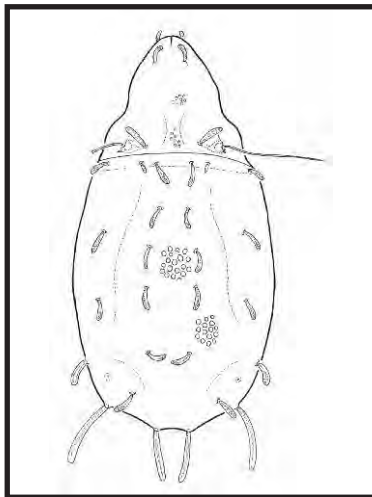


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**Two new species of *Nothrus*  
(Acari: Oribatida: Nothridae)  
from South Africa**

by

**Sergey G. Ermilov &  
Elizabeth A. Hugo-Coetzee**



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**Two new species of *Nothrus* (Acari: Oribatida: Nothridae)  
from South Africa**

by

**Sergey G. Ermilov<sup>a</sup> & Elizabeth A. Hugo-Coetzee<sup>b, c</sup>**

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**ABSTRACT**

**Ermilov, S.G. & Hugo-Coetzee, E.A. 2012. Two new species of *Nothrus* (Acari: Oribatida: Nothridae) from South Africa. *Navors. nas. Mus., Bloemfontein* 28(2): 25-40.** Two new oribatid mite species in the family of Nothridae, *Nothrus louiseae* **spec. nov.** and *N. engelbrechti* **spec. nov.**, are described based on material in the collection of the National Museum (Bloemfontein, South Africa). These two species can be distinguished from other South African species by the long caudal setae  $h_2$  and  $p_1$  that are of similar length. The distribution ranges of the new species are mapped.  
**(oribatid mites, *Nothrus*, new species, morphology, South Africa)**

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## INTRODUCTION

The oribatid mite genus *Nothrus* Koch, 1835 (Acari: Oribatida: Nothridae) comprises more than 75 species that collectively have a cosmopolitan distribution (absent in the Antarctic region) (Subías 2004, online version 2011). Fifteen species have been recorded from Africa (see Ermilov & Hugo-Coetzee 2012 for a key to African species). Three species have been documented from South Africa, namely *N. monolongisetosus* Ermilov & Hugo-Coetzee, 2012, *N. bilongisetosus* Ermilov & Hugo-Coetzee, 2012, and *N. anauniensis* Canestrini & Fanzago, 1876 (Ermilov & Hugo-Coetzee 2012). The assemblage of *Nothrus* in South Africa as well as Africa as a whole, is not distinctive from congeners in other world regions (see Ermilov & Hugo-Coetzee 2012).

During studies on the oribatid mite collection of the National Museum (Bloemfontein, South Africa) we identified an additional two species of *Nothrus*. They are described below under the names *Nothrus louiseae* **spec. nov.** and *Nothrus engelbrechti* **spec. nov.**

The main characteristics of the genus *Nothrus* are: body surface with microsculpture; prodorsum triangular in dorsal view; rostrum incised; sensillus long, setiform, smooth or weakly barbed; 16 pairs of notogastral setae, setae  $h_2$  and  $p_1$  occasionally longer than other setae; two pairs of anal setae, three pairs of adanal setae; nine pairs of genital setae, aggenital setae absent; hysterosoma dorsoventrally flattened; epimeral setae neotrichous; legs with one, two or three claws (for detailed diagnostic characters of the genus see Fujikawa 1999 and Colloff 2011).

## MATERIALS AND METHODS

We examined specimens of *Nothrus* in the collection of the National Museum (Bloemfontein, South Africa). The locality and habitat data for all species are given below (under *Type material and type deposition* and *Collection data*).

Specimens were mounted in lactic acid on temporary cavity slides for measurement and illustration. All body measurements are presented in micrometers ( $\mu\text{m}$ ). Body length was measured in lateral view, from the tip of the rostrum to the posterior edge of the ventral plate, to avoid discrepancies caused by different degrees of notogastral distortion. Notogastral width refers to the maximum width in dorsal aspect. Lengths of body setae

were measured in lateral aspect. Some paratypes were dissected for examination of the gnathosoma and legs. Formulae for leg setation are given in parentheses according to the sequence trochanter–femur–genu–tibia–tarsus (famulus included). Formulae for leg solenidia are given in square brackets according to the sequence genu–tibia–tarsus. Terminology used in this paper follows that of Norton & Behan-Pelletier (2009).

### DESCRIPTION OF NEW SPECIES

#### *Nothrus louiseae* spec. nov.

(Figs 1–25, adult)



Figures 1–3: *Nothrus louiseae* spec. nov., adult: (1) dorsal view; (2) ventral view, gnathosoma and legs (except trochanters) not shown; (3) posterior part of notogaster, lateral view. Scale bars: (1, 2) 200  $\mu$ m, (3) 100  $\mu$ m.

**Diagnosis**

Body length 796–888 × 381–456; interlamellar setae longer than lamellar and rostral setae; sensilli setiform, thickened, smooth; notogastral setae  $h_2$  (348–384) and  $p_1$  (328–360) very long, setiform; setae  $h_1$  (94–180) longer than other notogastral setae, covered with phylliform cerotegument; epimeral setal formula 7(6)–4–5–6(5); hypostomal setae  $h$  and sometimes  $m_2$  covered with phylliform cerotegument, others ( $m_1$ , sometimes  $m_2$ ) setiform, smooth; two pairs of setiform adoral setae:  $or_1$  smooth;  $or_2$  with one cilium; cheliceral seta *cha* barbed, *chb* smooth; leg tarsi with three claws.

**Measurements**

Body length 847 (holotype, female), 796–888 (mean 841;  $n = 9$ ); body width 436 (holotype), 381–456 (mean 410;  $n = 9$ ).

