ODONATOLOGICAL ABSTRACTS

1978

(15401) TEVESZ, M.J.S., 1978. Benthic recolonization patterns in the Vermilion river, Ohio. *Kirtlandia* 27: 1-17. – (Formerly at Dept Geol. Sci., Cleveland St. Univ., USA; current address unknown).
2 recolonization studies were performed (9 July-13 Aug., 13 Aug.-6 Sept.) by planting invertebrate-free sedimentary "islands" in the river substratum and then collecting them at set intervals. The odon. were represented on the undisturbed sedimentary bottom by "Clithemis" [= Celithemis?] larvae, which invariably appeared on the islands by the 5th week in the first study and by the 24th day in the second study. Drift was likely an important source of organisms in the early stages of recolonization, but the taxonomic composition of the sedimentary islands was not entirely predicted by the total composition of the drift fauna.

1979

(15402) WOOTTON, R.J., 1979. Function, homology and terminology in insect wings. *Syst. Ent.* 4: 81--93. – (Hatherly Labs, Sch. Biol. Sci., Univ. Exeter, Prince of Wales Rd, Exeter, EX4 4PS, UK).
The history of current systems of wing nomenclature is summarized, and the underlying principles are reviewed. Conflicting aspects of commonly used systems of wing terminology are evaluated, and illustrated recommendations are put forward for consistent naming of veins, branches and wing areas.

1985

(15403) MANDEL'SHTAM, Yu.E., 1985. Funkcional'nye osobennosti sinapticheskogo apparata nasekomyh. – [Functional peculiarities of the insect synaptic apparatus]. *Dokl. Chten. Pamyati N.A. Holodkovskogo* 37: 44-79. (Russ.). – (Author's postal address not stated).
A review paper, mostly based on the situation in Locusta migratoria, but incl. a few references to the Odon.

(15404) NELSON, B., 1985. Coenagrion lunulatum (Charpentier) (Odonata) new to Fermanagh (H33). *Ir. Nat. J.* 21(11): 503-504. – (Dept Zool., Ulster Mus., Bot. Gardens, Belfast, BT9 5AB, UK).
The sp. is recorded from 2 inter-drumlin lakes (alt. 160 m), Ireland; 14/16-VI-1984. The Watson's Lough habitat and its odon. fauna are described. C. lunulatum has been discovered in Ireland in 1981 (cf. *OA* 4156); the known records are here reviewed.

(15405) SVIDERSKIY, V.L., 1985. Polet nasekomyh: neyrofiziologicheskie aspekty. – [Insect flight: neurophysiological aspects]. *Dokl. Chten. Pamyati N.A. Holodkovskogo* 37: 3-43. (Russ.). – (Author's postal address not stated).
A review paper, dealing mostly with the situation in Locusta migratoria and in Diptera, but including several references to the Odon. An important but little-known Russian paper related to this field in odon. is: V.G. Sveshnikov, 1972, Stroenie i funksional'nye osobennosti receptorov golovy, kontroliruyushchih roboty krylovyh myshic strekozy [Structure and functional properties of receptors in the head of a dragonfly, controlling the activity of wing musculature], *Zh. Evol. biohim. Fiziol.* 8(6): 530-535.

(15406) TEVESZ, M.J.S., 1985. Benthic colonization in fresh water: a synthesis. *Kirtlandia* 41: 3-14. – (Formerly at Dept Geol. Sci., Cleveland St. Univ.,

USA; current address unknown).
Colonization of defaunated substrata by benthic organisms proceeds in an orderly and predictable manner in diverse freshwater environments. Early colonizers tend to be relatively small organisms that have broad environmental tolerances and high powers of dispersal. They occur in communities where species richness is low. Later colonizers (incl. odon.), occur in more diverse communities and tend to be larger and possibly better protected. These findings suggest that the structure and colonization patterns of freshwater communities are linked to environmental factors, the most obvious of which is the temporal proximity to disturbance. The causes of natural disturbances that locally destroy portions of freshwater benthic communities are varied, yet the functional response of those communities to the disturbance is invariably similar. These findings are in contrast to long held views which placed great importance on the controlling influence of ambient physical/chemical environmental parameters. It seems that community structure and dynamics in freshwater are closely related to the frequency of disturbance.

