

# A check-list of Norwegian blow-flies (Dipt., Calliphoridae)

KNUT ROGNES

Rognes, K. 1985. A check-list of Norwegian blow-flies (Dipt., Calliphoridae). *Fauna norv. Ser. B.* 32, 89—93.

Calliphorid material from Norway in the museum collections of the Universities in Bergen, Oslo, Trondheim and Tromsø and in my own collection has been revised and a check-list of the 39 species known at present from Norway is presented. *Pollenia obscura* Bigot, 1888, preoccupied in *Pollenia* by *Musca obscura* Fabricius, 1794, is redescribed and removed from the synonymy of *Pollenia rudis* (Fabricius, 1794); *pseudorudis* nom.nov. is proposed as a replacement name.

Knut Rognes, Stavanger lærerhøgskole, Postboks 2521 Ullandhaug, N-4001 Stavanger, Norway.

The check-list presented below, which replaces previously published lists (Siebke 1877, Schøyen 1889, Bidentkap 1892, 1901, Ringdahl 1944a, 1944b, 1952) is based upon a revision of the blow-fly material from Norway in the museum collections of the Universities in Bergen (mainly O. Bidentkap, L. Greve, A. Løken, N. Knaben, T.R. Nielsen leg.), Oslo (mainly J. Knaben, J.H.S. Siebke leg.), Tromsø (mainly T. Soot-Ryen leg.) and Trondheim (DKNVS-Museet) (mainly J.O. Solem leg.) (about 1820 specimens) and in my own collection (about 2500 specimens). In addition a few small private collections have been examined (B. Sagvolden, Rollag, J.H. Simonsen, Oslo). I have only seen parts of the V. Storm collection in Trondheim revised by Ringdahl (1944a). I have examined specimens from Norway of all the species listed. Ringdahl (1944b, 1952) listed 18 species from Norway. Ardó (1957) added 1 and Rognes (1980, 1982, 1983a, 1985) 9 bringing the total to 28 species. The present revision lists 39 species from Norway. In comparison it may be noted that 20 species have been published from Denmark (Lundbeck 1927), 34 from Finland (Hackman 1980), 32 from Sweden (Ringdahl 1952) and 33 from the British Isles (Pont 1975). Note that *Helicobosca palpalis*, treated as a tachinid or sarcophagid by the cited authors, is not included in these numbers.

Four subfamilies are represented in the Nor-

wegian calliphorid fauna. The nomenclature adopted is based on Zumpt (1956), Peus (1960) and Schumann (1964, 1973a, 1973b, 1974). Synonyms have mostly been taken from Aubertin (1933), Ringdahl (1945), Zumpt (1956), Peus (1960), Schumann (1964, 1973b, 1974), Pont (1981) and Rognes (1983b, 1985 and in press). Generic synonyms have been cited when the type-species is on the list (as valid name or synonym), specific synonyms when based on type-specimens from Scandinavian type-localities, when being the basis for cited genus names or when commonly met with in literature dealing with the Scandinavian fauna.

Many of the currently used names are unfortunately preoccupied and name-changes are to be expected in the future. I have mostly held on to established names, except in a few cases. Neither have I made any changes as to the currently recognised generic limits, even though a few changes appear quite justified and necessary. These are indicated in the annotations at the end of the paper.

In the list generic and specific synonyms are indented. Superscript numbers refer to the numbered annotations.

## Family Calliphoridae

### Subfamily Calliphorinae

*Bellardia* Robineau-Desvoidy, 1830  
*agilis* (Meigen, 1826)<sup>1</sup>  
*amplectens* (Pandellé, 1896)  
*pusilla* (Meigen, 1826)<sup>2</sup>

1) Paper no. 2 in a series based on investigations financed by a grant («vikarstipend») from Stavanger lærerhøgskole 1982—1983.