**Integument** (Figs 1, 2, 4, 5)

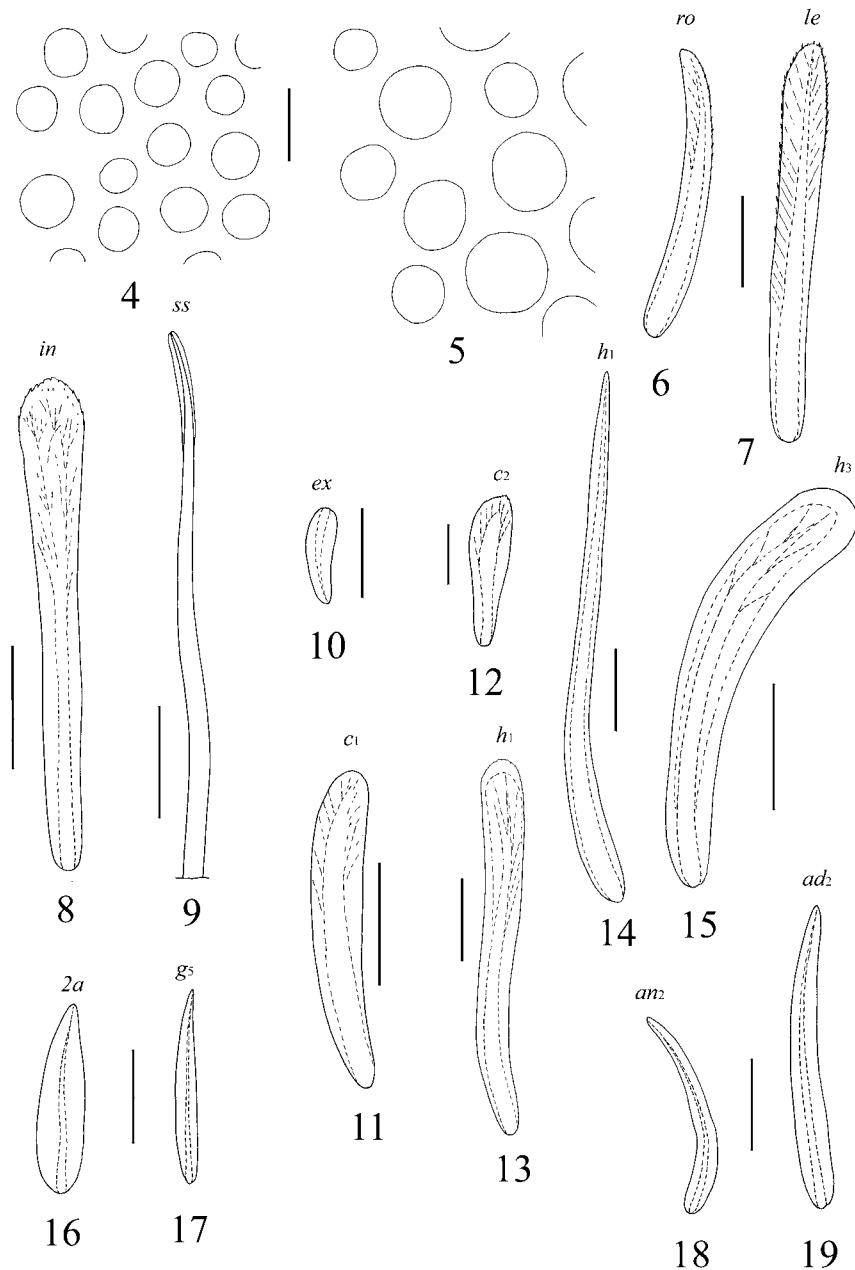
Body color yellowish-brown. Dorsal side and anogenital region of body alveolate (diameter of alveoli up to 8 on prodorsum and 16 on notogaster). Epimeres with dense microfoveolae. Genital plates slightly folded.

**Prodorsum** (Figs 1, 6–10)

Rostrum broadly rounded, with short medial indentation in dorsal view. Rostral (*ro*, 28–36) and lamellar (*le*, 41–45) setae setiform, thickened, covered with thin layer of cerotegument. Lamellar setae slightly serrate, set on tubercles. Interlamellar setae (*in*) long (73–90), dilated distally, covered with phylliform cerotegument, set on tubercles. Exobothridial setae (*ex*) shortest on prodorsum (10–12), covered with phylliform cerotegument. Sensilli (*ss*) longest setae on prodorsum (237–246), setiform, thickened, smooth, sometimes partially covered with thin layer of cerotegument.

