

Odonatological Abstract Service

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9593. Bernard, R. (1997): An extremely late record of *Sympetrum fonscolombi* (Sel.) in Poland (Anisoptera: Libellulidae). *Notulae odonatologicae* 4(10): 159-160. (in English) [Record of a male caught on 29-X-1996, near Poznań, Poland] Address: Bernard, R., Dept of General Zoology, Adam Mickiewicz University, Umultowska 89, PL-61-702 Poznań, Poland; E-mail: Bernard@amu.edu.pl

9594. Burkart, W. (1997): Neue Reproduktionsnachweise der Frühen Heidelibelle (*Sympetrum fonscolombi* SELYS 1840) (Odonata: Libellulidae) in Niedersachsen. *Beiträge zur Naturkunde Niedersachsens* 50: 48. (in German) [Teneral of *S. fonscolombi* were recorded in Rotenburg, Niedersachsen, Germany on 8-IX-1996] Address: Burkart, W., Am Emel 7, 27412 Wilstedt, Germany. E-mail: weguburkart@gmx.de

9595. Dijkstra, K.-D. (1997): New records of *Libellula fulva* (Müll.) for Portugal (Anisoptera: Libellulidae). *Notulae odonatologicae* 4(10): 160. (in English) [Two records of the regional very rare *L. fulva* are documented and briefly discussed.] Address: Dijkstra, K.D., Netherlands Centre for Biodiversity Naturalis, P.O. Box 9517, NL-2300 RA, Leiden, The Netherlands. E-mail: dijkstra@nrm.nl

9596. Gatter, W. (1997): *Birds of Liberia*. Aula-Verlag, Wiesbaden. ISBN 3-89104-615-4: 320 pp. (in English) [The book includes a colour picture of the Little Bee-eater *Merops pusillus* with an anisopteran prey.] Address: AULA-Verlag, Industriepark 3, 56291 Wiebelsheim, Germany

9597. Habdijia, I.; Radanovic, I.; Primc-Habdijia, B. (1997): Longitudinal distribution of predatory benthic macroinvertebrates in a karstic river. *Archiv für Hydrobiologie* 139(4): 527-546. (in English) ["The longitudinal distribution of predatory macroinvertebrates and their diversity were investigated on boulder, cobble and gravel substrates along the River Kupa, a karstic river in the NW Dinarid area (Croatia). Depending on substrate type and river section, the predator biomass constituted 6.9 % to 20.2 % of the total macro-invertebrate biomass. In the headwater streams more than 80 % of predator biomass was represented by rhyacophilid, perlid and perlodid larvae. In the upper river section *Hirudinea* species, rhyacophilids and the dipteran larva,

Atherix ibis, constituted approximately equal percentages of total predators. In the lower river section *Hirudinea* species, Odonata larvae, tanipod and ceratopogonid larvae were the most dominant predators. Along the river gradient the increase of predator biomass corresponded with the increase of scraper, collector-gatherer and filterer biomass. The Shannon index of diversity showed that the diversity of predators increased from the source area to the downstream reaches. A significant and positive association was found between diversity of predators and diversity of collector-gatherers. This positive relationship between predators and collector-gatherers may be interpreted as the diversity response of predators to the diversity of prey." (Authors) The species list includes *Platycnemis* sp., *Corduliidae*, 'non det.', *Gomphus vulgatissimus*, and *Onychogomphus* sp.] Address: Habdijia, I., Department of Zoology, Faculty of Science, University of Zagreb, Rooseveltov trg 6, 10000 Zagreb, Croatia

