ODONATOLOGICAL ABSTRACTS

1998

(16265) ANDREEV, A.V., 1998. O faune Odonata Moldovy i strekozah Talmaszkogo uchastka Dnestra. – [On the odonate fauna of Moldavia and dragonflies of the Talmaz section of the Dniester river]. *Problemy sohraneniya bioraznoobraziya Srednego i Nizhnego Dnestra* (Mater. mezhdunar. Konf.), pp. 14-16, ANM, Kishinev. (Russ.). – (Ecol. Soc. "Biotika", Inst. Zool., Moldavian Acad. Sci., Kishinev, Moldavia).
Based on literature and on own (1998) collections, a commented list is presented of 41 spp. from the Prut-Dniester region in Moldavia and the adjacent territories. 7 of these were not as yet recorded from the Republic of Moldavia (= Moldova).

(16266) CANNINGS, R.J., D. St. JOHN & G. HUTCHINGS, 1998. *A survey of rare dragonflies and damselflies (Odonata) in the Okanagan and Similkameen valleys*. Brit. Columbia Conserv. Data Centre, Victoria/BC. – (Conserv. Data Cent., P.O. Box 9344, Stn Prov. Govt, Victoria, BC, V8W 9M1, CA).
[Not available for abstracting] – An updated, abridged edn, titled "Rare Odoanta of the Okanagan and Similkameen valleys, British Columbia", appears at *http://www.livinglandscapes.bc.ca/thompok/dragonfiles/rareodonata.html* [sic!] – Treated are: Lestes forcipatus, Argia emma, A. vivida, Enallagma hageni, Aeshna constricta, Gomphus graslinellus, Stylurus olivaceus, Macromia magnifica (incl. M. rickeri), Somatochlora cingulata, Erythemis collocata, Libellula pulchella and Sympetrum vicinum. A tab., showing the characteristics of sites where they were seen or collected, is appended.

(16267) [DAIGLE, J.J.], 1998. *EcoSummary Deep Creek at US Hwy 441*. 1 p. – (Author: 2067 Little River Lane, Tallahassee, FL 32311, USA).
A concise BioReconnaissnce Report. The Deep Creek is a tributary of the Suwannee R., Florida. Adults and larvae of Hagenius brevistylus and Progomphus obscurus are common. They are considered as very good indicators of clean water in an undisturbed Florida stream ecosystem. Environmental parameters are stated.

(16268) GITT, W. & K.-H. VANHEIDEN, 1998. *Si los animalre pudieran hablar* ... Christliche Literatur-Verbreitung, Bielefeld. 124 pp. ISBN 3-89397--412-1. – (Publishers: Postfach 110135, D-33661 Bielefeld).
Spanish edn of the book listed in *OA* 12203. The odon. chapter appears on pp. 63-78.

(16269) RICHARDS, S., M. KAWANAMO & G. TORR, 1998. Odonata (dragonflies and damselflies). *In*: A. Mack, [Ed.], *A biological assessment of the Lakekamu Basin, Papua New Guinea*. Rapid Assessment Program Working Paper No. 9, pp. 47-49, 144-148. Conservation International, Washington. – (First Author: Vert. Dept, South Austral. Mus., North Terrace, Adelaide, SA 5000, AU).
34 spp. are listed, incl. 1 undescribed sp. and several others almost certainly so. Habitat preferences of each sp. are summarized.

1999

(16270) CANNINGS, R.A., S.G. CANNINGS & L.R. RAMSAY, 1999. *The dragonflies (Insecta: Odoanta) of the Columbia Basin, British Colum-*

bia: field surveys, collections development and public education. R. Br. Columb. Mus. [Living Landscapes Project], Victoria/BC. 287 pp. ISBN 0-7726-4008-4. Available at *http://livinglandscapes.bc.ca/www_dragon/toc.html* – (First Author: Roy. Brit. Columbia Mus., 675 Belleville St., Victoria, BC, V8W 9W2, CA).
This is a monumental review of all what is known on the odon. fauna of the Columbia R. Basin in British Columbia, Canada, exclusive of the Okanagan R. drainage (commonly called the Kootenay Region or The Kootenays). It is based on a 2-yr survey (1998-1999) and all previously (since 1905) known records are also considered. In all, 366 Columbia Basin sites and 5060 specimens, referable to 66 spp. are now on record. For the first time recorded are Calopteryx aequabilis, Lestes forcipatus, Coenagrion interrogatum, Stylurus olivaceus, Somatochlora cingulata, S. forcipata, S. minor, S. walshii and Leucorrhinia glacialis. A concise, well-balanced and very informative "Introduction" to the Odon., the descriptions of the 10 types of odon. habitats in the region, and the section on regional odon. biogeography (with definitions of faunal elements and list of spp. referable to each element) are followed by the systematic review of the fauna (pp. 23-268). For each sp., the information on its provincial status, the Columbia-Kootenay and global distribution, and on its biology (habitat, habits, phenology etc.) is presented, and a regional distribution map and a detailed list of records are provided. The concluding chapters deal with the effects of human activity on dragonfly populations, and with recommendations for future inventory, research and monitoring. – Among the "colateral products" of this survey is the production of slide shows of 2 types (slides on video with voice-over commentary, and shows made up of individual slides and associated hardcopy text), which were distributed to parks and naturalists organizations for use in interpretive programs. – The authors have to be congratulated and admired for the enormous amount of excellent work they have produced within an incredibly short period of time.

2000

(16271) CANNINGS, R.A., 2000. Checklist of dragonflies (Odonata) of the Thompson-Okanagan Region, British Columbia, Canada. Available at *http://www.livinglandscapes.bc.ca/thomp-ok/dragonfiles/odonata.html* [sic!] – (Roy. Brit. Columbia Mus., 675 Belleville St., Victoria, BC, V8W 9W2, CA).
67 spp. are listed, and the biogeographic character of each is stated.

(16272) CANNINGS, R.A. & S.G. CANNINGS, 2000. The Odonata (damselflies and dragonflies) of the Montane Cordillera Ecozone. Available at *http://livinglandscapes.bc.ca/thomp-ok/dragonfiles/odonata.html* [sic!] – (First Author: Roy. Brit. Columbia Mus., 675 Belleville St., Victoria, BC, V8W 9W2, CA).
The Zone extends from the eastern Rocky Mts in Alberta to the western slope of the Cascades in British Columbia, and from the latitude of the Skeena Mts in northern British Columbia to the United States border. Covering more than 49 million ha, it is Canada's sixth largest ecozone, with an exceptional diversity of topography and climate. 77 spp. are listed, those of management concern are asterisked, and the fauna is biogeographically analysed.

(16273) HELB, H.-W., 2000. Insekten als Bioindikatoren der Planung öffentlicher Baumassnahmen. *Mitt. dt. Ges. allg. angew. Ent.* 12: 295-298. (With Engl. s.). – (AG Biol. & Ökol., FB Architektur-, Raum- und Umweltplanung, Univ. Kaiserslautern, Postfach 3049, D-67633 Kaiserslautern).
In agreement with the construction scheme for the Kaiserslautern Univ. Campus, several region-specific biotopes were created. As it became apparent during a 4-yr systematic monitoring, this has triggered a biodiversity increase in plants, odon. (21 spp.), grasshoppers, ants, butterflies and birds, but not in land-bugs and in carabid beetles. The project was designed by the Rhineland-Palatinate government (Germany) as a pilot trial for the measures to be applied in the planning of public construction works.

2001

(16274) BROOKS, S.J., 2001. Dragonflies and damselflies. *In*: D.L. Hawksworth, [Ed.], *The changing wildlife in Great Britain and Ireland*, pp. 340-354, Taylor & Francis, London-New York. ISBN 0-415-32681-8. – (Author: Dept Ent., Nat. Hist. Mus. Lond., Cromwell Rd, London, SW7 5BD, UK).
The distribution and status of the 52 odon. spp. recorded from the British Isles are among the

best known of any invertebrate group. By 1990 the Odonata Mapping Scheme had received more than 160,000 UK records, from over 2000 recorders and achieved a coverage of about 87% of the British Isles. – Between 1945 and 1960, 3 spp. became extinct in Britain, while Coenagrion lunulatum was discovered in 1981 for the first time in the British Isles. Other spp. have suffered declines, although a few have increased their range. – The activities of extractive industries and the creation of many new garden ponds have helped to increase the range and abundance of several spp. Additionally, in the last few years, perhaps in respone to climate change, some spp. have expanded their ranges northwards and there appears to have been an increase in the abundance and numbers of spp. migrating to Britain, although none of these has established permanent breeding populations. – In the future, it seems likely that pressure will continue to grow on wetlands causing further contractions in the range of many odon. spp. However, if the number of wetland reserves and quality of land management continue to improve this may help to slow the decline. – Global warming may cause an increase in the numbers of migrant spp. Some of these may establish breeding populations, although this may be counter balanced by declines in southern populations of cold-adapted native spp.

(16275) DINGER, E., 2001. *Aquatic invertebrates of Cuatro Ciénegas, Coahuila, México and effects of fish on stromatolite invertebrate assemblages.* M.Sci. thesis (Biol.), Northern Arizona Univ., Flagstaff. 70 pp. – (Author: Merriam-Powell Cent. Ecol. Res., Dept Biol., Northern Arizona Univ., Box 5640, Flagstaff, AZ 86011, USA).
The Cuatro Ciénegas basin (ca 1500 km²) is a valley in central Coahuila, formed by the mountain ranges of Sierra Madre Oriental, 28 odon. spp. are listed, some identified approximately or to the genus only.

(16276) FEULNER, G.R., 2001. The damselfly Pseudagrion decorum breeding in the United Arab Emirates. *Tribulus* 11(1): 24.
[Not available for abstracting]. – The sp. is recorded from Wadi Shi. Cf. *OA* 16322.

(16277) MAUERSBERGER, R., 2001. Orthetrum brunneum (Fonscolombe, 1837) und O. coerulescens (Fabricius, 1798) wieder im Nordosten Deutschlands (Odonata: Libellulidae). *Märkische ent. Nachr.* 3(1): 29-31. (With Engl. s.). – (Waldstr. 4, D-16278 Steinhöfel).
The 2 spp. are recorded from the vicinity of Lychen, N Brandenburg, where they were observed as pioneer colonizers in a rehabilitated spring swamp; – NE Germany.

2002

(16278) BRATTON, J.H., 2002. Aquatic invertebrates recorded in the Gwent Levels: introduction, checklist and bibliography. *Countryside Council Wales nat. Sci. Rep.* No. 02/5/2, ii+23 pp. – (Nat. Sci. Gr., Countryside Council for Wales, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd, Wales, LL57 2DN, UK).
The Gwent Levels are an area of flat, low-lying farmland on the N side of the Severn Estuary, Wales, UK. This document summarises the site's origins, the reasons for its protection and its aquatic invertebrate interest. A checklist of aquatic invertebrates (incl. 15 odon. spp.) and the bibliography for the site's invertebrates are included.

(16279) GILLETT, M.P.T. & C.P.D.T. GILLETT, 2002. A winter survey of insects and other terrestrial invertebrates on Marawah Island, Abu Dhabi. *Tribulus* 12(2): 12-19.
[Not available for abstracting]. – Records of Hemianax ephippiger and Pantala flavescens; both Dec. 1998. Cf. *OA* 16322.

(16280) SONORAN ARTHROPOD STUDIES INSTITUTE, 2002. SASI and Smithsonian's Insect Zoo team up to develop insect farming in Costa Rica. *Instar* 29: 1-2. – (P.O. Box 5624, Tucson, AZ 85703, USA).
Megaloprepus coerulatus is considered a perfect candidate for exhibition in butterfly houses. Its larvae develop in water-holding bromeliads and the adults feed on spiders that are a persistent problem in butterfly houses.

(16281) [TRUEMAN, J.], 2002. Endangered NSW insects: Giant dragonfly (Petalura gigantea). *Creeky Voice* 3(7): 6. – (Sightings to be reported to: Giant dragonfly Recovery Program, NSW Natn. Parks & Wildlife Serv., P.O. Box 2115, Queanbeyan, NSW 2620, AU).
A call for sightings, with information on the status,

wild populations, threats and conservation of P. gigantea. Website references are included.

2003

(16282) BENARD, M.F. & J.A. FORDYCE, 2003. Are induced defenses costly? Consequences of predator-induced defenses in western toads, Bufo boreas. *Ecology* 84(1): 68-78. – (Sect. Evol. & Ecol., Cent. Pop. Biol., Univ. California, Davis, CA 95616, USA).
Induced defenses in amphibian larvae are often expressed as altered behaviour and changes in tail shape, colour and size. They should be costly in the absence of a predator threat. In laboratory, B. boreas larvae were rised in either the presence or absence of nonlethal predator cues. No differences in larval morphology, growth rate, or development rate were found between the predator and control treatments. However, in the larval bioassays, Aeshna larvae consumed significantly fewer of the toad larvae that were reared with predator cues compared to the control treatments.

