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The types of Anthomyiidae (Diptera) in the Shanghai Entomological Museum, Chinese Academy of Science, China

XUFENG ZHANG^{1,2} & WEIBING ZHU^{1,3}

¹Shanghai Entomological Museum; Institute of Plant Physiology & Ecology; Shanghai Institutes for Biological Sciences; Chinese Academy of Sciences; Shanghai, 200032, China

²Institute of Horticulture, Shanxi Academy of Agricultural Sciences, Taiyuan, 030031, China

³Corresponding author. E-mail: wbzhu@sibs.ac.cn



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Xufeng Zhang & Weibing Zhu

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Abstract

An annotated list of the type-specimens of Anthomyiidae deposited in the Shanghai Entomological Museum, China, is presented. A total of 196 holotypes and 479 paratypes representing 212 nominal species (207 valid, 5 synonyms) were recognized and are listed alphabetically. Bibliographical data of the original description, labels and condition of the type-specimens and the current name of the species are provided. At the end, a nomenclatural summary and a geographic summary are provided.

Key words: Anthomyiidae, type-specimens, Shanghai Entomological Museum, China

Introduction

Anthomyiidae is a large and diverse family of Muscoidea, Diptera. 1941 species have been described from all over the world so far (Pape *et al.* 2011), most of them from the Holarctic Region.

In China, the most prolific authority on Anthomyiidae was Zide Fan, researcher of the Shanghai Entomological Museum between 1964 and 2000. The most comprehensive work on the family under a Chinese perspective is that of Fan *et al.* (1988b), a monumental contribution with 396 pages listing 43 genera and 353 species. Fan and his colleagues, especially Jianyi Wu, Zhizi Chen and Yinghong Zhong, described over 200 species of Anthomyiidae from the 1970s to the 1990s. Their collections, including almost all of their types are deposited in the museum. Two other dipterists also working on the family, Anxiao Deng and Yan Feng, deposited their types in this museum as well.

Currently the collection of the Shanghai Entomological Museum contains specimens of 488 species of Anthomyiidae. A total of 675 type-specimens (196 holotypes, 479 paratypes) representing 212 nominal species (207 valid names and 5 synonyms) are deposited in the Shanghai Entomological museum. This paper presents detailed information of all Anthomyiidae types preserved in the Shanghai Entomological Museum.

Material and methods

Names are listed in alphabetical order of the specific epithet. Combinations and spelling of names follow the *Catalogue of Palaearctic Diptera: Anthomyiidae* (Dely-Draskovits, 1993), the *Flies of China* (Wei *et al.*, 1998), and the original descriptions. For each species, the label data of the type-specimen(s) are given first. The collection data and identification labels are transcribed verbatim and quoted in double quotation marks one by one; with a forward slash (/) separating lines (some tags without taxonomic significance are not included). In case of handwriting on printed labels, the handwritten is reproduced in italics; completely handwritten or completely printed labels are reproduced in regular font, following Ribeiro *et al.* (2007). The conditions of the types are given as well. Notes and corrections are provided if necessary. Finally, the current name (combination, junior synonym) of the species is given.

Seven species, whose types should be deposited at the Shanghai Entomological Museum, were not found and not included in our list. We are not sure whether these type specimens are actually housed in the Shanghai Entomological Museum. Most probably they were not properly labelled when described and published. Within the next three years, we plan to revise the Chinese anthomyiid flies and, then, if these types cannot be found they will

