

Case 2712

***Calliphora vicina* Robineau-Desvoidy, 1830 (Insecta, Diptera): proposed conservation of the specific name**

Knut Rognes

Stavanger Lærhogskole, Postboks 2521 Ullandhaug, N-4004 Stavanger, Norway

Robert E. Blackith

University of Dublin, Trinity College, Department of Zoology, Dublin-2, Ireland

Abstract. The purpose of this application is to conserve the specific name of *Calliphora vicina* Robineau-Desvoidy, 1830, a cosmopolitan bluebottle fly now widely known under this name. The name is threatened by *Musca carnivora* Fabricius, 1794, a senior synonym, but unused since its proposal. The fly is often referred to as *Calliphora erythrocephala* (Meigen, 1826), but this specific name is a junior primary homonym.

1. The blowfly *Calliphora vicina* Robineau-Desvoidy, 1830 (p. 435) is very common and widely distributed throughout the Holarctic Region, and has followed man into South America, the Afrotropical region (Mauritius and South Africa), northern India, Australia and New Zealand. It is a widely known and easily bred laboratory insect of great medical, veterinary and forensic importance (Zumpt, 1965; Greenberg, 1971, 1973, 1985; Smith, 1986). It is one of the few insects to have whole monographs devoted to it (references in Smith, 1986, p. 105) and some 900 scientific publications have been based on this species, mostly in the field of insect physiology and genetics.

2. Until 1948 the fly was known under the specific name *erythrocephala* Meigen, 1826 (p. 62). However, Hall (1948, pp. 307-308) pointed out that *Musca erythrocephala* Meigen was a junior primary homonym of *M. erythrocephala* De Geer, 1776 (p. 146) and *M. erythrocephala* Fabricius, 1787 (p. 351) and therefore an invalid name. There is also a species given the replacement name *Musca erythrocephala* by Villers (1789, p. 137). Meigen's name is therefore preoccupied several times over. The identity of De Geer's, Fabricius's and Villers's species is not known with certainty, but they are definitely species other than *Calliphora vicina*. Hall (1948), acting as first reviser, selected the name *vicina* Robineau-Desvoidy, 1830, one of several next oldest available synonyms by Robineau-Desvoidy that were listed by Bezzi & Stein (1907). At present the species is universally known in the taxonomic literature (as opposed to the applied literature, see para. 3) under the name *vicina* (Hall, 1965; James, 1970, 1977; Pont, 1980; Hardy, 1981; Schumann, 1986; Rognes, 1990). Dear (1986, p. 26) recovered and labelled the holotype of *Calliphora vicina* Robineau-Desvoidy in Bigot's Diptera Exotica collection in Oxford.

3. Since 1940 some 680 publications based on this insect and listed by *Biological Abstracts* have used the specific name *erythrocephala*. The name *vicina* first appeared in

the *Zoological Record* in 1948 and in *Biological Abstracts* in 1956. In the first decade after 1956 three publications used *vicina* whereas 79 used *erythrocephala*, and since then 78 have used *vicina* whereas 586 used *erythrocephala*. In very recent years the two names have been used about equally. For four decades this insect has therefore been known, de facto, by two specific names. Research papers using one name have appeared with those using the other in the same journals, often in the same volume of a journal, suggesting that some people (including editors) believe that two species are involved. Patently, the editors of non-taxonomic journals have been unable to give appropriate guidance (a fact thrown into relief by the use of garbled versions of these names such as '*erythroencephala*', '*vincina*' and '*vicinia*' reported as such in *Biological Abstracts* for 1979 and 1987).

4. *Musca carnivora* Fabricius, 1794 (p. 313) was listed by Bezzi & Stein (1907, p. 546) and Schumann (1986, p. 18) as a synonym of *Calliphora vomitoria* (Linnaeus, 1758). The holotype of *carnivora* is present in the Fabrician collection (Kiel collection) in the Universitetets Zoologiske Museum in Copenhagen. It has recently been examined (Rognes, 1990) and found to be a specimen of *Calliphora vicina*. The name *carnivora* has never been used since its proposal.

5. According to the Principle of Priority the specific name *carnivora* Fabricius should replace *vicina* Robineau-Desvoidy. However, this replacement is likely to produce even further confusion and instability as regards the nomenclature of this fly species than did the replacement of *erythrocephala*. Considering the very slow acceptance of the name *vicina* since 1948 (see para. 3), the introduction of a third name for this species is likely to be even less successful. The chances are microscopic or nil that *carnivora* would be universally adopted in the foreseeable future. There are even ample reasons to believe that, outside the field of taxonomy, a third name may lead to a mistaken belief in the existence of yet another species, in the same manner as some editors today apparently believe that *erythrocephala* and *vicina* are two different species. Utter chaos and confusion would almost certainly be the outcome of the introduction of *carnivora*.

6. There also seems to be no good reason today to reinstate the name *erythrocephala* for this species by suppressing its senior homonyms, in view of the universal acceptance of *vicina* in the taxonomic literature and the growing adherence to the name *vicina* in the applied literature.

