



AGRION

NEWSLETTER OF THE WORLDWIDE DRAGONFLY ASSOCIATION

PATRON: Professor Edward O. Wilson FRS, FRSE

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AGRION is the Worldwide Dragonfly Association's (WDA's) newsletter, published twice a year, in January and July. The WDA aims to advance public education and awareness by the promotion of the study and conservation of dragonflies (Odonata) and their natural habitats in all parts of the world. AGRION covers all aspects of WDA's activities; it communicates facts and knowledge related to the study and conservation of dragonflies and is a forum for news and information exchange for members. AGRION is freely available for downloading from the WDA website at http://worlddragonfly.org/?page_id=125. WDA is a Registered Charity (Not-for-Profit Organization), Charity No. 1066039/0.

Editor's notes

Keith Wilson [kdpwilson@gmail.com]

Conference News

The 2015 International Congress of Odonatology will be held at La Plata City, 60 km south of Buenos Aires, Argentina in association with the Universidad Nacional de La Plata, Museo de La Plata and Instituto de Limnología. The Congress venue is the 'Salon Cultural' of the Seguros Rivadavia Company (7th Avenue and 46th Street). The congress will be held between 15th and 20th November 2015. The post congress tour will be in Patagonia from November 21st; in this tour we will visit Bariloche City (Rio Negro Province) and San Martin de los Andes City (Neuquen Province) visiting two beautiful National Parks: Lanin and Nahuel Huapi, hoping to find several of the patagonic endemics. For Congress enquiries contact Javier Muzón [icoargentina2015@gmail.com]. Enquiries for funding support should be addressed to Dr. Vincent Kalkman, Dorpsstraat 84, 2343BB Oegstgeest, The Netherlands. E-mail: [kalkman@naturalis.nnm.nl]. A web site has been established for the Congress at: [<http://ico2015-argentina.com.ar/congress/>] and a Registration Form can be down loaded from: [<http://ico2015-argentina.com.ar/registration/>].

The Third European Congress on Odonatology (ECOO 2014) was held in Montpellier, France, 7-10 July, 2014. The abstracts of the presentations given at the Congress are available to download at: [http://odonates.pnaopie.fr/wp-content/uploads/2013/11/ECOO2014_ABSTRACT-BOOK.pdf]. A short account of the Congress is provided on pages 6-7. At the Congress Magnus Billquist invited participants to attend the Fourth European Congress on Odonatology (ECOO 2016) to be held in Sweden.

The Fourth Balkan Odonatological Meeting (BOOM) Meeting was held in Bosnia and Herzegovina, from 1-8 August, 2014. An account of this meeting is provided on pages 4-5. The Fifth Balkan Odonatological Meeting (BOOM 2015) will be held in summer 2015 in Macedonia. More information will be announced in the spring of 2015 (see page 5).

Agrion Regional Representatives

As mentioned in the last edition of *Agrion*, Graham and I are appointing Regional Representatives, to help gather regional-based odonatological news and information of potential interest to WDA members. Seven *Agrion* Regional Representatives have been appointed, covering South America, Africa, Western Europe, North Asia, East Asia, Southeast Asia and South Asia. We are hoping to appoint additional Regional Representatives to cover North America, Middle East and Australia. If any member would be interested in taking on the role for any of these three regions we would be very pleased to hear from you.

North America: Vacant

South America: Dr. Javier Muzon [muzon@ilpla.edu.ar]

Cover photo: *Macromia illinoensis* (Walsh, 1862) nymph, from Vilas County, Wisconsin, USA; photo taken using 'stacked image technique'. Photo credit: Dennis Johnson. According to Dennis: 'The photo is a composite of 32 photo images shot at different focus levels and assembled using a computer stacking program (Zerene Stacker) to take only the parts of the 32 images that are in focus to make the final completely in-focus image.' Further examples of stacked photo images are provided in the article titled: 'Nematode parasitization of macromiids in northern U.S. lakes', see Figures 2 and 3, pages 8 and 9.

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Australasia:	Vacant

WDA website

The WDA web site can be accessed at [<http://worlddragonfly.org/>]. The site contains general information about dragonflies and the Society including, the composition of its WDA Board of Trustees, details of its WDA Conservation and Research Grants, WDA meetings and publications. WDA membership application forms can be completed at [http://worlddragonfly.org/?page_id=14] or downloaded for completion and submission to WDA Secretary at [http://worlddragonfly.org/wp-content/uploads/2013/11/membership_application_form.pdf].

The WDA webmasters' email and address contacts are: Rhainer Guillermo Ferreira [rhainerguillermo@yahoo.com.br], Department of Biological and Environmental Sciences, Federal University of Grand Dourados, 79.804-970, Dourados, MS, Brazil and Christopher Hassall [c.hassall@leeds.ac.uk], School of Biology, University of Leeds, Woodhouse Lane, Leeds, LS2 3JT, UK.

Facebook and Twitter

WDA is now on Facebook and Twitter. The WDA Facebook website can be found at the link: [<https://www.facebook.com/WorldwideDragonflyAssociation>] and the WDA Twitter website may be found at the link: [<https://twitter.com/WorldDragonfly>].

Zootaxa Festschrift to Angelo Machado

Angelo Pinto has informed our WDA Secretary Jessica Ware that the deadline for the Festschrift in honour of Angelo B. M. Machado's 80th birthday is now February 20, 2015. A link to the manuscripts already submitted is provided here: [<https://docs.google.com/document/d/1aVJfEcVA9AkCtsU5qGHjDc8kCwSvJTg1w6LY671HTTQ/edit?usp=sharing>].