9598. Holuša, O. (1997): The occurrence of dragonfly *Aeshna subarctica* Walker, 1908 (Odonata: Aeshnidae) in the Hrubý Jeseník Mts. (Czech Republic). *Čas. Slez. Muz. Opava (A)*. 46: 287-288. (in Czech, with English summary) [5 males, 1 female and 2 exuviae of *A. subarctica* were collected by the author on 8-IX-1997 at the peaty lake Malé mechové jezírko on the moorland of Rejvíz (745 in a.s.l., Hrubý Jeseník Mts., north-western Silesia in Czech Republic). Oviposition took place in the growth of *Eriophorum* sp. in the margin of the lake. *A. subarctica* frequently was observed to hunt for tandems of *Sympetrum* species.] Address: Holuša, O., Muzeum Beskyd, Přírodovědné oddělení, Zámecké náměstí 1264, CZ-738 01 Frýdek-Místek

9599. Holuša, O. (1997): Scarce chaser (*Libellula fulva*), a rare species in the Czech Republic and Slovak Republic. *Ochrana Přírody* 52(8): 240-241. (in Czech, with English summary) [*L. fulva* was found on a pond near the village Brzotin, Slovakia. The regional records of this species are documented. The list of Odonata from the same locality includes further 9 Odonata species e.g. *Erythromma viridulum*, *Anax parthenope*, and *Crocothemis erythraea*.] Address: Holuša, O., Muzeum Beskyd, Přírodovědné oddělení, Zámecké náměstí 1264, CZ-738 01 Frýdek-Místek

9600. Parr, A. (1997): The 1996 Red-veined Darter *Sympetrum fonscolombi* (Selys) influx into Britain. *Atropos* 2: 44-46. (in English) [The influx is given in de-

ture records are summarised and reasons for the decline of this species are discussed." (Authors)] Address: Schneider, T., Arnold-Knoblach-Ring 76, 14109 Berlin Wannsee, Germany. E-mail: karin.thomas.schneider@gmx.de.

9921. Schorr, M. (2010): Umzug der Libellensammlung Jurzitza von Karlsruhe nach Frankfurt, Senckenbergmuseum. *Libellennachrichten* 23: 12-14. (in German) [The important collection of Gerhard Jurzitza, Karlsruhe, Germany with many thousand Southamerican specimens and including holo- and paratypes was translocated from his private property to the Senckenberg Museum in Frankfurt, Germany.] Address: Schorr, M., Schulstr. 7B, 54314 Zerf, Germany. E-mail: bierschorr@online.de

9922. Schröter, A. (2010): On a collection of dragonflies from eastern Georgia, with the first record of *Sympetrum arenicolor* (Odonata: Libellulidae). *Libellula* 29(3/4): 209-222. (in English, with Georgian and German summary) ["On a short field trip in 2006 to eastern Georgia, 14 Odonata species were recorded at six localities. A male of *Sympetrum arenicolor* was collected in the outskirts of Tbilisi. This species is new for the Georgian fauna. All species are annotated and a list of the sampled localities is given." (Author)] Address: Schröter, A., Rasenweg 10, D-37130 Gleichen, Germany. E-mail: asmustim@gmx.de

9923. Shieh, S.-H.; Chi, Y.-S. (2010): Factors influencing macroinvertebrate assemblages in artificial subtropical ponds of Taiwan. *Hydrobiologia* 649: 317-330. (in English) ["Macroinvertebrate assemblages and its association with environmental factors at the 11 artificial subtropical ponds of Taiwan were examined using the multivariate analysis software STATICO. The aims of the study were to determine whether spatial and seasonal variation of macroinvertebrate assemblages changed seasonally, to examine which environmental factors determined the spatial and temporal structure of macroinvertebrate assemblages, and to compare between-pond variations in the taxon composition of macroinvertebrates. Macroinvertebrates were collected seasonally by a corer and a sweep net in 2007, and 13 physical and chemical factors were measured at the same time. A total of 31 macroinvertebrate taxa were collected during the sampling period, and the most dominant taxa were Chironomidae (31.7% of total animal abundance) and Tubificidae (22.4%). STATICO identified pond size, pond depth, sediment depth, and altitude as the major abiotic factors and *Bufo melanostictus* (Amphibia) as the major biotic factor to influence macroinvertebrate assemblages at these ponds. These factors changed with seasonality. For example, the abundance of *B. melanostictus* was the most important factor during the spring but became much less important in other seasons. According to the spatial distribution patterns of macroinvertebrate assemblages, macroinvertebrates could be split into two groups based on their dispersal. The active dispersers, such as insect taxa, were strongly associated with pond size and the passive dispersers, such as non-insect taxa, were strongly associated with the pond depth and/or sediment depth. The results of this study suggested that pond size might influence macroinvertebrate assemblages through their dispersal mechanisms and that the environmental factors which influenced the macroinvertebrate assemblages most changed with seasons in this study area." (Authors) Odonata were represented by nine taxa.] Address:

Shieh, S.-H., Department of Ecology, Providence University, 200 Chung-Chi Rd, Shalu, Taichung, 43301, Taiwan, ROC, E-mail: shshieh@pu.edu.tw

9924. Siraj, S.; Yousuf, A.R.; Bhat, F.A.; Parveen, M. (2010): The ecology of macrozoobenthos in Shallabugh wetland of Kashmir Himalaya, India. *Journal of Ecology and the Natural Environment* 2(5): 84-91. (in English) ["Macrozoobenthos comprise of an important group of aquafauna by way of their contribution to ecosystem stability, besides acting as potential bioindicators of trophic status. Being efficient energy converters, they constitute an important link in the aquatic food web. In view of importance of such an aquatic bioresource, on one hand, and scarcity of information about them, on the other, the present study aimed at working out the species composition, distribution pattern and abundance of macrozoobenthos in relation to several physico-chemical parameters of the Shallabugh wetland of Kashmir Himalaya. The data collected on various physico-chemical parameters showed wide seasonal and site-specific fluctuations. Dissolved oxygen concentration fluctuated between 3 - 12 mg/l, while as free CO₂ ranged from 1 - 19 mg/l showing also high values of bicarbonates of Ca and Mg, nitrogen and total phosphorus. The pH of the wetland remained mostly alkaline but at the emergent macrophytic site it showed a slight acidic trend (6.6) in during late summer. Benthos of the Shallabugh wetland was represented by Arthropoda, Annelida and Mollusca, and was studied in relation to abiotic and biotic factors for one year. Perusal of the results revealed that Arthropoda, Annelida and Mollusca were represented by 10, 7 and 6 species respectively. The abundance of some specific pollution indicator species, especially Annelids such as *Limnodrilus* sp, *Tubifex tubifex* and *Branchiura sowerbyii*, is depictive of transition in trophic status of the wetland from meso- to eutrophy. In view of the eutrophication-induced changing biotic community structure, the present study calls for urgent management and restoration of the Shallabugh wetland ecosystem." (Authors) "*Lestes spec.*" larvae were recorded only once at site W2.] Address: Siraj, S., Centre of Research for Development (CORD), University of Kashmir, Srinagar, J & K, India, 190006. E-mail: mashah75@yahoo.com.

9925. Skvortsov, V.E. (2010): The dragonflies of Eastern Europe and Caucasus: An illustrated guide. KMK Scientific Press Ltd. Moscow. ISBN: 9785873176571: 623 pp. (in bilingual Russian and English) [Reviewed by Asmus Schröter:

Mainly due to the language barrier 20 years after the fall of the Iron Curtain both exchange and cooperation between Odonatologists from Europe and Russia and the successor states of the former Soviet Union still remains on an unsatisfying low level. The result is a considerable mutual lack of knowledge of the respective Odonata fauna of the other side's part of the world. Whilst on the one hand European Russia and the Caucasus region faunistically are still largely terra incognita for most of the European odonatologists, their Russian speaking colleagues on the other hand are frequently unaware of the situation in the West. According to the book author's introduction one of the aims of his work is to function as a link between Russian and English-speaking Odonatologists and in this perspective this consequently bilingual guide of the Odonata fauna of European Russia and the Caucasus region conceptually fills this gap.