(16283) BOHONAK, A.J. & D.G. JENKINS, 2003. Ecological and evolutionary significance of dispersal by freshwater invertebrates. *Ecol. Letters* 2003(6): 783-796. – (First Author: Dept Biol., San Diego St. Univ., 5500 Campanile Dr., San Diego, CA 92182-4614, USA).
Although large-scale migrations are known in some odon. adults, high territoriality and very low dispersal has been found in others. Interpretation of mark and recapture studies in most odon. is difficult because ♂ ♂ may forage away from their territory, and both sexes disperse during the teneral (initial terrestrial) phase prior to territory acquisition. Thus, behavioural studies focused on territoriality may miss important dispersal events. Recent studies have noted low genetic population differentiation in odon. that are known to disperse poorly as adults, lending support to the hypothesis that dispersal may be widespread, but concentrated in the teneral stage. However, very few ecological or behavioural studies have been conducted on this portion of the life cycle.

(16284) CANNINGS, S.G., 2003. Status of Olive clubtail, Stylurus olivaceus (Selys), in British Columbia. *Wildlife Bull. Br. Columbia* B-112: vii+12 pp. – (353 Valleyview Crescent, Whitehorse, YT, Y1A 3C9, CA).
This is a sp. of warm streams and lakes in western N America. In British Columbia (Canada) it is restricted to a few lakes and warm streams in the Thompson, Kettle and Okanagan valleys. Recent observations are not known from the Thompson R. Little is known of the biology of the sp. and no real trend information is available. Possible threats include shoreline development (incl. loss of riparian vegetation), pesticide contamination, eutrophication and predation by introduced fish. Recommendations include more focused inventory, basic research into the sp. biology, maintenance of natural shorelines where possible and control of introduced predatory fish.

(16285) CONNOR, E.F., J. HAFERNIK, J. LEVY, V.L. MOORE & J.K. RICKMAN, 2003. Insect conservation in an urban biodiversity hotspot: the San Francisco Bay area. *J. Insect Conserv.* 6: 247-259. – (Dept Biol., San Francisco St. Univ., 1600 Holloway Ave, San Francisco, CA 94132, USA).
Includes a brief description of the history of Ischnura gemina in Glen Canyon Park in San Francisco. The population went extinct in the late 1980s due to overgrowth of the habitat. As part of a creek restoration project (begun in 1996) the sp. was reintroduced and then monitored for 2 yr. By the end of the first summer, the survival rate approached that observed before the local extirpation. However, because habitat management was not continued, the I. gemina population crashed in subsequent years as the habitat became overgrown and shaded.

(16286) DE BRUYN, U. & F. SINNING, 2003. *Kompensationsmassnahme "Wümme-Nordarm": Bestandsaufnahme ausgewählter Insektengruppen 2002*. Büro f. Okol. Frank Sinning, Oldenburg. 11 pp. – (Publishers: Elisabethstr. 23, D-26135 Oldenburg).
This is an assessment report, produced for the "Wasser- und Schifffahrtamt Bremerhaven" (re "Ausbau der Aussenweser"). The topographic position of the locality on the Wümme R. (Lower Saxony, Germany) is not specified, but a list is provided of 19 odon. spp., incl. Calopteryx splendens and Sympetrum pedemontanum that are red-listed as "endangered" in Lower Saxony.

(16287) GASSMANN, D., 2003. Phylogeny and distribution of the Philippine damselfly subgenus Ri-

siocnemis (Igneocnemis) Hämäläinen (Odonata: Platycnemididae). *Org. Div. Evol.* 3 (Electr. Suppl. 17: Abstr. 6th Ann. Congr. Soc. Biol. Syst.): 20 [abstract only]. – (Naturalis, P.O. Box 9517, NL-2300 RA Leiden).
[Verbatim]: Risiocnemis Cowley, 1934 is the largest gen. of the zygopt. sfam. Calicnemiinae in the Indo-Pacific region. The group is endemic to the Philippines, except for the Sulu archipelago and the Palawan island chain. Members of the group are confined to small, clear creeks in shady rainforest environment, occurring from lowland up to mid-montane forest. – 2 sgen. within Risiocnemis are currently recognized: Risiocnemis Cowley, 1934 s. str., and Igneocnemis Hämäläinen, 1991. A revision of the sgen. Risiocnemis was presented by Hämäläinen (1991, *Odonatologica* 20: 151-194). Mainly based on the large Roland A. Müller collection from the Philippines, which is now housed by the Natural History Museum in Leiden, a complete taxonomic revision of Igneocnemis has recently been completed by Gassmann & Hämäläinen (*OA* 14603). In total, 20 Igneocnemis spp. have been recognized, of which 5 were newly described. – Several putative synapomorphies of Igneocnemis spp. point to the monophyly of the group. However, the monophyly of the whole genus, i.e. Risiocnemis Cowley s.l., is less certain. Within the scope of a phylogenetic-biogeographical study on the Indo-Pacific Platycnemididae, the phylogeny of the Igneocnemis spp. was reconstructed based on morphological characters. The distribution patterns of the spp. can be explained by Tertiary island arc connections as well as by the existence of larger islands during the Pleistocene.

(16288) GUERRERO-BOLANO, F., A. MANJARRÉS-HERNÁNDEZ & N. NÚÑEZ-PADILLA, 2003. Los macroinvertebrados bentónicos de Pozo Azul (cuenca del rio Gaira, Colombia) y su relación con la calidad del agua. *Acta biol. colombiana* 8(2): 43-55. (With Engl. s.). – (Progr. Biol., Fac. Cienc. Básicas, Univ. Magdalena, Santa Marta, Magdalena, Colombia).
The locality is situated in the Gaira R. basin, Magdalena distr., Colombia. Only family taxa are mentioned (Odon.: Gomphidae, Libellulidae).

(16289) TSUBAKI, Y., 2003. The genetic polymorphism linked to mate-securing strategies in the male damselfly Mnais costalis Selys (Odonata: Calopterygidae). *Popul. Ecol.* 45: 263-266. – (Biodiv. Conserv. Res. Gr., Natn. Inst. Envir. Stud., Tsukuba, 305-8253, JA).
Alternative ♂ mate-securing strategies are widespread among animal taxa, but there are few well-documented examples of genetic polymorphism for them. In M. costalis, ♂♂ occur as either orange-winged territorial fighters, or clear-winged, non-territorial sneakers. It has previously been suggested that this behavioural polymorphism is genetically controlled. However, there was no direct evidence for this. By rearing 2 groups of larvae from the same ♀ but sired by different ♂ morphs, it is shown that differential morph development is genetically controlled and consistent with a single-locus 2-allele autosomal genetic polymorphism.

(16290) VICK, G.S., 2003. Biodiversity assessment of the odonate fauna of Takamanda Forest Reserve, Cameroon. *In*: J.A. Comiskey, T.C.H. Sutherland & J.L. Sutherland-Groves, [Eds], *Takamanda: the biodiversity of an African rainforest*, pp. 73-82 [Smithson. Instn Monit. Assmnt biodiv. Progr., Vol. 8]. – (Crossfields, Little London, Tadley, Hants, RG26 5ET, UK).
The fauna is described and characterised; the hitherto recorded 67 spp. are listed with precise localities and notes on habitat requirements.

2004

(16291) BERTOLINI GONCALVES, F. & J.M. ROCHA ARANHA, 2004. Ocupação espaço-temporal pelos macroinvertebrados bentônicos na bacia do rio Ribeirão, Paranaguá (Brasil). *Acta biol. paranaense* 33(1/4): 181-190. (With Engl. & Fr. s's). – (Depto Zool., Univ. Fed. Paraná, SCB, Caixa Postal 19020, BR-81531-990 Curitiba, PR).
6 odon. fam. were represented in macroinvertebrate benthos samples (Oct. 2002-Feb. 2003) from the Ribeirão R. in the city of Paranaguá (PR), Brazil. The spp. are not listed.

(16292) HOWARTH, B. & M. GILLETT, 2004. The insects of Jebel Hafit. *In*: S. Aspinall & P. Hellyer, [Eds], *Jebel Hafit, a natural history*, pp. 94-143. Emirates Nat. Hist. Gr., Abu Dhabi.
[Not available for abstracting]. – Records of 7 odon. spp. Cf. *OA* 16322.

(16293) SALUR, A. & O. OZSARAC, 2004. Ad-

ditional notes on the Odonata fauna of Çiçekdagi (Kirsehir), Turkey. *Gazi Univ. J. Sci.* 17(1): 11-19. (Bilingual: Engl./Turk). (First Author: Dept Biol., Corum Sci. & Arts Fac., Gazi Univ., TR-19030 Corum).
Records of 21 spp.; central Turkey.

(16294) SOHNI, V. & O.-D. FINCH, 2004. Die Libellen eines regenerierten Restmoores in Nordwestdeutschland (Insecta: Odonata). *Drosera* 2004(1/2): 119-135. (With Engl. s.). – (AG Terrestrische Ökol., Inst. Biol., Univ. Oldenburg, D-26111 Oldenburg).
The odon. fauna (30 spp.) of a peat bog area in the Cloppenburg distr., Lower Saxony is described and analysed. The occurrence of Ceriagrion tenellum and Aeshna subarctica elisabethae is of particular interest.

(16295) TESSIER, C., A. CATTANEO, B. PINRL-ALLOUL & G. GALANTI, 2004. Biomass, composition and size structure of invertebrate communities associated with different types of aquatic vegetation during summer in Lago di Candia (Italy). *J. Limnol.* 63(2): 190-198. – (Second Author: Dépt. Sci. Biol., Univ. Montréal, C.P. 6128, succursale Centre Ville, Montréal, GC, H3C 3J7, CA).
The biomass, taxonomic composition, and size distribution of invertebrates associated to emergent (Schoenoplectus lacustris), submerged (Myriophyllum spicatum), and floating leaved (Trapa natans) vegetation at 2 depths (surface and water column) in Lago di Candia, N. Italy are compared. In the total invertebrate biomass, the odon. were represented as follows: S. lacustris: 0.2%; M. spicatum: 0.0%; T. natans, surface: 12.3% and deep: 1.9%. Spp. are not stated.

2005

(16296) BADMIN, J., 2005. Do wind turbines impact on insects? *Antenna* 29(1): 37-40. – (Author's address not stated).
The hazards of the operating wind turbines to insect life are reviewed (a reference to Odon. is included), and an appeal is made for a thorough investigation of the problem and for a systematic collecting of evidence on various impacts, such as injuries and killing by the rotating blades, adversary effects of the generated wind on small local populations, etc.

(16297) BECHLY, G., 2005. A new fossil dragonfly (Anisoptera: Corduliidae) from the Paleocene Fur Formation (Mo clay) of Denmark. *Stuttgart. Beitr. Naturk.* (B) 358: 1-7. (With Germ. s.). – (Staat. Mus. Naturk., Rosenstein 1, D-70191 Stuttgart).
Molercordulia karinae gen. n., sp. n. is described from the Paleocene (or lowermost Eocene) of Limfjord area, Denmark. It is considered as the oldest fossil record of the Corduliidae, particularly interesting because of its stratigraphic proximity to the important Cretaceous-Tertiary boundary.

(16298) BECHLY, G., 2005. A re-description of "Stenophlebia" casta (Insecta: Odonata: Parastenophlebiidae n. fam.) from the Upper Jurassic Solnhofen Limestone in Germany. *Stuttgart. Beitr. Naturk.* (B) 359: 1-12. (With Germ. s.). – (Staat. Mus. Naturk., Rosenstein 1, D-70191 Stuttgart).
The enigmatic taxon is redescribed and its wing venation figured for the first time, based on several new specimens. Previously it was considered as a nomen dubium within Odonata incertae sedis, because the holotype is lost and the original description is insufficient. Now, its previous attribution to the genus Stenophlebia and the Stenophlebiidae can be rejected. The sp. is here attributed to Parastenophlebiidae fam. n., and Parastenophlebia gen. n., of Heterophlebioptera-Heterophlebioidea, representing a basal branch close to Liassophlebiidae.

(16299) BETTS, C., 2005. Insects at Center Parcs, Longleat. *Bull. amat. ent. Soc.* 64(458): 5-6. – (IT Services, St Luke's Campus, Univ. Exeter, Exeter, EX1 2LU, UK).
Sightings of 4 aeshnid spp.; – UK.