**Notogaster** (Figs 1, 3, 11–15)

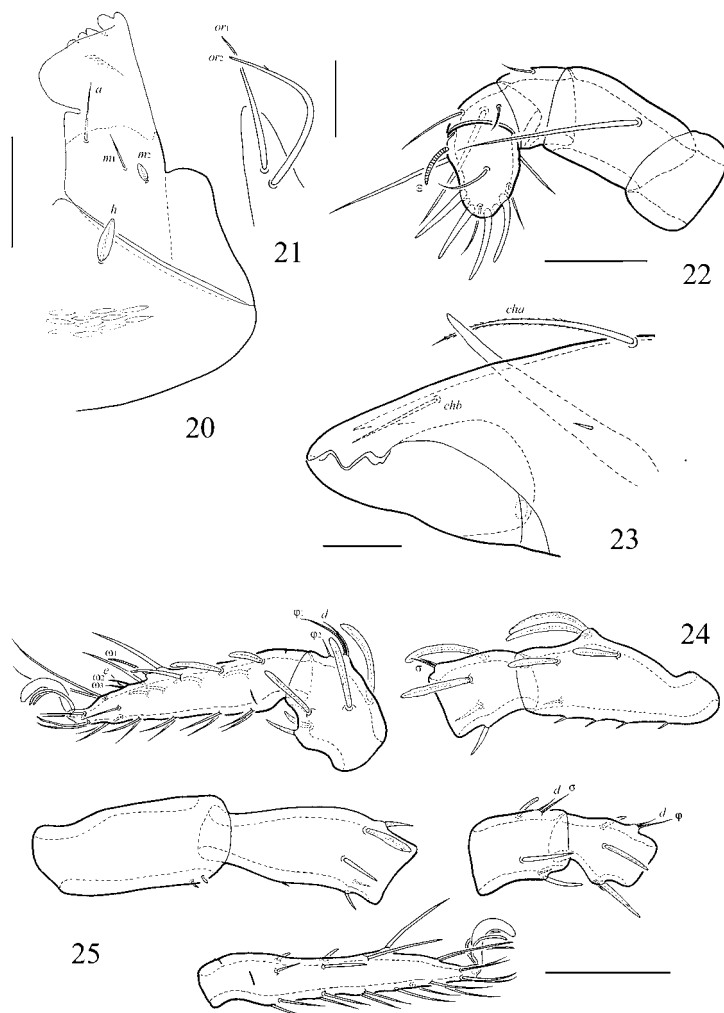
Weakly convex in dorso-central and dorso-lateral parts, with circummarginal furrow between them (visible only in dorso-lateral and dorso-caudal views). Anterior border almost straight. Sixteen pairs of notogastral setae set on tubercles. Setae  $h_2$  and  $p_1$  very long (348–384 and 328–360, respectively), setiform, sometimes covered with thin layer of cerotegument. Setae  $h_1$  of medium size, varying in length (94–180) and morphology (from setiform, thickened, covered by thin layer of cerotegument to dilated distally, covered with phylliform cerotegument), sometimes even in same specimen. Other setae considerably shorter ( $f_2$ ,  $p_2$  and  $h_3$  more dilated distally), covered with phylliform cerotegument. Distance between setae  $c_1$ – $c_2$  shorter than between  $c_2$ – $c_3$ . Lyrifissures *ia* and *im* not evident. Large opisthonotal gland opening (*gla*) present postero-mediad of  $f_2$ .



Figures 4–19: *Nothrus louiseae* **spec. nov.**, adult: (4) microsculpture of middle part on prodorsum; (5) microsculpture between setae  $e_1$ ; (6) rostral seta; (7) lamellar seta; (8) interlamellar seta; (9) apical part of sensillus; (10) exobothridial seta; (11) notogastral seta  $c_1$ ; (12) notogastral seta  $c_2$ ; (13) and (14) notogastral seta  $h_1$ ; (15) notogastral seta  $h_3$ ; (16) epimeral seta  $2a$ ; (17) genital seta  $g_s$ ; (18) anal seta  $an_2$ ; (19) adanal seta  $ad_2$ . Scale bars: (4–7, 10, 12, 16–19) 10  $\mu$ m, (8, 9, 11, 13–15) 20  $\mu$ m.

**Gnathosoma** (Figs 20–23)

Subcapitulum longer than wide (172–180 × 123–131). Hypostomal setae *h* (20–24) covered with broad, phylliform cerotegument; setae *m*<sub>1</sub> (16) and *a* (28–32) setiform, smooth; setae *m*<sub>2</sub> (8) covered with phylliform cerotegument or setiform. Two pairs of setiform adoral setae (20–24): *or*<sub>1</sub> smooth; *or*<sub>2</sub> with one cilium. Palps (82–86) with setation 0–1–1–3–9(+1ω). Solenidion thickened, blunt-ended, not coupled with *acm*. Chelicerae (168–176) with two setiform cheliceral setae: *cha* (61) barbed, longer than smooth *chb* (24). Trägårdh's organ clearly visible.



Figures 20–25: *Nothrus louiseae* **spec. nov.**, adult: (20) left half of subcapitulum; (21) left lip with adoral setae; (22) palp; (23) anterior part of chelicera, lateral view; (24) leg I, without trochanter, left, antiaxial view; (25) leg IV, left, antiaxial view. Scale bars: (20) 50  $\mu$ m, (21) 10  $\mu$ m, (22, 23) 20  $\mu$ m, (24, 25) 100  $\mu$ m.



**Epimeral region** (Figs 2, 16)

Epimeral setal formula 7(6)–4–5–6(5). Setae short, similar in length (20–24), covered with phylliform cerotegument, set on small tubercles.

**Anogenital region** (Figs 2, 3, 17–19)

Two pairs of anal ( $an_1$ ,  $an_2$  24), three pairs of adanal ( $ad_1$  28–36,  $ad_2$  24–32,  $ad_3$  20–24) and nine pairs of genital ( $g_1$ – $g_9$  20–24) setae covered with thin layer of phylliform cerotegument. Lyrifissures *ian*, *iad*, *ih* and *ips* clearly visible, *ip* not evident.

**Legs** (Figs 24, 25, Table 1)

Tarsi with three smooth claws, median claw stronger than lateral claws. Formulae of leg setation and solenidia: I (1–9–5–6–27) [1–2–3], II (1–8–5–5–25) [1–1–1], III (4–5–5–5–22) [1–1–0], IV (2–6–5–5–22) [1–1–0]; homology of setae and solenidia indicated in Table 1. Many setae covered with phylliform or thin layer of cerotegument. Famulus short, setiform, pointed. All solenidia rod-like, weakly blunt-ended.

