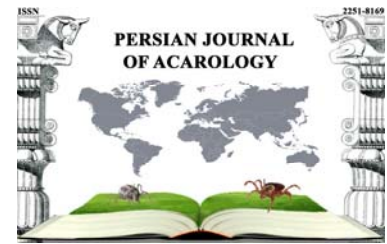




Persian J. Acarol., 2019, Vol. 9, No. 2, pp. 209–212.
<http://dx.doi.org/10.22073/pja.v9i2.60814>
Journal homepage: <http://www.biotaxa.org/pja>



Correspondence

Corrections and additions to *Leptus* Latreille (Trombidiformes: Erythraeidae) of the world: revised classification and keys

Alireza Saboori^{1*}, Masoud Hakimitabar², Narjes Khademi³, Hamidreza Masoumi¹ and Ahmad-Reza Katouzian⁴

1. Jalal Afshar Zoological Museum, Department of Plant Protection, Faculty of Agriculture, University of Tehran, Karaj, Iran; E-mails: saboori@ut.ac.ir, h.r.masoumi@ut.ac.ir
2. Department of Plant Protection, Faculty of Agriculture, Shahrood University of Technology, Shahrood, Iran; E-mail: hakimitabar@yahoo.com
3. Department of Entomology, Science and Research Branch, Islamic Azad University, Tehran, Iran; E-mail: narjes_khademi@yahoo.com
4. School of Biology and Centre of Excellence in Phylogeny of Living Organisms, University of Tehran, Tehran, Iran; E-mail: a.r.katouzian@ut.ac.ir

* Corresponding author

PAPER INFO.: Received: 31 March 2020, Accepted: 1 April 2020, Published: 15 April 2020

Saboori *et al.* (2020) in the reclassification of *Leptus*, identified 220 species and divided the genus into 8 morpho-groups, and 40 subgroups of species and made 11 synonymies. In the couplet of 18 of key to subgroups of *phalangii* species group, an explanation is added in the parentheses. The key is changed as follows:

Key to subgroups of *phalangii* species group

1. BFe III with solenidion *candangus* species subgroup
– BFe III without solenidion 2
2. TFe I with ≥ 1 solenidion *schedingi* species subgroup
– TFe I without solenidion 3
3. Ge I with 2 solenidia *torresianus* species subgroup
– Ge I with 1 solenidion 4
4. Ti I with 3 solenidia *indianensis* species subgroup
– Ti I with 2 solenidia 5
5. Ti III with 2 solenidia *hozumii* species subgroup
– Ti III with 1 solenidion 6
6. Ge II with 1 solenidion *kuroshimaensis* species subgroup
– Ge II without solenidion 7
7. Solenida on Ti II absent *phyllostretae* species subgroup
– Solenida on Ti II present 8

How to cite: Saboori, A., Hakimitabar, M., Khademi, N., Masoumi, H. & Katouzian, A.-R. (2020) Corrections and additions to *Leptus* Latreille (Trombidiformes: Erythraeidae) of the world: revised classification and keys. *Persian Journal of Acarology*, 9(2): 209–212.

- 8. Ti II with 1 solenidion *asahinai* species subgroup
- Ti II with 2 solenidia 9
- 9. BFe III with 2 setae *guilinicus* species subgroup
- BFe III with 1 seta 10
- 10. Sensillary setae significantly setulose throughout the length *killingtoni* species subgroup
- Sensillary setae setulose about distal half 11
- 11. ASens bases posterior to PL bases *chelonethus* species subgroup
- ASens bases anterior to PL bases 12
- 12. ASens bases level with or anterior to AL bases *gagzoi* species subgroup
- ASens bases between AL and PL bases 13
- 13. Large microsetae on Ge I-II & Ti I *aldonae* species subgroup
- Microsetae on Ge I-II & Ti I normal 14
- 14. Chelicerae striated *treati* species subgroup
- Chelicerae punctate 15
- 15. fD > 125 *millipediis* species subgroup
- fD < 125 16
- 16. 100 < fD < 125 *meloidarum* species subgroup
- fD < 100 17
- 17. Scutum distinctly longer than wide (L-W > 15 µm) *gagrellae* species subgroup
- Scutum otherwise 18
- 18. Scutum distinctly wider than long (usually W-L ≥ 14 µm) *gifuensis* species subgroup
- Scutum length and width semi-equal (L > W; or W-L < 14 µm)* 19
- 19. Ti I < 125 *molochinus* species subgroup
- Ti I > 125 20
- 20. Ti III > 340 & Ti I > 280 *boggohoranus* species subgroup
- Ti III < 340 or Ti I < 280 *phalangii* species subgroup

* The character “L < 14 µm” in the parentheses should be replaced with “L > W; or W-L < 14 µm” in the definition of the *molochinus*, *boggohoranus* and *phalangii* species subgroups in Saboori et al. (2020).

Leptus (*L.*) *clelandi* Southcott, 1999 and *L.* (*L.*) *tindalei* Southcott, 1999 which were placed in the *gifuensis* species subgroup are placed in the *meloidarum* species subgroup. Thus, species in these two subgroups and the keys to species are changed as follows.