The book to be discussed covers the European part of Russia, stretching to the Yamal Peninsula and Tyumen Province in the east. Moreover, the territories of Moldova, Estonia, Lithuania, Latvia, Belarus, Ukraine and Georgia, Armenia and Azerbaijan are considered.

Almost all of the 120 species which are subject of the book are depicted, including numerous detail drawings of appendages, secondary genitalia, wings, larvae and other features substantial for determination. Beside the author's introduction and a concise and well illustrated introduction on morphology of imago and larvae, the main part of the book consists of a dichotomous identification key. The key is organized from suborder down to species level, whereas each species additionally is shortly described in an extra chapter, supplying information on flight period, measurements, distribution and ecology whenever available.

As a special feature of the key and probably a novelty in dragonfly guides, diagnostic traits of the larvae and wing venation (whenever available) are incorporated in the key.

The chapters following the key offer distribution maps based on more than 350 localities, a list of localities, toponyms and administrative items. With extra schemes in a larger scale in some species special attention is paid to the complicated situation of the species rich Caucasus region. The book ends with species annotations and comments on distribution and a list of references.

When first paging through, the most conspicuous feature of the voluminous book is without doubt the more than 2000 (!) aesthetically appealing drawings and illustrations, which alone makes the book a remarkable piece of odonatological artwork. These drawings were made exclusively for this book. Some images, however, show unrealistic proportions, f. ex. the much too big terminalia of the males in *Coenagrion australocaspicum* (page 200) and *ponticum* (208), the inadequately big head in the depicted male of *Cordulegaster insignis charpentieri* (374) etc.

However, the majority of the drawings in view of accuracy and clarity satisfy high scientific demands.

Generally the book's importance as a profound and comprehensive fully illustrated diagnostic key for Russian speaking people interested in the dragonflies of the region cannot be assessed highly enough, as to date no up-to-date dragonfly guide for the region was available.

As the level of odonatological exploitation in the considered region, compared to the Asian part within the area of the former Soviet Union, curiously still remains on a lower level, the book hopefully will have a positive effect on the faunistic survey of the region encouraging more people interested in nature to deal with dragonflies.

As far as the authors second aim is concerned - to provide a complete revision of the faunistic data of European Russia and the Caucasus especially for non-Russian speaker - unfortunately the book does not meet the requirements.

Beside many unnecessary spelling errors, even very eye catching ones in bold headlines, f. ex. "*Cordulegasler*" (359), in author names, f. ex. "*Kolentai*" (359) or species names, f. ex. constantly "*stirolatum*" (459 onwards), several inconsistencies concerning the contents hamper the reader, f. ex. an incomplete list of abbreviations (23), not allowing the interpretation of several ab-

brevisions in the section "general distribution" in species descriptions, f. ex. MDT, ME, TEA, AM etc.

The same goes for missing entries concerning the navigation of the headers and footers of the key, f. ex. in *Onychogomphus lefebvrei* (346) no indication to the annotation on page 593 is given, the latter being written inconsistently on one and the same page (346) "*lefebvrei*" (species description) and "*lefebvrei*" (footer below) etc.

Several contents are incorrect displayed, f. ex. *Onychogomphus assimilis* is stated for Lagodekhi NE Georgia in the species annotation (593; i. e. Bartenev 1932), but this is not plotted on the species' distribution map (583).

Data given for several species concerning the status in the region are blurred and lost in vagueness, f.ex. in *Onychogomphus lefebvrei*:

Whilst the genus introduction (340) ["The only species widespread over the region is *O. forcipatus*; however, three other species occur in its Caucasus part where field separation of all the congeners is complicated."] implicitly mentions this species as part of the regional fauna and thus leads to the assumption, that *O. lefebvrei* definitively occurs in Caucasus, it is relativised in the following annotation "only reported from NW Caucasus; no exact data cited" (593). Thus, the reader is left in the lurch about the status of *O. lefebvrei* in the region and it remains unclear for which reason this species is dealt with at all etc.

