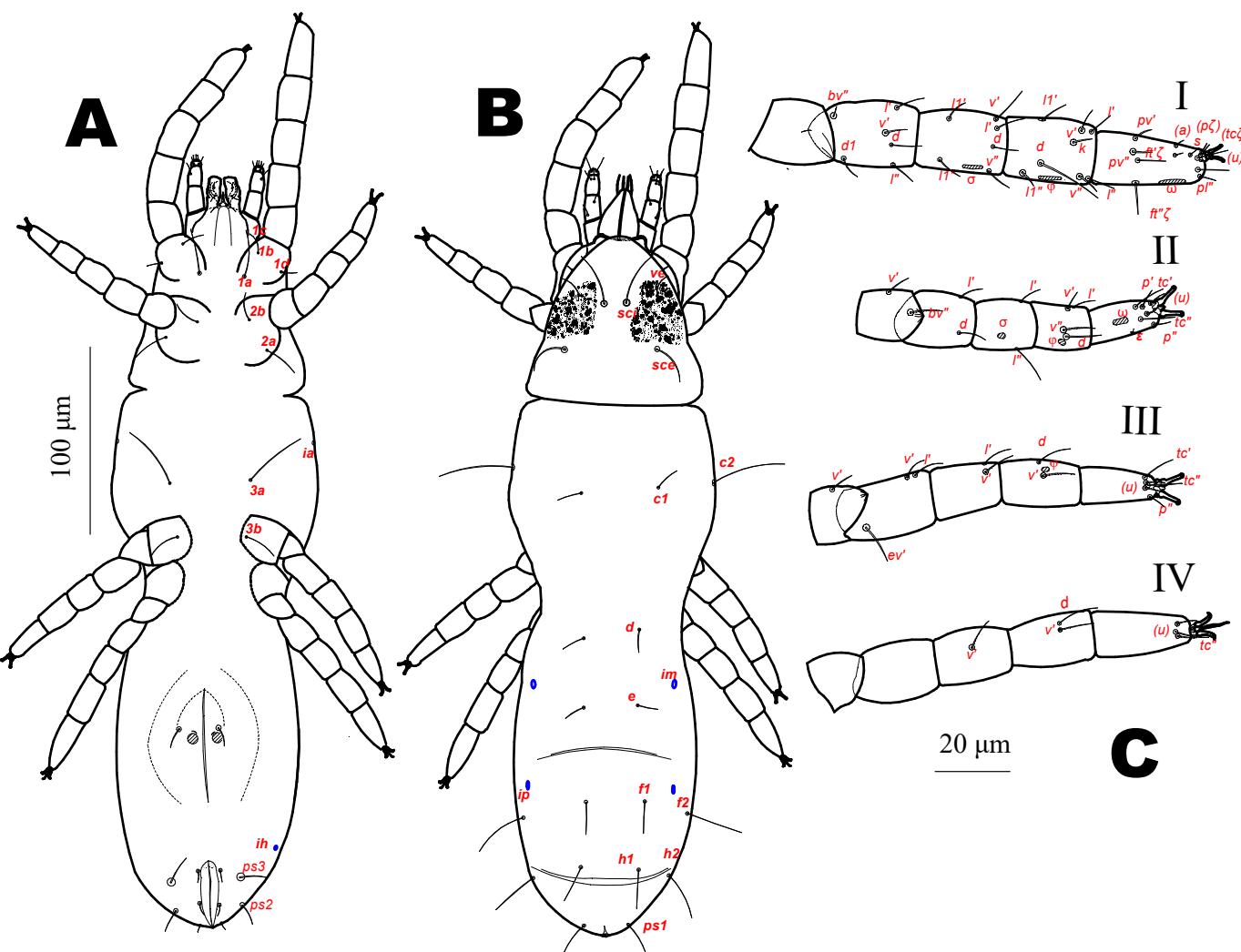


Figure 8 *Tanytydeus nothofagi* n.sp., protonymph A – venter; B – dorsum; C – legs.

22, 3a 43, 3b 21, 3c 7, 4a 14, ag_1 15, ag_2 16, g_1 8, g_2 8.