1989

(15407) CHAO, H.-f.,1989. Collection, preparation and preservation of dragonflies. *Kunchong Zhishi* 26(3): 173-174. (Chin., with Engl. title in contents table). – (Author deceased).
[Abstract not available]

(15408) NELSON, B., R. NORTHRIDGE & I. RIPPEY, 1989. The Odonata (Insecta) of co. Fermanagh, Ireland. *Bull. Ir. biogeogr. Soc.* 12: 113-134. – (First Author: Dept Zool., Ulster Mus., Bot. Gardens, Belfast, BT9 5AB, UK).
Records have been collected from 157 sites, 16 spp. are listed, of which Coenagrion lunulatum is rare and of particular interest. Habitat requirements of each sp. are pointed out.

1994

(15409) BRAUCKMANN, C., B. BRAUCKMANN & E. GRÖNING, 1994. The stratigraphical position of the oldest known Pterygota (Insecta, Carboniferous, Namurian). *Annls Soc. géol. Belg.* 117: 47-56. (With Fr. s.). – (Inst. Geol. u. Paläontol., Techn. Univ. Clausthal, Leibnizstr. 10, D-38678 Clausthal-Zellerfeld).
The stratigraphical position of some Namurian pterygote insects is reviewed. The previously suggested Lower Namurian age of the 2 odon. spp. (Meganisoptera: Eugeropteridae), viz. Eugeropteron lunatum Riek, 1984 and Geropteron arcuatum Riek, 1984, from Malanzán, Argentina, is not certain; an early Westphalian age for these spp. appears more likely. For the original descriptions, see *OA* 4786.

(15410) NEW, T.R., 1994. *Exotic insects in Australia*. Gleneagles Publishing, Glen Osmond/Australia. x+138 pp. ISBN 1-87-5553-03.7. – (Publishers: P.O. Box 41, Glen Osmond, SA 5064, AU).
Insects introduced by accident or on purpose to Australia are discussed. Odon. have no exotic Australian representatives, although a number of strongly-flying spp. are widespread and Australia is part of their natural range.

1995

(15411) ŁABEDZKI, A., 1995. The Odonata (dragonflies) of Gorce National Park: state of knowledge and expected developments. *Parki nar. Rezerw. Przyr.* 14(3): 97-102. (Pol., with Engl. s.). – (Katedra Entomologii Leśnej, Akad. Rolnicza, ul. Wojska Polskiego 71a, PO-60-625 Poznan).
23 spp. are listed from the Park. Sympecma paedisca and Leucorrhinia pectoralis are of particular interest. It is expected, the completion and flooding of the Czorsztyn Reservoir will favourably affect the local odon. fauna.

(15412) SUGIMURA, M. & R. NIHASHI, 1995. Interspecific hybrids of Sympetrum kunckeli × S. e. eroticum. *Gensei* 67: 11-15. (Jap., with Engl. s.). – (Second Author: 2936, Niguchi, Daimon-cho, Imizu-gun, Toyama-ken, 939-02, JA).
8 ♂ specimens, assumed to represent hybrids between the 2 spp. mentioned in the title, are described and illustrated.

1996

(15413) BOYLE, T.P., J.F. FAIRCHILD, E.F. ROBINSON-WILSON, P.S. HAVERLAND & J.A. LEBO, 1996. Ecological restructuring in experimental aquatic microcosms due to the application of diflubenzuron. *Envir. Toxicol. Chem.* 15(10): 1806-1814. – (Second Author: Midwest Sci. Cent., Natn.

Biol. Serv., 4200 New Haven Rd, Columbia, MO 65201, USA).
Diflubenzuron is a chitin-inhibiting insecticide, used in controlling a multitude of invertebrate pests. Its mode of action is selective. The odon. are considered "somewhat resistant", in the present study they were "apparently insensitive". This has a positive effect on bluegill that normally feeds mostly on (the sensitive) chironomids and on odon. It is surmised that shifts in the diet of adult bluegill to odon. may have decreased the effects of dietary reduction on growth rates following diflubenzuron treatment. Generally, the results of the present study indicate that diflubenzuron had both direct and indirect impacts on het experimental aquatic ecosystems under the conditions tested.