(16300) BORGES, P.A.V., 2005. Odonata. *In*: P.A.V. Borges et al., [Eds], *A list of terrestrial fauna (Mollusca and Arthropoda) and flora (Bryophyta, Pteridophyta and Spermatophyta) from the Azores*, p 187. Direcção Regional do Ambiente, Horta & Univ. Açores, Angra do Heroismo-Ponta Delgada. ISBN 972-8612-22-2. (Bilingual: Port./Engl.). – (Distributor: Direcção Regional do Ambiente, Governo Regional dos Açores, Rua Cônsul Dabney, Colónia Alemã, PT-9900-014 Horta, Faial; – Author: Depto Ciên. Agrarias, Univ. Açores, Terra-Chã, PT-9700-851 Angra do Heroismo, Terceira, Açores).
A checklist, indicating the occurrence of each of the 4 spp. across the 9 islands of the Azores, Portugal.

All spp. (incl. Ischnura hastata) are considered "native".

(16301) CARVALHO, A.L. & P.C. WERNECK DE CARVALHO, 2005. Descrição da larva de Orthemis cultiformis Calvert, 1899 (Insecta, Odonata, Libellulidae). *Arqs Mus. nac. Rio de J.* 63(2): 267--273. (With Engl. s.). – (First Author: Caixa Postal 68044, BR-21944-970 Cidade Universitária, Rio de Janeiro, RJ).
The final instar larva is described and illustrated based on reared specimens from Magé, RJ, Brazil. A key to the known larvae of the genus is appended.

(16302) CORDOBA-AGUILAR, A. & A. CORDERO-RIVERA, 2005. Evolution and ecology of Calopterygidae (Zygoptera: Odonata): status of knowledge and research perspectives. *Neotrop. Ent.* 34(6): 861-879. (With Span. s.). – (First Author: Lab. Ecol. Artróp., Inst. Ecol., UNAM, Apdo postal 70-273, Circuito Exterior, MX-Ciudad Universitaria, Mexico, D.F.).
The studies on evolution and ecology in the Calopterygidae are reviewed. Adults are easily distinguished for their pigmented wings and territorial behaviour. The genera Hetaerina, Calopteryx and Mnais were well studied. Larvae develop in riverine aquatic environments. Selection operates at this stage to produce large muscle mass for adults. The adult spends some days until sexually ready. During this time, it feeds extensively to produce muscle fat for egg production and flight. However, gregarine parasites may ingest the fat reserves. ♂♂ may use 2 mating tactics or strategies that may be genetically (Mnais) or environmentally (Calopteryx and Hetaerina) determined: territoriality and nonterritoriality. In Mnais, these strategies appear balanced in fitness terms. Calopteryx, Mnais and Phaon ♂♂ show a precopulatory courtship that is not the case for Hetaerina. ♂ wing pigmentation seems to signal how good the ♂ is to deal immunologically with parasites to females during the male courtship. During copulation, ♂♂ displace the sperm the ♀ has stored in the storage organs from previous matings. There is an enormous variation in ♂ sperm displacement mechanisms and ability, and in genitalic morphology in both sexes. This variation possibly results from a coevolutionary game between the sexes to control stored sperm. After copulation, ♂♂ guard ♀♀ apparently to avoid that other ♂♂ take the ♀ in copulation. The review suggests sources for research in this family.

(16303) COSTA, J.M. & B.B. OLDRINI, 2005. Diversidade e distribuição dos Odonata (Insecta) no estado do Espirito Santo, Brasil. *Publçoes avuls. Mus. nac. Rio de J.* 107: 1-15. (With Engl. s.). – (Depto Ent., Mus. Nac., UFRJ, Quinta da Boa Vista, São Cristovão, BR-20940-040 Rio de Janeiro, RJ).
180 spp. are listed for the state of Espirito Santo, Brazil. Notes on some spp. are included, and a basic bibliography is provided.

(16304) CULHANE, F., 2005. *The impact of forest disturbance on Odonata communities and the potential use of Odonata as indicators of environmental disturbances, Buton Island, Indonesia.* Moderatorship thesis, Dept Zool., Trinity Coll., Dublin. 105 pp. – (Author's current address unknown).
7 sites on Buton Is. were sampled over a period of 5 weeks in autumn 2004. GIS data were used to classify sites into disturbed or undisturbed forest. Larvae were collected by kick sampling in 2 kinds of habitat at each site. Assessment of environmental variables of forests was carried out at the study sites. Larvae were identified to fam. level and then divided into morphospecies. The length of each larva was measured. Differences in species composition, diversity measures, functional groups and size frequency distribution were used to show differences between disturbed and undisturbed sites. 34 morphospecies in 9 fam. were found. Species richness and diversity differed among sites and were lower at disturbed sites. It was found that the distribution of Zygoptera larvae differed between habitats, and between disturbed and undisturbed sites based on caudal appendage morphology, implying a potential use for caudal appendage type in biomonitoring. The width of size frequency distribution was lower at disturbed sites. Most sites contained morphospecies which were unique to it, thus, a range of habitats from pristine to moderately disturbed would conserve the greatest number of Odon. spp.

(16305) DAGUET, C., 2005. *Dragonflies and damselflies in your garden.* English Nature, Peterborough. 27 pp. ISBN 1-85716-877-1. – (Publishers: Northminster House, Peterborough, PE1 1UA, UK; – Author: c/o English Nature, Attingham Park, Shrewsbury, SY5 6QL, UK).

General on the biology and behaviour of British spp. that are likely to be encountered in garden ponds. Brief descriptions of 16 spp. and statements on their preferred habitats are included. – A useful publication, directed at general readership.

(16306) DODS, P.L., E.M. BIRMINGHAM, T.D. WILLIAMS, M.G. IKONOMOU, D.T. BENNIE & J.E. ELLIOTT, 2005. Reproductive success and contaminants in tree swallows (Tachycineta bicolor) breeding at a wastewater treatment plant. *Envir. Toxicol. Chem.* 24(12): 3106-3112. – (First 3 Authors: Dept Biol. Sci., Simon Fraser Univ., Burnaby, BC, V5A 1S6, CA; – correspondence to last Author: Canadian Wildlife Serv., Environment Canada, Delta, BC V4K 3N2, CA).
In the Greater Vancouver Area, British Columbia, Canada, Nematocera were by far the most numerous items fed to tree swallow nestlings, but other Diptera and Odon. were also numerically important. The mass of odon. diet items delivered to nestlings was not affected by site: the Serpentine Wildlife Area (as a reference) and the wastewater treatment plant.

(16307) DUBUC, Y., 2005. *Les insectes du Québec: guide d'identification.* Broquet, Saint-Constant/QC. 431 pp. ISBN 2-89000-677-8. – (Publishers: 97-B, Montée des Bouleaux, Saint-Constant, QC, J5A 1A9, CA).
The book gives a kind of a general impression of the insect world of Quebec, Canada. It cannot serve as an identification tool. The odon. are treated on pp. 33-43; a single page of a general introduction is followed by col. phot. of collection specimens of 21 easily recognisable common spp.

(16308) FROST, R.A., 2005. Dukes and dragons. *J. Derbys. & Notts. ent. Soc.* 156: 7-8. – (Author's address not stated).
Annotations on 8 odon. spp. in The Dukeries co., Nottinghamshire, UK.

(16309) FROST, R.A., 2005. Golden-ringed dragonflies in Nottinghamshire. *J. Derbys. & Notts. ent. Soc.* 156: 9. – (Author's address not stated).
A critical note on, and an appeal for confirmation of the hitherto undocumented occurrence of a Cordulegaster boltonii population at an unknown locality nr Girton, Nottinghamshire, UK.

(16310) *IDF-REPORT.* Newsletter of the International Dragonfly Fund (ISSN 1435-3393), Vol. 8 (31 Dec. 2005). – (c/o M. Schorr, Schulstr. 7 B, D-54314 Zerf).
Khrokalo, L.A.: Annotated bibliography of the odonatological papers of Ukraine (pp. 1-51; 261 titles, mostly with brief Engl. abstracts).

(16311) IUCN, 2005. [Workshop report] *Biodiversity assessment tools for inland water ecosystems in southern Africa.* Grahamstown, 19-22 May 2005, Cambridge/UK. 16 pp. – (219 c Huntingdon Rd, Cambridge, CB3 0DL, UK).
Among the regional case studies, the odon. were represented by Paragomphus cataractae (details presented in Plenary; see *OA* 16318), and Pseudagrion kesteri. The provisional status assessment for the Namibia sub-population of the latter (IUCN categories) is "Endangered [EN B2a(ii)b(iii,v)c(iv)]". The sub-population was not considered a non-breeding visitor and genetic evidence suggests no immigration from outside the country. The original assessment, therefore remains unchanged.

(16312) JOURDE, P., 2005. Les libellules de Charente-Maritime. Bilan de sept années de prospection et d'étude des odonates 1999-2005. *Annls Soc. Sci. nat. Charente-Maritime* (suppl. Dec. 2005): 144 pp., 16 col. pls excl. Price: € 35.- net). – (Distributor: Soc. Sci. nat. Charente-Maritime, c/o Mus. Hist. Nat., 28 rue Albert 1er, F-17000 La Rochelle).
A nicely produced distribution atlas of the 62 spp. known to occur in Charente-Maritime, France. A distribution map and a phenology graph, brief sections on habitats, ecology and conservation, and statements on the status and on the number of the known localities are among the principal information provided for each sp. The concluding chapters deal with the spp. that require further study, with odon. inventories of various types of habitats, and with conservational aspects.

(16313) MINNITI, M., 2005. Biotopi di Odonata Anisoptera nel Lazio e nella Toscana. *Atti Mus. Stor. nat. Maremma* 21: 1-13. (With Engl. s.). – (Via del Giordano 19, I-00144 Roma).
11 aeshnid, corduliid and libellulid spp. are frequenting the shores of some lakes in Latium and Tuscany (central Italy). Cordulegaster "annulatus" is confined to some streams in Latium. Trithemis annulata occurs in Latium (Lago di Bracciano) and

in Tuscany (Lago dell'Accesa). Anaciaeschna isosceles and Lindenia tetraphylla are reported from Lago dell'Accesa. Aeshna mixta swarms were seen migrating along the sea shore in the vicinity of Castiglion della Pescaia (Tuscany).

(16314) MITCHELL, F.L. & J.L. LASSWELL, 2005. *A dazzle of dragonflies*. Texas A & M Univ. Press, College Station/TX. 224 pp. Hardcover (22.1×28.5 cm). ISBN 1-58544-459-6. Price: € 35.96 net).
An impressive, general book on the Anisoptera. The chapter titles are: "The world of dragonflies", "Dragonfly tales" (including also some interesting original information on North American dragonfly folklore), "The prehistory of dragonflies", "Dragonfly lives", "The natural history of dragonflies", "Collecting dragonflies", "Water gardening for dragonflies" and "Picturing dragonflies". The 4 apps are titled: "Dragonfly website", "Colloquial names of dragonflies" (in various languages), "The Dragonfly Society of the Americas Collecting Statement", and "Monitoring dragonfly migration". The book is well illustrated, all in colour; the reproductions of most photos/scans are much exceeding natural size of the portrayed insects. – A useful and enjoyable reading for professionals and non-professionals alike.

(16315) SENGUPTA, T., 2005. *Insects of India*. Sengupta, Bibhasa. xiv+284 pp. Hardcover. ISBN 81-87337-20-6. Price: US$ 100.- net. – (Author: 146/8B Lake Gardens, Calcutta-700045, India).
All insect orders are systematically and briefly reviewed (Odon. pp. 13-17), based on examples from the Indian fauna. A special feature of the book is the section on, and route maps of 38 areas throughout India that are considered entomologically particularly interesting and are covering all major ecological areas. The provided information includes that on the respective climate, altitude, collecting seasons, transport, accomodation, contact addresses, and a statement on the status of local insect exploration. A review of the important protected areas and of the major Nature Reserves in India is also included. This part of the book will be of considerable interest to professional entomologists. Otherwise, the book is in the first place directed at graduate and postgraduate students. In his Foreword, the Director of the Zoological Survey of India (*J.R.B. Alfred*) recommended it as a source for the zoology and entomology syllabi. In its scope the book is unique, but it is neither a handbook nor a textbook, though the systematic part has the features of the latter. The appended selected bibliography on Indian entomology will also be useful.

(16316) SIMPSON, M., 2005. The Simpson Collection of entomological memorabilia. *J. Derbys. & Notts. ent. Soc.* 156: 6. – (Harvest Lodge, Foxenfields, Abbot Ripton, Cambs PE28 2PW, UK).
A brief description of the Collection, which is open for study and photographic purposes, with an appeal for the donation/sale of any relevant material, such as all types of entomological equipment, old catalogues, dealers price lists, letters of entomological content and similar entomological bygones that would otherwise be thrown away. In the Collection, their survival for the future benefit of entomologists is ensured.