Table 1. Leg setation and solenidia of adult *Nothrus louiseae* **spec. nov.** (same data for *Nothrus engelbrechti* **spec. nov.**)

Leg	Trochanter	Femur	Genu	Tibia	Tarsus
I	$v'$	$d$ , ( $l_1$ ), ( $l_2$ ), $bv''$ , $v_1''$ , $v_2''$ , $v_3''$	$\underline{d\sigma}$ , ( $l$ ), ( $v$ )	$\underline{d\phi_1}$ , ( $l_1$ ), $l_2''$ , ( $v$ ), $\phi_2$	( $ft$ ), $pl'$ , ( $l_1$ ), ( $l_2$ ), ( $l_3$ ), ( $tc$ ), ( $p$ ), ( $u$ ), ( $a$ ), $s$ , ( $pv$ ), ( $v_1$ ), ( $v_2$ ), ( $v_3$ ), $e$ , $\omega_1$ , $\omega_2$ , $\omega_3$
II	$v'$	$d$ , ( $l_1$ ), ( $l_2$ ), $bv''$ , $v_1''$ , $v_2''$	$\underline{d\sigma}$ , ( $l$ ), ( $v$ )	$\underline{d\phi}$ , ( $l$ ), ( $v$ )	( $ft$ ), ( $l_1$ ), ( $l_2$ ), ( $l_3$ ), ( $tc$ ), ( $p$ ), ( $u$ ), ( $a$ ), $s$ , ( $pv$ ), ( $v_1$ ), ( $v_2$ ), ( $v_3$ ), $\omega_1$
III	$l'_1$ , $l'_2$ , $l'_3$ , $v'$	$d$ , ( $l$ ), $bv''$ , $v''$	$\underline{d\sigma}$ , ( $l$ ), ( $v$ )	$\underline{d\phi}$ , ( $l$ ), ( $v$ )	( $ft$ ), ( $l_1$ ), ( $l_2$ ), ( $tc$ ), ( $p$ ), ( $u$ ), ( $a$ ), $s$ , ( $pv$ ), ( $v_1$ ), ( $v_2$ ), $v_3'$
IV	$v'$	$d$ , ( $l_1$ ), $l_2''$ , $bv''$ , $v''$	$\underline{d\sigma}$ , ( $l$ ), ( $v$ )	$\underline{d\phi}$ , ( $l$ ), ( $v$ )	( $ft$ ), ( $l_1$ ), ( $l_2$ ), ( $tc$ ), ( $p$ ), ( $u$ ), ( $a$ ), $s$ , ( $pv$ ), ( $v_1$ ), ( $v_2$ ), $v_3'$

Roman letters refer to normal setae ( $e$  to famulus), Greek letters to solenidia;  $\underline{d\sigma}$ ,  $\underline{d\phi}$  – seta and solenidium coupled. Single prime (') marks setae on anterior and double prime (") setae on posterior side of the given leg segment. Parentheses refer to a pair of setae.

**Etymology**

This species is named in honour of Louise Coetzee from the National Museum, Bloemfontein, South Africa, for her guidance and for mentoring the second author.

**Type material and type deposition**

The holotype (NMB 2791.10.1) and seven paratypes (NMB 2791.10) have the following collection data: South Africa, Western Cape, Kleinmond, 34°19'S, 19°00'E, in moist soil with decomposed leaf litter, collected by C.M. Engelbrecht, 17 November 1982. Two paratypes (NMB 3412.2) have the following collection data: South Africa, Eastern Cape, Hogsback, 32°26'S, 26°55'E, in decomposed plant debris. The holotype and four paratypes (NMB 2791.10) are deposited in the collection of the National Museum, Bloemfontein.

Three paratypes are deposited in the collection of the Siberian Zoological Museum, Novosibirsk, Russia. Two paratypes are in the personal collection of the first author.

### Collection data

Co-ordinates of collection sites where *louiseae* **spec. nov.** was found is indicated by filled circles on the map of South Africa (Fig. 49). It is currently known only for fynbos in the south-western Cape, grassland in the Eastern Cape, the Drakensberge of KwaXulu-Natal, and eastern Lesotho. This species seems to be more scarcely distributed in South Africa than *N. bilongisetosus* and *N. monolongisetosus* (see distribution map of the latter two species in Ermilov & Hugo-Coetzee 2012).

Betty's Bay, Western Cape (34°21'S, 18°56'E, decomposed plant debris under shrubs); Kogel Bay, Western Cape (34°02'S, 18°43'E, humid soil and decomposed plant debris near beach); near Gordon's Bay, Western Cape (34°09'S, 18°51'E, humid sandy soil and decomposed leaf litter under trees); Sehlabathebe National Park, KwaZulu-Natal (29°53'S, 29°05'E, soil near rock pools); near Harding, KwaZulu-Natal (30°34'S, 29°50'E, humid soil and decomposed plant material under dense indigenous shrubs).