***meloidarum* species subgroup**

BFe III without solenidion, TFe I without solenidion, Ge I with 1 solenidion, Ti I with 2 solenidia, Ti III with 1 solenidion, Ge II without solenidion, Ti II with 2 solenidia, TFe III with 1 seta, sensillary setae setulose in about distal half, ASens bases between AL and PL bases, solenidia on Ti II present, microseta on Ge I-II & Ti I normal, chelicerae punctate, 100 < fD < 125.

Species included: *L.* (*L.*) *meloidarum* Beron, 1975 (syn.: *L.* (*L.*) *gyas* Fain & Amico, 1997, *L.* (*L.*) *mariae* Haitlinger, 1987*, *L.* (*L.*) *clarki* Southcott, 1989, *L.* (*L.*) *baudini* Southcott, 1999, *L.* (*L.*) *clelandi* Southcott, 1999, *L.* (*L.*) *tindalei* Southcott, 1999.

* The redescription of Southcott (1992) is considered.

Key to species of *meloidarum* species subgroup

- 1. Ti III/AW > 2 2
- Ti III/AW < 1.80 4

2. Ti III/AW > 2.50 *L. (L.) clarki* Australia
 – Ti III/AW < 2.40 3
3. L > 120, PL > 70 *L. (L.) mariae*
 Austria, Belgium, Bulgaria, Czech Republic [N], Estonia, Hungary, Italy, Latvia, Luxembourg,
 Macedonia, Norway, Poland, Romania, Slovenia, Spain, Sweden, Switzerland, The Netherlands
 – L < 100, PL < 50 *L. (L.) tindalei* Australia
4. L > 90 5
 – L < 80 *L. (L.) baudini* Australia
5. W 126–133, PSens 68–75, ASens 42–45 *L. (L.) meloidarum* Bulgaria, Italy, Kyrgyzstan
 – W 112–115, PSens 41–45, ASens 28–32 *L. (L.) clelandi* Australia

***gifuensis* species subgroup**

BFe III without solenidion, TFe I without solenidion, Ge I with 1 solenidion, Ti I with 2 solenidia, Ti III with 1 solenidion, Ge II without solenidion, Ti II with 2 solenidia, TFe III with 1 seta, sensillary setae setulose in about distal half, ASens bases between AL and PL bases, solenidia on Ti II present, microseta on Ge I-II & Ti I normal, chelicerae punctate, fD < 100, scutum distinctly wider than long (usually W–L ≥ 14 μm).

Species included: *L. (L.) gifuensis* Kawashima, 1958, *L. (L.) alberti* Haitlinger, 1991, *L. (L.) cercopius* Southcott, 1992, *L. (L.) rwandae* Fain & Jocqué, 1996, *L. (L.) admeti* Haitlinger, 1998, , *L. (L.) fisheri* Southcott, 1999, , *L. (L.) brasiliicus* Haitlinger, Šundić & Pompermaier, 2017, *L. (L.) haitlingeri* Jacinavicius, BassiniSilva & Welbourn, 2019.

Key to species of *gifuensis* species subgroup

1. L < 65 *L. (L.) gifuensis* Japan
 – L > 70 2
2. With four hypostomal setae 3
 – With two hypostomal setae 7
3. Ti III/AW < 2.30 4
 – Ti III/AW > 2.40 6
4. Anterior border of scutum concave *L. (L.) brasiliicus* Brazil
 – Anterior border of scutum nearly straight 5
5. Ti III 195, Ti I 170 *L. (L.) fisheri* Australia
 – Ti III 117–119, Ti I 105–108 *L. (L.) rwandae* Rwanda
6. SoTa I ~30, aHy small (14 long) *L. (L.) cercopius* USA
 – SoTa I 62–66, aHy minute (3–4 long) *L. (L.) haitlingeri* Brazil
7. AL 44, PL 60 *L. (L.) alberti* Brazil
 – AL > 70, PL > 80 *L. (L.) admeti* Indonesia (Sumatra)

ACKNOWLEDGMENTS

We are grateful to Dr. Andreas Wohltmann for the critical review of the manuscript and useful comments. Also, we are thankful to Mr. Samuel Costa (Ph. D. candidate, Acarology lab from the Universidade Federal de Minas Gerais, Brazil) for informing us about incorrect placement of *L. (L.) clelandi* and *L. (L.) tindalei*.

REFERENCE

- Saboori, A., Hakimitabar, M., Khademi, N., Masoumi, H. & Katouzian, A.-R. (2020) *Leptus* Latreille (Trombidiformes: Erythraeidae) of the world: revised classification and keys. *Persian Journal of Acarology*, 9(Supplement 1): 1–57.
DOI: 10.22073/pja.v9i1st%20Suppl..57900

COPYRIGHT



Saboori *et al.* Persian Journal of Acarology is under a free license. This open-access article is distributed under the terms of the Creative Commons-BY-NC-ND which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.