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References

- Ackland, D.M. (1967) Diptera from Nepal Anthomyiidae. *Bulletin of the British Museum (Natural History), Entomology*, 20 (4), 105–139.
- Chen, Z.Z. & Fan, Z.D. (1995) A new species of Anthomyiidae from Qinghai, China (Diptera). *Acta Zootaxonomica Sinica*, 20 (4), 492–494. [in Chinese]
- Cui, C.Y., Fan, Z.D. & Ma, Z.Y. (1983) On Chinese *Acklandia* (Diptera: Anthomyiidae). *Contributions from Shanghai Institute of Entomology*, 3, 235–238. [in Chinese]
- Cui, C.Y., Li, S.J. & Fan, Z.D. (1995) Two new species of Anthomyiidae (Diptera) from Northeast China. *Contributions from Shanghai Institute of Entomology*, 11, 137–140. [in Chinese]
- Dely-Draskovits, Á. (1993) Anthomyiidae. In: Soós, Á & Papp, L. (Eds.), *Catalogue of Palearctic Diptera. Vol. 13*. Hungarian Natural History Museum, Budapest, pp. 12–102.
- Deng, A.X. (1983) Notes on Anthomyiidae from Mountain Emei, China II. Description of 2 new species and 1 new subspecies of the *Pegohylemyia Seneciella* Group. *Acta Academiae Medicinae Sichuan*, 14 (2), 131–135. [in Chinese]
- Deng, A.X. (1985) Notes on Anthomyiidae from Mountain Emei, China V. Description of two new species of genus *Pegohylemyia* (Diptera). *Acta Academiae Medicinae Sichuan*, 16 (2), 102–104. [in Chinese]
- Deng, A.X. (1993) Two new species belonging to Tibetana group of genus *Pegohylemyia* in China (Diptera: Anthomyiidae). *Journal of West China University of Medical Sciences*, 24 (1), 58–16. [in Chinese]
- Deng, A.X. (1997) Note on four new species of genus *Pegohylemyia* of Anthomyiidae in MinShan Mountain region of Sichuan (Diptera: Anthomyiidae). *Acta Zootaxonomica Sinica*, 22 (2), 201–205. [in Chinese]
- Deng, A.X. & Li, L. (1993) Note on a new species of genus *Pegomya* and a new record of genus *Paradelia* in Northwest Sichuan (Diptera: Anthomyiidae). *Sichuan Journal of Zoology*, 12 (4), 8–10. [in Chinese]
- Deng, A.X. & Li, L. (1994) Descriptions of three new species of the genus *Delia*, Anthomyiidae, Diptera in Sichuan, China. *Journal of West China University of Medical Sciences*, 25 (1), 18–21. [in Chinese]
- Deng, A.X. & Li, R. (1986) Description of three new species of the family Anthomyiidae from Sichuan, China (Diptera). *Journal of West China University of Medical Sciences*, 17 (2), 105–108. [in Chinese]
- Deng, A.X. & Li, R. (1988) Description of six new species of the genus *Pegomya* from Mount Emei (Diptera: Anthomyiidae). *Entomotaxonomia*, 10 (3–4), 197–202. [in Chinese]
- Deng, A.X., Li, R. & Fan, Z.D. (1990) Description of six new species of the family Anthomyiidae from Mountain Emei. *Journal of West China University of Medical Sciences*, 21 (3), 247–250. [in Chinese]
- Deng, A.X., Li, L. & Liu, Y. (1996) Notes on three new species of the genus *Pegohylemyia* from Northwestern Sichuan (Diptera, Anthomyiidae). *Acta Entomologica Sinica*, 39 (4), 426–429. [in Chinese]
- Deng, A.X., Liu, Y. & Li, L. (1995a) Reports on two species of *Pegohylemyia* in Xiling Snow Mountain of Dayi County, Sichuan, China (Diptera: Anthomyiidae). *Journal of West China University of Medical Sciences*, 26 (4), 375–377. [in Chinese]
- Deng, A.X., Geng, L., Liu, Y. & Li, L. (1995b) Reports on two species of *Pegohylemyia tibetana* group in Xiling Snow Mountain of Dayi County, Sichuan, China (Diptera: Anthomyiidae). *Journal of West China University of Medical Sciences*, 26 (1), 58–60. [in Chinese]
- Deng, A.X., Li, R., Sun, K.R. & Zhu, S.H. (1987) Description of 4 new species of Anthomyiidae from Mount Emei. *Entomotaxonomia*, 9 (2), 91–95. [in Chinese]
- Fan, Z.D. (1965) *Key to the common flies of China*. Science Press, Beijing, xv + 330 pp. [in Chinese]
- Fan, Z.D. (1974) Three new species and one new subspecies of Anthomyiidae and Muscidae from China (Diptera). *Acta Entomologica Sinica*, 17 (1), 92–96. [in Chinese]
- Fan, Z.D. (1982) Descriptions of some new species of *Pegomya* R.-D. from China (Diptera: Anthomyiidae). *Contributions from Shanghai Institute of Entomology*, 1, 201–206. [in Chinese]
- Fan, Z.D. (1986) On *Pegomya Hyoscyami* group in China, with description of a new species (Diptera: Anthomyiidae). *Entomotaxonomia*, 8 (1–2), 25–30. [in Chinese]
- Fan, Z.D. (1987) Six new species of the family Anthomyiidae from west Sichuan, China. *Contributions from Shanghai Institute of Entomology*, 6, 229–236. [in Chinese]