### Remarks

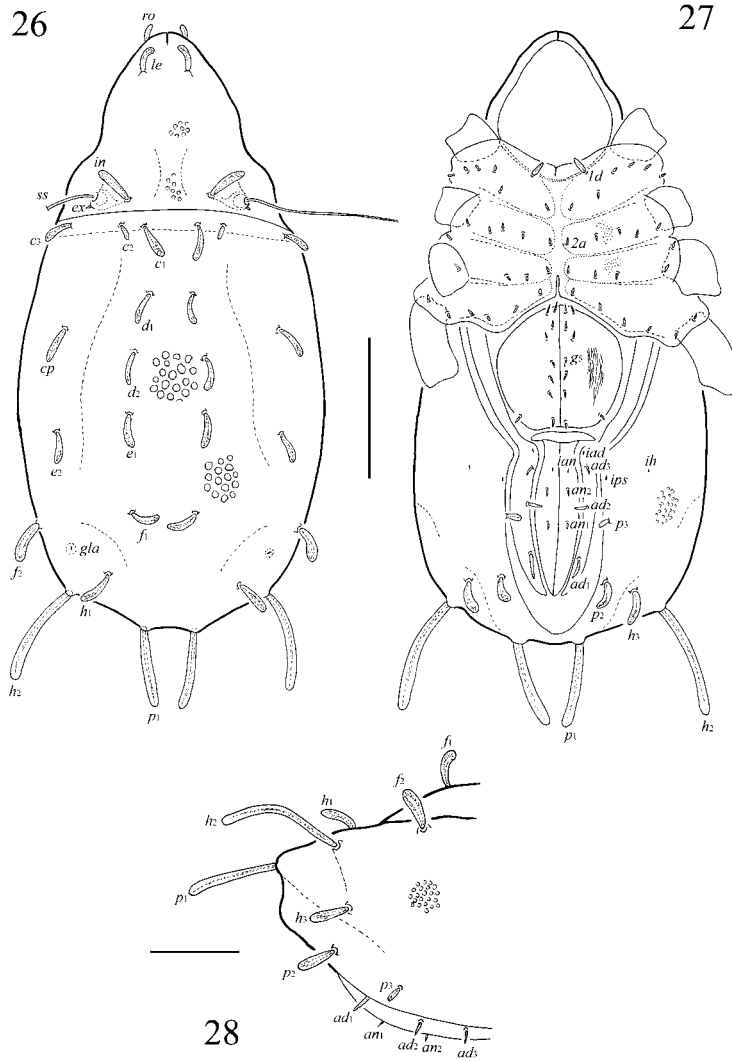
In having the combination of very long notogastral setae  $h_2$  and  $p_1$  (longer than half of notogaster) and tridactylous legs, *louiseae* **spec. nov.** is similar to *Nothrus leleupi* Balogh, 1958 from Tanzania (Balogh 1958) and *reunionensis* Mahunka, 1978 from Reunion Island (Mahunka 1978). However, *N. louiseae* **spec. nov.** clearly differs from *N. leleupi* by body size (796–888 × 381–456 vs. 980 × 580 in *N. leleupi*), lengths of sensilli, lamellar and interlamellar setae ( $ss$  237–246,  $le$  41–45,  $in$  73–90 vs.  $ss$  275–290,  $le$  55,  $in$  125 in *N. leleupi*) and lengths of posterior setae ( $h_1$  94–180,  $h_2$  348–384,  $p_1$  328–360 vs.  $h_1$  60,  $h_2$  190,  $p_1$  100 in *N. leleupi*). *Nothrus louiseae* **spec. nov.** clearly differs from *N. reunionensis* by its greater body length (796–888 vs. 736–768 in *N. reunionensis*), morphology of rostral and lamellar setae (slightly thinner compared to *N. reunionensis*), length and morphology of sensilli (237–246, smooth vs. 220, barbed in *N. reunionensis*), lengths of posterior setae ( $h_1$  longer than centrodorsal notogastral setae,  $h_2$  348–384,  $p_1$  328–360 vs.  $h_1$  not longer than centrodorsal notogastral setae,  $h_2$  200–250,  $p_1$  120–140 in *N. reunionensis*).

### *Nothrus engelbrechti* **spec. nov.**

(Figs 26–48, adult)

### Diagnosis

Body length 763–830 × 352–398; interlamellar setae longer than lamellar and rostral setae; sensilli, setiform, thickened, barbed; notogastral setae  $h_2$  (155–164) and  $p_1$  (110–123) longer, slightly dilated or not dilated distally; other setae shorter, well dilated distally; epimeral setal formula 7–5–5–6, seta *Id* longer than the rest; hypostomal setae *h* covered with phylliform cerotegument, others setiform, barbed; two pairs of adoral setae:  $or_1$  simple,  $or_2$  bifurcate; cheliceral setae setiform, barbed; leg tarsi with one claw.



Figures 26–28: *Nothrus engelbrechti* spec. nov., adult: (26) dorsal view; (27) ventral view, gnathosoma and legs (except trochanters) not shown; (28) posterior part of notogaster, lateral view. Scale bars: (26, 27) 200  $\mu$ m, (28) 100  $\mu$ m.

**Measurements**

Body length 804 (holotype, female), 763–830 (mean 794;  $n = 11$ ); body width 352 (holotype), 362–398 (mean 378;  $n = 11$ ).

**Integument** (Figs 26, 27, 29, 30)

Body color yellowish-brown. Dorsal side and anogenital region of body alveolate (diameter of alveoli up to 10 on prodorsum and 16 on notogaster). Epimeres with dense microfoveolae. Genital plates slightly folded.

