

**Case 3128*****Drosophila rufifrons* Loew, 1873 and *D. lebanonensis* Wheeler, 1949 (currently *Scaptodrosophila rufifrons* and *S. lebanonensis*; Insecta, Diptera): proposed conservation of the specific names by the designation of a neotype for *D. rufifrons***

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**Abstract.** The purpose of this application is to conserve the specific names of *Scaptodrosophila rufifrons* (Loew, 1873) and *S. lebanonensis* (Wheeler, 1949) for two European species of lesser fruit fly in the *S. rufifrons* species group (family DROSOPHILIDAE). The lectotype of *S. rufifrons* is now known to be a specimen of *S. lebanonensis*, rendering the name *rufifrons* a senior synonym of *lebanonensis*. It is proposed that the lectotype of *rufifrons* be set aside and a neotype designated in accord with accustomed usage.

**Keywords.** Nomenclature; taxonomy; Diptera; DROSOPHILIDAE; lesser fruit flies; *Scaptodrosophila rufifrons*; *Scaptodrosophila lebanonensis*; Europe.

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1. In 1873 Loew (p. 50) described the new species *Drosophila rufifrons* on male and female specimens from the central Balkans area. It is one of the more rare forest species, developing in oozing sap of trees (mainly oak) in central and southern Europe.

2. In 1949 Wheeler (p. 143) described the species *Drosophila lebanonensis* based on a holotype male numbered 1733.1 in the *Drosophila* Type and Reference Collection of the University of Texas, Austin, Texas. There is also a series of paratype males and females; all the specimens originated in Beirut, Lebanon. This is a Mediterranean-Submediterranean lesser fruit fly which develops in fermenting fruits, and is commonly found in fruit stores such as cellars. It is an important species in the study of evolutionary biology, morphogenetics and physiology, and has been kept as laboratory stock for more than five decades. The species is the most frequently quoted representative of the genus *Scaptodrosophila* Duda, 1923.

3. In 1982 I (Bächli, p. 295) designated a lectotype for *Scaptodrosophila rufifrons* (Loew, 1873). This was a specimen (misprinted as ♀ and corrected to ♂ in Bächli, 1984, p. 254) in the Zoological Museum, Berlin, labelled: (1) 'Kasan 20.6.71'; (2) 'Coll. H. Loew'; (3) [Loew's handwriting] '?*Drosoph.* n.sp.'; (4) '*D. rufifrons* Lw. det. Dr O. Duda'; (5) ♂; (6) '*D. rufifrons* Lw. lectotypus, G. Bächli det. 1982'; (7) 'Zool. Mus. Berlin'. A recent study of the European species of the *Scaptodrosophila rufifrons*-group (see Papp, Rácz & Bächli, in press) has shown that the lectotype of *S. rufifrons*, which is the single extant original specimen, is a specimen of the species known as *Scaptodrosophila lebanonensis* (Wheeler, 1949).

4. The specific names of *Scaptodrosophila rufifrons* (Loew, 1873) and *S. lebanonensis* (Wheeler, 1949) are currently used for two distinct species which are ecologically separated and have never been confused. The species *S. rufifrons* was identified widely in Europe by several authors in the 1920's, and the name has been consistently in use from at least Duda's (1934–1935) revision of the family DROSOPHILIDAE. The name *S. rufifrons* has been mentioned in at least 155 publications, the vast majority of which date from the last 50 years, and *S. lebanonensis* has been used in at least 107 publications; lists of these publications are held by the Commission Secretariat. The name *S. rufifrons* has been used in the following recent representative works: Pelandakis & Solignac (1993), Gross & Christian (1994), Merçot et al. (1994), Franzen (1996), Gillies & Hardy (1997) and Máca (1997). The name *S. lebanonensis* has appeared in Albalat & Gonzalez-Duarte (1993), Kwiatowski, Skarecky, Bailey & Ayala (1994), Tamura, Toba, Park & Aotsuka (1996), Herrewege & David (1997) and Remsen & DeSalle (1998).

5. Recognition that the lectotype of *Scaptodrosophila rufifrons* (Loew, 1873) designated by me (Bächli, 1982) is a specimen of *S. lebanonensis* (Wheeler, 1949) as always understood means that the name *S. rufifrons* becomes formally a senior subjective synonym of *S. lebanonensis*. The name *S. rufifrons* would become valid for the species currently known as *S. lebanonensis*, and a new name would be required for *S. rufifrons* as currently understood. *Drosophila nitens* Buzzati-Traverso, 1943 (p. 38) is the only available name for the species currently known as *S. rufifrons* but it has never been used for the taxon. Moreover, the syntypes of this nominal species, formerly in the Istituto di Zoologia e Genetica della R. Università di Pavia, Italy, are missing and presumed lost.

