



A critical review of the world catalogs of Empidoidea (Insecta: Diptera) by Yang et al. (2006, 2007)

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Yang D., Zhu Y., Wang M. & Zhang L. (2006) *World Catalog of Dolichopodidae (Insecta: Diptera)*. China Agricultural University Press, Beijing, 704 pp. Hard cover, US\$95.00.

Yang D., Zhang K., Yao G. & Zhang J. (2007) *World Catalog of Empididae (Insecta: Diptera)*. China Agricultural University Press, Beijing, 599 pp. Hard cover, US\$78.00.

Many in the worldwide Diptera taxonomic community were surprised to see the recent publication of the “World Catalog of Dolichopodidae (Insecta: Diptera)” by Yang, Zhu, Wang & Zhang (2006) and the “World Catalog of Empididae (Insecta: Diptera)” by Yang, Zhang, Yao & Zhang (2007). The rapid completion of both catalogs that together report to cover all of the world’s empidoid diversity, the apparent lack of peer review, and the higher classification schemes adopted in these works, appear to have created considerable scepticism and discussion on the extent of their usefulness by empidoid workers. As O’Hara (2008) recently stated “modern technological advances make it possible for just about anyone to compile names from the *Zoological Record*, to scan catalogues, and to gather information from secondary sources to produce an unimpressive world catalogue in record time”. In order to accurately assess the value of these two catalogs, especially for current and future users, we provide a critical review that touches on all aspects of these contributions. It is not our intention to give a page by page critique, but instead to provide a summary of the types of errors and omissions (illustrated with examples) we have encountered and to point out the limitations of these catalogs while also indicating which parts are useful in a general sense.

Both catalogs are attractively bound with a few color habitus figures of representatives of some major empidoid lineages, as well as 12 color photographs of various dolichopodid species in Yang et al. (2006). Line drawings illustrating the head, antennae, thorax, wings, legs, and male and female terminalia accompany both catalogs. The dolichopodid catalog (Yang et al. 2006) also includes habitus line drawings of 21 species representing 9 subfamilies. The dolichopodid catalog (Yang et al. 2006) was the first of the two catalogs to be published, apparently on 26 December 2006. The cut-off date for taxa included in this catalog is not stated, but appears to include names published up until late April 2006. The empidid catalog was published sometime later (Yang et al. 2007). No papers published in 2007 are included in that catalog, so we are assuming that the cut-off date for the empidid catalog is 31 December 2006.

The dolichopodid catalog (Yang et al. 2006) covers the Dolichopodidae *s.str.*, whereas the empidid catalog (Yang et al. 2007) covers the remainder of the Empidoidea including the microphorine and parathalassiine lineages that are now placed in the Dolichopodidae *s.lat.* (Sinclair & Cumming 2006). This division of the Empidoidea (and catalogs) into two families follows a traditional but now outdated classification system in which both groups are viewed as monophyletic families. Nearly all workers now view the former Empididae as composed of several families, and the Microphorinae and Parathalassiinae, previously placed in the Empididae, as basal lineages of the Dolichopodidae *s.lat.* To support the traditional classification of the Empidoidea, Yang et al. (2007) cite three supposed synapomorphies for the monophyly of their Empididae: head small and spherical; thorax distinctly convex dorsally; and eyes with angular inner incision near antennae (Yang et al. 2007: 3). The former two characters are very ambiguous and could refer to a large number of fly lineages. The latter character (i.e., eye notch) should in fact be viewed as a synapomorphy of the entire Empidoidea that