

## A new species of the genus *Saprolaelaps* LEITNER, 1946 from the Harz region of Germany (Acari: Gamasina: Halolaelapidae)

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7 Figures and 1 Table

### Abstract

HEDDERGOTT, M.; ECKERT, R.: A new species of the genus *Saprolaelaps* LEITNER, 1946 from the Harz region of Germany (Acari: Gamasina: Halolaelapidae). – *Hercynia N.F.* 42 (2009): 111-116.

A new mesostigmatic mite *Saprolaelaps stubbi* sp. nov. is described from the Harz region in Thuringia and Saxony-Anhalt and is separated from the related species *Saprolaelaps areolatus* LEITNER, 1946, *Saprolaelaps claudiae* BŁASZAK & EHRNSBERGER, 2000, *Saprolaelaps goetzi* BŁASZAK & EHRNSBERGER, 2002 and *Saprolaelaps reticulatus* BŁASZAK & EHRNSBERGER, 2000 by differential diagnosis. The females are described and illustrated. The male and immatures are unknown.

*Key words:* Acari, systematic, new species *Saprolaelaps stubbi* sp. nov., Thuringia, Saxony-Anhalt, Germany.

## 1 Introduction

While working on material of the family Halolaelapidae found in the Harz region (Thuringia and Saxony-Anhalt) a new species of the genus *Saprolaelaps* LEITNER, 1946 was discovered.

The genus *Saprolaelaps* LEITNER, 1946 is closely related to the genus *Halolaelaps* (BERLESE & TROUESART, 1889). The difference in the two genera is markedly pronounced, above all in the number of setae on the genu III. On the genu III of the *Saprolaelaps* there are 8 setae; on the genu III of the genus *Halolaelaps* there are 9 setae. Additionally there is a marked difference in the shape of the ventral side of the male. In the males of the genus *Halolaelaps* there is a sternogenital shield as well as a ventroanal shield, whereas the male of the genus *Saprolaelaps* has only a holovenral shield. According to EVANS & TILL (1979), these characteristics represent the main differences in determining the genera.

EVANS & TILL (1979) also describes a further characteristic in the genus *Saprolaelaps*. The authors refer to a spur in the anterior area of the coxa II in this genus which is not present in the genus *Halolaelaps*. According to studies by BŁASZAK & EHRNSBERGER (1995), BŁASZAK & EHRNSBERGER (1998a), BŁASZAK & EHRNSBERGER (1998b) and BŁASZAK & EHRNSBERGER (2002), such a spur is also found in the subgenus *Haloseius* of the genus *Halolaelaps* BŁASZAK & EHRNSBERGER, 1998 and *Halogamasellus* BŁASZAK & EHRNSBERGER, 1995. This characteristic has led to confusion in classification in the past.

The identification key according to BREGETOVA (1977), HIRSCHMANN (1968) and KARG (1993) included all species from the genus *Saprolaelaps* in the genus *Halolaelaps*. The genus *Saprolaelaps* LEITNER, 1946 in Europe was first revised by BŁASZAK & EHRNSBERGER (2002).

## 2 Material and Methods

In the course of studies of pseudoscorpions and mites in the Harz region of Thuringia, Lower Saxony and Saxony-Anhalt a large number of mites also became available for study. The mites were collected by sieving leaves, use of ground traps and collection by hand. Before examination, the mites are stored in a 70 % alcohol solution. Drawings were made with a phase contrast Zeiss microscope (Göttingen; Lower Saxony;