6. The loss of the name *Scaptodrosophila lebanonensis*, the transfer of the frequently used name *S. rufifrons* from the one species to the other, and the introduction of the unused name *S. nitens* in place of *S. rufifrons* as currently understood, would all inevitably cause disruption and confusion, affecting both the two species involved and species of *Scaptodrosophila* in general. I propose that the lectotype of *S. rufifrons* be set aside and that a neotype be designated in accord with the accustomed usage of the name. This action would remove *rufifrons* from the synonymy of *lebanonensis*, so allowing the usages of both names to continue. The proposed neotype is a male specimen in the Hungarian Natural History Museum, Budapest, labelled as 'Neotype' on a red-margined card, and with label data: (1) K[iskunsági] N. P.: Kunfehértó, *Morus alba* kicsorgó nedvén [oozing sap]; (2) 1982. VI. 15–23., leg. Papp L.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to set aside all previous type fixations for the nominal species *Drosophila rufifrons* Loew, 1873 and to designate the male specimen in the Hungarian Natural History Museum, Budapest, referred to in para. 6 above, as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the following names:
  - (a) *rufifrons* Loew 1873, as published in the binomen *Drosophila rufifrons* and as defined by the neotype designated in (1) above;
  - (b) *lebanonensis* Wheeler, 1949, as published in the binomen *Drosophila lebanonensis*.

## References

- Albalat, R. & Gonzalez-Duarte, R. 1993. Adh and Adh-dup sequences of *Drosophila lebanonensis* and *D. immigrans*: interspecies comparisons. *Gene*, **126**: 171–178.
- Bächli, G. 1982. On the type material of Palearctic species of Drosophilidae (Diptera). *Beiträge zur Entomologie* (Berlin), **32**(2): 289–301.
- Bächli, G. 1984. Die Drosophiliden-Typen der Dipterenammlung des Zoologischen Museums in Berlin. *Mitteilungen des Zoologischen Museums Berlin*, **60**(2): 229–261.
- Buzzati-Traverso, A. 1943. Morfologia, citologia e biologia di due nuove specie di *Drosophila* (Diptera Acalyptera). *Rendiconti del Istituto Lombardo di Scienze e Letteri*, **77**: 37–49.
- Duda, O. 1934, 1935. Periscolidae, Astiidae, Aulacogastridae, Curtonotidae, Diastatidae, Camillidae und Drosophilidae. In Lindner, E. (Ed.), *Die Fliegen der palaearktischen Region*, vol. 6, part 1. Pp. 1–64 (1934); pp. 65–118 (1935).
- Franzen, J. 1996. Essigfliegen (Diptera: Drosophilidae) aus einem Hausgarten in Köln. *Decheniana*, **35** (Beihefte): 459–464.
- Gillis, J.E.M. & Hardy, I.C.W. 1997. Nematode parasitism in a northern European drosophilid community. *Entomologia Experimentalis et Applicata*, **84**: 275–291.
- Gross, H. & Christian, E. 1994. Drosophilid communities along an urban gradient across Vienna. *Zeitschrift für Ökologie und Naturschutz*, **3**: 81–86.
- Herrewége, J. van & David, J.R. 1997. Starvation and desiccation tolerances in *Drosophila*: comparison of species from different climatic origins. *Ecoscience*, **4**: 151–157.
- Kwiatowski, J., Skarecky, D., Bailey, K. & Ayala, F.J. 1994. Phylogeny of *Drosophila* and related genera inferred from the nucleotide sequence of the Cu, Zn Sod gene. *Journal of Molecular Evolution*, **38**: 443–454.
- Loew, H. 1873. Diptera nova, in Pannoniâ inferiori et in confinibus Daciae regionibus a Ferd. Kowarzio capta. *Berliner Entomologische Zeitschrift*, **17**: 33–52.
- Máca, J. 1997. Drosophilidae. Pp. 86–87 in Chvál, M. (Ed.), *Checklist of Diptera (Insecta) of the Czech and Slovak Republics*. Karolinum-Charles University Press.
- Merçot, H., Defaye, D., Cappy, P., Pla, E. & David, J.R. 1994. Alcohol tolerance, ADH activity, and ecological niche of *Drosophila* species. *Evolution*, **48**: 746–757.
- Papp, L., Rácz, O. & Bächli, G. In press. Revision of the European species of the *Scaptodrosophila rufifrons* species group (Diptera, Drosophilidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, **72**: 105–117.
- Pelandakis, M. & Solignac, M. 1993. Molecular phylogeny of *Drosophila* based on ribosomal RNA sequences. *Journal of Molecular Evolution*, **37**: 525–543.
- Remsen, J. & DeSalle, R. 1998. Character congruence of multiple data partitions and the origin of the Hawaiian Drosophilidae. *Molecular Phylogenetics and Evolution*, **9**: 225–235.
- Tamura, K., Toba, G., Park, J. & Aotsuka, T. 1996. Origin of Hawaiian drosophilids inferred from alcohol dehydrogenase gene sequences. Pp. 9–18 in Takahata, N. & Nei, M. (Eds.), *Current topics of molecular evolution*.
- Wheeler, M.R. 1949. Studies in the genetics of *Drosophila*. VI. Articles on genetics, cytology and taxonomy. The subgenus *Pholadoris* (*Drosophila*) with descriptions of two new species. *University of Texas Publications*, **4920**: 143–156.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).