Next issue of AGRION

For the next issue of *AGRION*, to be published at the beginning of July 2015, please send your contributions to Keith Wilson [kdpwilson@gmail.com] or Graham Reels [gtreels@gmail.com]. All articles, information and news items related to dragonflies or of interest to WDA members are most welcome and will be considered for publication. Please send all text and figure captions in a Word file by email, preferably, or on a disk by post. Please do not include artwork with the text but provide a separate file or files in soft copy form, ideally in a compressed format (e.g. 'jpeg' or 'gif'), or as files on disk if sent by post.

If you have an odonate photo illustrating any rarely observed aspect of dragonfly biology, or an unusual species, or simply a stunning dragonfly shot, please submit it for consideration for publication on the front cover of *AGRION*.

AGRION CONTENTS

Editor's notes	2
The Fourth Balkan Odonatological Meeting (BOOM) 2014	4
Third European Congress on Odonatology (ECCO), Montpellier, France, 7-10 July 2014	6
Nematode parasitization of macromiids in northern U.S. lakes	8
Unusual perching behaviour of male <i>Euphaea decorata</i> Selys 1853	10
Odonata of Rinshinomori Park, Tokyo, part 2: Final results of observation record of 2014	11
Dragonflies of North America, 3 rd Edition Errata	14
The German Atlas of Dragonflies	15
The Dragonflies and Damselflies of Eastern Africa: Handbook for all Odonata from Sudan to Zimbabwe	16
Dragonfly fauna of Sri Lanka: distribution and biology, with threat status of its endemics	17

The Fourth Balkan Odonatological Meeting (BOOM) 2014

Dejan Kulijer [dejan.kulijer@gmail.com]

For the fourth year in a row, the Balkan Odonatological Meeting (BOOM) gathered European odonatologists, primarily from the Balkans, in one of the Balkan countries. The annual BOOM Meeting has quickly become an established venue in which dragonfly lovers - professional and amateur - can meet, exchange their ideas, present their research and work together investigating dragonflies in one of the least known regions of Europe.

The Balkan Odonatological Meeting represents a regional research and educational programme developed and led by young researchers and students from the west Balkan area with the main goal of researching and protecting the dragonflies and freshwater habitats of the region. The Meeting combines field studies, lectures and workshops on dragonflies, and is a perfect place to gain knowledge and experience on dragonflies and to enhance regional cooperation. It is also a chance for all participants to get to know the natural beauty and still largely undisturbed nature of this part of Europe. The BOOM is especially oriented towards young researchers and students from the Balkans with an interest in odonatology.

The idea for the cooperation in dragonfly research in the Balkans was born at the First European Congress of Odonatology in Porto in June, 2010, when participants from several Balkan countries expressed their willingness for teamwork and research in the Balkans. The following year, the Slovene Odonatological Society (SOD) turned this idea into reality and the First BOOM was born. Prior to 2014, three successful Meetings were held (In Slovenia 2011, Serbia 2012 and Croatia 2013). The Meetings were attended by 20-30 participants, mostly young researchers and students from Bosnia and Herzegovina, Croatia, Italy, Hungary, Macedonia, Germany, Slovakia, Slovenia and Serbia.

This year's Meeting was held in Bosnia and Herzegovina, from 1st to 8th August. The Meeting was organized by the Society for Biological Research and Protection of Nature BIO.LOG and the Natural Heritage Protection Society Arbor Magna together with the SOD. A total of 22 participants from Bosnia and Herzegovina, Germany, Macedonia, Serbia and Slovenia attended the Meeting, which took place in two regions of the country: Prnjavor (North Bosnia) and Blagaj (Herzegovina). During seven days, participants had the opportunity to investigate the dragonfly fauna of different biogeographical regions of the country. The goal was to gather dragonfly records from poorly known areas, and also to visit remarkable places and search for the country's most interesting species. Unfortunately, the short time for the excursions did not allow us to visit as many places as we wanted.



Figure 1. Participants at the BOOM 2014 meeting in Blagaj. Photo credit: D. Kulijer.

During the Meeting several participants presented their work on Odonata, current research activities and projects. It was a very successful Meeting, we all had a great time working together and enjoyed visiting various sites. We visited more than 60 localities and recorded 47 species. The most significant results are new localities of rare and threatened species (e.g. *Chalcolestes viridis*, *Coenagrion scitulum*, *Erythromma najas*, *Cordulegaster heros*), as well as improved knowledge of the distribution of many other species.



Figure 2. Evening presentations at the terrace of the motel in Prnjavor. Photo credit: D. Kulijer.

In the Mediterranean region we investigated and learned about the dragonfly fauna and biodiversity of Neretva, Hutovo blato and Trebižat biodiversity hotspots. Research conducted during the BOOM 2014 contributed to the efforts in research and conservation of dragonflies in these key biodiversity areas. These activities are implemented in the framework of the ongoing project on the research and protection of karst freshwater habitats, supported by Critical Ecosystem Partnership Fund (CEPF) and implemented by the BIO.LOG and SOD.

The BOOM 2014 was supported by CEPF, SOD, the Rufford Foundation, the International Dragonfly Fund and several other national and international organizations. We would also like to express our gratitude to Klaus-Jürgen Conze for his help in the organization of the Meeting, who unfortunately due to a sudden attack of flu was not able to join us this year.

The Fifth Balkan Odonatological Meeting (BOOM 2015) will be held in summer 2015 in Macedonia. More information will be announced in the spring of 2015.

Further details on the results of the BOOM 2014 and the information on the BOOM 2015 Meeting will be available on the BIO.LOG website: www.biolog.ba. For any additional information please contact us by e-mail: balkandragonflies@gmail.com.



Figure 3. Lake at Nevesinjsko karst polje. Photo credit: I. Miljevi.

