



On the correct authorship, spelling, and type species of genus *Dasongius* (Pauropoda: Pauropodidae)

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The genus *Songius* Sun & Guo in Guo *et al.*, 2010 (Pauropoda: Pauropodidae) was established for two new species from China: *Songius rugosus* Sun & Guo in Guo *et al.*, 2010 and *Songius bicruris* Guo & Sun in Guo *et al.*, 2010. The manuscript was received by the journal Zoological Science on 7th April 2010 and the article is displayed on the BioOne platform with the publication date of 1st November 2010. In the same year, Yin *et al.* (2010) established the genus *Songius* Yin & Li in Yin *et al.*, 2010 (Coleoptera: Staphylinidae: Pselaphinae).

According to Qian *et al.* (2015: 533) the publication date of the article by Yin *et al.* (2010) is June 2010. Therefore, Qian *et al.* (2015: 533) recognized the genus *Songius* Sun & Guo in Guo *et al.*, 2010 as a junior homonym of the genus *Songius* Yin & Li in Yin *et al.*, 2010, and proposed a new replacement name for the junior homonym.

Qian *et al.* (2015: 532) wrote “*Dasongius* (Sun & Guo, 2010) nom. nov.” and “*Dasongius* (Sun & Guo, 2010) new name (= *Songius* Sun & Guo, 2010)”. In doing so, they made two mistakes:

(1) They proposed multiple original spellings (two) in the sense of article 19.3 of the Code (ICZN 1999). To the best of our knowledge, no author has yet acted as the First Reviser (articles 24.2.3 and 24.2.4) of the two original spellings involved. In citing both, we hereby fix *Dasongius* as the etymologically correct original spelling, and regard *Dasongius* as an unavailable, incorrect original spelling.

(2) They incorrectly stated the authorship of their new replacement name. Bu (2021: 240), following Qian *et al.* (2015), also wrote “Genus *Dasongius* Sun & Guo, 2010”. Qian *et al.* (2015) missed that the authorship of junior homonyms without synonyms is ruled by article 60.3 of the Code. A new substitute name bears its own author and date. The correct authorship of the replacement name *Dasongius* is thus Qian, Dong, Bernard & Sun, 2015.

The type species of *Dasongius* was cited by Qian *et al.* (2015: 533) as “Type species: *Dasongius rugosus* (Sun & Guo, 2010) new combination (= *Songius rugosus* Sun & Guo, 2010)”, and later by Bu (2021: 240) as “Type species. *Dasongius rugosus* (Sun & Guo, 2010)”. Such treatment is not erroneous, but we encourage subsequent authors to follow Recommendation 67B of the Code and to cite the type species of *Dasongius* by its original binomen, *Songius rugosus* Sun & Guo in Guo *et al.*, 2010. If desired, the valid name *Dasongius rugosus* (Sun & Guo in Guo *et al.*, 2010) may be cited in addition.

Additional remarks:

Remark 1: Guo *et al.* (2010: 896) attributed the authorship of the family Pauropodidae to “Lubbock, 1867”, most likely following the classification by Scheller (2008: 3). The name had been published in the Transactions of the Linnean Society of London, volume 26, part 1, consisting of pp. 1-352 and plates 1-22. According to Raphael (1970: 71), there are two competing publication dates for volume 26, part 1: either 5th March 1868 or 11th April 1868. Here we adopt the earliest date for the purpose of recording in Myriapoda. Regardless of the chosen date, the authorship of the family Pauropodidae is “Lubbock, 1868”, as long as it is linked to the Transactions, volume 26, part 1. A source of future confusion may be that Lubbock (1867, 1868) used the same article title, “On *Pauropus*, a new type of centipede”, for two different publications, both mentioned in the reference list below. Only the latter contains the family name Pauropodidae.

Remark 2: Guo *et al.* (2010: 896) attributed the authorship of the subfamily Pauropodinae to “Verhoeff, 1934”, most likely following Scheller (2008: 5). The correct authorship of the subfamily is ruled by the Principle of Coordination ap-

plied to family-group names, article 36.1 of the Code. A name established for a taxon at any rank in the family group is deemed to have been simultaneously established for nominal taxa at all other ranks in the family group. The family-rank name Pauropodidae was first proposed by Lubbock (1868: 182). The correct authorship of the coordinated subfamily name Pauropodinae is thus “Lubbock, 1868”.