*aculeata* (Pandellé, 1896)  
*zetterstedti* (Enderlein, 1933)  
*stricta* (Villeneuve, 1926)  
*unxia* (Walker, 1849)  
*pandia* (Walker, 1849)  
*biseta* (Kramer, 1917)  
**Calliphora** Robineau-Desvoidy, 1830  
*Acrophaga* Brauer & Bergenstamm, 1891  
*Abonesia* Villeneuve, 1927  
*Stobbeola* Enderlein, 1933  
*genarum* (Zetterstedt, 1838)  
*laticornis* (Zetterstedt, 1838)  
*alpina* (Zetterstedt, 1838)  
*loewi* Enderlein, 1903  
*germanorum* (Villeneuve, 1907)  
*stelviana* (Brauer & Bergenstamm, 1891)  
*norwegica* (Enderlein, 1933)  
*alpina*: authors, not Zetterstedt (misi-  
 dentification)  
*subalpina* (Ringdahl, 1931)  
*uralensis* Villeneuve, 1922  
*vicina* Robineau-Desvoidy, 1830  
*erythrocephala* (Meigen, 1826), preocc.  
*vomitorea* (Linnaeus, 1758)  
**Cynomya** Robineau-Desvoidy, 1830  
*mortuorum* (Linnaeus, 1758) 1761  
**Lucilia** Robineau-Desvoidy, 1830  
*Phaenicia* Robineau-Desvoidy, 1863  
*Bufolucilia* Townsend, 1919  
*Francilia* Shannon, 1924  
*Acrophagella* Ringdahl, 1942  
*bufonivora* Moniez, 1876  
*caesar* (Linnaeus, 1758)  
*cadaverina* (Linnaeus, 1758)  
*splendida* (Meigen, 1826)  
*fuscipalpis* (Zetterstedt, 1845)  
*magnicornis* (Siebke, 1863)  
*alaskensis* (Shannon, 1924)  
*illustris* (Meigen, 1826)  
*simulatrix* (Pandellé, 1896)  
*regalis* (Meigen, 1826)  
*longilobata* (Pandellé, 1896)  
*richardsi* Collin, 1926  
*sericata* (Meigen, 1826)  
*silvarum* (Meigen, 1826)  
**Melinda** Robineau-Desvoidy, 1830  
*Xerophilophaga* Enderlein, 1933  
*cognata* (Meigen, 1830)  
*caerulea* (Meigen, 1826), preocc.  
*anthracina* (Meigen, 1838)  
*gentilis* Robineau-Desvoidy, 1830  
**Onesia** Robineau-Desvoidy, 1830  
*Macrophallus* Mueller, 1922  
*Macronesia* Villeneuve, 1926  
*sepulcralis* (Meigen, 1826)  
*subapennina* Rondani, 1862

*retrocurva* (Pandellé, 1896)  
**Pseudonesia** Villeneuve, 1920<sup>3</sup>  
*puberula* (Zetterstedt, 1838)  
*pubicornis* (Zetterstedt, 1838)  
*dolens* (Zetterstedt, 1838)

#### Subfamily Helicoboscinae<sup>4</sup>

**Helicobosca** Bezzi, 1906<sup>4</sup>  
*Theria* Robineau-Desvoidy, 1830, preocc.  
*palpalis* (Robineau-Desvoidy, 1830)  
*distinguenda* Villeneuve, 1924

#### Subfamily Phormiinae

**Boreellus** Aldrich & Shannon, 1923<sup>5</sup>  
*atriceps* (Zetterstedt, 1845)  
*boganidae* (Erichson, 1851)  
*aristatus* Aldrich & Shannon, 1923  
**Protocalliphora** Hough, 1899  
*Avihospita* Hendel, 1901  
**Orneocalliphora** Peus, 1960  
*azurea* (Fallén, 1817)  
*sordida* (Zetterstedt, 1838)  
*chrysorrhoea* (Meigen, 1826)  
*nuortevai* Grunin, 1972  
*proxima* Grunin, 1966  
**Protophormia** Townsend, 1908<sup>5</sup>  
*terraenovae* (Robineau-Desvoidy, 1830)  
*groenlandica* (Zetterstedt, 1838)  
**Trypocalliphora** Peus, 1960  
*braueri* (Hendel, 1901)  
*hirudo* (Shannon & Dobrosky, 1924)  
*lindneri* Peus, 1960