Third European Congress on Odonatology (ECO), Montpellier, France, 7-10 July 2014

Klaus-Jürgen Conze [kjc@loekplan.de]

The Third European Congress on Odonatology (ECO) took place in Montpellier in the Roussillon-Languedoc region from 7th to 10th of July 2014. Philippe Lambret and his colleagues were perfect hosts for more than fifty odonatologists from all over the continent. With their typical “savoir vivre” from the beginning there was a familiar atmosphere which made it easy to exchange a lot of new information and knowledge among all participants (Figure 1).



Figure 1. Participants at the Third European Congress on Odonatology (ECO), Montpellier. Photo credit: KJ Conze.

The congress was organised by the French Society of Odonatology (FSO), the Office for Insects and their Environment (OPIE) and the Conservatory for the Natural Sites of the Languedoc-Roussillon region in the frame of the National Action Plan for Odonata.

The organizing committee comprised Magnus Billquist, Xavier Houard, Jean Ichter, Raphaëlle Itrac-Bruneau, Samuel Jolivet, Régis Krieg-Jacquier, Philippe Lambret, Marc Levasseur, Florence Merlet and Audrey Poujol. The scientific committee included Jean Pierre Boudot, Geert De Knijf, Sónia Ferreira, Philippe Lambret and Robby Stoks. The congress was supported by the “Ministère de l’Écologie, du développement durable et l’Énergie (MEDDE)” and the “Gesellschaft deutschsprachiger Odonatologen” and also had its own mascot, see Figure 2.

There were many opportunities to talk with colleagues, such as at the welcome party on

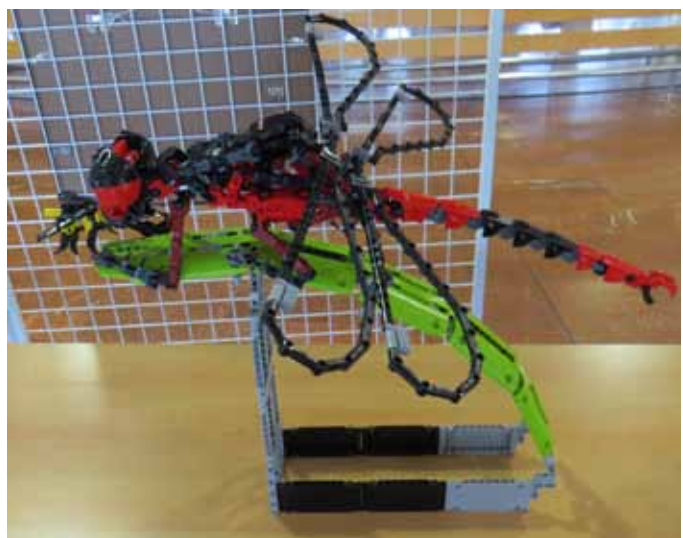


Figure 2. Lego® ECOO dragonfly, ‘Libellulego danica’ by Erland Nielsen. Photo credit: KJ Conze.

the first evening or at the congress dinner on the last evening. Mid-congress fieldtrips provided the opportunity to observe the habitats of *Lestes macrostigma* and *Macromia splendens* and also other extraordinary insects (see Figure 3).

Within the congress six sessions (ecology, genetics and phylogeography, faunistics and biodiversity, conservation and measurements, behaviour and last but not least monitoring) took place with 28 talks and 6 poster presentations. So a field covering variety of themes, with surely something special for everyone interested in dragonflies, was offered. Very good discussions followed most of the talks and presentations. All this information is available in the abstract-book at:

http://odonates.pnaopie.fr/wp-content/uploads/2013/11/ECOO2014_ABSTRACT-BOOK.pdf

The Congress brought together the greater community of European odonatologists; a very large family from all over the continent. There was a lot of cooperation and, what is more, a lot of friendship! For 2016 Magnus Billquist has already invited everyone to go to Sweden.

For some participants the party continued in an extraordinary post-congress field trip to the area around Carcassonne, which afforded very good observations of *Macromia splendens* and *Gomphus simillimus*, to name just a few (see Figures 4 and 5).

Merci millefois chers amis francais!
On behalf of all participants, KJC ☺



Figure 3. Not a dragonfly but very large and interesting antlion (Myrmeleonidae: *Palpares libelloides*). Photo credit: KJ Conze.



Figure 4. In the South of France there is plenty of good beer to drink. Photo credit: KJ Conze.



Figure 5. *Macromia splendens* taken on field trip. Photo credit: KJ Conze.

Nematode parasitization of macromiids in northern U.S. lakes

Ken Tennessen [ktennessen@centurytel.net],
William Smith, Marla Garrison, Denny Johnson

Macromia illinoiensis Walsh (Odonata: Macromiidae) is a large, dark and yellow-streaked dragonfly (Fig. 1) that is common in eastern North America. Nymphs (Fig. 2) are long-legged sprawlers, partially concealing themselves in sand/silt sediments. Throughout its considerable geographic range, this species breeds in mid-sized to large rivers, but in northern Wisconsin it also inhabits relatively large lakes with considerable wave action. In the summer of 2013, KT and WS were sampling a lake in Vilas County, Wisconsin, and netted a number of *M. illinoiensis* nymphs that had something inside their abdomens that looked like worms (we could see the unusual coiled, stringy forms through the nearly transparent ventral integument of the nymphs). In the field, it appeared that at least half of the specimens had these forms inside. We had not seen worms inside any macromiid nymphs from lotic habitats taken previously over many years of surveying.



Figure 1. *Macromia illinoiensis* male, Pettenwell Dam, Wisconsin River, Juneau County, Wisconsin, USA, 27 August, 2008. Photo credit: K. Tennessen.