(16317) STOKS, R., M. DE BLOCK & M.A. McPEEK, 2005. Alternative growth and energy storage responses to mortality threats in damselflies. *Ecol. Lett.* 2005(8): 1307-1316. – (First Author: Lab. Aquat. Ecol., Univ. Leuven, Bériotstraat 32, B-3000 Leuven).
The role of physiology in mediating the growth/predtion risk trade-off has been largely ignored. Effects were examined of predation risk on relationships between growth and storage molecules in Enallagma aspersum and Ischnura verticalis damselfly larvae that differ in this trade-off. In laboratory and field experiments, both spp. had similar growth and mortality rates and similar concentrations of storage molecules in the absence of mortality threats. However, in the presence of predatory Anax larvae, Ischnura larvae had higher mortality rates and grew faster than Enallagma larvae. Consistent with the difference in growth rate, Enallagma's total protein concentrations decreased under predation risk while those of Ischnura did not. Glucose and glycogen concentrations were not affected, while triglyceride concentrations were lower under predation risk in Enallagma but not in Ischnura. Species differences at the physiological level to the presence of mortality threats may be crucial to understanding patterns in metamorphic and post-metamorphic traits.

(16318) [SUHLING, F.], 2005. Paragomphus cataractae. *In*: IUCN, [Workshop report] *Biodiversity assessment tools for inland water ecosystems in south-*

ern Africa, pp. 15-16, IUCN, Cambridge/UK. – (Inst. Geoökol., Techn Univ. Braunschweig, Langer Kamp 19 c, D-38106 Braunschweig).
P. cataractae does not appear in the IUCN Red List. The region delineated for the present assessment is Namibia. The sp. is known there from only 2 locations (river rapids). The population is not considered to be severely fragmented. The major threats are dam construction which threaten to destroy its rapids habitat. There are no data on decline in the population, habitat quality etc., or on actual population size. The sub-population in Namibia is not a non-breeding visitor and there is no information on the likelihood of immigration from the nearest known sub-population outside Namibia in the Zambezi, therefore the final IUCN assessment of its status is "Vulnerable [VU D1+D2]". If it is found that dam construction is planned for the locations where the sp. occurs, the assessment would be upgraded to EN B2ab(i, ii, iii) on the basis of a suspected future decline in available habitat.

(16319) TERZANI, F., A. MARCONI & B. CARLETTI, 2005. Odonati della Somalia raccolti dal 1971 al 1986 e depositati nel Museo zoologico della Università di Firenze (Odonata). *Atti Mus. Stor. nat. Maremma* 21: 39-48. (With Engl. s.). – (Mus. Zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).
29 spp. collected in Somaliland between 1971 and 1986 and deposited in Mus. Zool., Univ. Firenze, Italy are brought on record. Hemistigma albipunctata, Orthetrum guineense, and Trithemis pluvialis were not previously recorded. Currently, 56 spp. are known to occur in Somaliland; a checklist is provided.

(16320) TREVIS, G., 2005 A few observations on the Lepidoptera and Odonata of 2003/4. *Bull. amat. Ent. Soc.* 64(458): 24-25. – (14 Old Coach Rd, Droitwich, Worcesters., WR9 8BB, UK).
Notes on the abundance (2004) of 9 odon. spp. in the Droitwich area, Worcestershire, UK.

(16321) URRUTIA, M.X., 2005. Riqueza de especies de Odonata Zygoptera por unidades fisiográficas en el departamento del Valle del Cauca. *Boln Mus. Ent. Univ. Valle* 6(2): 30-36. (With Engl. s.). – (Depto Biol., Univ. Valle, 25360 Cali, Colombia).
40 Zygoptera spp. are listed from 4 physiogeographic units of the Cauca Valley, Colombia. Some taxa in Argia, Enallagma, Telebasis and Cora are identified to the generic level only. 18 spp. were not previously reported from the department.

(16322) VAN HARTEN, A., 2005. *The insects of the United Arab Emirates: a checklist of published records*. Dar Al Ummah, Abu Dhabi. iv+82 pp. Softcover (16.3×22.5 cm). ISBN none. – (Publishers & Distributors: P.O. Box 39975, Abu Dhabi, United Arab Emirates).
Includes an annotated and bibliographically cross-referenced list of the 22 hitherto from the United Arab Emirates recorded odon. spp. The original records appear in the following publications: FEULNER, G.R., 1999, *Tribulus* 9(2): 31; – 2001, *ibidem* 11(1): 24; – GILES, G., 1998, *ibidem* 8(2): 9-15; – GILLETT, M.P.T. & C.P.D.T. GILLETT, 2002, *ibidem* 12(2): 12-19; – HOWARTH, B. & M. GILLETT, 2004, *in*: S. Aspinall & P. Hellyer, *Jebel Hafit, a natural history*, pp. 94-143, Emirates Nat. Hist. Gr., Abu Dhabi; – SCHNEIDER, W. & H.J. DUMONT, 1997, *Fauna Saudi Arabia* 16: 89-110; – TIGAR, B.J. & P.E. OSBORNE, 1999, *J. arid Envir.* 43: 159-170; – WALKER, D.H. & A.R. PITTAWAY, 1989, *Insects of eastern Arabia*, McMillan, London; – WINGATE, B., 1992, *Tribulus* 2(2): 40.

(16323) VAN SCHAIK, V.A. & R.P.G. GERAEDS, 2005. Gomphus flavipes along the river Roer: the settlement of a new population in the province of Limburg. *Natuurh. Maandbl.* 94(Feb.): 33-36. (Dutch, with Engl. s.). – (First Author: Bergstraat 70, NL-6131 AW Sittard).
G. flavipes was first sighted along the Roer R., the Netherlands in 2000. During 2002-2003, 46 exuviae were collected, indicating the sp. became well established there. The occurrence of G. flavipes is associated with the lower reaches of large rivers. Since the Roer R. is rather small, the habitat is different from those where the sp. usually occurs in the Netherlands.

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(16324) *ABSTRACTS OF PAPERS presented at the 17th International Symposium of Odonatology, Hong Kong, 31 July-4 August 2006*. Edited by T.-w. Tam. Issued by Soc. Int. Odonatol., Hong Kong, 68 pp. – (Available from the Eds of Odonatologica, P.O. Box 256, NL-3720 AG Bilthoven; – price € 25.- net, incl. the *Field Trip* and the *Programmes &*

Generalities booklets).

Andrew, R.J.: Field notes on emergence and mortality of Pantala flavescens (Fabricius) in central India (pp. 7-8); – *Andrew, R.J. & N.V. Patankar*: The process of moulting during emergence of the dragonfly Pantala flavescens (Fabricius) (pp. 9-10); – *Bakare, S.S., D.B. Tembhare & R.J. Andrew*: Scanning electron microscopy of the penis of Anax guttatus (p. 11); – *Bárta, D.*: Some common species of the dragonflies of Kerala (p. 12); – *Bárta, D., A. Dolny, F. Harabiš & V. Plášek*: Dragonflies (Odonata) of coal sludge sedimentation ponds and mine subsidence pools: the paradoxes of life in waters of mining areas (p. 13); – *Bedjanič, M.*: Globally threatened dragonflies of Sri Lanka: present state and future perspective (p. 14); – *Beketov, M.A. & M. Liess*: Spear concept: bioassessment and defining of endangered species (p. 15); – *Brockhaus, T.*: Dragonfly records in the Shivapuri Hills, Nepal (Zygoptera, Anisoptera) (pp. 16-17); – *Cheung, F.K.W. & D. Dudgeon*: Seasonal variation and spatial distribution of odonates along a salinity gradient in a tropical marsh (p. 18); – *Dijkstra, K.D.-B.*: Scientific benefits for odonatology of conservation-oriented projects: examples from tropical Africa (p. 19); – *Fukao, Y.*: On the behaviour of Sinictinogomphus clavatus (Fabricius, 1775) at Mizumoto Metropolitan Park (p. 20); – *Gaurav, S.*: Studies on the reproductive behaviour and life history of Ceriagrion coromandelianum (Fabricius) in Dholbaha Dam of Punjab Shivalik (Punjab, India) (p. 21); – *Günther, A.*: Female refusal behaviour in Chlorocyphidae (p. 22); – *Higashi, T. & M. Watanabe*: The conservation ecology of the brackish water damselfly, Mortonagrion hirosei: colonization process and the population dynamics of the adults in the newly established habitat (p. 24); – *Inoue, K. & K. Yoshida*: Diagonal gynandromorph of Nannophya pygmaea (p. 25); – *Inoue, K. & M. Sugimura*: Development and present situation of Shimanto Tombo Kingdom (p. 26); – *Ishizawa, N.* Why do Sympetrum i. infuscatum (Selys) pairs separate soon after start of oviposition (p. 27); – *Iwata, S. & M. Watanabe*: The conservation ecology of the brackish water damselfly, Mortonagrion hirosei: saline tolerance for eggs and young larvae of the coexisting coenagrionid damselfly (p. 28); – *Kalkman, V.J.*: Studies on Old World Megapodagrionidae (p. 29); – *Kalnins, M.*: The distribution and occurrence frequency of Gomphidae in river Gauja in Latvia (p. 30); – *Karube, H.*: Review of the genus Anotogaster Selys (p. 31); – *Karube, H. & F. Hayashi*: Molecular phylogenies of Aeshnidae and Corduliidae (Anisoptera) (p. 32); – *Malikova, E.I.*: Synonymy of Somatochlora japonica Matsumura, 1911 and S. exuberata Bartenev, 1911, with the priority of the former (p. 33); – *Matsu'ura, S. & M. Watanabe*: The conservation ecology of the brackish water damselfly Mortonagrion hirosei: fecundity and oviposition in four coexisting damselfly species in estuarine habitat (p. 34); – *May, M.L., D. Moskowitz, D.S. Wilcove, J. Cochran, J.S. Adelman & M. Wikelski*: Tracking Anax junius (Drury) (Anisoptera: Aeshnidae) during migration using miniature radio transmitters (p. 35); – *Mimura, Y. & M. Watanabe*: The conservation ecology of the brackish water damselfly Mortonagrion hirosei: population dynamics of adults in the original habitat (p. 36); – *Morimoto, M., Y. Yamamura & M. Watanabe*: The conservation ecology of the brackish water damselfly Mortonagrion hirosei: dynamics of the reed community established for the new habitat (p. 37); – *Norma-Rashid, Y.*: Tetracanthagyna, a beauty to behold (p. 39); – *Reels, G.T. & R. Dow*: Preliminary results of an ongoing survey of Odonata in Gunung Mulu National Park, Sarawak, East Malaysia (p. 40); – *Reels, G.T.*: Study of dragonfly emergence in managed wetlands in Hong Kong (p. 41); – *Ryazanova, G.I. & A.V. Smirnov*: Spatial distribution in the males of Erythromma najas (Hans.) (Zygoptera: Coenagrionidae) at the reproduction sites: territoriality, form and function (p. 42); – *Samways, M.J.*: Dragonflies as umbrellas for monitoring the recovery of freshwater ecosystem health (p. 43); – *Suvorov, A.*: Nehalennia speciosa (Charp.) (Zygoptera: Coenagrionidae) discovered in Moscow region (p. 44); – *Tajima, Y. & M. Watanabe*: Sperm transfer process in the non-territorial damselfly Ischnura asiatica during copulation (p. 45); – *Takahashi, Y. & M. Watanabe*: Male mate choice to female dimorphism in relation to copulation experience in Ischnura senegalensis (p. 46); – *Takuya, K.*: Differentiation of Anotogaster sieboldii (Selys) in the East Asian islands inferred from mitochondrial genealogy and geometric morphometrics (p. 47); – *Tam, T.W.*: Spatial pattern and habitat correlation of dragonfly communities in Hong Kong, China (p. 48); – *Tang, H.C. & S.L. Chen*: Dragonfly fauna of Taipei Zoo, Taipei (p. 49); – *Teramoto, Y. & M. Watanabe*: The conservation ecology of the brackish water damselfly Mortonagrion hirosei: yearly changes in the distribution

and abundance of the larvae in the newly established habitat (p. 50); – *Torres, M.A.J. & C.G. Demayo*: Species diversity and community structures of dragonflies from selected areas in Mindanao, Camiguin and Negros Oriental (p. 51); – *Torres, M.A.J., C.G. Demayo & R.S. Herrera*: Variations in wing shapes and centroid sizes within, between and among populations and species of damselflies (p. 52); – *Tsang, E.P.K.*: Public-private partnership (PPP) proposal for Sha Lo Tung Valley (p. 53); – *Watanabe, K.I.*: Some dragonflis expanding their range in Ryukyu island, Japan (p. 54); – *Watanabe, M.*: The conservation ecology of the brackish water damselfly Mortonagrion hirosei: planning to establish a new habitat for mitigation after the discovery of the species (p. 55); – *Wilson, K.D.P.*: Comparison of Hong Kong and Guangdong's odonate biodiversity (pp. 56-57); – *Wong, A. & S. So*: Baseline study of odonates at Mai Po Nature Reserve (p. 58); – *Yip, J.Y.*: Odonates in recreated wetlands of Hong Kong Wetland Park (p. 59); – *Zessin, W.*: Pictures of the 16th International Symposium of Odonatology in Schwerin, Germany, 2004 (pp. 60-61); – Some interesting giant dragonflies of the Paleozoic (Odonatoptera: Meganisoptera) (p. 62); – The Protomyrmeleontidae, an interesting and nearly unknown Mesozoic family (Odonatoptera, Archizygoptera) (pp. 63-64); – *Zhang, H.J. & Z.D. Yang*: The list of the Chinese dragonflies in Shaanxi (p. 65); – *Informal Presentations* (p. 66; titles only: *Piper, W.*: Selected dragonfly habitats and species: biodiversity and conservation of Odonata in Brazil; – *Inoue, K. & M. Sugimura*: Dragonflies observed in Shimanto Tombo Kingdom).