- Fan, Z.D. (1988) Diptera: Anthomyiidae *In*: Huang, F.S. (Eds.), *Insects of Mt. Namj Agbarwa Region of Xizang*. Science Press, Beijing, pp. 491–495. [in Chinese]
- Fan, Z.D. & Chen, Z.Z. (1984) Two new species of the genus *Enneastigma* Stein (Diptera: Anthomyiidae). *Zoological Research*, 5 (3), 251–254. [in Chinese]
- Fan, Z.D. & Chen, Z.Z. (1992) Two new species of the genus *Anthomyia*, Hainan, China. *Chinese Journal of Vector Biology and Control*, 3 (4), 197–199. [in Chinese]
- Fan, Z.D. & Fang, S.Y. (1981) A new species of genus *Lasiomma* Stein from Northeast China (Diptera: Anthomyiidae). *Acta Zootaxonomica Sinica*, 6 (2), 179–181. [in Chinese]
- Fan, Z.D. & Gao, Z.N. (1989) A new leaf miner belonging to *Pegomya* infesting a Lycium plant in Ningzia Province, China (Diptera: Anthomyiidae). *Entomotaxonomia*, 11 (4), 333–336. [in Chinese]
- Fan, Z.D., & Wu, X.S. (1987) Two new species of Anthomyiidae from Jiuquan prefecture, Gansu, China (Diptera). *Zoological Research*, 8 (4), 375–378. [in Chinese]
- Fan, Z.D., Chen, Z.Z. & Chen, H.L. (1993) A new species of the genus *Pegohylemyia* (Diptera: Anthomyiidae) from Henan, China. *Entomotaxonomia*, 15 (1), 59–61. [in Chinese]
- Fan, Z.D., Chen Z.Z. & Fang, J.M. (1987) Diptera: Anthomyiidae, Muscidae, Calliphoridae, Sarcophagidae. *In*: Zhang, S.M. (Ed.), *Agricultural, Insects, Spiders, Plant Diseases and Weeds of Xizang. Vol. 1*. Tibet People's Press, Lhasa, pp. 299–300. [in Chinese]
- Fan, Z.D., Chen, Z.Z. & Ma, S.Y. (1989) *Lopesohylemyia*, a new genus of Anthomyiidae (Diptera) from Qinghai, China. *Memórias do Instituto Oswaldo Cruz*, 84 (Suppl. IV), 567–568.
<http://dx.doi.org/10.1590/s0074-02761989000800097>
- Fan, Z.D., Chen, Z.Z. & Ma, S.Y. (2000) Two new species of Anthomyiidae (Diptera) from Qinghai, China. *Entomotaxonomia*, 22 (2), 129–133. [in Chinese]
- Fan, Z.D., Li, S.J. & Cui, C.Y. (1994) Two new species of the genus *Phorbia* from Henan, China. *Contributions from Shanghai Institute of Entomology*, 11, 133–136. [in Chinese, dated 1993 but published in 1994]
- Fan, Z.D., Wang, B.L. & Yang, Z.T. (1988a) A new species of the genus *Phorbia* from Sichuan, China (Diptera: Anthomyiidae). *Contributions from Shanghai Institute of Entomology*, 8, 199–201. [in Chinese]
- Fan, Z.D., Chen, Z.Z., Cui, C.Y. & Wang, C.J. (1983a) Studies on the Chinese species of the genus *Paraprosalpia* (Diptera: Anthomyiidae). *Contributions from Shanghai Institute of Entomology*, 3, 217–229. [in Chinese]
- Fan, Z.D., Chen, Z.Z., Fan, Q.S & Ma, S.Y. (1980) On genus *Engyneura*, with descriptions of three new species (Diptera, Anthomyiidae). *Entomotaxonomia*, 2 (2), 121–129. [in Chinese]
- Fan, Z.D., Chen, Z.Z., Ma, Z.Y. & Ge, F.X. (1982a) On some new species of Anthomyiidae from China (Diptera). *Contributions from Shanghai Institute of Entomology*, 2, 221–239. [in Chinese]