Figure 2. *M. illinoiensis* nymph., Vilas County, Wisconsin, USA. Photo credit: D. Johnson.

With MG and DJ joining our team in 2014, we made intensive collections of macromiid nymphs in seven lakes in far northern Wisconsin. Preliminary results to date show that the worms are nematodes and that they parasitize not only *M. illinoensis* (Fig. 3) but also *Didymops transversa* (Say), the only other species of Macromiidae found in northern Wisconsin. In one lake, we found a ninety percent infection rate in both macromiid species. Some of the nymphs had as many as four nematodes inside the body cavity. The infection rate in other lakes we sampled this year was zero or very low. We did not find parasites in the few specimens of Aeshnidae, Gomphidae, Corduliidae and Libellulidae that we sampled along the lake shores, although we did not collect enough specimens to be conclusive.

There are few reports on nematodes parasitizing Odonata nymphs, and we have yet to find anything published on macromiids. Therefore, we have decided to study this phenomenon further.

We have received a grant from Dr Martin Schorr to help with travel and supply expenses, and also to contract out for DNA analysis to try to identify the parasite(s). We hope to determine 1) the extent of infection in Wisconsin lakes and how variable infection rates are between lakes, 2) if infection within nymphs is seasonal, and 3) the effects these parasites have, if any, on macromiid nymph survival. We also plan to team up with a parasitologist to learn as much as possible about the life cycle of the nematode parasites. Field and laboratory studies are being planned for 2015 and 2016.



Figure 3. Nymph of *M. illinoensis*, ventral view, with sternites removed exposing nematode worms inside Photo credit: D. Johnson.

Unusual perching behaviour of male *Euphaea decorata* Selys 1853

Hide Natsume [romluna@y4.dion.ne.jp]

Odonata with ovipositors are often observed ovipositing underwater, especially Zygoptera (Corbet, 1999; Silsby, 2001). Even in Anisoptera, underwater oviposition of Australian Aeshnidae has been reported (Hawking et al., 2004). In tandem oviposition of Zygoptera it is not uncommon for the damselflies to alight on emergent vegetation and slowly submerge themselves by climbing down to oviposit. During this behaviour sometimes males in tandem position with females also completely submerge themselves.

When mature males make territories and perch to defend them and/or to find females (in the case of perchers) they usually perch on dried stones, sticks or vegetation. Many Zygoptera and family Gomphidae males make territories close to the water surface and occasionally on wet stones or ground in the splash zone.

However, they tend to change their position when their legs happen to touch the water body or submerged materials, but one male of *Euphaea decorata* Selys 1853 was observed perching on a submerged leaf persistently in a small stream at Mt Butler, Hong Kong, China and this behaviour was photographed.



Figure 1. Male *Euphaea decorata* Selys 1853 perching on submerged leaf Mt Butler, Hong Kong.

Observations

A male of *Euphaea decorata* Selys 1853 was observed at a small fast-flowing stream at Mt Butler (290m a.s.l., N22°16'28" E114°12'6"), Hong Kong, China on July 29th, 2014. The weather was bright and the Hong Kong temperature was 31°C. I arrived at the site at 1705h, and at around 1730h one male of *Euphaea decorata* was found at the middle part of the stream. I assumed it was perching on a stone or some material on the surface of the running water at first sight but later found it was perching on submerged material. This individual flew away when I disturbed it but came back to the same spot and carefully grasped the submerged material. Video and photos were taken between 1735h and 1738h. *E. decorata* is quite common at this habitat but the density of males was not so high at that time. At least, no other male of the same species was found within 3 m of this spot. Unfortunately I had to leave a few minutes later so it is unknown whether the male successfully found a female or had a chance to fight with other males after that. According to the photo the underwater material looks like dead leaf, and the unevenness of the leaf may have been helpful in permitting this individual to grasp it with six legs.

References

- Corbet, P.S., 1999. *Dragonflies: Behavior and Ecology of Odonata*. Cornell University Press, Ithaca.
- Hawking, J., Suhling, F., Wilson, K., Theischinger, G. and Reels, G., 2004. Underwater and epilithic oviposition by Australian Aeshnidae (Odonata). *International Journal of Odonatology* 7(1): 33-36.
- Silsby, J., 2001. *Dragonflies of the World*. CSIRO Publishing, Collingwood.

Odonata of Rinshinomori Park, Tokyo, part 2: Final results of observation record of 2014

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Abstract

In *Agrion* 18(2) I reported that I set the target number of 24 species of Odonata as this year's expectation at Rinshinomori Park in Tokyo, even though the number of species recorded through 1977 to 2013 at this park was only 17. Wetland areas are very limited in the park (Figure 1) but it has become a good resting space for birds to stay and feed as an oasis in the huge metropolitan city of Tokyo. In my previous report, five species of Odonata had been recorded from May 4th up to June 20th this year, namely *Anax nigrofasciatus* Oguma, 1915, *Orthetrum albistylum* (Selys, 1848), *Orthetrum melania* (Selys, 1883), *Pseudothemis zonata* (Burmeister, 1839) and *Polycanthagyna melanictera* (Selys, 1883).



Figure 1. Sesoragi upper pond at Rinshinomori park.

I subsequently visited the park on 51 days after June 23rd until December 6th and the last day I saw a dragonfly was October 20th, when one female of *Sympetrum frequens* (Selys, 1883) was observed resting on a warm patch of ground surrounded by tall grasses. Thirteen additional species of Odonata have been successfully recorded since June 23rd and the total number of observed species has risen to 18 throughout the year of 2014. Out of these insects *Sieboldius albardae* Selys, 1886, *Anaciaeschna martini* (Selys, 1897) and *Sympetrum eroticum* (Selys, 1883) are recorded for the first time in Meguro ward and four are new to this site since 1944 when Tokyo city adopted the ward government system. Recorded number of Odonata at Rinshinomori park has finally reached 24 this year. Unfortunately damselflies seem to be extinct in the park because of a lack of water plants, and *Anatogaster sieboldii* (Selys, 1854) has not been observed through this year, probably due to the artificial stopping of flow in the canals in 2013 affecting and damaging larva of this lotic species.