(16325) *AGRION, WDA*. Newsletter of the Worldwide Dragonfly Association. (ISSN 1476-2552). Vol. 10, No. 2 (July 2006). – (c/o J. Silsby, Sunrise of Banstead, Croydon Lane, Banstead, Surrey, SM7 3AG, UK).
[Selected articles:] *Anonymous*: 5th WDA International Congress of Odonatology (pp. 17-18; detailed announcement); – *Mackenzie Dodds, R.*: A belated account of a dragonfly hunt in New Zealand (pp. 19-20); – *Taylor, J.*: A good dragonfly year (pp. 20-22; Australia); – *Parr, M.J.*: Return to Nigeria (pp. 22-24); – *Dyatlova, E. & V. Fursov*: Workshop in central Finland (pp. 24-27; abstracts of presentations); – *Corbet, P.*: [book review] Dragonflies of Peninsular Malaysia and Singapore, by A.G. Orr (pp. 27-28).

(16326) ANJOS-SANTOS, D. & J.M. COSTA, 2006. A revised checklist of Odonata (Insecta) from Marambaia, Rio de Janeiro, Brazil with eight new records. *Zootaxa* 1300: 37-50. (With Port. s.). – (Depto Ent., Mus. Nac., UFRJ, Quinta da Boa Vista, Sao Cristóvão, BR-20940-040, Rio de Janeiro, RJ).
A checklist of 77 spp., with detailed information on the 8 newly recorded taxa.

(16327) BEDJANIČ, M., K. KONNIFF & G. DE SILVA WIJEYERATNE, 2006. [Geham's photo booklet] *Dragonflies of Sri Lanka and southern India*. Jetwing Eco Holidays, Colombo. iv pp. + 21 col. pls with captions. ISBN 955107908-6. (Bilingual: Engl./Sinhalese). – (First Author: Kolodvorska 21/B, SI-2310 Slovenska Bistrica; – Publishers: Jetwing House, 46/26 Navam Mowatha, Colombo-2, Sri Lanka).
The objective of the booklet is to facilitate (an approximate) odon. identification by the biologically interested visitors of Sri Lanka. It contains 126 col. field phot. (adults only, both sexes where considered appropriate) of 78 spp. (out of the 117 spp. hitherto recorded from Ceylon/Sri Lanka). Engl. and Sinhalese common names are added to the taxonomic nomenclature, and the information on the status of each sp. is provided ("common/uncommon/scarce/ very scarce/ resident/migrant/endemic/vagrant"). There is no other text. – Assuming the booklet is readily available to those at whom it is directed, the idea of its production is refreshing and certainly worth of imitation in various other countries.

(16328) BRODIN, T., D.J. MIKOLAJEWSKI & F. JOHANSSON, 2006. Behavioural and life history effects of predator diet cues during ontogeny in damselfly larvae. *Oecologia* 148: 162-169. – (First Author: Dept Ecol. & Envir. Sci., Anim. Ecol., Umeå Univ., S-90187 Umeå).
A central issue in predator-prey interactions is how predator associated chemical cues affect the behaviour and life history of prey. Here it was investigated how growth and behaviour during ontogeny of Coenagrion hastulatum larva in high and low food environments was affected by the diet of a predator, Aeshna juncea. Larvae were reared in 3 different predator treatments; no predator, predator feeding on conspecifics and predator feeding on heterospecifics. It was found that, independent of food availability, larvae displayed the strongest anti-predator

behaviours where predators consumed prey conspecifics. Interestingly, the effect of predator diet on prey activity was only present early in ontogeny, whereas late in ontogeny no difference in prey activity between treatments could be found. In contrast, the significant effect of predator diet on prey spatial distribution was unaffected by time. Larval size was affected by both food availability and predator diet. Larvae reared in the high food treatment grew larger than larvae in the low food treatment. Mean larval size was smallest in the treatment where predators consumed prey conspecifics, intermediate where predators consumed heterospecifics and largest in the treatment without predators. The difference in mean larval size between treatments is probably an effect of reduced larval feeding, due to behavioural responses to chemical cues associated with predator diet. The study suggests that anti-predator responses can be specific for certain stages in ontogeny.

(16329) *BULLETIN OF AMERICAN ODONATOLOGY* (ISSN 1061-3781), Vol. 9, No. 3/4 (5 Apr. 2006). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13902, USA).
Flint, O.S., R.H. Bastardo & D.E. Perez-Gelabert: Distribution of the Odonata of the Dominican Republic (pp. 67-84; 67 spp.); – *Beckemeyer, R.J.*: Hind wing fragments of Meganeuropsis (Protodonata: Meganeuridae) from the Lower Permian of Noble county, Oklahoma (pp. 85-89).

(16330) CARVALHO, A.L., P.H.R. SOUZA & E.R. CALIL, 2006. Description of the larvae of Castoraeschna colorata (Martin, 1908) and C. longfieldae (Kimmins, 1929) (Insecta: Odonata: Aeshnidae), with a key to the known larvae of the genus. *Zootaxa* 1296: 19-28. – (First Author: Caixa Postal 68044, BR-21944-970 Cidade Universitária, Rio de Janeiro).
The ultimate instar larva of the 2 spp. are described and illustrated based on reared specimens from Parque Nacional das Emas, GO, and Chapada dos Guimarães, MT, Brazil, respectively. A comparative tab. and an identification key for all described Castoraeschna larvae are provided.

(16331) COUTYEN, S., 2006. Etude de l'exploitation des sites de reproduction par les anisoptères à l'île de la Réunion (Odonata). *Bull. Soc. ent. Fr.* 111(1): 65-71. (With Engl. s.). – (Assoc. réunionnaise d'Ent., 188 ch. Nid-Joli, F-97430 Le Tampon, Réunion).
The study deals with the way 11 adult Anisopt. spp. occupy the island's reproduction sites. 7 spp. share the same sites concomitantly. Gynacantha bispina, Hemicordulia asiatica and Sympetrum fonscolombii use different sites. Tholymis tillarga uses the same sites as the other 7 spp., but its activities are restricted to daybreak and dusk hours. The interspecific competition is discussed.

(16332) DIJKSTRA, K.-D.B., [Ed.], 2006. *Field guide to the dragonflies of Britain and Europe*. Brit. Wildlife Publishing, Gillingham. 320 pp. Hardcover (14.5×22.1 cm). ISBN 0-9531399-5-6. Price: £ 30.- (UK), € 56.- net (elsewhere). – (Publishers: The Old Dairy, Milton-on-Stour, Gillingham, Dorset, SP8 5PX, UK).
31 experts from 20 countries have contributed texts for this perfectly balanced field guide to the Odon. (159 spp.) of Europe, W Turkey and NW Africa, including also Cyprus, the Canaries, Madeira and the Azores. The title of the book, therefore, does not cover really its scope. – The concise introductory chapters give useful information on studying dragonflies, on their behaviour, the occurrence and habitats. The highlights are the innovative tabs and keys for separation of families and genera. This is followed by the section titled "Regional guide to dragonflies", i.e. brief, masterly styled odonatological presentations of most of the countries covered, contributed by 26 regional specialists. Unfortunately, some countries had to be excluded here (e.g. Russia, Moldova, Liechtenstein), since no recent information for these was available. The texts of the systematic treatment of genera and spp. were provided by *K.-D.B. Dijkstra, H.J. Dumont, R. Jödicke, V.J. Kalkman, A. Martens, O. Müller, G. Sahlén, F. Suhling, C. van Pelt* and *H. Wildermuth*. Simple keys to (the groups of similar) spp. are provided for all genera where required. The treatments of spp. are uniformly organised, including sections on identification (field and hand characters are outlined separately), variation, range (with maps), status, habitat and flight season. In the Appendices, the debatable taxonomic affiliations for some European Odon., and the vernacular names are dealt with. In an attempt to arrive at an internationally workable system of vernacular appellations, some new names (and "vernacular synonyms") are created. The book also has a glossary of technical terms, but a bibliography is not included, therefore in the text no references are made to the authorities responsible

for certain views adopted. Including some photographs (of spp. and habitats) there are almost 1000 (not numbered) illustrations, mostly of diagnostic features. The high quality of this artwork, authored by R. Lewington, greatly enhances the value of the book. – For professionals and non-professionals alike, the book certainly is a must. The editor and the artist are to be warmly congratulated on the splendid result of their work.

(16333) DYATLOVA, E.S., 2006. Orthetrum coerulescens anceps (Odonata, Libellulidae) in Odessa and the vicinities (Ukraine). *Vest. Zool.* 40(3): 275-278. (Russ., with Engl. s.). – (Frantsuzkij Bul'var 37, kv. 3, UKR-65044 Odessa).
The O. coerulescens-complex is analysed. In the Odessa area it is represented by O. c. anceps (Schneider). Some morphological features of ♂♂ are discussed.

(16334) ESQUIVEL, C., 2006. *Libélulas de Mesoamérica y el Caribe / Dragonflies and damselflies of Middle America and the Caribbean.* Inst. Nac. Biodiv., Santo Domingo/Heredia, Costa Rica. 319 pp. Softcover (15.0×22.8 cm). ISBN 9968-927-13-9. Price: € 32.10 net. (Bilingual: Span./Engl.).
Ca 500 spp. are estimated to occur in Mesoamerica and the Caribbean; 75 of these, pertaining to 16 fam., are described here. The information is presented on morphology, habitat, behaviour, immature stages, and on geographical distribution of all taxa, and col. portraits of all spp. are provided. Also included are a pictorial key to the families, and a regional checklist of all the known spp., showing their distributions per country. With the introductory chapters on odon. biology and ecology, the book will be useful to the local (and other) workers. It is the first commercially available work on the Odon. of this area.

(16335) EVENHUIS, N.E. & D.A. POLHEMUS, 2006. Checklist of Odonata of Fiji. *Bishop Mus. tech. Rep.* 35(15): 1-3. – (Dept Ent., Bishop Mus., 1525 Bernice St., Honolulu, HI 96817-2704, USA).
46 spp.

(16336) FLECK, G., M. BRENK & B. MISOF, 2006. DNA taxonomy and the identification of immature insect stages: the true larva of Tauriphila argo (Hagen, 1869) (Odonata: Anisoptera: Libellulidae). *Annls Soc. ent. Fr.* (N.S.) 42(1): 91-98. (With Fr. s.). – (First Author: VIlla Juanita, 32 av. du Marechal Joffre, F-31800 Saint-Gaudens).
A molecular approach is applied to link larval and adult T. argo specimens. The sequenced mt SSU gene fragments of the reared ♀, supposedly referable to T. argo, and a clearly identified ♂ specimen of this sp. were identical. However, the larva of the reared ♀ clearly differed from that described as T. argo by J.M. Costa & C.V. de Assis (1994, *Odonatologica* 23: 51-54). It is apparent that the previously described larva does not belong to this sp. because of too many phenotypic differences that far exceed the generally observed infraspecific variation.

(16337) *FORSCHUNGSSTELLE REKULTIVIERUNG*, Jüchen, 2006. [Jahresbericht 2005]. 19 pp. – (Hackhausen 86, D-41363 Jüchen).
On pp. 14-15 is an anonymous report on the results of the odon. mapping on the Indre R. and its environs, Germany. Noteworthy records and local status of 14 odon. spp. are mentioned.