(15414) HURD, M.K., S.A. PERRY & W.B. PERRY, 1996. Nontarget effects of a test application of diflubenzuron to the forest canopy on stream macroinvertebrates. *Envir. Toxicol. Chem.* 15(8): 1344-1351. – (Natn. Biol. Serv., W Virginia Coop. Fish & Wildl. Res. Unit, Div. Forestry, W. Virginia Univ., Box 6125, Morgantown, WV 26506-6125, USA).
Pre- and post-treatment differences based on mean densities between streams in treatment and reference watersheads are stated for Lanthus sp. and Cordulegaster sp.; – Fernow Exp. Forest nr Parsons, W Virginia, USA. No other references are made to the odon.

2001

(15415) GAPUD, V.P. & J.D. RECUENCO-ADORADA, 2001. Contribution to the taxonomy of Philippine Megapodagrionidae (Odonata: Zygoptera). *Philipp. Ent.* 15(2): 115-124. – (First Author: Dept Ent., Coll. Agric., Univ. Philippines Los Baños, College, Laguna-4031, Philippines).
Argiolestes baltazarae sp. n. is described and illustrated. Holotype ♂: Philippines, Northern Sierra Madre Natural Park, on vegetation beside Catalunga R., 1/4-VII-2000; deposited in Mus. Nat. Hist., U.P., Los Baños. The original description of A. realensis is modified to separate the 2 closely related spp. The ♂ Rhinagrion philippinum is described, and the Philippine megapodagrionid spp. are illustrated and keyed.

(15416) HARP, G.L. & L. TRIAL, 2001. Distribution and status of Ophiogomphus westfalli (Odonata: Gomphidae) in Missouri and Arkansas. *J. Ark. Acad. Sci.* 55: 43-50. – (First Author: Dept Biol. Sci., Arkansas St. Univ., State University, AR 72467, USA).
The sp. is endemic to the Interior Highlands (Ozark Plateaus and Ouachita Mts), in Missouri, Arkansas and SE Kansas. Its life history is still little known. Prior to 1997, the sp. was known only from 6 sites in Missouri and 10 in Arkansas. From late May through late July 1999 and 2000 the Authors surveyed 49 sites on Missouri Ozark streams in order to further clarify the distribution and relative abundance of this dragonfly. Adults, larvae and/or exuviae were found at 23 sites. Literature and museum searching bring to 72 locations in Missouri and 10 in Arkansas where the sp. has been found. Small to moderate-sized populations, restricted to the Interior Highlands, are known from at least 82 locations. Therefore, it is recommended that the global and Missouri rankings of O. westfalli be changed from G2 and S2 to G3 and S3, respectively. Distribution and abundance of this sp. need further study in Arkansas.

(15417) NELSON, B., 2001. The land invertebrates of Ireland. *Brit. Wildlife* 12(4): 256-263. – (Dept Zool., Ulster Mus., Bot. Gardens Belfast, BT9 5AB, UK).
A description of various types of wetlands, including their characteristic odon. assemblages, is presented. Turloughs are temporary waterbodies, found in the limestone areas, which fill and disappear through underground channels and are considered unique to Ireland. Lestes dryas is a characteristic sp. The turlough-like conditions can be found associated with some of the marel lakes, which are the main Orthetrum cancellatum habitat in Ireland. Pyrrhosoma nymphula, Aeshna juncea, Libellula quadrimaculata, Sympetrum danae and in SW Ireland also Somatochlora arctica are associated with fens. When bogs were hand-cut for peat, areas of open, less acid and less nutrient-poor water were created, harbouring Coenagrion pulchellum, A. grandis and Brachytron pratense. On sites where the pools have become eutrophic and have fish populations, only C. puella and Ischnura elegans will persist. Some examples of change in assemblage composition, caused by altered habitat features, are supplied.