Dragonflies recorded additionally after June 22, 2014

6) *Sieboldius albardae* Selys, 1886 (Figure 2)

A young male individual was observed and photographed in July by a local birdwatcher. This is the first record in Meguro ward. As being expected in my last report in *Agrion* 18(2), this one may have flown over from a habitat with a big stream, perhaps Tamagawa River which is around 4 km west of the park. In spite of its big body size *Sieboldius albardae* usually does not have a tendency for emigrating to other areas. Although this species is not uncommon in the suburbs of Tokyo, it is quite rare for it to be found in the metropolitan city as it usually lives only in medium to large streams surrounded by forest.



Figure 2. Young male of *Sieboldius albardae* Selys, 1886.

7) *Anaciaeschna martini* (Selys, 1897)

On July 22nd one male was observed flying at high speed across the garden and away to the roof tops of busy residential areas. After this another male was collected (Figs 3 and 4) while female individuals were observed two times flying high above the tree tops at dusk in August. These are the first records in the whole Meguro ward. This fast flying dragonfly has expanded its range even to central parts of Tokyo in the last twenty years, but for most insect lovers it is very difficult even to identify this dragonfly flying at dusk and hardly being captured because of its unusual high flying speed. Since one dead larva of this species was accidentally found from a small water tank on my house's



Figures 3-4. Male *Anaciaeschna martini* (Selys, 1897).

balcony in 2008 I have been hoping to record this beautiful dragonfly in neighbouring areas such as Rinshinomori Park.

8) *Anax parthenope* (Selys, 1839)

One of the commonest aeshnids in Tokyo and occasionally migrating from neighbouring habitats in Meguro or Shinagawa ward. This species could be sometimes observed at Meguro River area (the nearest point of the river is 1 km east of the park) and one male individual seen in July maybe came from this river or further remote habitat in Meguro, Shinagawa or Minato ward.



Figure 5. *Pantala flavescens* (Fabricius, 1798).

9) *Crocothemis servilia mariannae* (Drury, 1770)

The first encounter with this striking reddish species was on June 25th, and only one male was observed (three times). It probably migrated from the nearest stable habitat of Himonya Pond, 1.5 km northwest of Rinshinomori Park. According to the Green Data Book of Meguro government the last record of this species in Meguro ward was August 17th, 2008 at Aobadai, 2.5 km north of Rinshinomori Park.



Figures 6-7. *Sympetrum baccha matutinum* Selys, 1884, (left) female and (right) male.

10) *Pantala flavescens* (Fabricius, 1798) (Figure 5)

The first observed flight was on July 21st, and 7 to 20 individuals have been constantly observed flying in two to three different places in the park until October 14th.

11) *Rhyothemis fuliginosa* Selys, 1883

Only four records in Meguro ward since the 1930s, and the last record was August 2nd, 2004 at Aburamen Park, 1 km northwest of Rinshinomori Park. Two immature individuals were observed flying high above the tree tops in July. This is the first record in Rinshinomori Park of this species. They probably came from other areas with the wind, and stayed in the park only for one week. Mature individuals have never been observed around the water body.

12) *Sympetrum baccha matutinum* Selys, 1884

On July 28th one male was collected (Figure 6) at the north corridor between the park and residential area (Figure 8). This is the first record of *Sympetrum baccha* in Rinshinomori Park. This species has been recorded only 7 times in Meguro ward, between 1999 and 2010. *Sympetrum baccha* has long been uncommon in Tokyo metropolitan area but has been expanding its area in the last twenty years. Several local insect reports issued recently say that this red dragonfly is coming back to town. One female (Figure 7) was collected on August 20th. Only two records through the year at Rinshinomori Park.



Figure 8. Northern corridor between Rinshinomori park and residential area (Shimomeguro 5-chome, Meguro ward). This area is important for females to feed and avoid encounters with males.

13) *Sympetrum darwinianum* (Selys, 1883)

Not common and only 14 records between 1982 and 2011 in Meguro ward, however, they have often been misidentified as other red dragonflies such as the common *Sympetrum frequens* (Selys, 1883).

14) *Sympetrum eroticum* (Selys, 1883)

On September 21st one male was collected at Seseragi upper pond. (Figure 9). This is the only record at Rinshinomori Park, and surprisingly the first record in Meguro ward. This tiny red dragonfly is not uncommon in the suburbs of Tokyo but very rare in metropolitan Tokyo. Even at the Imperial Palace, where 40 Odonata species have been recorded in the past, this dragonfly was not observed through 2009-2013 in research conducted by the National Museum of Nature and Science.



Figure 9. Male of *Sympetrum eroticum* (Selys, 1883).

15) *Sympetrum frequens* (Selys, 1883)

One of the Aka-tombo (red dragonflies) in Japan, and it is common in most parts of Tokyo in autumn. They spend the summer season in remote mountain areas at altitude and move to level ground when matured. First appearance at Rinshinomori Park was on September 14th and more than 30 individuals were counted on September 19th (Figs 10 and 11).



Figures 10-11. *Sympetrum frequens* (Selys, 1883), (top) male and (bottom) female.

16) *Sympetrum infuscatum* (Selys, 1883)

On August 8th the first individual was observed, and since then two to three individuals were constantly witnessed until the end of September (Figure 12). This species is also common like *Sympetrum frequens* but the observed number is not stable by the year.