- Fan, Z.D., Chen, Z.Z., Ma, S.Y. & Wu, Y. (1984a) New species of the family Anthomyiidae (Diptera) from Qinghai Province, China, I. *Contributions from Shanghai Institute of Entomology*, 4, 239–253. [in Chinese]
- Fan, Z.D., Chen, Z.Z., Wu, J.Y. & Zhong, Y.H. (1984b) Notes on calypterate flies from Xizang district, China. IV. Six new species of Anthomyiidae. *Contributions from Shanghai Institute of Entomology*, 4, 255–260. [in Chinese]
- Fan, Z.D., Ge, F.X., Zhang, R.S. & Fang, S.Y. (1982b) On Chinese species of genus *Lasiomma* especially those injurious to the coniferous cones (Diptera: Anthomyiidae). *Journal of North-Eastern Forestry Institute*, 1, 1–12. [in Chinese]
- Fan, Z.D., Huang, J.C., Zou, M.Q. & Wu, J.Y. (1984c) A preliminary report on Anthomyiidae from Wuyi Mountain, with description of two new species of the genus *Pegomya* (Diptera: Anthomyiidae). *Wuyi Science Journal*, 4, 219–223. [in Chinese]
- Fan, Z.D., Wu, J.Y., Jin, Z.Y., Chen, Z.Z. & Li, X.M. (1983b) A study on the Chinese species of the genus *Alliopsis* Schnabl (Diptera: Anthomyiidae). *Entomotaxonomia*, 5(2), 95–108. [in Chinese]
- Fan, Z.D., Sun, C.H., Chen, Z.Z., Ma, S.Y., Wu, L., Ge, F.X., Xue, W.Q., Cui, C.Y., Wang, C.S., Ma, Z.Y., Wang, C.J., Jin, Z.Y., Jiang, T.J., Qian, J.Q. & Li, R. (1988b) Diptera: Anthomyiidae. *Economic Insect Fauna of China*, Fascicle 37. Science Press, Beijing, pp. 1–396, 10 pls. [in Chinese]
- Feng, Y. (1987) Studies on calypterate flies from west Sichuan, China, II. Descriptions of seven new species of the family Anthomyiidae (Diptera). *Acta Zootaxonomica Sinica*, 12 (2), 202–212. [in Chinese]
- Feng, Y. (2006) Three new species and a new record of the Anthomyiidae from Sichuan, China (Diptera: Muscoidea). *Entomological Journal of East China*, 15 (1), 1–6. [in Chinese]
- Feng Y., Fan, Z.D. & Zeng, W.Z. (1999) Three new species of Calypterae from from Sichuan, China (Diptera: Anthomyiidae, Muscidae). *Chinese Journal of Vector Biology and Control*, 10 (5), 321–322. [in Chinese]
- Feng, Y., Liu, G.L. & Zhou, M.S. (1984) Three new species and one new record of the family Anthomyiidae from west Sichuan, China (Diptera). *Entomotaxonomia*, 6 (1), 1–6. [in Chinese]
- Ge, F.X. & Li, S.J. (1985) Two new species of Anthomyiidae from Henan Province (Diptera). *Zoological Research*, 6 (3), 232–242. [in Chinese]
- Jin, Z.Y. (1983) Seven new species of the genus *Pegohylemyia* from Gansu, China (Diptera: Anthomyiidae). *Entomotaxonomia*, 5 (1), 13–24. [in Chinese]
- Jin, Z.Y. (1985) Three new species of the genus *Eutrichota* from Gansu, China (Diptera: Anthomyiidae). *Entomotaxonomia*, 7 (4), 259–263. [in Chinese]
- Jin, Z.Y., Ge, F.X. & Fan, Z.D. (1981) Descriptions of five new species of Anthomyiidae from south Gansu, China (Diptera).

