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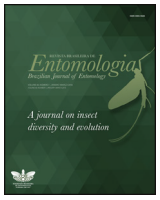

Manual of Afrotropical Diptera: 2023. Volume 3, edited by Ashley H. Kirk-Spriggs and Bradley J. Sinclair

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Volume 3 of the *Manual of Afrotropical Diptera* was launched in 2023 during the 10th International Congress of Dipterology in Reno, NV, USA. It is no wonder that the hundreds of dipterists who had gathered for the event were delighted with the completion of another phase of this ambitious project. The earlier regional Diptera manuals, particularly the Nearctic, Palaearctic and Central American, represented a turning point in knowledge of Diptera diversity, not just for the regions they cover. Certainly, this seminal work, focusing on the Afrotropical Diptera fauna, represents another major step forward on this journey.

As established by the editors, "… *the* Manual of Afrotropical Diptera *provides an up-to-date interpretable means for identifying families and genera of two-winged flies of the continental Afrotropical Region, its associated oceanic islands and the southernmost Arabian Peninsula, fostering a better understanding of the science of dipterology, especially in Africa, and encouraging the study of Diptera by new generations of dipterists*".

The recent launched Volume 3 comprises 984 pages of which 974 are dedicated to 51 chapters, each of a different family of the brachyceran clade Cyclorrhapha (higher flies), including the first branching lineages (= "Aschiza") and the most likely paraphyletic acalyptratae grade of the division Schizophora. The Cyclorrhapha is a lineage primarily characterized by the pupariation, where the pupa forms within the last larval skin and the manner in which the adult exits the puparium. Numerous morphological and molecular studies have shown that the "Aschiza" (cyclorrhaphan flies without a ptilinial suture) is paraphyletic, but the group is traditionally used in the literature, while the Schizophora is monophyletic, supported by the presence of a fully-developed ptilinum and an externally visible ptilinal fissure. The Schizophora is divided into two groups, the Calyptratae and the Acalyptratae. In the former, the monophyly is well supported and the Afrotropical fauna will be considered in Volume 4. In the latter, the monophyly of which is still not universally confirmed and comprises about 20% of the described species of Diptera, the genus-level fauna is the object of this third volume. It is important to note that some of these families are highly diversified in the Afrotropics [*e.g.*, Chloropidae (88 genera and 454 spp.), Drosophilidae (29 and 479), Ephydridae (69 and 379), Phoridae (64 and 340) and Syrphidae (54 and 522)], in contrast to those that have a single genus and less than five species recorded [*e.g.*, Braulidae (3 spp.), Marginidae (2 spp.), Mormotomyiidae (1 sp.) and Neminidae (2 spp.)]; there are also endemic families (Marginidae and Mormotomyiidae) and some with economic importance related to agriculture (*e.g.*, Agromyzidae, Tephritidae) or health (*e.g.*, Chloropidae, Milichiidae). Over 50 authors, the leading taxonomic experts from 20 different countries, have contributed chapters.

The same standardized format of chapters presented in the previously published volumes is followed in Volume 3, including the following sections for each family: diagnosis; biology and immature stages; economic significance; classification; identification, with a detailed and well-illustrated identification key for the genera when the family contains more than one Afrotropical genus; and a genus-level synopsis of the fauna. The chapters are richly illustrated with a total of 3,164 colour photographs and line drawings of flies and their internal and external morphological structures. The stunning and technically perfect live photos by Stephen A. Marshall, used to illustrate the cover and most of the family chapters, are the icing on the cake.

Key points to consider, and most importantly to commend, are first the herculean volunteer work of the editors in coordinating so many different authors working simultaneously on a long journey, and second, the equally volunteer work of all authors to write and illustrate such detailed chapters on this continental fauna of a megadiverse insect order such as Diptera. We could not see the publication of such

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a work without recognizing this collaborative effort as a great show of generousness on the part of all involved. By generousness, I mean not only to future generations of dipterologists, who will take on the mission of producing and sharing further better knowledge of various aspects of dipterology, but also to humanity at large. The expanded capacities in dipterology will provide a comprehensive and scientifically sound basis for the conservation and management of this fauna, which plays important biological, economic and medical roles (*e.g.*, many species of flies are vectors of diseases afflicting humans and their livestock; others are agricultural pests, pollinators, predators, ectoparasites, parasitoids or saprophages).

However, not only celebration and joy summarize this moment. We also cannot exclude from the history of this *Manual* the sad, unpredictable events that hardly impacted it. I cannot avoid mentioning the COVID-19 pandemic that devastated the world in 2020 and 2021 and the loss of colleagues who died while writing chapters for this volume. The editors have deservedly dedicated Volume 3 to the memory of Dr. Amnon Freidberg (1945–2020), Dr. Lloyd Vernon Knutson (1934–2018) and Dr. László Papp (1946–2021).

We should be aware that this journey is not over yet. The complete *Manual of Afrotropical Diptera* will consist of four volumes, the first two were published in December 2017, the third (the subject of this review) in 2023, and the fourth, which will focus on the Calyptrate clade of the higher flies, is expected to be published in late 2024.

When I started writing this review, I went back 33 years, exactly to 1990 when I started studying Diptera at the National Museum (MNRJ) in Rio de Janeiro, Brazil. The *Manual of Nearctic Diptera* (MND) is one of my favorite references for studying the morphology and identifying the Brazilian fauna. It was fascinating for a young student to run a family through identification keys with so many line drawings to compare. I used to do the same with the keys to genera, despite the challenge of studying the Neotropical fauna using a Nearctic Manual, but it would have been a much more difficult task without those three red volumes. PDF versions did not exist at that time, which nowadays makes it easy to share the contents of any book with anyone anywhere, and we used a single bound black and white photocopy of the first two volumes and shared them between all MNRJ's dipterists, as the price were too high for a student to order a hard copy. With the almost daily accompaniment of this heavily used photocopy, I successfully completed my master's degree (1996) and my doctoral degree (2002). Two years later, in 2004, a few weeks after being appointed as the Curator of Diptera at the Museum of Zoology of the University of São Paulo (MZUSP), I received, by mail, one of the best and most desired gifts I have ever been given. It was a package coming from Washington D.C. in the USA with the original three volumes of the MND, each with this kind dedication: "*To Carlos, from your friends in Washington, Chris* [the late F. Christian Thompson], *Wayne Mathis, Norman Woodley and Allen L. Norrbom*". Then I could finally leave behind the old photocopies and start using my own original volumes!

Now, the worldwide professional biologists, teachers, university students and informed amateurs do not have to share black and white photocopies of such monumental works or even wait twenty long years to have his own hard copy of the recently published *Manual of Afrotropical Diptera*. The chapters are now not only rich in line drawings, as are the previous regional Diptera manuals, but they are also replete with high quality colour photos of the specimens and most amazingly, free PDF versions of the complete volumes are also available for download. In order to celebrate the publication of the MAD Volume 3 and the importance of this moment for present and future generations, I propose a reflection: how should it have been if there were a complete collection of regional manuals and such technological advances (PDF versions, high quality photos, the computer network) at the beginning of the career of the worldwide current generations of dipterists?

As I have done myself, any student, researcher, professor or naturalist interested in dipterology should keep all volumes of this monumental work within reach on his or her own bookshelves.

Hard copies of the first three volumes are available for purchase and accessible for a free PDF download, to anyone, on the Natural History Museum, UK, website (NHM, 2023).

The three initial volumes were published by SANBI Graphics & Editing, Pretoria, South Africa, edited by Ashley H. Kirk-Spriggs and Bradley J. Sinclair.

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