Other data are out of date and incorrect, f. ex. in *Ophiogomphus*:

Four North Asian members of the genus *Ophiogomphus* are known from the area of the former Sowjet Union, not only three! (338/339): *O. cecilia* (Geoffroy in Fourcroy, 1785) (= *O. serpentinus* (Charpentier, 1825), *O. obscurus* Bartenev, 1909, *O. reductus* Calvert, 1898 and *O. spinicornis* Selys, 1878. For *O. spinicornis* in Russia see Kosterin & Zaika (2003). Even though the latter three are not very likely to be found in the covered area, they are now widely accepted as full species (inter alia Asahina (1979), Haritonov & Borisov (1990).

Moreover, several species included in the key do decidedly not occur in the considered region, but have been recorded in adjacent areas and countries and might be considered as hopeful candidates to be discovered once. Those species are marked with an asterisk, and thus being clearly designated as such. However, at least some of the included species marked with an asterisk, like *Oxygastra curtisii* and *Somatochlora borisi*, are in hardly any respect connected to the region and according to the author included just on account of interest to show the fascinating taxonomical variety of dragonflies (16/17). However, I would have cautioned the author from doing so, as the pure mention of such species bearing no relation to the region or the content of the book at all, is just another unnecessary source of misunderstanding.

The same applies for the dubious Lithuanian record of *Sympetrum eroticum* (Stanionyte 1989) which, although clearly marked with an asterisk, should have better been neglected at all.

Some further species are presented in a very general way and a more precise and differentiated contemporary presentation or at least the attempt to do so would have been desirable:

Gomphus flavipes: Unfortunately no indication on the occurrence of *Gomphus ubadschii* Schmidt, 1953 (sub

(*Gomphus flavipes lineatus* Bartenev, 1929) is given and only the nominate taxon is considered (337). *Lineatus* was described from Poti/Georgia by Bartenev (1929) and it appears likely that all records of *flavipes* from Transcaucasia in fact pertain to *ubadschii*.

Aeshna juncea: The bewildering phenotypical variability of *A. juncea* in the Caucasus region and the doubtful status of two regional taxa *atshischgho* Bartenev, 1929 and *crenatooides* Bartenev, 1929 are mentioned shortly (285), but unfortunately no new information or interpretation is given. Especially against the background of recent records of specimens of *A. juncea* of the "mongolica-type" with distinctly enlarged yellow thorax pattern in adjacent NE Turkey

(<http://www.libellen.org/epallage/pubs/juncea.html>)

further information on distribution and colouration of Caucasian populations would have been highly appreciated. From this perspective "the comma-like spot below spiracle" presented as diagnostic feature in the key (274) to separate *subarctica* from *juncea* may apply elsewhere, but should be treated with some caution in the Caucasus region.

However, such weak points are of minor importance and do not affect the general quality of the book. Much more serious in this context is, however, the frequent uncritical reviewing and subsequent repeating of obviously or probably erroneous records. Undoubtedly, the book boasts an impressive amount of data and contains the essence of virtually the complete literature relevant for the region and one can easily imagine the huge amount of work behind it. However, one main problem - beside the language barrier - most of the European Odonatologists are constantly facing while dealing with (mainly old) faunistic data from Russia and the Caucasus, are the numerous doubtful records and unclear status of several taxa described from the region. In this respect the book unfortunately does hardly provide any progress as it does largely not represent the current state of knowledge and unfortunately contains such doubtful data throughout. Considering the stated aim of the author on the one hand, to improve the insufficient communication between East and West (9), and the nature of many of the erroneous data presented on the other hand, one could easily get the impression, that the author itself became a victim of insufficient exchange with colleagues from elsewhere as obvious errors like *Cordulegaster princeps* etc. might easily have been avoidable just by a few words from an expert of the region. Those mistakes cast a shadow on the pleasure to read and work with this otherwise useful book.