(16338) GARRISON, R.W. & N. VON ELLENRIEDER, 2006. Generic diagnoses within a closely related group of genera: Brechmorhoga, Gynothemis, Macrothemis, and Scapanea (Odonata: Libellulidae). *Can. Ent.* 138: 269-284. (With Fr. & Span. s's). – (First Author: California Dept Food & Agric., 3294 Meadowview Rd, Sacramento, CA 95832, USA).
Based on examination of most spp. of the 4 gen., the latter are rediagnosed, resulting in the following taxonomic changes: Brechmorhoga archboldi (Donnelly, 1970) comb. nov., Gynothemis pumila (Karsch, 1890) comb. nov., Macrothemis heteronycha (Calvert, 1909) comb. nov., and M. calliste (Ris, 1913) comb. nov. M. calliste ♂ is described and illustrated for the first time.

(16339) GARRISON, R.W., N. VON ELLENRIEDER & J.A. LOUTON, 2006. *Dragonfly genera of the New World: an illustrated and annotated key to the Anisoptera.* Johns Hopkins Univ. Press, Baltimore. xiv+368 pp., 8 col. pls excl. Hardcover (18.4×24.4 cm). ISBN 0-8018-8446-2. – (Publishers: 2715 North Charles St., Baltimore, MD 21218-4363, USA).
A monumental set of perfectly styled and easy to use keys to families, subfamilies (where applicable), and genera, with bibliographically annotated checklists

of the known spp. per genus, and with concise descriptions of the higher taxa, all supported by 1626 numbered, technically lucid and artistically pleasing figs are the subject of this work of excellence that represents a significant milestone in the New World odonatology. – With regard to recognition of families and genera, the Authors have steered a "conservative" course and have refrained from deviating from most of the "classically" recognised higher taxa, but are providing comments and references regarding phylogenetic relationships of genera where known. The Corduliinae, Macromiinae and Libellulinae are treated as subfamilies in the Libellulidae; the arguments for this classification are outlined. The genera and the higher taxa are briefly diagnosed and described, and the status of their respective classification is assessed. The unique generic characters are emphasized, and statements are provided on the potential for the new spp. and on habitats. The geographical range of the genera is shown on maps, and their country-wise occurrence is indicated in the appended distribution tabs. – The first Author (RWG) has kindly pointed out to the Ed. of *OA* a few minor errors and required updatings, e.g. on p. ix: the number of genera should be given as 125 (not 195); on p. 16: ♂ epiproct in Tachopteryx is bifid (not trifid), and on p. 272: Scapanea does not occur on the island of Dominica, since "S." archboldi was recently (2006) transferred to Brechmorhoga. – So far there were no comprehensive treatments allowing for reliable identification of the neotropical taxa, therefore the book will certainly facilitate and accelerate taxonomic and ecological studies on Meso- and S American fauna, and it will be useful to N American aquatic entomologists as well. As a superb reference work for 2 continents, written with much skill and profound command of the factual knowledge, the value of the book can be hardly exaggerated.

(16340) *GOMPHUS*. Mededelingsblad van de belgische Libellenonderzoekers – Bulletin de liaison des odonatologues belges (ISSN 0772-4691), Vol. 20, No. 2 (dated, on p. 2 of the cover: Dec. 2004, on title page of each paper: June 2006; mailed 13 July 2006). (Dutch & Fr., with Engl. s's). – c/o G. de Knijf, Matrouwstraat 10, B-9661 Brakel-Parike).
Tailly, M.: Editorial (pp. 1-2); – *Lambrechts, J. & R. Guelinckx*: The results after the restoration of the Vinne at Zouleeuw (province of Vlaams-Brabant) as a natural lake in Flanders: in one year from 7 to 27 Odonata species (pp. 3-12); – *Fichefet, V.*: Compte-rendu des observations d'espèces prioritaires d'odonates en Wallonie durant les saisons 2003, 2004 et 2005, dans le cadre du programme d'Inventaire et Surveillance de la Biodiversité (ISB) (pp. 13-28); – *Goffart, P. & T. Paternoster*: Redécouverte du Lestes virens en Wallonie (pp. 29-38); – *Fichefet, V.*: Compte-rendu de l'excursion du 14 mai dans l'Avesnois "à la découverte d'Epitheca bimaculata" (pp. 39-40); – *Annonce* (pp. 41-45); – *Excursions 2006* (pp. 46-48).

(16341) GIERE, S. & H. HADRYS, 2006. Polymorphic microsatellite loci to study population dynamics in a dragonfly, the libellulid Trithemis arteriosa (Burmeister, 1839). *Mol. Ecol. Notes* 6: 933-935. – (ITZ, Ecol. & Evol., TiHo Hannover, Bünteweg 17 d, D-30559 Hannover).
T. arteriosa is one of the most widely distributed odon. in Africa. It is an indicator for permanent water bodies, which are freshwater ecosystems of high environmental value especially in arid regions. For studies to determine population structures, assess species viability and monitor environmental changes, a panel of 10 polymorphic microsatellite loci was developed. The number of alleles per locus ranged from 4 to 12, with an observed heterozygosity ranging from 0.149 to 0.843.

(16342) HARRIS, W.E., P.F. BRAIN & D.W. FORMAN, 2006. Apparent territoriality of the black darter Sympetrum danae (Sulzer) new to the National Wetlands Centre Wales. *Br. J. Ent. nat. Hist.* 19(2): 91-95. – (Dept Biol. Sci., Univ. Wales, Swansea, SA2 8PP, UK).
A preliminary study was made of 2 ♂, at an alkaline pond at the National Wetlands Centre Wales, UK. Behaviour was categorised and recorded in 20 min blocks to produce a time budget for each insect. Perch sites and perch durations were also noted. Differences between and within the time budgets of the individual ♂ ♂ were confirmed using a G-test for homogeneity. Both had one perch site they used more frequently than others and intruders of alien spp. were chased away from such locations. The territory of each ♂ was separated by a boardwalk, and therefore had no common edge. This apparent site attachment supports the view that these individuals were behaving in a territorial manner.

(16343) HOLFORD, N., 2006. Gomphus and Cord-

ulegaster: the two large black and yellow dragonflies of Britain. *Amat. Ent. Soc. bug Club Mag.* 14(3): 22-25, cover phot. excl. – (c/o Ed.: P.O. Box 8774, London, SW7 5ZG, UK).
Descriptions of Gomphus vulgatissimus and Cordulegaster boltonii, directed at the general reader.

(16344) HOOPER, I.R., P. VUKUSIC & R.J. WOOTTON, 2006. Detailed optical study of the transparent wing membranes in the dragonfly Aeshna cyanea. *Optics Express* 14(11), 7 pp. – (Third Author: Sch. Biosci., Univ. Exeter, Exeter, EX4 4PS, UK).
The optical properties of transparent single membranes on the wings have been investigated. These membranes comprise one central thick cuticular layer covered dorsally and ventrally with typical odon. wax pruinosity. Optical characterisation of individual membranes reveals they can support optical guided modes comprising differential polarisation reflection. It is suggested this may offer an intraspecific signalling channel. The guided modes' characteristics depend on membrane thickness and the nature of the wax pruinosity. Multiple optical data sets were accurately modelled simultaneously, thereby inaugurally quantifying the roughness of the pruinosity and the complex refractive indices of the wax and the odon. cuticle.

(16345) HORNUNG, C.L.R. & C. PACAS, 2006. Investigating damselfly populations at springs in Banff National park, Canada, with special focus on Argia vivida, Amphiagrion abbreviatum and Ischnura cervula (Odonata: Coenagrionidae). *Aquat. Ecol.* 40: 49-58. – (First Author: Univ. Alberta, 751 GSB, Edmonton, AB, T6G 2H1, CA).
The objective of this study was to estimate A. vivida populations, identify breeding habitat, and investigate movement of adults within Banff National Park, during the summer of 2003. Mark-recapture techniques and standardized dip-net surveys were used to monitor A. vivida at various life stages. A reproductive index identified which sites it recognized as suitable breeding habitat, and exuviae surveys confirmed breeding sites. The basic structure of emergent and surrounding vegetation was measured to investigate the importance of available ovipositing or roosting sites and the condition of the matrix habitat. Data was recorded for A. abbreviatum and I. cervula to determine if these spring-associated spp. were successfully breeding within the Park. Comparisons were made between the highly protected Middle Springs and the heavily altered Cave & Basin Springs. Additional surveys at the Vermilion Lake cool spring and Middle Springs Bog investigated their use as breeding habitat for A. abbreviatum and A. vivida, respectively. Results suggest the ecological value of thermal springs extends beyond their origin to outflows and downstream pools. Conservation of A. vivida must recognize the value of unobstructed thermal outflows, and consider the condition of the forested habitat surrounding springs with regard to its potential use as nocturnal roosts and dispersal corridors. A. abbreviatum was confirmed breeding within the Park, while no sign of breeding activity was recorded for I. cervula.

(16346) ILMONEN, J. & J. SUHONEN, 2006. Intraguild predation, cannibalism, and microhabitat use in Calopteryx virgo and Somatochlora metallica larvae: a laboratory experiment. *Aquat. Ecol.* 40: 59-68. – (First Author: Finnish Envir. Inst., 140, FIN-00251 Helsinki).
A laboratory experiment was performed to assess the microhabitat use and cannibalism between intermediate and late instars of Calopteryx virgo larvae and predation by larger Somatochlora metallica larvae on the intermediate C. virgo instars. The experiment was run in small running-water aquaria where the larvae were able to divide their mutual habitat vertically by clinging onto artificial perches or crawling on the bottom. Life span of the small C. virgo larvae and attack rate on them were compared between the cannibalism and IGP treatments. The effect of predation on the activity, habitat use and spatial distribution of the small C. virgo larvae was examined. The IGP rate was 36%. The prey larvae spent most of their time on the perches, whereas S. metallica preferred the substrate. The large C. virgo larvae did not cannibalise smaller conspecifics. The presence of a predator (S. metallica) had no effect on the habitat use or activity of the prey (C. virgo) larvae. Habitat use differed more between those spp. than between conspecifics of different size classes of C. virgo. The spatial distribution between S. metallica and C. virgo showed a completely random pattern, whereas the 2 size classes of C. virgo aggregated in the vegetation. Absence of cannibalism and behavioural observations indicate that C. virgo may have a low tendency for intraspecific aggressions.

(16347) *I[NTERNATIONAL] C[ONGRESS OF] E[NTOMOLOGY] NEWSLETTER*, No. 1 (March 2006). – (c/o Ent. Soc. Sth Africa, P.O. Box 1935, Durban-4000, SA).
The XXIII International Congress of Entomology is to take place in Durban, South Africa, 6-12 July 2008. For more information visit the Congress website <*www.ice2008.org.za*>. The forthcoming information (newsletter) is available from <*info@ice2008.org.za*>.

(16348) *INTERNATIONAL JOURNAL OF ODONATOLOGY* (ISSN 1388-7890), Vol. 9, No. 2 (1 Oct. 2006).
Dijkstra, K.D.-B., African Diplacodes: the status of the small species and the genus Philonomon (Odonata: Libellulidae) (pp. 119-132, col. pls 1-2 excl.); – *Ferreira, S., J.M. Grosso-Silva, M. Lohr, E. Weihrauch & R. Jödicke*: A critical checklist of the Odonata of Portugal (pp. 133-150); – *Günther, A.*: Reproductive behaviour of Neurobasis kaupi (Odonata: Calopteygidae) (pp. 151-164, col. pl. 8 excl.); – *Hottenbacher, N. & N. Koch*: Influence of egg size on egg and larval development of Sympetrum striolatum at different prey availability (Odonata: Libellulidae) (pp. 165-174); – *Kalkman, V.J. & W. Lopau*: Identification of Pyrrhosoma elisabethae with notes on its distribution and habitat (Odonata: Coenagrionidae) (pp. 175-184, col. pl. 4 excl.); – *Michalski, J.*: Neurobasis awamena sp. nov. from New Guinea, with a discussion of the Sulawesi and Papuan species of the genus (Odonata: Calopterygidae) (pp. 185-195, col. pl. 5 excl.); – *Reels, G.T. & R. Dow*: Underwater oviposition behaviour in two species of Euphaea in Borneo and Hong Kong (Odonata: Euphaeidae) (pp. 197-204, col. pl. 6 excl.); – *von Ellenrieder, N. & J. Muzón*: The genus Andinagrion, with description of A. garrisoni sp. nov. and its larva from Argentina (Odonata: Coenagrionidae) (pp. 205-223, col. pl. 7 excl.); – *Wildermuth, H.*: Reciprocal predation involving Odonata, Asilidae and Saltatoria (pp. 225-234, col. p. 3 excl.); – *Worthen, W.B. & C.M. Jones*: Relationships between body size, wing morphology, and perch height selection in a guild of Libellulidae species (Odonata) (pp. 235-250); – *Xu, Q.*: Coeliccia mingxiensis sp. nov. from Fujian, China (Odonata: Platycnemididae) (pp. 251-254).