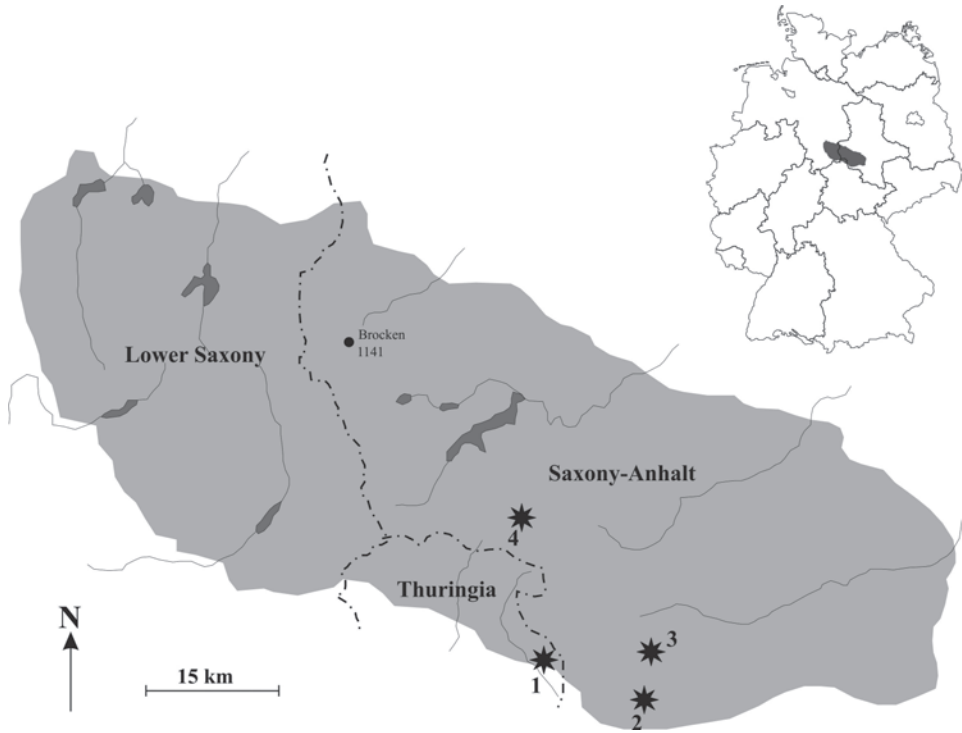


Fig. 1 Distribution of *Saproalelaps stubbi* sp. nov. in the Harz region. Thuringia: **1** = Rodishain (= Typus locality). Saxony-Anhalt: **2** = Questen-cave by Questenberg, **3** = Rotha and **4** = Hasselfelde.

Abb. 1 Vorkommen von *Saproalelaps stubbi* sp. nov. im Harz. Thüringen: **1** = Rodishain (= Typus Lokalität). Sachsen-Anhalt: **2** = Questenhöhle bei Questenberg, **3** = Rotha und **4** = Hasselfelde.

Germany) with a drawing tube. The nomenclature of the dorsum and the morphological terminology are as proposed by EVANS & TILL (1979), BŁASZAK & EHRNSBERGER (2002) and CHRISTIAN & KARG (2008). All measurements are given in micrometers ( $\mu\text{m}$ ).

Abbreviations: **AMNH** – American Museum of Natural History (New York; USA), **BMNH** – British Museum of Natural History (London; United Kingdom), **CMH M.** – Collection Mike Heddergott – mites, (Heilbad Heiligenstadt; Germany) and **MNB** – Museum of Natural History, Humboldt-University Berlin (Berlin; Germany).

### *Saproalelaps stubbi* sp. nov. (Figs. 1-7)

**Material.** (Fig. 1) **Holotype:** 1 ♀, compost heap with fruit remains, 21.VII.2007, Rodishain [010°55'11" O; 51°32'36" N], Rural District of Nordhausen, Thuringia, Germany, leg. M. Heddergott, H.-L. Hansen and G. Sommerfeld [BMNH].

**Paratypes:** 1 ♀, Greenhouse with tomatoes, 09.VIII.2008, Hasselfelde [010°50'22" O; 51°40'51" N], Rural District of Mansfeld-Südharz, Saxony-Anhalt, leg. M. Heddergott and G. Sommerfeld [MNB]. – 2 ♀♀, 1987-1991 (SH 25), Questen-cave by Questenberg [011°07'17" O; 51°29'28" N], Rural District of Mansfeld-Südharz, Saxony-Anhalt, leg. R. Eckert [CMH M. 2674/2006 and 2675/2006]. – 1 ♀, compost heap with fruit remains, 02.IV.2008, Rotha [011°08'55" O; 51°32'30" N], Rural District of Mansfeld-Südharz, Saxony-Anhalt, leg. M. Heddergott and G. Sommerfeld [AMNH].

**Type locality.** Rodishain [010°55'11" O; 51°32'36" N], Rural District of Nordhausen, Thuringia, Germany.

**Diagnosis.** The new species *Saprolaelaps stubbi* sp. nov. belongs to the group of the species with 14 pair's setae of podonotal shield. Belong to this group of species: *Saprolaelaps areolatus* LEITNER, 1946, *S. claudiae* BŁASZAK & EHRNSBERGER, 2000b, *S. goetzi* BŁASZAK & EHRNSBERGER, 2002 and *S. reticulatus* BŁASZAK & EHRNSBERGER, 2000a. The different characteristics of the five species are presented in Table 1.

The new species *Saprolaelaps stubbi* sp. nov. marks itself by the available being setae i1 on pronotal shield and the number setae Iv (3 pairs) and Zv (2 pairs) on opisthosoma.