The following seven species and taxa dealt with in identification key and species description, which are presented as part of the fauna of the area covered by the book are either doubtful or with the outermost probability erroneous and should be therefore deleted from the species list at all:

1. *Platycnemis latipes*: Stated for Kabardino-Balkaria (Russian Caucasus).

P. latipes is a western Mediterranean Endemic confined to Iberia and France and definitively not part of Russia and adjacent countries. According to the cited reference (594) ([Byuleten gosudarstvennogo muzeya Gruzii] 6:85-96) another specimen from that area was considered (...) "a form of *P. pennipes* closely resembling *P. latipes*." However, obviously the same goes for that particular specimen stated as *P. latipes*. Another explanation

might be confusion with the similar regional congener *P. dealbata*.

2. *Coenagrion mercuriale*: Stated for Armenia, Azerbaijan and Belarus (588/589). This species has been rejected by Taily et al. (2004) from the checklist of Armenia, and Dijkstra (2006: 110) consider even all records of *C. mercuriale* from Eastern Europe to be erroneous. Hence, the occurrence of this western Mediterranean species in the Caucasus region generally seems to be most unlikely.

3. *Onychogomphus forcipatus unguiculatus*: Both taxa *albotibialis* and *unguiculatus* are stated for Caucasus (593). However, Boudot et al. (1990) outlined the nature and distribution of the subspecies of *Onychogomphus forcipatus*, whereupon the taxon *O. f. unguiculatus* is confined to the western Mediterranean and is replaced by *O. f. albotibialis* in Asia Minor. Therefore, *O. f. unguiculatus* is certainly not part of the regional fauna. As far as the Caucasus is concerned Reinhardt (1992) and Schröter (2010b) decidedly assigned specimens from Georgia to *O. f. albotibialis*.

4. *Gomphus davidi*: *G. davidi* is stated for Caucasus without further information (336). However, *Gomphus davidi* is a Levantine Endemic restricted to a small range within Turkey, Israel, Jordan, Lebanon and Syria (Suhling & Müller 1996, Kalkman 2006, Boudot et al. 2009) and most probably does neither occur nor will ever be expected in the Caucasus or elsewhere within the region covered by this book.

5. *Cordulegaster princeps*: *C. princeps* is an endemic confined to the Middle and High Atlas of Morocco (Boudot 2001, Van Pelt (2006), Boudot et al. 2009) and thus the stated record from Tbilisi/Georgia is with the outermost certainty erroneous and one could hardly imagine another Palaearctic dragonfly species, whose occurrence in Georgia is as unlikely than this.

6. *Cordulegaster coronata*: Included in the diagnostic key (364) and in the species description (367), but no further information or data are given - "no regional data" (367), "no local record" (590). However, this Central Asian species is very unlikely to occur within the considered region. In addition to all this, images which should depict *Cordulegaster coronata* are erroneous and both images of the male in top and lateral view (375) do for sure not show this species! *C. coronata* has a much yellower overall appearance and the yellow abdominal markings do laterally not descend onto the underside of the segments, every segment additionally shows yellow apical patches and on segments 8 and 9 very distinctive shaped yellow "double-7 spots" are present. For accurate drawings of males of *C. coronata* see Fraser (1929), Schmidt (1961) and for photos of both sexes Schröter (2010a).

7. *Brachythemis impartita* (Karsch, 1890) (see: Dijkstra & Matushkina, 2009: sub *B. leucosticta*): *Brachythemis impartita* has an Afrotropical distribution and comes closest to the considered region in the Near East, where it is locally very common. Notably only a few records from adjacent southern Turkey are known to date (Kalkman 2006, Dijkstra 2006). Although a wandering individual could not be excluded a priori, the cited very old single record (586; referring to Bartenev 1912d) appears to be erroneous beyond doubt.