Remark 3: Qian *et al.* (2015: 533) wrote “Other species: *Dasongius bicrurus* (Guo & Sun, 2010) new combination (= *Songius bicrurus* Guo & Sun, 2010)”. Those names contain the specific epithet “*bicrurus*”, different from the original epithet “*bicruris*”. The two names do not represent a mandatory change or an emendation, as evidenced by the correct spelling *Dasongius bicruris* mentioned three times by Qian *et al.* (2015: 522, 533, 536). The misspelled names are thus incorrect subsequent spellings in the sense of article 33.3 of the Code, and as such are unavailable. The misspelled epithet “*bicrurus*” was inadvertently repeated by Bu (2021: 244) once, along with four mentions of the correct original spelling “*bicruris*”.

Remark 4: Guo & Sun in Guo *et al.* (2010: 897) wrote about the etymology of *Songius bicruris*: “From the Latin *bi* = two and *cruris* = branch (referring to the appendages of the anal plate)”. The authors did not indicate whether they regarded “*bicruris*” as a noun or as an adjective. It is here regarded as a nominative singular, masculine, third declension adjective. The adjective is listed by Eckel (2011), as “*bicruris,-e* (adj.B): with two legs [i.e., segments or divisions]”. The abbreviation “adj.B” was used by Eckel (2011) to indicate third declension adjectives. The expression “*bicruris,-e*” highlights that this third declension adjective is in the nominative singular, and that it belongs to one main form in which masculine and feminine are the same, and neuter is different. Therefore, “*bicruris*” satisfies article 11.9.1.1. of the Code, as an adjective in the nominative singular. According to article 31.2 of the Code, a species-group name which is a Latin adjective in the nominative singular, must agree in gender with the generic name with which it is at any time combined. The adjective “*bicruris*” agrees in gender with the masculine genus name *Dasongius*, and with any feminine generic name with which it may be combined in the future. If ever combined with a neuter genus name, “*bicruris*” must be declined to “*bicrure*”.

Biodiversity Informatics recording:

1) Names: The following 16 taxonomic names are recorded in Myriatrix (The Fellowship of the Rings 2020 onwards), the virtual research environment for Myriapoda and Onychophora proposed by Martínez-Muñoz (2019). Recording is deemed complete for the genus *Dasongius* and its subordinated names.

1. Class Pauropoda Lubbock, 1868
2. Order Tetramerocerata Remy, 1950
3. Superfamily Pauropodidae Lubbock, 1868
4. Family Pauropodidae Lubbock, 1868
5. Subfamily Pauropodinae Lubbock, 1868
6. Genus *Dasongius* Qian, Dong, Bernard & Sun, 2015; **replacement name** pro *Songius* Sun & Guo in Guo *et al.*, 2010, a junior homonym of *Songius* Yin & Li in Yin *et al.*, 2010 (Coleoptera: Staphylinidae: Pselaphinae)
7. *Dasongius* Qian, Dong, Bernard & Sun, 2015; **unavailable, incorrect original spelling** pro *Dasongius* Qian, Dong, Bernard & Sun, 2015
8. *Songius* Sun & Guo in Guo *et al.*, 2010; **invalid, junior homonym** of *Songius* Yin & Li in Yin *et al.*, 2010 (Coleoptera: Staphylinidae: Pselaphinae)
9. *Dasongius bicruris* (Guo & Sun in Guo *et al.*, 2010)
10. *Dasongius bicrurus* (Guo & Sun in Guo *et al.*, 2010); **unavailable, incorrect subsequent spelling**
11. *Songius bicruris* Guo & Sun in Guo *et al.*, 2010
12. *Songius bicrurus* Guo & Sun in Guo *et al.*, 2010; **unavailable, incorrect subsequent spelling**
13. *Dasongius rugosus* (Sun & Guo in Guo *et al.*, 2010)
14. *Songius rugosus* Sun & Guo in Guo *et al.*, 2010
15. *Dasongius liupanensis* Bu, 2021
16. *Dasongius spatulatus* Bu, 2021

2) Diagnoses: We compiled ten relevant taxonomic diagnoses (see numbers in bold in the list above) and rewrote them when necessary. Taxon pages were created in Myriatrix and all diagnoses were recorded on the respective taxon page, section “Diagnostic description”, and additionally in a supplementary file (<https://doi.org/10.5281/zenodo.4682989>). Diagnoses for taxa in the higher classification of Pauropoda (class to family-group) follow Scheller (2008; 2011), the diagnosis

of Pauropoda being rewritten with increased consistency. Diagnosis of genus *Dasongius* follows Guo *et al.* (2010: 896) and Bu (2021: 240). Diagnoses of *Dasongius* species follow their original descriptions, with the necessary standardization and a few corrections made in this work. To the extent possible, the diagnoses follow a morphological progression from anterior to posterior and from dorsal to ventral. Diagnoses above the species level provide an anchoring element by referring to the parent taxon in the first sentence.