(16349) JOOP, G., A. MITSCHKE, J. ROLFF & M.T. SIVA-JOTHY, 2006. Immune function and parasite resistance in male and polymorphic female Coenagrion puella. *BMC Evol. Biol.* 2006, 6: 19 (10 pp.); doi: 10.1186/1471-2148-6-19. – (Third Author: Dept Anim. & Plant Sci., Univ. Sheffield, Sheffield, S10 2TN, UK).
The studies of immune function revealed no differences in immune function between the gynomorphic and andromorphic ♀ morphs but between the sexes in adults. In an experimental infection, ♀ ♀ infected shortly after emergence showed a higher resistance against a fungal pathogen than ♂ ♂. However, ♀ morphs did not differ in resistance. In a field sample of adults, no differences were found in infection rates with watermites and gregarines. With respect to resistance and immune function 'andromorph' (blue) C. puella ♀ ♀ do not resemble the ♂ ♂. Therefore the colour polymorphism in coenagrionids is unlikely to be maintained by differences in immunity.

(16350) KARLSSON, T., 2006. Two new provincial records of dragonflies (Odonata) for Östergötland: Coenagrion johanssoni and Leucorrhinia caudalis. *Ent. Tidskr.* 127(1/2): 35-38. (Swed., with Engl. s.). – (Länsstyrelsen Östergötland, Miljövårdsenheten, S-581-86 Linköping).
In 2005, the 2 spp. were recorded 30-40 km S of the city of Linköping, Sweden. The range of C. johanssoni apparently extends further S than previously known. The odon. fauna of Östergötland stands at 50 spp. now.

(16351) KEFFORD, B.J., L. ZALIZNIAK & D. NUGEGODA, 2006. Growth of the damselfly Ischnura heterosticta is better in saline water than freshwater. *Envir. Poll.* 141: 409-419. – (First Author: Biotechnol. & Envir. Biol., Sch. Appl. Sci., RMIT Univ., P.O. Box 71, Bundoora, Victoria 3083, AU).
Increasing salinity has the potential to affect freshwater organisms. Yet sub-lethal effects of salinity on macroinvertebrates are poorly understood. Growth and development of I. heterosticta was experimentally shown to be faster in 5-20 mS/cm than 0.1-1 mS/cm, while in 35 mS/cm all individuals died. In 30 mS/cm about half died and growth was similar to the 0.1 mS/cm treatment. The salinity-growth relationship cannot be explained indirectly, that is salinity affecting the survival of their prey. Tissue content and concentration of Ca, Mg, Na and K in emerged adults showed no evidence of deficiencies

at low salinity. Heart beat rate was similar across treatments, except at 35 mS/cm, where it was slower. Respiration and feeding were similar at 0.1, 10 and 30 mS/cm. While there are similarities in I. heterosticta and other species' salinity response, there are differences and studies on more spp. are urgently needed.

(16352) KIYOSHI, T. & T. SOTA, 2006. Differentiation of the dragonfly genus Davidius (Odonata: Gomphidae) in Japan inferred from mitochondrial and nuclear gene genealogies. *Zool. Sci.* 23(1): 1-8. – (Dept Zool., Graduate Sch. Sci., Kyoto Univ., Kyoto, 606-8502, JA).
To infer the differentiation of Japanese Davidius spp., the genealogies of the mitochondrial cytochrome oxidase subunit I gene (COI) and the nuclear ribosomal RNA gene region encompassing 18S, ITS1, 5.8S and ITS2 sequences were investigated in D. nanus, D. fujiama, D. moiwanus (all from Japan) and in D. lunulatus (Korea). According to the mitochondrial and nuclear gene genealogies, D. nanus and D. moiwanus are closely related and represent a sister group of the continental D. lunulatus. D. fujiama differentiated from an ancestor of the other 3 spp.

(16353) KJAERSTAD, G., 2006. Invertebrater og amfibier i dammer og tjern i Levanger og Verdal. – [Invertebrates and amphibians at the ponds and forest lakes in Levanger and Verdal]. *NTNU Vitensk Mus. zool. Notat* 1: 1-19. ISBN 978-82-7125-738-4. (Norw.). – (c/o Vitenskapsmuseet, Seksjon for naturhistorie, N-7491 Trondheim).
10 odon. spp. are listed from 6 localities. Habitats are briefly described and an overview phot. is provided of each pond/lake; – Norway.

(16354) LOPEZ DEL CASTILLO, P., D. GONZÁLEZ LAZO & J.C. NARANJO LÓPEZ, 2006. Lista de insectos acuáticos de la Reserva Ecológica "Alturas de Banao", Sancti Spiritus, Cuba (Insecta). *Boln Soc. ent. aragon.* 38: 201-204. (With Engl. s.). – (First Author: Empresa Nacional para la Conservación de la Flora y la Fauna, Parque Nacional Turquino, Granma, Cuba).
The list includes 7 odon. spp., with collection localities; – central Cuba.

(16355) MARCONI, A. & F. TERZANI, 2006. Odonati della Sierra Leone (Odonata). *Onychium* 4: 1-22. (With Engl. s.). – (Mus. zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).
74 spp. from the MZF (Firenze) and MSNM (Milano) collections are listed along with locality data and dates. Descriptive notes and diagnostic figs are provided for some of them. Pseudagrion kersteni, Heliaeschna fuliginosa, Ictinogomphus ferox, Phyllomacromia cf. lamottei, Trithemis aconita, T. hecate and Palpopleura jucunda were not previously recorded from Sierra Leone. – See also *OA* 10073.

(16356) MAZEROLLE, M.J., M. POULIN, C. LAVOIE, L. ROCHEFORT, A. DESROCHERS & B. DROLET, 2006. Animal and vegetation patterns in natural and man-made bog pools: implications for restoration. *Freshw. Biol.* 51: 333-350. – (First Author: USGS Patuxent Wildlife Res. Cent., 12100 Beech Forest Rd, Laurel, MD 20708-4017, USA).
The work was conducted (1999-2000) in 3 bogs (835-2315 ha) in E New Brunswick, USA, with 6-12% of their surface mined for peat. Zygoptera larvae captures increased with distance to the mined edge, pool pH and water depth, and were also influenced by vegetation structure at the pools. Anisoptera larvae abundance, on the other hand, was independent of all the variables considered. No species names are stated, and the odon. represent but a minor subject of this study.

(16357) McCARTHY, J.M., C.L. HEIN, J.D. OLDEN & M.J. VAN DER ZANDEN, 2006. Coupling long-term studies with meta-analysis to investigate impacts of non-native crayfish on zoobenthic communities. *Freshw. Biol.* 51: 224-235. – (First Author: Dept Biol., Colorado St. Univ., Fort Collins, CO 80523-1878, USA).
This study provides novel insight into the ecological effects of native and non-native crayfish on zoobenthic communities, with emphasis on the non-native Orconectes rusticus. The meta-analysis summarised quantitatively the results of cage experiments for 7 crayfish spp., spanning 4 continents. Total zoobenthic densities were significantly in treatments containing crayfish relative to controls. This was significant for non-native crayfish but not for crayfish in their native range. Results from the time series analysis comparing temporal trends in Orconectes and invertebrate abundances from Sparkling Lake, Wisconsin were consistent with the findings from the meta-analysis. Orconectes were negatively corre-

lated with the abundance of total zoobenthos, Diptera, Ephemeroptera and Odon., as well as families of Trichoptera.

(16358) MIKOLAJEWSKI, D.J., F. JOHANSSON, B. WOHLFAHRT & R. STOKS, 2006. Invertebrate predation selects for the loss of a morphological antipredator trait. *Evolution* 60(6): 1306-1310. – (First Author: Lab. Aquat. Ecol., Univ. Leuven, Bériotstraat 32, B-3000 Leuven).
Antagonistic selection by different predators has been suggested to underlie variation in morphological antipredator traits among and within spp. Direct empirical proof is equivocal, however, given the potential interrelationships of morphological and behavioral traits. Here it is tested whether spines in Leucorrhinia caudalis larvae, which are selected for by fish predators, are selected against by invertebrate aeshnid predators. Using a manipulative approach by cutting spines instead of making comparisons among spp. or inducing spines, it was possible to decouple the presence of spines from other potentially covarying morphological antipredator traits. Results showed survival selection for the loss of spines imposed by invertebrate predation. Moreover, spined and nonspined larval L. caudalis did not differ in the key antipredator behaviours, activity level, and escape burst swimming speed. The observed higher mortality of spined larvae can therefore be directly linked to selection by aeshnid predation against spines.

(16359) NEL, A. & A. ARILLO, 2006. The first Baltic amber dysagrionine damselfly (Odonata: Zygoptera: Thaumatoneuridae: Dysagroninae). *Annls Soc. ent. Fr.* (N.S.) 42(2): 179-182. (With Fr. s.). – (First Author: Entomologie, Mus. Nac. Hist. Nat., 45 rue Buffon, F-75005 Paris).
Electrophenacolestes serafini gen. n., sp. n. is described and illustrated from Baltic amber (Middle to Late Eocene) of Poland. Holotype: MNHN-LP-R63880 in Lab. Paléontol., MNHN, Paris. This is the first Theumatoneuridae recorded from an amber deposit, the second record of the fam. from the European Paleogene, and the fourth Zygoptera sp. described from Baltic amber. A comparison with the related taxa is provided.

(16360) NORMA-RASHID, Y., 2006. *Malaysian biojewels dragonflies and damselflies*. Calendar 2006. Abacus, Kuala Lumpur. (20.8×19.0 cm). – (Publishers: 17th Floor, Menara Dato, Onn, Putra World Trade Cent., 45 Jalan Tun Ismail, MY-50480 Kuala Lumpur; – Author: Dept Biol. Sci., Univ. Malaya, MY-50603 Kuala Lumpur).
Has a dragonfly portrait (with a concise informative caption, using taxonomic and Engl. vernacular nomenclature) for every month. A brief general introductory note on dragonflies goes with a dragonfly poem by the Author.

(16361) NOVELO-GUTIERREZ, R. & J.A. GÓMEZ-ANAYA, 2006. A description of the larva of Argia funcki (Selys, 1854) (Odonata: Zygoptera: Coenagrionidae). *Proc. ent. Soc. Wash.* 108(2): 261-266. (With Span. s.). – (Depto Ent., Inst. Ecol., A.C., Aptdo Postal 63, MX-91070 Xalapa, Veracruz).
The larva is described, illustrated and compared to its closest relative, A. lugens. It belongs to the species group characterised by a very prominent ligula and by a single palpal seta. It is the largest of the known Argia larvae.

(16362) *ODONATRIX*. Bulletin of the Odonatological Section of the Polish Entomological Society (ISSN 1733-8239), Vol. 2, No. 2 (15 July 2006). (Pol., with Engl. s's). – (c/o Dr P. Buczyński, Dept Zool., UMCS, Akademicka 19, PO-20-033 Lublin).
Buczyński, P.: Notes on the occurrence of Aeshna affinis Vander L. in the Lublin region (pp. 33-36); – *Śniegula, S.*: The adventure with Somatochlora sahlbergi Trybom, 1889 (pp. 36-39); – *Tończyk, G.*: Dragonflies (Odonata) of the city of Łódź: data from Ernst Koeppen's collection (p. 39); – Odonatological notes from the vicinities of the Wigry Lake (pp. 40-42); – Dragonflies (Odonata) recorded at the Puck Bay (pp. 42-44); – *Buczyński, P.*: 25. Annual Meeting of the Society of German-speaking Odonatologists (GdO), Essen (Germany), March 17-19, 2006 (pp. 44-46); – *Tończyk, G.*: "Świtezianka", a forbidden newsletter (pp. 46-47; during the 7th Int. Symp. Odonatol., Paris, 1985 it was suggested to start an odon. bulletin in Poland, Dr S. Mielewczyk was to be the Editor, but the Polish authorities declined to issue the required licence); – *Buczyński, P.*: [book review] Verbreitungsatlas der Libellen (Odonata) im Freistaat Thüringen, by W. Zimmermann et al. (pp. 47-48); – Polish and to Poland dedicated odonatological papers published in the first half of 2006 and additions to 2005 (pp. 48-50); – *Buczyński, P. & G.*

Tończyk: Report on activities of the Odonatological Section of the Polish Entomological Society in 2005 (pp. 50-52); – *Miszta, A.*: Reflections on the beginning of the fifth year of dragonfly monitoring in Upper Silesia (pp. 52-53); – *Letters* to and from the Editorial Office (p. 54).