Legs (Fig. 9C). Length of legs: leg I 125, leg II 87, leg III 97, leg IV 109. Solenidia as in other stages. Claws of legs I small almost one half the length of claws of legs II - IV. Empodium shorter than tarsal claws.

Tritonymph — (Fig. 10)

Length of idiosoma 455, width 121. Body color and pigmentation, gnathosoma and prodorsum as in female. Subcapitular setae n 9, m 7, and or_{1-2} 6-7. Cheliceral setae 11. Peritremes as in female. Gnathosomal blunt ended setae ep 3 and epl 3.

Idiosomal dorsum (Fig. 10B). As in female. *Idiosomal venter* (Fig. 10A) ventral setae smooth and pointed. Hysterosoma with transverse dorsal furrows between C and D and and H and PS. Genital and anal areas widely separated. Genital area with 4 pairs of aggenital setae and 4 pairs of genital setae, 3 pairs of genital acetabulae , near each a pair of acetabular setae k_1 , k_2 and k_3 (Fig. 10A). Cupules ia and ih and anal region as in female. Length of idiosomal setae: ve 12, sci 33, sce 22, c_1 15, c_2 42, d 13, e 12, f_1 14, f_2 37, h_1 24, h_2 34, ps_1 18, ps_2 23, ps_3 30, ad_1 23, ad_2 18, ad_3 19, $1a$ 25, $1c$ 5, $1b$ 16, $1d$ 9, $2b$ 16, $2c$ 6, $2a$ 21, $3a$ 31, $3b$ 7, $3c$ 20, $4a$ 19, $4b$ 7, ag_1 13, ag_2 13, ag_3 14, ag_4 12, g_1 5, g_2 7, g_3 5, g_4 8.