3) Publications: All taxonomic publications cited in the reference list at the end of this work, including the Coleoptera article by Yin *et al.* (2010) containing one senior homonym, are registered in the literature database of Myriatrix. Recording of publications included filling the “Date Published” field with the most accurate date available, in the format DD/MM/YYYY.

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References:

- Bu, Y. (2021) Two new species of the genus *Dasongius* (Myriapoda, Pauropoda, Pauropodidae) from China. *Zootaxa*, 4908 (2), 239–250.
<https://doi.org/10.11646/zootaxa.4908.2.5>
- Eckel, P.M. (2011) *A Grammatical Dictionary of Botanical Latin*. Missouri Botanical Garden. Available from: <http://www.mobot.org/mobot/LatinDict/search.aspx> (accessed 1 March 2021)
- Guo, H., Sun, H.-Y., Qian, C.-Y., Shen, H. & Zhou, K.-Y. (2010) A new genus and two new species of the subfamily Pauropodinae (Myriapoda: Pauropoda: Pauropodidae) from China. *Zoological Science*, 27 (11), 895–899.
<https://doi.org/10.2108/zsj.27.895>
- ICZN (1999) *International Code of Zoological Nomenclature. 4th Edition*. The International Trust for Zoological Nomenclature, London, 306 pp.
- Lubbock, J. (1867) On *Pauropus*, a new type of centipede. *Journal of the Linnean Society of London*, Zoology, 9 (35), 179–180.
<https://doi.org/10.1111/j.1096-3642.1867.tb00281.x>
- Lubbock, J. (1868) On *Pauropus*, a new type of centipede. *Transactions of the Linnean Society of London*, 26 (1), 181–190, pl. 10.
<https://doi.org/10.1111/j.1096-3642.1968.tb00504.x>
- Martínez-Muñoz, C.A. (2019) Proposal of Myriatrix, a virtual research environment for the International Society for Myriapodology. *International Society for Myriapodology Newsletter*, 4, 25–26. [<https://www.myriapodology.org/newsletter/newsletter/CIMnewsletter2019.pdf>]
- Qian, C.-Y., Dong, Y., Bernard, E.C. & Sun, H.-Y. (2015) Records of Pauropoda (Pauropodidae, Brachypauropodidae, Eury-pauropodidae, Sphaeropauropodidae) from China, with a key to the species and descriptions of three new species of *Decapauropus*. *Zootaxa*, 4006 (3), 521–539.
<https://doi.org/10.11646/zootaxa.4006.3.6>
- Raphael, S. (1970) The publication dates of the Transactions of the Linnean Society of London, Series I, 1791–1875. *Biological Journal of the Linnean Society*, 2 (1), 61–76.
<https://doi.org/10.1111/j.1095-8312.1970.tb01688.x>
- Scheller, U. (2008) A reclassification of the Pauropoda (Myriapoda). *International Journal of Myriapodology*, 1 (1), 1–38.
<https://doi.org/10.1163/187525408X316730>
- Scheller, U. (2011) Pauropoda. In: Minelli, A. (Ed.), *Treatise on Zoology—Anatomy, Taxonomy, Biology. The Myriapoda. Vol. 1*. Brill, Leiden, pp. 467–508.
https://doi.org/10.1163/9789004188266_022
- The Fellowship of the Rings (2020 onwards) Myriatrix. Available from: <http://myriatrix.myspecies.info> (accessed 25 March 2021)
- Yin, Z.-W., Li, L.-Z. & Zhao, M.-J. (2010) Contributions to the knowledge of the myrmecophilous pselaphines (Coleoptera, Staphylinidae, Pselaphinae) from China. III. Two new genera and two new species of the subtribe Batrisina (Staphylinidae, Pselaphinae, Batrisitae) from a colony of *Lasius niger* (Hymenoptera, Formicidae, Formicinae) in East China. *Sociobiology*, 55 (1), Part B, 241–253. [<https://www.researchgate.net/publication/291460213>]