17) *Sympetrum risi risi* Bartenef, 1914 (Figure 13,14)

Two males were observed at Seseragi lower pond on August 17th and several individuals were constantly observed perching around this water body until September 2nd. This is the first record at Rinshinomori Park and past records of this species are rare in Meguro ward. Only two records in the past are one male seen on September 27th, 1982 and again one male observed on September 8th, 2004, both at the large campus of the University of Tokyo, Komaba district (north end of Meguro ward).



Figure 12. Young male of *Sympetrum infuscatum* (Selys, 1883). When matured its colour of thorax and abdomen turns into dark brown.

18) *Sympetrum speciosum* Oguma, 1915

Only two records in Meguro ward, in 1982 and 2004, both at the campus of University of Tokyo, 4 km north of Rinshinomori Park. On August 4th I saw one dragonfly at the top of a tall tree (13 m from the ground) and recognised the orange markings at the base of all four wings. Judging from the behaviour it seemed to be a young individual of this species, but this could not be clearly determined as it was far above the tree top. Later, local birdwatcher Harumi Terayama took several pictures of this individual in the second week of August in the park and identified it finally. This is the first record in Rinshinomori Park.

Out of these 18 recorded species, so far only six species (*Anax nigrofasciatus* Oguma, 1915, *Orthetrum albistylum* (Selys, 1948), *Orthetrum melania* (Selys, 1883), *Pseudothemis zonata* (Burmeister, 1839), *Polycanthagyna melanictera* (Selys, 1883) and *Sympetrum risi risi* Bartenef, 1914) are breeding in the ponds at Rinshinomori Park. The present report is the initial part of continuous research of the latest fauna of Meguro ward, a part of central Tokyo metropolitan city (23 wards) and further exploration including larval research will be necessary from next year onwards.



Figures 13-14. *Sympetrum risi risi* Bartenef, 1914.

Remarks

Records of Odonata of Meguro ward is based on the official information by the local government which treats past literature since the 1930's. They do not consider some old specimens collected in old Tokyo city before 1939 as these need to be examined carefully for the locality labels.

Bibliography

- Meguro city Website, Odonata of Meguro City: [<http://www.city.meguro.tokyo.jp/kurashi/shizen/ikimono/zukan/ikimono/tonbo.html>].
- Natsume, H. (2014). Odonata of Rinshinomori Park, Tokyo. *Agrion* 18(2): 38-40.
- Ozono, A., Kawashima, I. and Futahashi, R. (2012). *Dragonflies of Japan / Nature Guide*. Bun-ichi Co. Ltd, Tokyo.
- Rinshinomori Park Website (Japanese only): [<http://www.geocities.jp/greensv88/kouen-rinshinomori.html>]
- Website of Tokyo Metropolitan Park Association: [<http://www.tokyo-park.or.jp/english/>].
- Suda, S. (2014). Dragonflies and Damselflies of the Imperial Palace, Central Tokyo. *The Nature & Insects* 49(7): 11-15. New Science Co., Ltd. In

Dragonflies of North America, 3rd Edition

Errata

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Since the publication of the 3rd Edition of *Dragonflies of North America* earlier this year (March 2014), several omissions or errors have been brought to my attention. In hopes of saving at least some readers the confusion, and in some cases, apparently, the downright anguish, that might result, I list the known instances here, by page number:

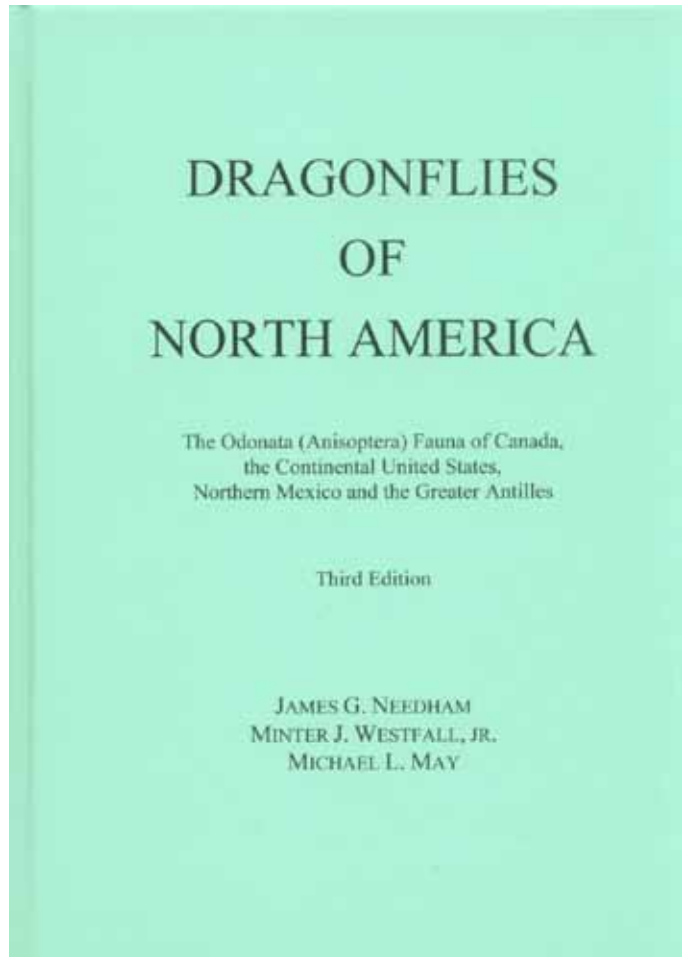
p. 85 – In the list of pertinent literature given in the account of *Anax walsinghami*, the date of the original description by McLachlan is given as 1882; it should be 1883, as correctly given in the Bibliography (p. 623).