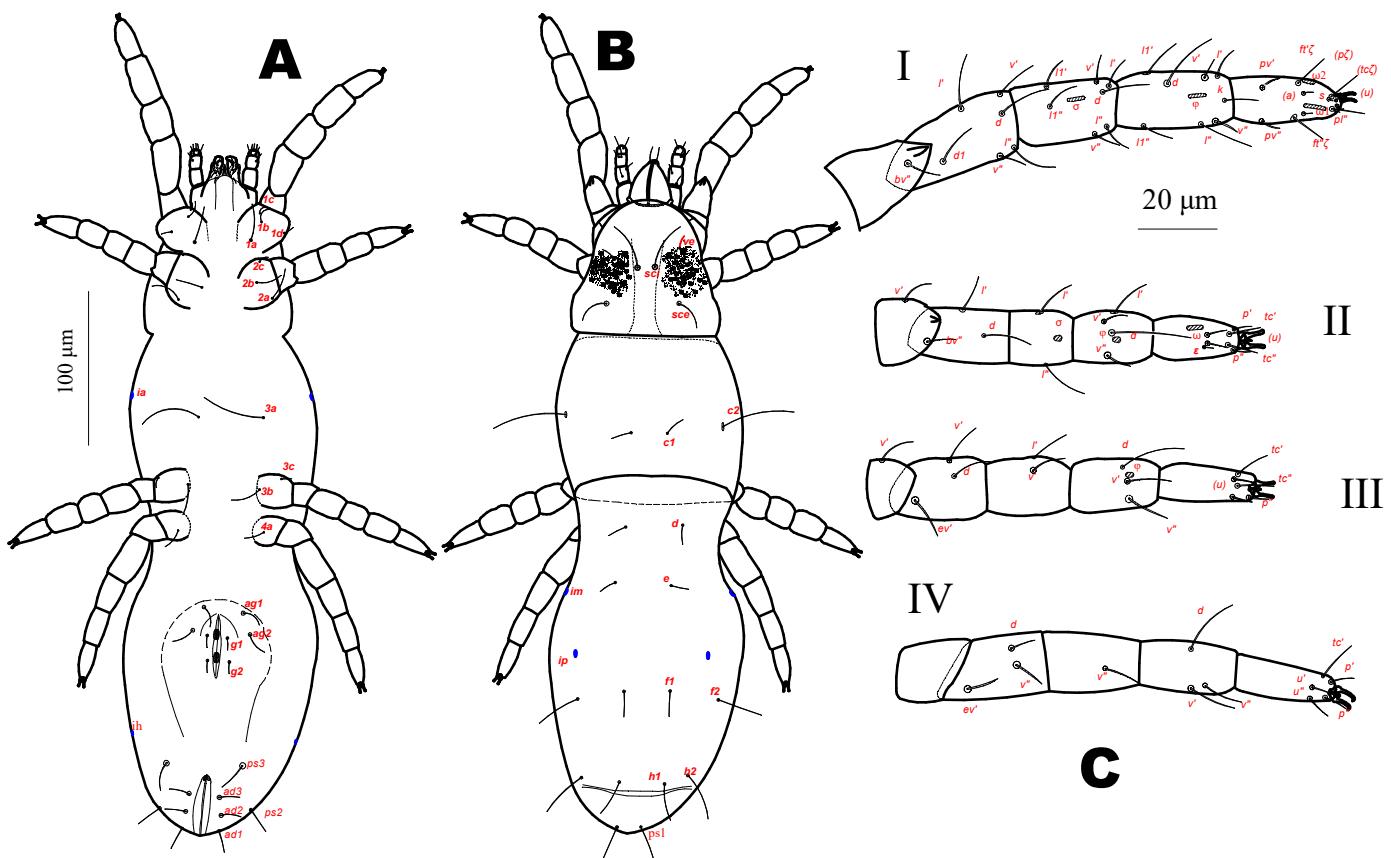


Figure 9 *Tanytydeus nothofagi* n.sp., deutonymph A – venter; B – dorsum; C – legs.

Legs (Fig.10C) Length of legs: leg I 139, leg II 92, leg III 94, leg IV 106. Femur I with only two setae present on basifemur (Table 5).

In Fig. 10B a symmetrical structure appears under the cuticle. The origin of it cannot be attributed at this point to either the beginning of the formation of male genitalia or an internal organ.

Table 4 *Tanytydeus nothofagi* n.sp., deutonymph. Leg setation.

Leg	Tr	Fe	Ge	Ti	Ta
I	0	2/5	7 (1)	8 (1)	14 (2)
		$bv''', d_1, (v), (l), d$	$(l1), (v), (l), d, \sigma$	$(l_1), d, (v), k, (l), \varphi$	$(pv), (f\zeta), (a), s, p\ell'', (p\zeta), (tc\zeta), (u), \omega_1, \omega_2$
II	1	3	2 (1)	4 (1)	6 (2)
	v'	bv''', l', d	$(l), \sigma$	$(v), d, l', \varphi$	$(tc), (p), (u), \mathcal{E}, \omega$
III	1	3	2	3 (1)	5
	v'	ev', v', d	l', v'	$(v), d, \varphi$	$(tc), (u), p''$
IV	0	3	1	3	5
		ev', v'', d	v'	$(v), d$	$tc'', (u), (p)$