**Prodorsum** (Figs 26, 31–35)

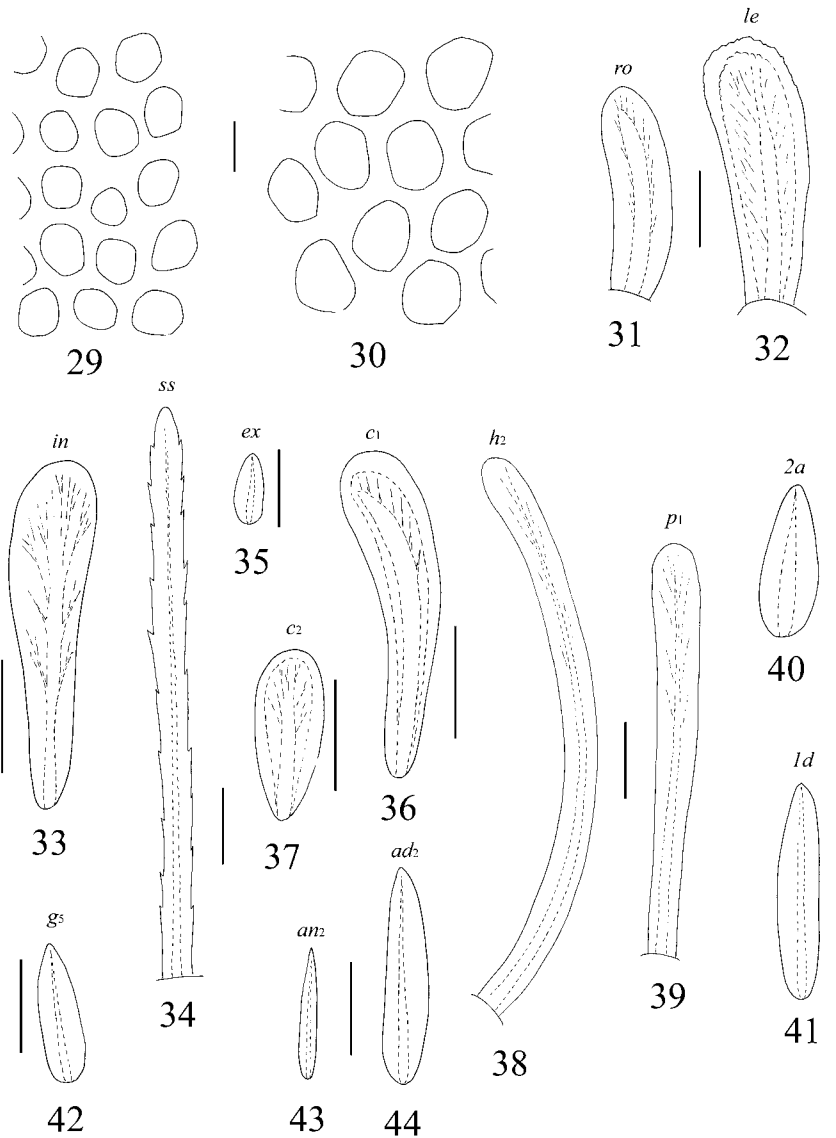
Rostrum broadly rounded, with long medial indentation in dorsal view. *ro* (24–28), *le* (36–45), *in* (53–65) and *ex* (8) covered with phylliform cerotegument, *le* and *in* dilated distally. Sensilli longest setae on prodorsum (213–233), setiform, thickened, barbed.

**Notogaster** (Figs 26, 28, 36–39)

Weakly convex in dorso-central and dorso-lateral parts and with circummarginal furrow between them. Anterior border weakly convex medially. Sixteen pairs of notogastral setae set on tubercles. Setae  $h_2$  and  $p_1$  (155–164 and 110–123, respectively) long, slightly dilated or not dilated distally, covered with phylliform cerotegument. Other setae shorter (49–57, except  $c_2$  and  $p_3$  20–28), well dilated distally, covered with phylliform cerotegument. Distance between setae  $c_1$ – $c_2$  shorter than between  $c_2$ – $c_3$ . Lyrifissures *ia* and *im* not evident. Large opisthonotal gland opening present postero-mediad of  $f_2$ .

**Gnathosoma** (Figs 45, 46)

Subcapitulum longer than wide (155–164 × 123–127). Hypostomal setae *h* (20–24) covered with phylliform cerotegument; setae  $m_1$  (20–24),  $m_2$  (8–12) and *a* (32–41) setiform, barbed. Two pairs of adoral setae (24–28):  $or_1$  simple, smooth;  $or_2$  bifurcate. Palps (77–82) similar morphologically to *N. louiseae* **spec. nov.**, with setation 0–1–1–3–9(+1 $\omega$ ). Solenidion thickened, blunt-ended, not coupled with *acm*. Chelicerae (155–164) similar morphologically to *N. louiseae* **spec. nov.**, with two setiform and barbed cheliceral setae: *cha* (53–57) longer, than *chb* (28–32). Trägårdh's organ clearly visible.



Figures 29–44: *Nothrus engelbrechti* **spec. nov.**, adult: (29) microsculpture of middle part of prodorsum; (30) microsculpture between setae  $e_1$ ; (31) rostral seta; (32) lamellar seta; (33) interlamellar seta; (34) apical part of sensillus; (35) exobothridial seta; (36) notogastral seta  $c_1$ ; (37) notogastral seta  $c_2$ ; (38) notogastral seta  $h_2$ ; (39) notogastral seta  $p_1$ ; (40) epimeral seta  $2a$ ; (41) epimeral seta  $1d$ ; (42) genital seta  $g_5$ ; (43) anal seta  $an_2$ ; (44) adanal seta  $ad_2$ . Scale bars: (29–32, 34, 35, 40–44) 10  $\mu\text{m}$ , (33, 36–39) 20  $\mu\text{m}$ .

**Epimeral region** (Figs 27, 40, 41)

Epimeral setal formula 7–5–5–6. Setae short, similar in length (16–20, except longer *ld* 28–32), covered with phylliform cerotegument, set on small tubercles.

**Anogenital region** (Figs 27, 28, 42–44)

Two pairs of anal (12–16), three pairs of adanal (*ad*<sub>1</sub> 22–28, *ad*<sub>2</sub> and *ad*<sub>3</sub> 16–24) and nine pairs of genital (12–16) setae covered with thin layer of phylliform cerotegument. Lyrifissures *ian*, *iad*, *ih* and *ips* clearly visible, *ip* not evident.

**Legs** (Figs 47, 48)

Tarsi with one smooth claw. Formulae of leg setation and solenidia: I (1–9–5–6–27) [1–2–3], II (1–8–5–5–25) [1–1–1], III (4–5–5–5–22) [1–1–0], IV (2–6–5–5–22) [1–1–0]; homology of setae and solenidia indicated in Table 1. Many setae covered with phylliform or thin layer of cerotegument. Famulus short, setiform, pointed. All solenidia rod-like, weakly blunt-ended.

**Etymology**

The species is named in honour of Dr. Chris. M. Engelbrecht, a former director of the National Museum, Bloemfontein, and well known acarologist, who collected the species.