p. 38, p. 150, p. 642, p. 652 – In the List of Genera and Species, in the species account, and in the Common Name Index, the common name of *Erpetogomphus crotalinus* is given as Autumn Ringtail; the correct name, as approved by the Dragonfly Society of the Americas, is Yellow-legged Ringtail. This error came about as an unfortunate by-product of using a global change to amend the common name of *Sympetrum vicinum* (formerly Yellow-legged Meadowhawk) to Autumn Meadowhawk.

pp. 156-164 – As the result of an extremely unfortunate and careless oversight on my part, the larvae of *Erpetogomphus bothrops*, *E. elaps*, *E. eutainia*, and *E. liopeltis* were omitted from the key and listed as unknown in the respective species accounts. Larvae of these four species were described and keyed by Rodolfo Novelo: 2005. Five new *Erpetogomphus* Hagen in Selys larvae from Mexico, with a key to the known species (Anisoptera: Gomphidae). *Odonatologica* 34(3): 243-257. My apologies to Rodolfo and to users of the Manual.

p. 284, p. 643, p. 649 – At the time the Manual was published, *Phyllogomphoides nayaritensis* was included because it had been recorded in Sonora, MX, but it had not been collected in the United States and so had no “official” common name. Based on the written description, I proposed the name “Clear-faced Leaf-tail, but was persuaded by Dennis Paulson and others with field experience of the species that this name would be misleading. I then settled on the suggested name of “West Mexican Leaf-tail”, which is used in the List of Genera and Species. On the pages listed above, however, i.e., in the species account and the Common Name Index, this last-minute correction was overlooked, and it remains as “Clear-faced Leaf-tail”. As of this writing the species still has no DSA approved common name, but West Mexican Leaf-tail is more likely to be used.

If anyone finds other errors or discrepancies, I’d be very grateful if you would let me know so that these also can be corrected.



Mike May
11 October 2014

The German Atlas of Dragonflies

Klaus-Jürgen Conze [kjc@loekplan.de]

In March 2007 the Society of German speaking odonatologists (GdO) decided in its annual meeting to start work on a German Atlas of Dragonflies and to publish it as a supplement of its organ: *Libellula*.

To date, distribution atlases have only been available for a few federal states (e.g. Schleswig-Holstein, Mecklenburg-West Pomerania, Brandenburg, Hessen, Saxony, Baden-Württemberg and Bavaria). The federal states of Saarland and Rhineland Palatinate are integrated in

a cross-border atlas together with Luxemburg and parts of the neighbouring France and Belgium.

Within the last six years a project working group was built up and organized the “making of” the atlas. The compilation of all the data hosted separately in the single federal states was especially complicated, because every state had its own way of sampling and storing the data. In some federal states there are honorary working groups active while in others it is organized by the administration for nature conservation. But there are also some federal states where there have been no institutions at all. So the atlas project also initiated new groups to begin the inventory of the dragonflies in their country.

Due to this heterogeneity, only a small core of attributes fields of the different data sets could be put together, just to create distribution maps and to check a short-track trend of the species abundance in the last 25 years.

A further analysis of all the data has been done on the level of the federal states in some cases but remains a project for the future in the majority of them and especially for the whole of Germany.

The Atlas will be published soon in 2015. It is based on more than a million datasets collected from the 16 federal states with the help of more than 2000 volunteers, who originally provided the data on distribution of dragonflies.

Now for the first time distribution maps in a grid of approximately 10 by 10 kilometres (10 latitude x 6 longitude minutes) are available as the core part of the Atlas. The Atlas also includes short monographs of three pages for each of the 81 species ever recorded in Germany. This dataset also facilitates analyses for a new Red List of Germany. Furthermore a list of hitherto known introduced dragonflies is given as well as a compilation of fossil German records of Odonata.

As part of the project the *Libellula* supplement 11 (SCHORR & WOLF 2012) was published in 2012. It is a bibliography of German literature on odonatology with more than 6,000 titles.

More information can be found on www.libellula.org and www.libellen-verbretungsatlas.de; on the latter site an online bibliography is also available.

The delivery will be free for members and the conditions for non-members will be placed on the homepage when the atlas is printed.

Reference

Schorr, M. & J. Wolf (2012): Bibliographie der für Deutschland publizierte Libellenliteratur (Odonata). *Libellula Supplement 11, Libellen Deutschlands, Band I*: 5-420.



The Dragonflies and Damselflies of Eastern Africa: Handbook for all Odonata from Sudan to Zimbabwe