Table 1 Differential diagnosis of the *Saprolaelaps areolatus* LEITNER, 1946, *Saprolaelaps claudiae* BŁASZAK & EHRNSBERGER, 2000, *Saprolaelaps goetzi* BŁASZAK & EHRNSBERGER, 2002, *Saprolaelaps reticulatus* BŁASZAK & EHRNSBERGER, 2000 and *Saprolaelaps stubbi* sp. nov.

Tab. 1 Differenzialdiagnose der Arten *Saprolaelaps areolatus* LEITNER, 1946, *Saprolaelaps claudiae* BŁASZAK & EHRNSBERGER, 2000, *Saprolaelaps goetzi* BŁASZAK & EHRNSBERGER, 2002, *Saprolaelaps reticulatus* BŁASZAK & EHRNSBERGER, 2000 und *Saprolaelaps stubbi* sp. nov.

Characteristic	<i>Saprolaelaps areolatus</i> LEITNER, 1946	<i>Saprolaelaps claudiae</i> BŁASZAK & EHRNSBERGER, 2000	<i>Saprolaelaps goetzi</i> BŁASZAK & EHRNSBERGER, 2002
1	seta i1 exterior to the podonotal shield	seta i1 exterior to the podonotal shield	seta i1 exterior to the podonotal shield
2	opisthonotal shield with 14 pairs setae	opisthonotal shield with 13 pairs setae	opisthonotal shield with 14 pairs setae
3	middle incision of opisthonotal shield deeply and reach up to base of setae Z2	middle incision of opisthonotal shield weakly reach up to base of setae I1	middle incision of opisthonotal shield deeply and reaches up to half of the segment between I1 and I2
4	seta S1 on the opisthonotal shield	seta S1 not on the opisthonotal shield	seta S1 on the opisthonotal shield
5	tectum has a long lance-shaped central tip without supplementary tips at the base	tectum has a long lance-shaped central tip with supplementary tips at the base	tectum has a long lance-shaped central tip with supplementary tips at the base
6	opisthosoma with 4 pairs Iv setae and 4 pairs Zv setae	opisthosoma with 4 pairs Iv setae and 4 pairs Zv setae	opisthosoma with 4 pairs Iv setae and 4 pairs Zv setae
7	anal shield with 3 setae	anal shield with 3 setae	anal shield with 3 setae

Characteristic	<i>Saprolaelaps reticulatus</i> BŁASZAK & EHRNSBERGER 2000	<i>Saprolaelaps stubbi</i> sp. nov.
1	seta i1 exterior to the podonotal shield	seta i1 on the podonotal shield
2	opisthonotal shield with 14 pairs setae	opisthonotal shield with 14 pairs setae
3	middle incision of opisthonotal shield level and does not reach up to base of setae I1	middle incision of opisthonotal shield weakly behind setae I1
4	seta S1 on the opisthonotal shield	seta S1 on the opisthonotal shield
5	tectum has a long lance-shaped central tip without supplementary tips at the base	tectum has a long lance-shaped central tip without supplementary tips at the base
6	opisthosoma with 4 pairs Iv setae and 4 pairs Zv setae	opisthosoma with 3 pairs Iv setae and 2 pairs Zv setae
7	anal shield with 5 setae	anal shield with 3 setae

### 3 Description

**Female** (Figs. 2-7). **Dorsum** (Fig. 2 and 4). Pronotal shield with 14 pairs of setae. Seta i1 on the pronotal shield (Fig. 4). Setae s1 and x1, as well as all setae of the r-row, are exterior to the podonotal shield. The pronotal shield is clearly covered with a net-like structure. Setae r3 and s3 on the podonotal shield. Setae

z1, i2, i3, i4, i5, z2, z3, z4, z6, r3, s4, and s4 on the pronotal shield are smooth. Setae i1 and x1, as well as all setae of r-row are feathered at the tip (cf. Fig. 6). The opisthotal shield has 14 pairs of setae. All setae of the R-row are not located on the opisthotal shield. Seta S1 on the opisthotal shield. Setae I1, Z1, Z2, Z3, Z4, Z5, S1, S2, S3, S4 and S5 on the opisthotal shield are long and smooth. Setae I2, I4 and I5 on the opisthotal shield are feathered in the distal region (cf. Fig. 7). The opisthotal shield is clearly covered with a net-like structure. The interscutal membrane is covered with thin lines.

**Venter** (Fig. 3). The sternal shield is covered with dimples and has three pairs of setae (St1, St2 and St3). St1 and St2 are noticeably longer than St3. Metasternal shields are present and have each one seta. The genital shields are longer and are not fused with the sternal shield. The genital shield is distally domed. Genital shield with 1 pair setae (St5). The metapodal shield is present. The anal shield is large with an oval shape, covered with net-like structure, and has 3 setae. The peritreme is long and reaches as far as the anterior edge of coxa I. The peritreme sits on a narrow peritreme shield. On the ventral side of the opisthosoma there are 3 pairs of Iv setae and 2 pairs of Zv setae. On the ventral side of the opisthosoma the skin is covered with small dimples.