#### Subfamily Polleniinae

**Pollenia** Robineau-Desvoidy, 1830  
*angustigena* Wainwright, 1940<sup>6</sup>  
*griseotomentosa* (Jacentkovsky, 1944)<sup>7</sup>  
*varia*: Wainwright 1932, Emden 1954,  
 not Meigen (misidentification)  
*intermedia* Macquart, 1835  
*nitens* (Zetterstedt, 1845)<sup>8</sup>  
*vespillo*: authors, not Fabricius (misi-  
 dentification)  
*pseudorudis* nom.nov.<sup>9</sup>  
*obscura* Bigot, 1888, preocc., stat.n.  
*rudis* (Fabricius, 1794)<sup>10</sup>  
*obscura* (Fabricius, 1794)<sup>11</sup>  
*vagabunda* (Meigen, 1824)

## Annotations

- (1) *Bellardia agilis* (Meigen). *Musca agilis* Meigen, 1826 is a junior primary homonym of *Musca agilis* Harris, 1780 (Tachinidae) (Crosskey 1975)
- (2) *Bellardia pusilla* (Meigen). *Musca pusilla* Meigen, 1826 is a junior primary homonym of *Musca pusilla* Gmelin, 1790 (Syrphidae).
- (3) *Pseudonesia* (monotypic) should be included in *Bellardia* by virtue of phallosome and ovipositor structure as well as external features, according to own observations.
- (4) My reasons for treating *Helicobosca* as a calliphorid rather than a paramacronychiine (agriine) sarcophagid as done by e.g. Verves (1980, 1982) and for assigning it to a separate subfamily will be given in a forthcoming paper.
- (5) The monotypic genera *Boreellus* and *Protophormia* should probably be merged. Rognes (1985) cites a number of synapomorphies common only to these genera, and Collin (1925), Rodendorf (1926) and Séguy (1928) regard the constituent species as congeneric.
- (6) Contrary to Wainwright (1940) and Pont (1975) I regard *angustigena* as a good species, not merely a subspecies of *rudis*. I do not accept the synonymisation made by Zumpt (1955, 1956).
- (7) British material of «*varia*» agrees very well with Zumpt's (1956) and Mihályi's (1976) descriptions of *griseotomentosa*. The terminalia of British and Norwegian material also agree with Mihályi's (1979) figures. Mihályi (1976) describes the basicosta as black, but not all the specimens I have seen are that dark. This feature varies. Neither Wainwright (1932, 1940), Emden (1954) nor Mihályi (1976, 1979) refer to the single *ph* seta (outer one lacking), an apparently constant feature of this species.
- (8) *Pollenia nitens* (Zetterstedt). Zetterstedt (1845:1340) cites Meigen to the effect that Meigen's *Musca sepulcralis* (a species with yellow palpi) according to Wiedemann is present in Fabricius' collection under the name *Musca vespillo*. He also points out that Fabricius' older name *vespillo* should be used for this species and not for the *Pollenia* species with black palpi and shining blackish abdomen to which the name *vespillo* was erroneously assigned by Meigen (and subsequently by most modern authors, e.g. Zumpt 1956 and Mihályi 1979) and for which Zetterstedt introduced the name *Musca nitens*. The two specimens (probably syntypes) of *Musca vespillo* Fabricius, 1794 present in Fabricius' collection (the Kiel collection) (cf. Zimsen 1964) in fact both belong in *Bellardia* according to own observations, and the correctness of Zetterstedt's view is thus confirmed. Unfortunately *Musca nitens* Zetterstedt, 1845 is a junior primary homonym of *Musca nitens* de Villers, 1789 (Syrphidae).
- (9) Among *Pollenia* material from Europe, North America and even New Zealand I have seen numerous specimens belonging to an hitherto unrecognised species. It runs to *rudis* in Mihályi's key (1976), but is easily distinguished from both *rudis* and *angustigena* (not considered by Mihályi) in both sexes by the presence of a bundle of pale hairs on the underside of the wing at the junction of *h* and *sc*. The male can also be recognised by the absence on the middle third of the hind tibia of any erect *av* hairs, only normal decumbent setulae are present besides the *av* setae. In *rudis* males there are numerous erect longish *av* hairs in addition to the *av* setae (usually less conspicuous in *angustigena*). Neither is the ventral vestiture of the male abdominal tergites in any way as dense and fine as in *rudis* males, but rather similar to the one present dorsally (as in *angustigena*). There are also constant and distinct differences in the structure of the distiphallus from both *rudis* and *angustigena*. I have recently been able to examine the ♂ holotype of *Pollenia obscura* Bigot, 1888: 597 from «Amér. septentr.» (in BMNH, London). It belongs to the present taxon. Bigot's name, treated as a synonym of *rudis* by Hall (1965), is a junior secondary homonym, preoccupied in *Pollenia* by *Musca obscura* Fabricius, 1794. I have used the proposed replacement name on determination labels in various collections.
- (10) Nothing but an empty pin carrying a label reading «*rudis*» in Fabricius' hand remains of the holotype of *Musca rudis* Fabricius, 1794: 314 in the Kiel collection in ZM Copenhagen. A neotype corresponding to the concept of *rudis* of Wainwright (1940) (very tight ventral abdominal vestiture of male, cf. above note 9) should be designated.