- Entomotaxonomia*, 3 (2), 87–92. [in Chinese]
- Li, R. & Deng, A.X. (1981) Notes on Anthomyiidae from Mountain Emei, China I. Description of 5 species. *Acta Academiae Medicinae Sichuan*, 12 (2), 125–131. [in Chinese]
- Li, R. & Deng, A.X. (1983) Eight new species of the *Pegomya acklandi* group (Diptera: Anthomyiidae). *Entomotaxonomia*, 5 (3), 203–211. [in Chinese]
- Li, R. & Deng, A.X. (1990) A short revision of the species group *Pegomya acklandi*, with description of a new species (Anthomyiidae, Diptera). *Journal of West China University of Medical Sciences*, 21 (2), 150–154. [in Chinese]
- Li, R., Deng, A.X., Zhu, S.H. & Sun, K.R. (1984) Notes on Anthomyiidae from Mountain Emei, China IV. Five new species of *Pegomya acklandi* group. *Acta Academiae Medicinae Sichuan*, 15 (2), 105–111. [in Chinese]
- Li, S.J., Cui, C.Y. & Fan, Z.D. (1994) Descriptions of two Anthomyiid species from Henan Province (Diptera). *Contributions from Shanghai Institute of Entomology*, 11, 129–132. [in Chinese, dated 1993 but published in 1994]
- Li, S.J., Liu, C.L., Fan, Z.D. & Cui, C.Y. (1999) Descriptions of three new *Pegomya* species from Henan, China (Diptera: Anthomyiidae). *Chinese Journal of Vector Biology and Control*, 10 (4), 241–245. [in Chinese]
- Pape, T., Blagoderov, V. & Mostovski, M.B. (2011) Order Diptera Linnaeus, 1758. In: Zhang, Z. Q. (Ed), *Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness*. *Zootaxa*, 3148, 222–229.
- Pont, A.C. & Ackland, D.M. (2009) The types of Anthomyiidae (Diptera) in the Museum für Naturkunde Berlin, Germany. *Zoosystematics and Evolution*, 85 (1), 5–56.
<http://dx.doi.org/10.1002/zoos.200800015>
- Qian, J.Q. & Fan, Z.D. (1981) New genus and species of calypterate flies from Xinjiang China. *Acta Entomologica Sinica*, 24 (4), 438–446. [in Chinese]
- Ribeiro, G.C., Lamas, C.J.E. & Azevedo, L.N.S.D. (2007) A catalogue of the types of Limoniidae and Tipulidae (Diptera: Tipulomorpha) in the collection of the Museu de Zoologia da Universidade de São Paulo, Brazil. *Zootaxa*, 1497, 1–22.
- Suwa, M. (1974) Anthomyiidae of Japan (Diptera). *Insecta Matsumurana*, 4, 1–247.
- Wei, L.M., Xue, W.Q. & Cui, C.Y. (1998) Anthomyiidae. In: Xue, W.Q. & Chao, J.M. (Eds.), *Flies of China. Vol. 1*. Liaoning Science and Technology Press, Shenyang, pp. 634–808. [in Chinese]
- Ye, Z.M., Ni, T. & Fan, Z.D. (1982) Identification of Chinese Flies. In: Lu, B.L. (Ed.), *Identification handbook for medically important animals in China*. People's Medical Publishing House, Beijing, pp. 343–506. [in Chinese]
- Zetterstedt, J.W. (1838) Dipterologis Scandinaviae, Sectio Tertia [Section 3] Diptera. In: Zetterstedt, J.W. (Ed.), *Insecta Lapponica*. Leipzig, pp. 477–868.
- Zetterstedt, J.W. (1845) Diptera Scandinaviae disposita et descripta. *Lundae*, 4, 1281–1738.
<http://dx.doi.org/10.5962/bhl.title.8143>
- Zhang, X.F., Fan, Z.D. & Zhu, W.B. (2011) Two new species of the genus *Phorbia* (Diptera: Anthomyiidae) from China. *Acta Zootaxonomica Sinica*, 36 (2), 297–300.
- Zheng, S.S. & Fan, Z.D. (1992) Descriptions of some new species of family Anthomyiidae from western China (Diptera). *Contributions from Shanghai Institute of Entomology*, 9, 181–186. [in Chinese]
- Zhong, Y.H. (1985a) Notes on calypterate flies from Xizang district, China. III. Descriptions of seven new species belonging to Anthomyiidae. *Zoological Research*, 6 (4), 329–336. [in Chinese]
- Zhong, Y.H. (1985b) Notes on calypterate flies from Xizang district, China. II. Descriptions of seven new species belonging to Anthomyiidae. *Zoological Research*, 6 (4) (Suppl.), 131–138. [in Chinese]