References:

Asahina, S. 1979. Notes on Chinese Odonata. XI. On two North Chinese Gomphids, with special reference to Palaearctic Ophiogomphus species. Tombo 22: 2-11

- Boudot J.-P., G. Jacquemin & H.J. Dumont 1990. Revision of the subspecies of *Onchogomphus forcipatus* (Linnaeus, 1758) in Europa and Asia Minor, and the distribution of *Onchogomphus forcipatus unguiculatus* (Vander Linden, 1823) (Odonata: Gomphidae). *Bulletin et Annales de la Société Royale Belge d'Entomologie* 126: 95-111
- Borisov, S.N. & A.Y. Haritonov. 2007. The Dragonflies (Odonata) of Middle Asia. Part 1. Caloptera, Zygoptera. *Eurasian entomological journal* 6(4): 343-360
- Borisov S.N. & A.Y. Haritonov .2008. The Dragonflies (Odonata) of Middle Asia. Part 2 (Anisoptera). *Eurasian Entomological Journal* 7: 97-123
- Boudot J.-P. 2001. Les Cordulegaster du Paléarctique occidental: identification et répartition (Odonata, Anisoptera, Cordulegasteridae). *Martinia* 17: 1-34
- Boudot, J.-P., Kalkman, V. J., Azpilicueta Amorín, M., Bogdanovic, T., Cordero Rivera, A., Degabriele, G., Dommanget, J.-L., Ferreira, S., Garrigós, B., Jovic, M., Kotarac, M., Lopau, W., Marinov, M., Mihokovic, N., Riservato, E., Samraoui, B. & Schneider, W. 2009. Atlas of the Odonata of the Mediterranean and North Africa. *Libellula Supplement* 9. 256 pp.
- Fraser, F.C. 1929. A revision of Fissilaboidea (Cordulegasteridae, Petaliidae, and Petaluridae) (Order Odonata). Part I. Cordulegasteridae. *Memoirs of the Indian Museum* 9: 69-167, 4 pls.
- Haritonov, A. Yu., Borisov S. N. 1990: Eurasian species of the genus *Ophiogomphus* (Odonata, Gomphidae). - In G. S. Zolotarevko, (ed.): *Redkie gel'minty, kleshchi i nasekomye (Novye i maloizvestnye vidy fauny Sibiri) [Rare Helminths, Mites and Insects. (New and Little-Known Species of the Fauna of Siberia)]* 21: 43-51. (in Russian).
- Kalkman, V.J. 2006. Key to the dragonflies of Turkey, including species known from Greece, Bulgaria, Lebanon, Syria, the Trans-Caucasus and Iran. *Brachytron* 10: 3-82
- Kalkman, V. J. 2006. *Brachythemis Brauer, 1868 - "Groundlings"*. In: Dijkstra, K.-D.B. & R. Lewington *Fieldguide to the dragonflies of Britain and Europe: 297-299*. British Wildlife Publishing. Gillingham.
- O. E. Kosterin & V. V. Zaika. 2003. Odonatological expeditions to the Tyva Republic (Tuva) 2000-2002, IDF-Report 5: 1-44
- Reinhardt K. 1992. Beobachtungen von Libellen an Fließgewässern in Georgien (Odonata). *Entomologische Nachrichten und Berichte* 36: 243-248
- Suhling F & Müller O. 1996. Die Flußjungfern Europas (Gomphidae). *Die Neue Brehm-Bücherei* 628, Westarp, Magdeburg and Spektrum, Heidelberg, 237 pp.
- Schmidt, E. 1961. Ergebnisse der Deutschen Afghanistan-Expedition 1956 der Landessammlungen für Naturkunde Karlsruhe sowie der Expeditionen J. Klapperich, Bonn, 1952-1953 und Dr. K. Lindberg, Lund (Schweden) 1957-1960. - *Beitr. Naturk. Forsch. SüdwDtl.* 19: 399-435
- Schröter A. 2010a. The Odonata of Kyrgyzstan, part I Critical national checklist, annotated list of records and collected data of the summer half-years 2008 and 2009. *International Dragonfly Fund -Report* 28: 1-72
- Schröter, A. 2010b. On a collection of dragonflies from eastern Georgia, with the first record of *Sympetrum arenicolor* (Odonata: Libellulidae). *Libellula* 29 (3/4) 209-222