(11) I have recently examined the ♂ holotype of *Musca obscura* Fabricius, 1794: 315 in the Kiel collection in ZM Copenhagen. It lacks the head and all legs. It clearly belongs to *rudis* in the sense of Wainwright (1940).

#### ACKNOWLEDGEMENTS

Many thanks are due to L. Greve Jensen, Museum of Zoology, Bergen, J.E. Raastad, Museum of Zoology, Oslo, A. Fjellberg, Tromsø Museum, and J.O. Solem, DKNVS-Museet, Trondheim, for loan of material; to S. Andersen, Copenhagen, and A.C. Pont, London, for gift and loan of Danish and British material, respectively, and for important information; to S. Andersen, L. Lyneborg and V. Michelsen, Copenhagen for a most useful stay at the Copenhagen museum; to A.C. Pont for a most useful stay at the British Museum (Natural History), London; to B. Sagvolden and J.H. Simonsen for letting me see their collections; and to B. Håland, T. Jonassen, F. Midtgaard, T.R. Nielsen, A.-J. Nilsen, J.H. Simonsen and S. Svendsen for gift of precious material. The grant from Stavanger Lærerhøgskole 1982–1983 is gratefully acknowledged. A grant (D.68.40-023) from Norges Almenvitenskapelige Forskningsråd made possible the visits to Copenhagen and London.