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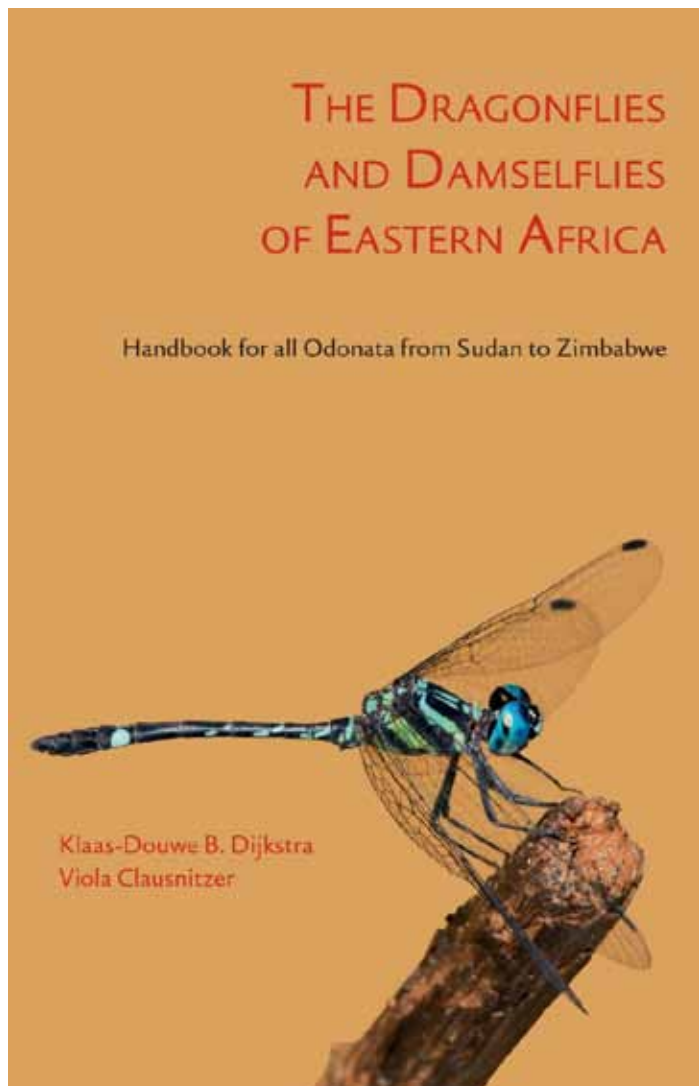
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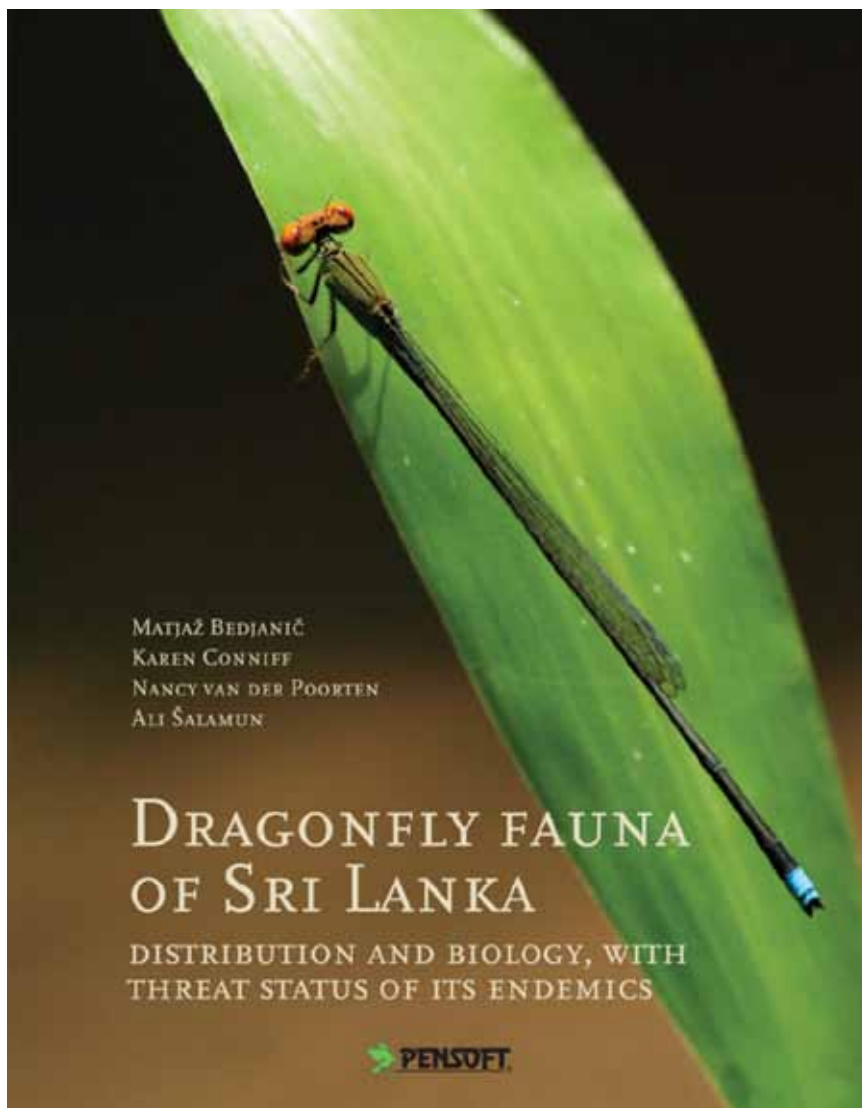


Dragonfly fauna of Sri Lanka: distribution and biology, with threat status of its endemics

**Authors: Matjaž Bedjanič, Karen Conniff,
Nancy van der Poorten and Ali Šalamun**

Dragonflies are strikingly beautiful insects and small colourful pearls of Sri Lanka's remarkable biodiversity. At present, 124 species are known from the island, of which almost half are endemic. Such an extraordinary level of endemism makes Sri Lankan dragonflies an exceptionally interesting group for studies in biodiversity, zoogeography, phylogeny and ecology.

Dragonfly Fauna of Sri Lanka: Distribution and Biology, with Threat Status of its Endemics is the result of almost 20 years of the authors' work on the subject. With detailed texts and hundreds of colour photographs, maps and charts, it summarizes all the available knowledge on the distribution, taxonomy, biology and disturbing threat status of the dragonflies of Sri Lanka. It aims to raise awareness and promote interest in odonatology among a widespread and diverse community of researchers, nature conservationists and students in Sri Lanka and abroad.



The book is available free from Pensoft Publishers as an open access 'pdf' file at the following webpage: [<http://www.pensoft.net/book/12977/dragonfly-fauna-of-sri-lanka-distribution-and-biology-with-threat-status-of-its-endemics>].

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