- Stanionyte, A.P. 1989. New and rare insects in Lithuania. In: V. Jonaitis (Ed.): *New and rare insect species of the Lithuanian SSR; records and descriptions of 1989: 9-11*
- Tailly M., V. Ananian & H. J. Dumont .2004. Recent dragonfly observations in Armenia, with an updated checklist. *Zoology in the Middle East* 31: 93-102
- Van Pelt, G. J. 2006. *Cordulegaster Leach, 1815 - "Goldenrings"*. In: Dijkstra, K.-D.B. & R. Lewington *Fieldguide to the dragonflies of Britain and Europe: 297-299*. British Wildlife Publishing. Gillingham.]
- Author: Schröter, A. Rasenweg 10, D-37130 Gleichen, Germany. E-mail: asmustim@gmx.de:
- 9926.** Smallshire, D.; Beynon, T. (2010): *Dragonfly Monitoring Scheme Manual*. British Dragonfly Society: 12 pp. (in English) [Handout with detailed instructions to choose a transect, count and document specimens, and supply data to the Dutch organisers. The BDS acknowledges the help and encouragement of De Vlinderstichting (Dutch Butterfly Conservation) in the production of this manual, which was based largely on Ketelelaar, R. & C. Plate (2001) *Manual Dutch Dragonfly Monitoring*.] Address: Prentice, S., Dragonflies in Focus Project Officer, British Dragonfly Society, c/o Natural England, Parkside Court, Hall Park Way, Telford TF3 4LR, UK. E-mail: stephen.prentice@naturalengland.org.uk
- 9927.** Smith, P.; Snook, D.; Muscutt, A.; Smith, A. (2010): Effects of a diesel spill on freshwater macroinvertebrates in two urban watercourses, Wiltshire, UK. *Water and Environment Journal* 24(4): 249-260. (in English) ["The impacts of a spill of approximately 9800 L of diesel on a small stream and the River Ray (near Swindon, Wiltshire, UK) were examined using kick-net sampling of freshwater macroinvertebrate families at impacted and reference sites. Initial impacts (10 days after the spill) 50 m downstream of the spill were severe, with only 9% survival of individuals (excluding oligochaete worms) and 56% survival of invertebrate families. The percentage survival of macroinvertebrates increased progressing downstream from the spill, with no detectable impacts beyond approximately 4 km downstream. The crustacean families Asellidae and Gammaridae were particularly sensitive to the diesel spill. The recovery of the macroinvertebrate community was assessed 13.5 months after the spill. At this time, recovery was almost complete, with only minor impacts at the sites closest to the spill. The use of live laboratory sorting of samples from impacted sites provided essential information on the impacts of the diesel spill." (Authors) Appendix A: Calopterygidae; Coenagrionidae] Address: Smith, P., Aquatronics Ltd., Glenthorne, Searle Street, Crediton, Devon EX17 2DB, UK. Email: phil@aquatronics.com
- 9928.** Smith-Patten, B.D.; Patten, M.A. (2010): Broken antehumeral stripes in a male *Enallagma civile* (Familial Bluet). *Argia* 22(3): 20. (in English) [Two avoid identification confusion it is important to consider that life and dried specimens may differ in appearance: Broken antehumeral stripes on a male *E. civile* collected near Fonda, Dewey County, Oklahoma, USA, 23-V-2010 are shown by the authors. These stripes were symmetric in life, but postmortem desiccation of the specimen has distorted this symmetry.] Address: Smith-Patten, Brenda, Dept of Recent Invertebrates, Sam Noble Oklahoma Museum of Natural History, University of Oklahoma, Norman, Oklahoma 73072, E-mail: argia@ou.edu