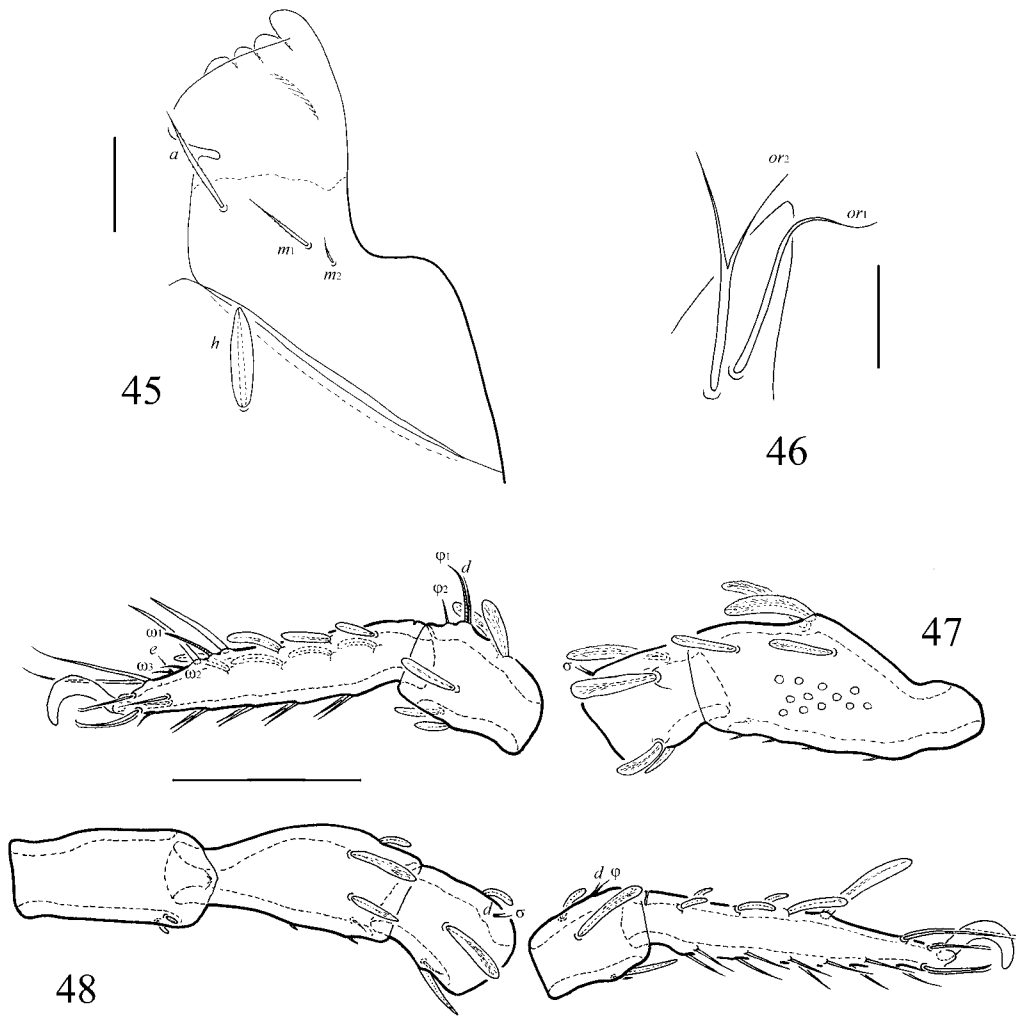
**Type material and type deposition**

The holotype (NMB 1874.11.1) and 11 paratypes (NMB 1874.11) have the following collection data: South Africa, KwaZulu-Natal, Pomeroy, 28°33'S, 30°25'E, in dry soil and decomposed litter under thorn trees, collected by C.M. Engelbrecht, 27 January 1982. The holotype and three paratypes (NMB 1874.11) are deposited at the National Museum, Bloemfontein. Three paratypes are deposited in the collection of the Siberian Zoological Museum, Novosibirsk, Russia. Five paratypes are in the personal collection of the first author.

**Collection data**

Co-ordinates where *N. engelbrechti* **spec. nov.** were found are indicated by filled triangles on the map of South Africa (Fig. 49). It is currently known only from grassland and savannah in Limpopo and KwaZulu-Natal provinces in eastern South Africa. This species is more scarcely distributed in South Africa than *N. bilongisetosus* and *N. monolongisetosus* (see distribution map in Ermilov & Hugo-Coetzee 2012).

Lenyenye, Limpopo Province (24°03'S, 30°22'E, dry loamy soil with decomposed plant material); near Izingolweni, KwaZulu-Natal (30°46'S, 30°07'E, very dry soil and decomposed leaf litter under indigenous trees).



Figures 45–48: *Nothrus engelbrechti* **spec. nov.**, adult: (45) partial left half of subcapitulum; (46) right lip with adoral setae; (47) leg I, without trochanter, left, antiaxial view; (48) leg IV, left, antiaxial view. Scale bars: (45) 20  $\mu\text{m}$ , (46) 10  $\mu\text{m}$ , (47, 48) 100  $\mu\text{m}$ .

### Remarks

In having the combination of longer notogastral setae  $h_2$ ,  $p_1$  and monodactylous legs, *Nothrus engelbrechti* **spec. nov.** is similar to the following congeners: *N. baviensis* Krivolutsky, 1998 from Vietnam (see Krivolutsky 1998), *N. discifer* Hammer, 1961 from Peru, *N. gracilis* Hammer, 1961 from the Neotropical region and India, *N. magnus* Palacios-Vargas & Iglesias, 1997 from Mexico, *N. montanus* Krivolutsky, 1998 from Vietnam (see Krivolutsky 1998), *N. silvestris* Nicolet, 1855 from the Holarctic and Australian regions (see Olszanowski 1996), and *N. willmanni* Mahunka, 1983 from the Neotropical region. However, *N. engelbrechti* **spec. nov.** clearly differs from all these listed species as follows:

– from *N. baviensis* by the morphology of sensilli (barbed vs. smooth in *N. baviensis*), morphology of rostral and lamellar setae (broad cerotegument vs. thickened setae in *N. baviensis*), number of pairs of genital setae (nine vs. eight pairs in *N. baviensis*), and morphology of notogastral setae ( $h_2$  and  $p_1$  differ from others, weakly or not dilated distally; other notogastral setae well dilated distally vs.  $h_2$  and  $p_1$  not different from others, all weakly dilated distally in *N. baviensis*);

– from *N. discifer* and *N. gracilis* by the lengths of notogastral setae  $h_2$  and  $p_1$  (two or more times longer than other notogastral setae vs. only slightly longer in *N. discifer* and *N. gracilis*), and morphology of notogastral setae ( $h_2$  and  $p_1$  differ from others, weakly or not dilated distally vs.  $h_2$  and  $p_1$  little different from others, all well dilated distally in *N. discifer* and *N. gracilis*);

– from *N. magnus* by the body size (763–830 × 352–398 vs. 946 × 572 in *N. magnus*), morphology of rostral and lamellar setae (broad cerotegument vs. thinner cerotegument in *N. magnus*), epimeral setal formula (7–5–5–6 vs. 9–6–6–6 in *N. magnus*), and length of epimeral setae *1d* (longer than others vs. not longer in *N. magnus*);

– from *N. montanus* by the body size (763–830 × 352–398 vs. 936 × 526 in *N. montanus*), morphology of sensilli (barbed vs. smooth in *N. montanus*), morphology of rostral and lamellar setae (with broad cerotegument vs. thickened setae in *N. montanus*), and morphology of notogastral setae ( $h_2$  and  $p_1$  differ from others, weakly or not dilated distally; other notogastral setae well dilated distally vs.  $h_2$  and  $p_1$  not different from others, all weakly dilated distally in *N. montanus*);

– from *N. silvestris* by the morphology of rostral and lamellar setae (with broad cerotegument vs. thickened setae in *N. silvestris*), morphology of notogastral setae ( $h_2$  and  $p_1$  differ from others, weakly or not dilated distally; other notogastral setae well dilated distally vs.  $h_2$  and  $p_1$  not different from others, all weakly dilated distally in *N. silvestris*), and lengths of centrodorsal notogastral setae (not reaching insertions of subsequent setae vs. reaching insertions of subsequent setae in *N. silvestris*);

– from *N. willmanni* by the length of interlamellar setae (medium size vs. extremely long in *N. willmanni*), and morphology of notogastral setae ( $h_2$  and  $p_1$  differ from others vs.  $h_2$  and  $p_1$  not different from others in *N. willmanni*).



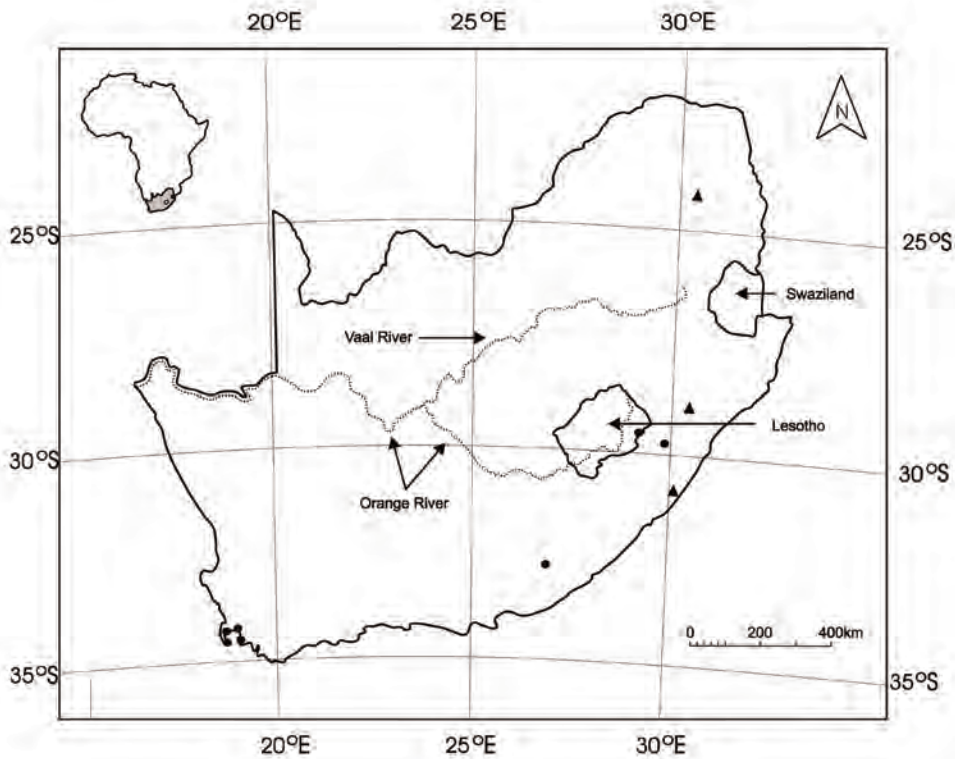


Figure 49: Known localities of *Nothrus louiseae* **spec. nov.** (filled circles) and *N. engelbrechti* **spec. nov.** (filled triangles) in South Africa.

### OPSOMMING

Twee nuwe oribatid myt spesies van die familie Nothridae, *Nothrus louiseae* **spec. nov.** en *Nothrus engelbrechti* **spec. nov.** word beskryf vanuit die versameling in die Nasionale Museum (Bloemfontein, Suid Afrika). Beide spesies kan van ander Suid-Afrikaanse spesies onderskei word op grond van die lang en kaudale setae  $h_2$  en  $p_1$  met dieselfde lengte. Die verspreiding van die nuwe spesies word aangedui.

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