**Legs** (Fig. 3). Coxa II have an anterior spur.

**Tectum** (Fig. 5). The tectum has a long lance shaped tip which is covered with fine thorns. The tectum thickens slightly towards the tip. There are no supplementary tips at the base of the tectum.

**Measurements.** Holotype [4 Paratypes (minimum-maximum; ranges followed by means in parentheses)]: Idiosoma length 404 [402-433; 414] and wide 258 [236-289; 255].

**Dorsum.** Pronotal shield long 212 [212-232; 224] and wide 227 [226-232; 228]; opisthotal shield long 192 [185-198; 190] and wide 203 [198-209; 202]; setae long: i1 22 [21-23; 22]; z1 25 [23-25; 24]; i2 31 [28-35; 31]; i3 32 [30-35; 32]; i4 33 [30-34; 30]; i5 41 [38-47; 41]; s1 14 [12-16; 14]; z2 30 [29-34; 29]; z3 34 [34-38; 36]; z4 43 [40-51; 45]; z5 48 [48-52; 49]; s2 24 [22-26; 24]; s3 31 [27-33; 29]; s4 40 [39-48; 43]; r1 19 [17-21; 19]; r2 21 [20-24; 22]; r3 31 [27-33; 29]; r4 27 [25-30; 27]; r5 33 [30-36; 33]; s5 41 [38-44; 40]; rx1 38 [35-39; 37]; I1 43 [42-46; 44]; I2 45 [39-48; 44]; I4 31 [28-33; 30]; I5 36 [34-38; 35]; Z1 37 [36-39; 37]; Z2 29 [29-32; 30]; Z3 30 [29-32; 30]; Z4 32 [30-32; 31]; Z5 39 [38-45; 42]; S1 34 [31-36; 34]; S2 27 [27-34; 30]; S3 28 [25-31; 28]; S4 23 [20-27; 23]; S5 25 [22-28; 25]; R1 25 [23-28; 25]; R2 24 [24-29; 26]; R3 26 [25-30; 27]; R4 22 [20-26; 22]; R5 27 [25-32; 28] and R6 24 [23-29; 25].

**Venter.** Sternal shield length 99 [98-119; 107] and wide (measured at the amount of St2) 72 [70-83; 77]; genital shield length 78 [76-86; 80] and wide 68 [63-79; 71]; anal shield length 79 [78-87; 83] and wide 49 [48-57; 52]; anal setae length 16 [15-21; 18]; setae long: St1 23 [21-27; 24]; St2 22 [19-26; 23]; St3 15 [14-19; 16] and St5 27 [24-28; 26].