#### REFERENCES

- Arldö, P. 1957. Studies in the marine shore dune ecosystem with special reference to the dipterous fauna. *Opusc. ent. Suppl.* 14, 255 pp.
- Aubertin, D. 1933. Revision of the genus *Lucilia* R.-D. (Diptera, Calliphoridae). *J. Linn. Soc. Lond. Zool.* 38, 389–436.
- Bidenkap, O. 1892. Undersøgelser over Diptera Brachycera i Jarlsberg og Laurvig's amt sommeren 1891. *Ent. Tidskr.* 13, 225–246.
- 1901. Foreløbig oversigt over de i det arktiske Norge hidtil bemærkede Diptera Brachycera. *Tromsø Mus. Aarsh.* 23 (1900), 13–112.
- Bigot, J.-M.-F. 1888. Diptères nouveaux ou peu connus. Muscidi (J.B.). *Bull. Soc. zool. Fr.* 12 (5–6) (1887), 581–617. (Published January 1888 according to information from A.C. Pont, London).
- Collin, J.E. 1925. Diptera (Cyclorhapha) from Spitsbergen. Results of the Oxford University Expedition to Spitsbergen 1924. *Ann. Mag. nat. Hist.* (9) 16, 332–337.
- Crosskey, R.W. 1975. 78. Tachinidae. — In: Kloet, G.S. & Hincks, W.D. (eds.), A check list of British insects. Second edition. Part 5: Diptera and Siphonaptera. *Handbk Ident. Br. Insects* 9 (5), 95–105.
- Emden, F.I. van 1954. Diptera Cyclorhapha Calyptrata (I). Section (a) Tachinidae and Calliphoridae. *Handbk Ident. Br. Insects* 10 (4) (a), 1–133.
- Hackman, W. 1980. A check list of the Finnish Diptera II. Cyclorhapha. *Notul. ent.* 60, 117–162.
- Hall, D.G. 1965. Family Calliphoridae. — Pp. 922–932, in: Stone, Sabrosky, Wirth, Foote & Coulson, *A catalog of the Diptera of America north of Mexico*. Agric. Handbook 276: iv + 1696 pp., Washington D.C.
- Lundbeck, W. 1927. *Diptera Danica. Part VII. Platypezidae, Tachinidae*. G.E.C. Gad, Copenhagen.
- Mihályi, F. 1976. Contribution to the knowledge of the genus *Pollenia* R.-D. (Diptera: Calliphoridae). *Acta zool. Acad. scient. Hung.* 22, 327–333.
- 1979. Fémeselegyek — Húslegyek Calliphoridae — Sarcophagidae. *Magyarország állatvilága Funa Hungariae* 15 (16), 1–152 (*Fauna Hungariae* 135, ISBN 963 05 2027 3).
- Peus, F. 1960. Zur Kenntnis der ornithoparasitischen Phormiinen (Diptera, Calliphoridae). — *Dt. ent. Z. (N.F.)* 7, 193–235.
- Pont, A.C. 1975. 81. Calliphoridae. — In: Kloet, G.S. & Hincks, W.D. (eds.), A check list of British insects. Second edition. Part 5: Diptera and Siphonaptera. *Handbk Ident. Br. Insects* 9 (5), 107–108.
- 1981. The Linnaean species of the families Fanniidae, Anthomyiidae and Muscidae (Insecta: Diptera). *Biol. J. Linn. Soc.* 15, 165–175.
- Ringdahl, O. 1944a. Revision av Vilhelm Storms Diptersamling I. Familjen Tachinidae. *K. Norske Vidensk. Selsk. Forh.* 17 (19), 79–81.
- 1944b. Contributions to the knowledge of the tachinids and muscids of Norway. *Tromsø Mus. Aarsh.* 65 (1942) (4), 1–27.
- 1945. Förteckning över de av Zetterstedt i Insecta Lapponica och Diptera Scandinaviae beskrivna tachiniderna med synonymer jämte anteckningar över en del arter. *Opusc. ent.* 10, 26–35.
- 1952. Catalogus Insectorum Sueciae XI Diptera Cyclorhapha: Muscaria Schizometopa. *Opusc. ent.* 17, 129–186.
- Rodendorf, B.B. 1926. Morphologisches Studium an äusseren Genitalorganen der Calliphorinen (Diptera). *Russkii Zoologicheskii Zhurnal (Revue zoologique russe)* 6 (1), 83–128. (In Russian, with English title and summary).
- Rognes, K. 1980. The blow-fly genus *Lucilia* Robineau-Desvoidy (Diptera, Calliphoridae) in Norway. *Fauna norv. Ser. B.* 27, 39–52.
- 1982. A small collection of calypterate Diptera (Tachinidae, Sarcophagidae, Calliphoridae, Muscidae) from the Dovre mountains, Southern Norway. *Fauna norv. Ser. B.* 29, 110–114.
- 1983a. Additions to the Norwegian fauna of calypterate Diptera (Tachinidae, Calliphoridae, Muscidae). *Fauna norv. Ser. B.* 30, 88–93.
- 1983b. The identity of *Sarcophaga magnicornis* Siebke, 1863 (Diptera: Calliphoridae). *Ent. scand.* 14, 405–406.
- 1985. Revision of the bird-parasitic blowfly genus