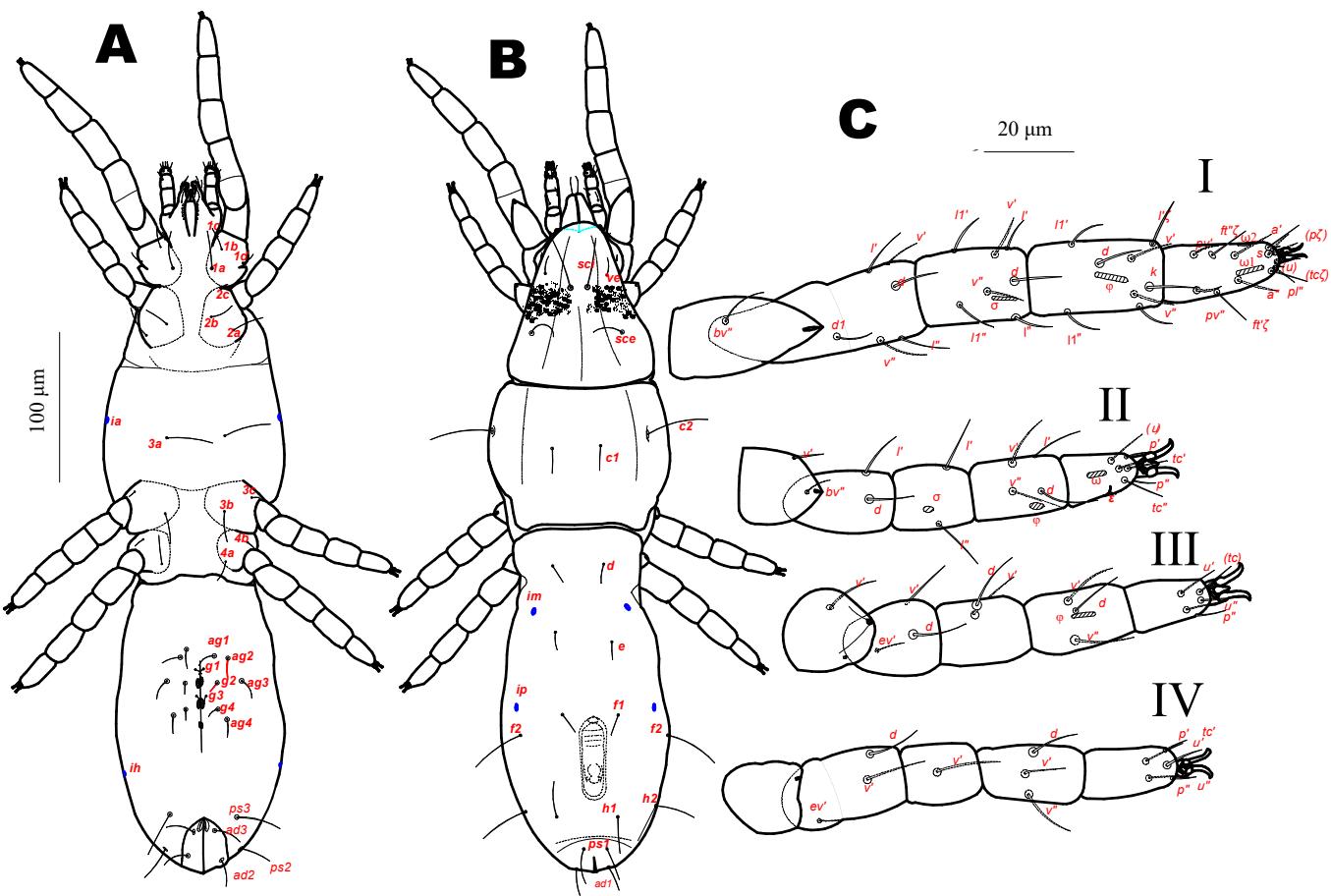


Figure 10 *Tanytydeus nothofagi* n.sp., tritonymph A – venter; B – dorsum; C – legs.

Material examined

Four males, 1 female, 1 tritonymph, 3 deutonymphs, 1 protonymph and 1 larva on 11 microscopic preparations path to Cerro LLao LLao, Parque Municipal LLao LLao (Río Negro) 41°02'52"S, 071°33'09"W, 972 m a.s.l., 14 April 2007 leg. M.E. Kun; 2 females, 1 protonymph on 3 microscopic preparations path to Cerro LLao Llao, Parque Municipal LLao LLao (Río Negro), 21 January 2007 Leg. M.E. Kun; 3 females, 1 tritonymph, 3 deutonymphs on 7 microscopic preparations path to Cascada Los Duendes, Villa Los Coihues, Parque Nacional

Table 5 *Tanytydeus nothofagi* n.sp., tritonymph. Leg setation.

