

PRESS RELEASE

Is it goodbye to *Drosophila melanogaster*? Fruit fly has its day in court

A case that challenges the name of the biologists' favourite research subject, *Drosophila melanogaster*, commonly known as 'Drosophila, the fruit fly', concluded today. The case submitted to the International Commission on Zoological Nomenclature (ICZN), proposed that the name *Drosophila melanogaster* be protected as a combination, but this was not supported by the Commission. This means that the fruit fly's name is likely to change to *Sophophora melanogaster* if results of a new evolutionary analysis are accepted.

If there is one species and genus name all biologists remember (besides *Homo sapiens*) it is *Drosophila melanogaster*, the premier model organism for research in genetics and development. When biologists say 'Drosophila' or 'the fruit fly' they usually mean the fly with the scientific name *Drosophila melanogaster*. This species, and some of its relatives, have provided experimental results that form the basis for much of our understanding of genetics and development. Its importance can not be overstated – even modern medicine can be said to have these flies at its core.

Making sure names are stable and that they mean what people think they mean is the foundation for the reliable, precise communication essential to science. Results of a new analysis of phylogeny (evolutionary relationship) suggest, however, that the species known as *D. melanogaster* should not remain in the same genus as the species that has the "original claim" (i.e., the type species, which provides an objective standard) on the name *Drosophila*, which is another fruit fly called *Drosophila funebris*. If this new evolutionary analysis is borne out, the scientific name of the biologists' stalwart, *Drosophila melanogaster*, is likely to be changed to *Sophophora melanogaster*, leaving the genus name *Drosophila* to species more closely related to the type species, *D. funebris*.

To pre-empt this possible name change, a case was put before the ICZN, an international body of experts on scientific nomenclature, and the arbiter on scientific names of animals. Cases of this sort go through a process not unlike a legal trial, though it is executed largely in the published literature, with formal presentation of the case, a period of public input (which is like open testimony), and judgment by the Commission. The Commission's job is to ensure names of animals are stable and universal by applying the rules of the *International Code of Zoological Nomenclature*, or occasionally by overriding the rules of the *Code* to better serve stability.

Kim van der Linde and colleagues, who submitted the *Drosophila* case, requested that the rules of nomenclature be overridden to permanently tie the genus name *Drosophila* to the species name *melanogaster* by making *melanogaster* the type species (the objective standard for the genus) and demoting *D. funebris* from this position. Today, after three years of hot debate and careful consideration in the zoological community, the Commission's ruling has been passed down in its published 'Opinion'. It has declined to lock the names *Drosophila* and *melanogaster* together into perpetuity. Any future name changes depend on the new phylogeny being published (which has yet to happen) and being accepted by the scientific community. A phylogeny, like any scientific hypothesis, is tested with new results until the community considers it robust enough to leave it unchallenged. The Commission considered it unwise to change the name based on a conclusion that had not yet endured this fundamental aspect of the scientific method.

The Commission argued further that making *melanogaster* the type species of *Drosophila* could result in a cascade of name changes to potentially hundreds of the 1450 other species currently in the genus, creating greater nomenclatural chaos (albeit for fruit flies with less celebrity than *D. melanogaster*). *Drosophila melanogaster* is currently in the subgenus *Sophophora* with 350 other species, whereas the subgenus *Drosophila* includes 1,100 species (these are currently written *Drosophila (Sophophora)* and *Drosophila (Drosophila)*). Locking together 'Drosophila' and 'melanogaster', as this case requested, would mean the names of 1,100 species in the subgenus *Drosophila* would potentially be under threat. An important role of the Commission is to balance the need of short-term stability of scientific names with the need for stability in the long-term. While a partial change of the binomial *Drosophila melanogaster* to *Sophophora melanogaster* has obvious ramifications in the immediate future, setting a precedent for overturning established rules to favour stability of one popular name to the potential detriment of stability in many other (perhaps less popular) names carries broader risks that cannot be ignored. The Commission felt that the scientific community would readily adjust by treating the name 'drosophila' as a vernacular name for the research species that might become formally known as *Sophophora melanogaster*.

So is it goodbye to *Drosophila melanogaster*? Probably not. The scientific name may change with the future publication and acceptance of a new phylogeny of drosophilid flies. But even then it will almost certainly continue to be known in common parlance as our friend, the model research species that has taught us much of what we know about genetics and development, drosophila (without italics, with a lower case 'd', and not as its scientific name).

Useful links:

Case and Comments: <http://www.iczn.org/BZNDec2007cases.html>

(note: this website is being updated over the next 12 hours. If the link is not working, try searching for Case 3407, or return to the link after a short pause)

<http://www.kimvdlinde.com/professional/DrosophilaSplit.html>

<http://www.kimvdlinde.com/professional/publications/DrosophilaSplit.html>

<http://flybase.org/forums/viewtopic.php?f=12&t=50>

<http://www.nature.com/news/2009/090120/full/457368a.html>

<http://catalogue-of-organisms.blogspot.com/2009/06/more-on-drosophila-and-sophophora.html>

<http://catalogue-of-organisms.blogspot.com/2008/01/drosophila-forever.html>

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