- Trypocalliphora* Peus, 1960 (Diptera: Calliphoridae). *Ent. scand.* 15, 371—382.
- in press. On the identity of *Sarcophaga alpina* Zetterstedt, 1838 and the interpretation of *Acrophaga Brauer & Bergenstamm*, 1891 (Diptera: Calliphoridae). *Ent. scand.*
- Schøyen, W.M. 1889. Supplement til H. Siebke's Enumeratio Insectorum Norvegicorum, Fasc. IV. (Diptera). *Christiania Vidensk. Selsk. Forh.* 1889 (12), 1—15.
- Schumann, H. 1964. Revision der Gattung *Onesia* Robineau-Desvoidy, 1830. *Beitr. Ent.* 14, 915—938.
- 1973a. Bemerkungen zum Status der Gattungen *Onesia*, *Melinda* und *Bellardia* (Diptera, Calliphoridae). *Mitt. zool. Mus. Berlin* 49, 333—344.
- 1973b. Revision der palaearktischen *Melinda*-Arten (Diptera: Calliphoridae). *Dt. ent. Z. (N.F.)* 20, 293—314.
- 1974. Revision der palaearktischen *Bellardia*-Arten (Diptera, Calliphoridae). *Dt. ent. Z. (N.F.)* 21, 231—299.
- Séguy, E. 1928. Études sur les mouches parasites. Tome I Conopides, Oestrides et Calliphorines de l'Europe occidentale. Recherches sur la morphologie et la distribution géographique des Diptères à larves parasites. *Encycl. ent. (A)* 9, 1—251.
- Siebke, H. 1877. *Enumeratio Insectorum Norvegicorum. Fasciculum IV, Catalogum Dipterorum Continentem.* xiv + 255 pp. Christianiae (= Oslo). (Edited and posthumously published by J. Sparre Schneider).
- Verves, Yu.G. 1980. Sostav podsemeistva Paramacronychiinae (Diptera, Sarcophagidae) Starogo Sveta. (The composition of the subfamily Paramacronychiinae (Diptera, Sarcophagidae) of the Old World). *Zool. Zh.* 59, 1476—1482.
- 1982. 64h. Sarcophaginae, pp. 235—296 (Lieferung 327). — In: Lindner, E. (ed.), *Die Fliegen der palaearktischen Region*, 11.
- Wainwright, C.J. 1932. The British Tachinidae (Diptera). First supplement. *Trans. ent. Soc. Lond.* 80, 405—424.
- 1940. The British Tachinidae (Diptera): Second supplement. *Trans. r. ent. Soc. Lond.* 90, 411—448.
- Zetterstedt, J.W. 1845. *Diptera Scandinaviae disposita et descripta*, 4, 1281—1738. Lundae (= Lund).
- Zimsen, E. 1964. *The type material of I.C. Fabricius.* Munksgaard, Copenhagen.
- Zumt, F. 1955. The width of frons as a variable feature in the Calliphorinae (Diptera), with descriptions of two new species. *J. ent. Soc. S. Africa* 18, 50—59.
- 1956. 64i. Calliphorinae. — In: Lindner, E. (ed.), *Die Fliegen der palaearktischen Region* 11, 1—140 (Lieferungen 190, 191, 193).

Received 17 Aug. 1984