Leg	Tr	Fe	Ge	Ti	Ta
I	0	$2/5$	$7(1)$	$8(1)$	$14(2)$
		$bv'', d_1, (v), (l), d$	$(l1), (v), (l), d, \sigma$	$(l_1).d, (v), k, (l), \varphi$	$(pv), (fl\zeta), (a), s, pl'', (p\zeta), (tc\zeta), (u), \omega_1, \omega_2$
II	1	3	$2(1)$	$4(1)$	$6(2)$
		bv', l', d	$(l), \sigma$	$(v), d, l', \varphi$	$(tc), (p), (u), \mathcal{E}, \omega$
III	1	3	2	$3(1)$	5
		ev', v', d	l', v'	$(v), d, \varphi$	$(tc), (u), p''$
IV	0	3	1	3	5
		ev', v'', d	v'	$(v), d$	$tc'', (u), (p)$

Nahuel Huapi (Río Negro) 41°10'42"S, 71°25'01"W, 862 m a.s.l., 14 April 2007 leg. M.E. Kun; 2 males, 1 female, 1 tritonymph, 1 deutonymph, 1 protonymph on 6 microscopic preparations, Puente romano, Parque Municipal Llao Llao (Río Negro) 41°03'01"S, 71°33'57"W, 817 m a.s.l., 25 November 2014 leg. M.P. Salaberry; 3 males, 2 females, 1 tritonymph, 2 deutonymphs, 2 protonymphs on 10 microscopic preparations path to Lago Escondido, Parque Municipal Llao Llao (Río Negro) 41°03'28"S, 71°33'55"W, 801 m a.s.l., May 2015 leg. M.P. Salaberry. All specimens on bark of *Nothofagus dombeyi*.

Differential diagnosis

Tanytydeus nothofagi n. sp. may be unique in *Tanytydeus* by the presence of subdermal eyespots which are not reported in the genus. The presence of 3 pairs of genital acetabulae (instead of 2 in the adult) places this species in a group comprising *T. beyzavii*, *T. kakadu*, *T. lamington*, *T. simplex* and *T. theroni* (Delfinado and Baker 1974, Seeman and Walter 1999, Khanjani *et al.* 2014, Khaustov *et al.* 2019). *T. nothofagi n. sp.* differs from *T. beyzavii*, *T. kakadu* and *T. theroni* by the presence of 8 setae on femur I, from *T. simplex* by the presence 3 setae on Fe II and 6 setae on Ta II, from *T. lamingtoni* by the presence of 7 setae on Ge I, 2 setae on Ge II, 4 setae on Ti II, 5 setae on Ta III.

Remarks

Species of Paratydeidae with eyes as those belonging to genus *Scolotydaeus* apparently live on exposed habitats such as bark, moss, or litter while the blind genus *Tanytydeus* is generally found in soil excepting *T. lamington*. The finding of *T. nothofagi n. sp.* living on bark instead of soil poses the question if the presence of eyespots could be a mild adaptation for the perception of shifts in light intensity which is an advantageous ability for surviving in a light exposed habitat.

Etymology

The species is named after *Nothofagus dombeyi*, the tree on which the mites were collected.

Acknowledgments

This work was realized under the project 04/B215 of the Universidad Nacional del Comahue, named “Diversidad de los artrópodos en la Patagonia argentina y sus relaciones con los animales, las plantas y el hombre” and project 04/B243 of the Universidad Nacional del Comahue, named “Biodiversidad, biología e interacciones ecológicas y antrópicas de artrópodos y vertebrados nativos y exóticos en el NO de Patagonia” in the laboratory de Zoología of the Centro Regional Universitario Bariloche (Universidad Nacional del Comahue). The author wishes to thank Doctor Alexander Khaustov and Doctor Owen Seeman for their suggestions, helpful comments and for sharing their knowledge about Paratydeidae. The author thanks also Dra María Inés Messuti and Dr Gernot Vobis for their support and encouragement for carrying out research on arthropods and their relations with lichens and Lic. María Paula Salaberry for lending collected material on bark of *Nothofagus dombeyi*.

ORCID

Marcelo E. Kun  <https://orcid.org/0000-0002-7299-2796>

References

Berlese, A. 1910 Acari nuovi. Redia, 6, 199-234.