7. The name *vicina* will possibly be threatened also in the future by other older (pre-1830) names. However, we are convinced that the best course to follow to remedy the confused present state of affairs in the applied literature and to lay the foundations for a stable nomenclature in the future is to conserve the name *vicina*.

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

- (1) to use its plenary powers to suppress the specific name *carnivora* Fabricius, 1794, as published in the binomen *Musca carnivora*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the name *vicina* Robineau-Desvoidy, 1830, as published in the binomen *Calliphora vicina*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the following names:
 - (a) *carnivora* Fabricius, 1794, as published in the binomen *Musca carnivora* and as suppressed in (1) above;

- (b) *erythrocephala* Meigen, 1826, as published in the binomen *Musca erythrocephala* (a junior primary homonym of *Musca erythrocephala* De Geer, 1776).

Acknowledgements

We would like to thank T. Pape, A.C. Pont, C.W. Sabrosky, G.E. Shewell and J.R. Vockeroth for having read and commented upon previous drafts of the paper, and A.C. Pont for information concerning species originally described in the genus *Musca* and for support.

References

- Bezzi, M. & Stein, P. 1907. Cyclorrhapha Aschiza. Cyclorrhapha Schizophora: Schizometopa. In Becker, Th., Bezzi, M., Kertész, K. & Stein, P. (Eds.), *Katalog der paläarktischen Dipteren*, vol. 3, 828 pp. Budapest.
- De Geer, C. 1776. *Mémoires pour servir à l'histoire des Insectes*, vol. 6, viii, 523 pp. Hesselberg, Stockholm.
- Dear, J.P. 1986. Calliphoridae (Insecta: Diptera). *Fauna of New Zealand*, vol. 8, 86 pp.
- Fabricius, J.C. 1787. *Mantissa insectorum*.... vol. 2, 382 pp. Hafniae.
- Fabricius, J.C. 1794. *Entomologia systematica emendata et aucta* vol. 4, 472 pp. Hafniae.
- Greenberg, B. 1971. *Flies and disease*, vol. 1 (Ecology, classification and biotic associations), 856 pp. Princeton University Press, Princeton.
- Greenberg, B. 1973. *Flies and disease*, vol. 2 (Biology and disease transmission), 447 pp. Princeton University Press, Princeton.
- Greenberg, B. 1985. Forensic entomology: case studies. *Bulletin of the Entomological Society of America*, 31: 25-28.
- Hall, D.G. 1948. *The blowflies of North America*, 483 pp. Thomas Say Foundation, Lafayette, Indiana.
- Hall, D.G. 1965. Family Calliphoridae. Pp. 922-932 in Stone, A., Sabrosky, C.W., Wirth, W.W., Foote, R.H., & Coulson, J.R. (Eds.), *A catalog of the Diptera of America north of Mexico*. Agriculture Handbook No. 276, iv, 1696 pp. Washington, D.C.
- Hardy, D.E. 1981. Diptera: Cyclorrhapha 4, Series Schizophora Section Calyptratae. *Insects of Hawaii*, vol. 14, vi, 491 pp. University Press of Hawaii, Honolulu.
- James, M.T. 1970. Family Calliphoridae. In Papavero, N. (Ed.), *A catalogue of the Diptera of the Americas south of the United States*, vol. 102, 28 pp. Museu de Zoologia, Universidade de São Paulo.
- James, M.T. 1977. Family Calliphoridae. Pp. 526-556 in Delfinado, M.D. & Hardy, D.E. (Eds.), *A catalog of the Diptera of the Oriental Region*, vol. 3, (Suborder Cyclorrhapha (excluding division Aschiza)), x, 854 pp. University Press of Hawaii, Honolulu.
- Meigen, J.W. 1826. *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten*, vol. 5, xii, 412 pp. Schultz, Hamm.
- Pont, A.C. 1980. 90. Family Calliphoridae. Pp. 779-800 in Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*, 1437 pp. British Museum (Natural History), London.
- Robineau-Desvoidy, A.J.B. 1830. Essai sur les Myodaires. *Mémoires présentés par divers savants à l'Académie des Sciences de l'Institut de France*, (2) 2: 1-813.
- Rognes, K. 1990. Blowflies (Diptera, Calliphoridae) of Fennoscandia and Denmark. *Fauna entomologica scandinavica*, vol. 24, E.J. Brill, Leiden. [In press.]
- Schumann, H. 1986. Family Calliphoridae. Pp. 11-58 in Soos, A. & Papp, L. (Eds.), *Catalogue of Palaeartic Diptera*, vol. 12, (Calliphoridae — Sarcophagidae), 265 pp. Akadémiai Kiado, Budapest.

- Smith, K.G.V.** 1986. *A manual of forensic entomology*. 205 pp. British Museum (Natural History), London.
- Villers, C.J. de.** 1789. *Caroli Linnaei entomologia, faunae suecicae descriptionibus aucta...* Tomi III (Nomenclator entomologus). 213 pp. Lugduni.
- Zumpt, F.** 1965. *Myiasis in man and animals in the Old World. A textbook for physicians, veterinarians and zoologists*. iv, 267 pp. Butterworths, London.