**Male and immatures.** Unknown.

**Distribution.** The Harz region of Germany in the states of Thuringia and Saxony-Anhalt (Fig. 1).

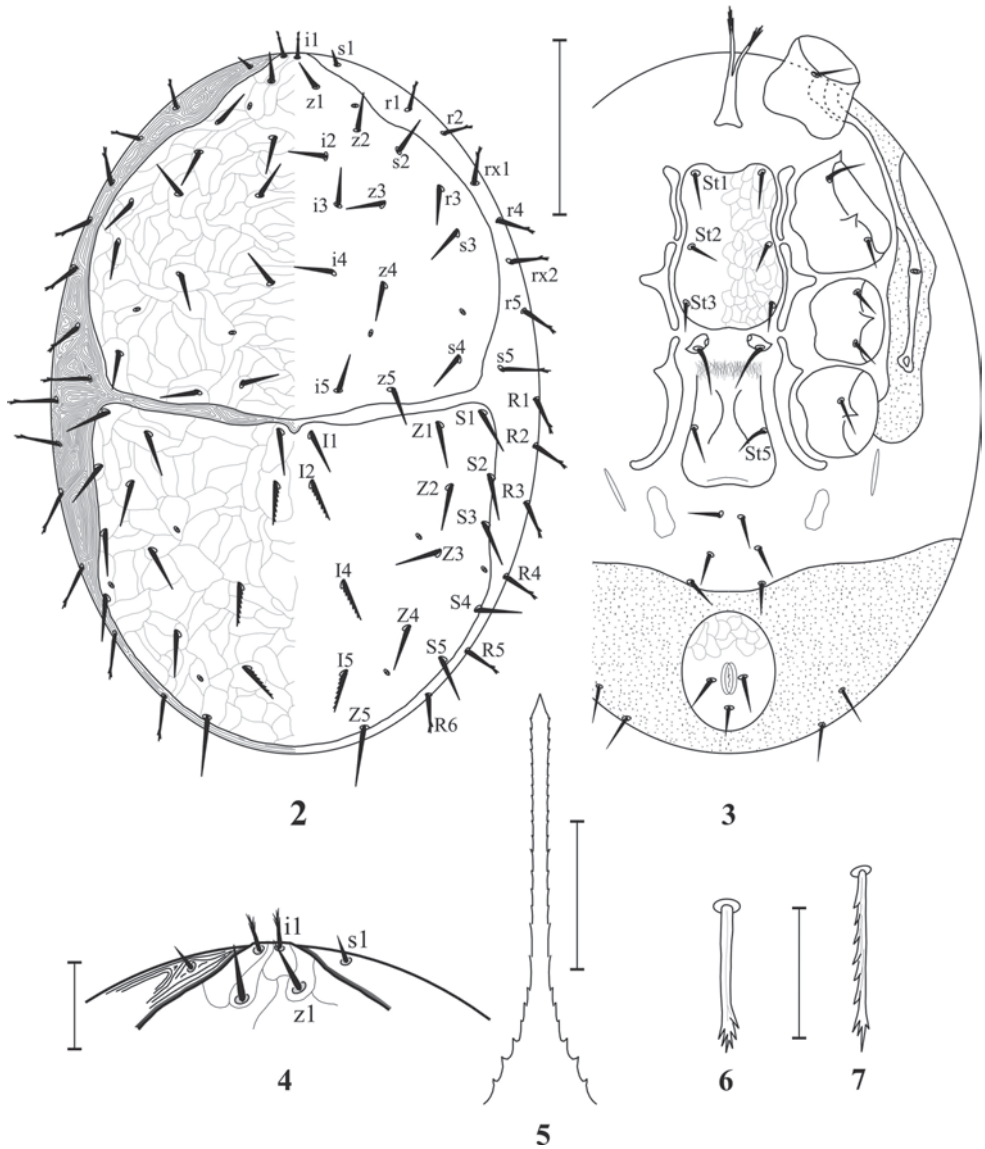
**Etymology.** The new species *Saprolaelaps stubbi* sp. nov. is named after Prof. Dr. Michael STUBBE, Halle/Saale (Saxony-Anhalt, Germany).

## 4 Acknowledgements

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## 5 Zusammenfassung

HEDDERGOTT, M.; ECKERT, R.: Eine neue Milbenart aus der Gattung *Saprolaelaps* LEITNER, 1946 aus dem Harz in Deutschland (Acari: Gamasina: Halolaelapidae). – *Hercynia* N.F. **42** (2009): 111-116.



Figs. 2-7 *Saprolaelaps stubbi* sp. nov. female (Holotype). 2. Dorsal. 3. Ventral. Scale: 100  $\mu$ m. 4. Idiosoma, anterodorsal region. Scale: 50  $\mu$ m. 5. Tectum. Scale: 25  $\mu$ m. 6. Bristles feathered at tip (i1) [i1, rx1, r1, r2, r4, r5 and R1-R6]. 7. Feathered bristles over the whole of the distal area (I2) [I2, I4 and I5]. Scale: 20  $\mu$ m.

Abb. 2-7 *Saprolaelaps stubbi* sp. nov. Weibchen (Holotyp). 2. Dorsalseite. 3. Ventralseite. Skala: 100  $\mu$ m. 4. Idiosoma, anterodorsale Region. Skala: 50  $\mu$ m. 5. Tectum. Skala: 25  $\mu$ m. 6. am Ende gefiederte Borsten (i1) [i1, rx1, r1, r2, r4, r5 und R1-R6]. 7. im distalen Bereich gefiederte Borsten (I2) [I2, I4 und I5]. Skala: 20  $\mu$ m.

Eine neue Raubmilbe *Saprolaelaps stubbi* sp. nov. wird aus dem Harz in Thüringen und Sachsen-Anhalt beschrieben und differentialdiagnostisch von den nahe verwandten Arten *Saprolaelaps areolatus* LEITNER, 1946, *Saprolaelaps claudiae* BŁASZAK & EHRNSBERGER, 2000, *Saprolaelaps goetzi* BŁASZAK &

EHRNSBERGER, 2002 and *Saprolaelaps reticulatus* BŁASZAK & EHRNSBERGER, 2000 abgegrenzt. Das Weibchen wird beschrieben und mit Zeichnungen dargestellt. Männchen und Immatures sind unbekannt.

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