(16363) PRINCIPE, R.E. & M. DEL CARMEN CORIGLIANO, 2006. Benthic, drifting and marginal macroinvertebrate assemblages in a lowland river: temporal and spatial variations and size structure. *Hydrobiologia* 553: 303-317. – (First Author: Depto Cien. Nat., Univ. Nac. Rio Cuarto, A.P. No. 3, X5804 BYA, Rio Cuarto, Argentina).
Drift ratios in the Ctalamochita R., Argentina, calculated in relation to benthos (% taxa in drift / %taxa in benthos) and marginal assemblage (% taxa in drift / % taxa in marginal fauna) are presented for "Agrionidae", Phyllocycla sp. and for Progomphus sp., at an urban and at a rural site, and are specified separately for each season.

(16364) RAAB, R., A. CHOVANEC & J. PENNERSTORFER, 2006. *Libellen Österreichs*. Springer, Wien-New York. viii + 345 pp. Hardcover (21.5 × 28.2 cm). ISBN 3-211-28926-7. Price: € 116.90 net.
A luxuriously presented "atlas" of the odon. fauna of Austria (77 spp.), with an introductory chapter on odon. biology (pp. 5-34, by *J. Waringer*). The information provided per species includes its distribution and status, habitat and biology, and its conservation status and the required management. A distribution map and the vertical occurrence and adult phenology graphs are also given for each sp. (pp. 72-256). For 7 previously for Austria listed spp., the arguments are presented for exclusion from the list. The concluding chapters are dealing with the fauna of some selected areas, with odon. as bioindicators, and with odon. conservation. The Austrian Red List (pp. 325-334) was compiled by *R. Raab*. A very comprehensive regional bibliography enhances the value of the work.

(16365) RUTSCHMANN, M. & P. SCHLUP, 2006. Jägerin mit 28.000 Augen. *Tier* 2006(2): 20-21. – (Authors' addresses not stated).
General on dragonflies, in a popular German animal magazine.

(16366) SALUR, A. & S. KIYAK, 2006. Additional records for the Odonata fauna of East Mediterranean region of Turkey. *Munis Ent. Zool.* 1(2): 239-252. – (First Author: Dept Biol., Corum Sci. & Arts Fac., Gazi Univ., TR-19030 Corum).
The records (2002, 2003) are presented of 52 spp./ sspp. from 5 provinces. Ischnura intermedia was not reported earlier from the region. – See also *OA* 16146.

(16367) SAMWAYS, M.J., 2006. Insect extinctions and insect survival. *Conserv. Biol.* 20(1): 245-246. – (Dept Conserv. Ecol. & Ent., Univ. Stellenbosch, Matieland-7602, SA).
The insect entries on the Red List reflect recorder effort as much as the actual conservation status of insects in general. The problem with using conservation status is that much of the change in status comes from alterations of methodology, improved knowledge on species status, varying effort put into status assessment etc. This is the case of Sth African Pseudagrion citricola, which is much more common than formerly thought and was removed from the Red List. Metacnemis angusta had not been seen since 1920 and was feared extinct, but it was rediscovered following improved field-search methods and population recovery advanced by removal of invasive alien plants.

(16368) *SCIENCE AND INFORMATION NEWSLETTER [of the] NATURAL HERITAGE INFORMATION CENTRE* [Ontario, Canada], Vol 11, No. 1 (winter 2006).
Includes 2 odonatol. articles, bringing some noteworthy records, viz.: *Jones, C.D.*: Two major dragonfly meetings in Ontario (pp. 12-14); – NHIC launches the Ontario Odonata Atlas website (pp. 14-15).

(16369) SLUIJTER, T., 2006. Koraaljuffers in Haamstede. – [Ceriagrion tenellum in Haamstede]. *Zeeuwse Prikkebeen* 14(1): 17-18. (Dutch). – (Repel 7, NL-4328 CG Burgh-Haamstede).
Between 19 June and 5 Sept. 2004 (and again on 31 May 2005), C. tenellum was observed and photographed at 2 garden ponds in Haamstede. It is a new sp. for the fauna of the Zeeland prov., the Netherlands. Its brief description is provided.

(16370) SOKOLOVA, Y.Y., N.A. KRYUKOVA, V.V. GLUPOV & J.R. FUXA, 2006. Systenostrema alba Larsson, 1988 (Microsporidia, Theloraniidae) in

the dragonfly Aeshna viridis (Odonata, Aeshnidae) from South Siberia: morphology and molecular characterization. *J. Eukaryot. Microbiol.* 53(1): 49-57. – (First Author: Inst. Cytol., Russ. Acad. Sci., RUS-194064 St. Petersburg).
The 5th-6th A. viridis instars were collected from intermittent streams in the Novosibirsk region, Russia. S. alba was originally described from Aeshna grandis in Sweden (J.I.R. Larsson, 1988, *Syst. Parasitol.* 11: 3-17).

(16371) STOKS, R., M. DE BLOCK & M.A. McPEEK, 2006. Physiological costs of compensatory growth in a damselfly. *Ecology* 87(6): 1566-1574. – (First Author: Lab. Aquat. Ecol., Univ. Leuven, Bériotstraat 32, B-3000 Leuven).
Little is known about physiological costs of rapid growth. The present authors successfully generated compensatory growth to time stress and transient food stress in the damselfly Lestes viridis and studied the physilogical correlates of the resulting reduced ability to cope with starvation. Evidence was found for both mechanisms proposed to underlie the physiological trade-off: compensatory growth was associated with (1) a higher metabolic rate, as indicated by a higher oxygen consumption and a faster depletion of energy storage molecules (glycogen and triglycerides), and (2) a smaller investment in energy storage. The former may also explain why storage molecules after emergence were negatively affected by time stress and food stress, despite the successful compensation before emergence. These deferred physiological costs of rapid growth have the potential to couple larval stresses to adult fitness irrespective of age and size at emergence, and they may partly explain why many animals do not show their maximum achievable growth rate.

(16372) STOKS, R., M. DE BLOCK, S. SLOS, W. VAN DOORSLAER & J. ROLFF, 2006. Time constraints mediate predator-induced plasticity in immune function, condition, and life history. *Ecology* 87(4): 809-815. – (Last Author: Dept Anim. & Plant Sci., Univ. Sheffield, Sheffield, S10 2TN, UK).
The simultaneous presence of predators and a limited time for development imposes a conflict: accelerating growth under time constraints comes at the cost of higher predation risk mediated by increased foraging. The few studies that have addressed this trade-off have dealt only with life history traits such as age and size at maturity. Physiological traits have largely been ignored in studies assessing the impact of environmental stressors, and it is largely unknown whether they respond independently of life history traits. Here were studied the simultaneous effects of time constraints, i.e., as imposed by seasonality, and predation risk on immune defense, energy storage, and life history in Lestes viridis. As predicted by theory, larvae accelerated growth and development under time constraints while the opposite occurred under predation risk. The activity of phenoloxidase, an important component of insect immunity, and investment in fat storage were reduced both under time constraints and in the presence of predators. These reductions were smaller when time constraints and predation risk were combined. This indicates that predators can induce sublethal costs linked to both life history and physiology in their prey, and that time constraints can independently reduce the impact of predator-induced changes in life history and physiology.

(16373) TORRALBA-BURRIAL, A. & F.J. OCHARAN, 2006. Dispersión y proporción en la emergencia en una población de Sympecma fusca (Odonata, Lestidae) en Huesca (NE de España). *Boln R. Soc. esp. Hist. nat.* (Biol.) 101(1/4): 29-36. (With Engl. s.). – (Depto Biol. Organ. y Sistemas, Univ. Oviedo, ES-33071 Oviedo).
101 ♂ and 135 ♀ were marked between July and Oct. Sex ratio at emergence was not significantly different from 1:1 and both sexes dispersed equally upon the emergence. Next summer, no marked individual returned either to the original pond or to any pond in the area. Hibernating individuals were observed in the vegetation at the pond edge, but none was marked. It is concluded that unlike in other Lestidae, in S. fusca the philopatry is completely lacking.

(16374) VAN DE MEUTTER, F., R. STOKS & L. DE MEESTER, 2006. Lotic dispersal of lentic macroinvertebrates. *Ecography* 29: 223-230; App. 1-4 as file E4483 to be downloaded from *www.oikos.ekol.lu.se/appendix* – (Second Author: Lab. Aquat. Ecol., Univ. Leuven, Bériotstraat 32, B-3000 Leuven).
The dispersal of lentic macroinvertebrates through pond connections in a highly connected pond system (De Maten nr Genk, Belgium) is quantified, and it was investigated how dispersal rates were af-

fected by connection properties and time of the day (day, night). The odon. are hardly mentioned in the printed text, but from the Appendix it is apparent that 7 gen. were examined. Coenagrion/Ischnura were represented in daytime and nighttime dispersal samples.

(16375) VAN DE MEUTTER, F., R. STOKS & L. DE MEESTER, 2006. Rapid response of macroinvertebrates to drainage management of shallow connected lakes. *J. appl. Ecol.* 43: 51-60. – (First Author: Lab. Aquat. Ecol., Univ. Leuven, Bériotstraat 32, B-3000 Leuven).
Temporal trends in the macroinvertebrate community following drainage were investigated in 6 shallow connected lakes in the nature reserve "De Maten", Belgium. The number of odon. spp. increased in the second yr after the drainage in May, tended to increase in the first yr after the drainage in July, but was unaffected by the drainage in Sept. A similar pattern was observed for odon. diversity. Odon. abundance was not affected significantly by the drainage. Multivariate analyses indicated significant changes in the odon. community in May, but not in July and Sept. In May, 2 groups of odon. spp. with a different response to the drainage could be distinguished: a first group, characterized by Lestes sponsa, increased in abundance in the first yr, and a second group, characterized by Sympecma fusca and Ischnura/Coenagrion, increased their abundance in the second yr after the drainage. – Generally, lake drainage has a positive effect on the diversity and richness of macroinvertebrates in shallow connected lakes. This may be due to a decline in fish predation following lake drainage in combination with a high rate of recolonization, e.g. via connections to non-drained lakes.

(16376) WALDBAUER, G., 2006. *A walk around the pond. Insects in and over the water*. Harvard Univ. Press, Cambridge/MA & London/UK. vi+286 pp. Hardcover (13.0 × 20.2 cm). ISBN 0-674-02211-4. Price: € 20.65 net.
The outstanding US odonatologist, Dr S.W. Dunkle, wrote: "The book is a good deal more than just a walk around the pond. Even readers who have studied aquatic insects for many years will find much that is new and interesting in these pages. The book is a total immersion in the lives of these amazing insects and the creatures, including ourselves, who interact with them". – The Author is Professor Emeritus of Entomology at the Univ. of Illinois, Urbana-Champaign. The book contains much (bibliographically documented) information on odon., and it is organized in 11 main chapters, titled: "A first look", "Who's Who in the water", "Where they live", "The breath of life", "Finding food and eating", "Going places", "The next generation", "On being eaten", "How not to be eaten", "Coping with the climate", and "Our friends and enemies'. While learning about the evolution, natural history and ecology of aquatic insects, the reader will also discover much about the scientists who study them. – A refreshing approach and a recommended reading.

(16377) WEIHRAUCH, F. & S. WEIHRAUCH, 2006. Records of protected dragonflies from Rio Tera, Zamora province, Spain (Odonata). *Boln Soc. ent. aragon.* 38: 337-338. (With Span. s.). – (Jägerstr. 21A, D-85283 Wolnzach).
Breeding records of Gomphus graslinii, Macromia splendens and Oxygastra curtisii are provided from Rio Tera, the outlet of Lago de Sanabria. With 1000 m a.s.l., this site is the highest altitude at which the 3 spp. have hitherto been recorded. This is most probably due to the exceptionally warm waters feeding Rio Tera at the outlet, caused by the summer hydrostratification of the lake.

(16378) YEH, W.-C., H.-C. TANG, S.-L. CHEN & M.-H. TSOU, 2006. Three dragonflies (Odonata) newly recorded in Taiwan. *Formosan Ent.* 26: 187-195. (With Chin. s.). – (First Author: Div. Forest Protection, Taiwan Forest. Res. Inst., 53 Nanhai Rd, Taipei-100, Taiwan).
Sinolestes edita, Zyxomma obtusum and Macromidia ishidai are reported from Taiwan for the first time. The genera Sinolestes and Macromidia are new to Taiwan as well. The descriptions of both sexes of the 3 spp. and of their habitats and habits are provided. Currently, 151 odon. spp. are known from Taiwan.