- Baker, E.W. (1950) Further notes on the family Paratydeidae (Acarina), with a description of another new genus and species. Journal of The Washington Academy of Sciences, 40, 289-291.
- Delfinado D.M., Baker E.W. 1974. Terrestrial mites of New York (Acarina: Prostigmata), I - Tarsocheylidae, Paratydeidae and Pseudocheylidae. J. N.Y. Entom. Soc. 82(3):202-211.
- Dönel G., Seeman O.D., Doğan S. 2012. The first Paratydeidae (Trombidiformes: Paratydeoidea) in Turkey: *Scolotydaeus anatolicus* sp. nov. Int. J. of Acarol., 38(5):436- 444. <https://doi.org/10.1080/01647954.2012.669527>
- Flechtmann C.H.W. 1985. *Eustigmaeus bryonemus* sp. n., a moss feeding mite from Brasil (Acari, Prostigmata : Stigmataidae). Rev. bras. Zool., S Paulo 2(6): 387-391. <https://doi.org/10.1590/S0101-81751984000200010>
- Flechtmann C.H.W. 1992. First record of a Paratydeidae (Acari, Prostigmata) in South America with description of *Scolotydaeus corticicola* sp. n. Rev. Bras. Zool. 9(3- 4):299-304. <https://doi.org/10.1590/S0101-81751992000200017>
- Grandjean, F. 1934. Les poils des épimères chez les Oribates (Acariens). Bull. Mus. Nat. Hist. Natur., Sér. 2(6):504-512.
- Grandjean, F. 1946. Au sujet de l'organe de Claparède, des eupathides multiples et des taenidies mandibulaires chez les Acariens actinochitineux. Archives des Sciences physiques et naturelles, 28: 63-87.
- Kethley, J. 1990. Acarina: Prostigmata (Actinedida). In: Dindal, D.L. (Ed.), Soil Biology Guide. John Wiley & Sons, New York, pp. 667-756.
- Khanjani, M., Nadri, A.R., Khanjani, M. & Seeman, O.D. 2014. Post larval stages of *Tanytydeusbeyzavii* sp. nov. (Acari: Paratydeidae) from Iran. Zootaxa, 3895 (2): 170- 182. <https://doi.org/10.11646/zootaxa.3895.2.2>
- Khaustov A. 2017. Review of the Paratydeidae (Acari: Prostigmata), with description of three new species. Zootaxa 4303(2):151-212. <https://doi.org/10.11646/zootaxa.4303.2.1>
- Khaustov, A.A., Hugo-Coetze E.A. & Ermilov S.G. 2019. A new species of *Tanytydeus* (Acari: Paratydeidae) from termite nests in South Africa. Syst. Appl. Acarol. 24(9): 1604-1619. <https://doi.org/10.11158/saa.24.9.3>
- Klimov, P.B., Khaustov, A.A., Vorontsov, D.D., Perkovsky, E.E., Pepato A.R. & Sidorchuk, E.A. 2020. Two new species of fossil Paratydeidae (Acari: Trombidiformes) from the late Eocene amber highlight ultraslow morphological evolution in a soil-inhabiting arthropod lineage. J. Systematic. Paleontology, 18(7):607-629. <https://doi.org/10.1080/14772019.2019.1655496>
- Norton, R.A. 1977. A review of F. Grandjean's system of leg chaetotaxy in the Oribatei and its application to the Damaeidae. In: Dindal, D.L. (Ed.), Biology of Oribatid Mites. SUNY College of Environmental Science and Forestry, Syracuse, pp. 33-62.
- Price, D.W. 1973. Abundance and vertical distribution of microarthropods in the surface layers of a California pine forest soil. Hilgardia 42:121-147. <https://doi.org/10.3733/hilg.v42n04p121>
- Seeman O.D., Walter D.E. 1999. A review of the Paratydeidae (Acari: Prostigmata) with description of the first Australian Representatives *Tanytydeus lamington* sp. nov. and *T. Kakadu* sp. nov. Acarologia. 40(4):393-400.
- Theron P.D., Meyer M.K.P., Ryke P.A.J. 1969. Two new genera of the family Paratydeidae (Acari: Prostigmata) from South African soils. Acarologia. 11(4):697-710.