(15418) ŠIBL, J., A. SEGINKOVA & E. BULÁNKOVÁ, 2001. Contribution to the knowledge of dragon-

fly fauna (Odonata) of Danubian Plain (southwestern Slovakia). *Entomofauna carpathica* 13: 68-71. (Slovak, with Engl. s.). – (First Author: J. Stanislava 15, SK-84105 Bratislava).
The 1999-2000 records of 34 spp. from 9 localities are listed, and those rare in Slovakia are emphasized.

2002

(15419) BRAUCKMANN, C. & K.J. HERD, 2002. Insekten-Funde aus dem Westfalium D (Ober-Karbon) des Piesberges bei Osnabrück (Deutschland), 1: Palaeoptera. *Osnabrück. naturw. Mitt.* 28: 27--69. (With Engl. s.). – (First Author: Inst. Geol. u. Paläont., Tech. Univ. Clausthal, Leibnizstr. 10, D--38678 Clausthal-Zellerfeld).
This is the 1st pt of a monograph on the hitherto known fossil insects from Westphalian D beds (Upper Carboniferous) of the Piesberg querry nr Osnabrück (Lower Saxony), Germany. The Odonatoptera are represented by a single sp., Erasipterella piesbergensis Brauckmann, 1983. It is redescribed and illustrated here. For the original description, see *OA* 4509.

(15420) DIETZ-BRANTLEY, S.F., B.F. TAYLOR, D.P. BATZER & A.E. DeBIASE, 2002. Invertebrates that aestivate in dry basins of Carolina bay wetlands. *Wetlands* 22(4): 767-775. – (Third Author: Dept Ent., Univ. Georgia, Athens, GA 30602, USA).
Water level fluctuates widely in Carolina bay wetlands, USA and most dry periodically. Aquatic organisms inhabiting them have the capacity either to resist desiccation or to recolonize newly flooded habitats. The objective of this study was to determine which invertebrates eastivate in the soil of dry Carolina bays. Sections of soil were removed from each bay during Aug. and Nov., when all sites were dry, placed into tube, flooded and covered with fine mesh. Invertebrates from naturally inundated sites were sampled from the water biweekly for 4 weeks. Invertebrate assemblages were contrasted between naturally inundated bays and rehydrated samples. After natural floodings, Argia, Aeshna, Erythrodiplax, Libellula and Sympetrum were found; from rehydrated samples only Sympetrum emerged.

(15421) GARD, M.F., 2002. Effects of sediment loads on the fish and invertebrates of a Sierra Nevada river, California. *J. aquat. Ecosyst. Stress Recovery* 9: 227-238. – (US Fish & Wildlife Serv., 2800 Cottage Way, Room W-2605, Sacramento, CA 95825, USA).
8 odon. taxa (gen. or spp.) are listed with approx. localities from the South Yuba R., Nevada Co., California, USA.

(15422) HELLMUND, M. & W. HELLMUND, 2002. Erster Nachweis von Kleinlibellen-Eilogen (Insecta, Zygoptera, Lestidae) in der mitteleozänen Braunkohle des ehemaligen Tagebaues Mücheln, Baufeld Neumark-Nord (Geiseltal, Sachsen-Anhalt, Deutschland). *Hallesches Jb. Geow.* (B) 24: 47-56. (With Engl. s.). – (Inst. Geol. wiss. u. Geiseltalmus., Domstr. 5, D-06108 Halle/Saale).
From the (?)Upper Middle Eocene of Geiseltal (Sachsen-Anhalt, Germany) 2 odon. egg-sets, deposited into the leaf of an unknown dikotyle sp., are described and illustrated. Presumably they are referable to a lestid sp. The adults or larvae were not found. Interestingly, in the Lower Middle Eocene of Messel nr Darmstadt similar coenagrionid/platycnemidid egg-sets occur.

(15423) NELSON, B., 2002 [Wildlife reports] Dragonflies [Ireland, 2001]. *Brit. Wildlife* 13: 206-207. – (Dept Zool., Ulster Mus., Bot. Gardens, Belfast, BT9 5AB, UK).
The winter 2000/2001 was one of the hardest in Ireland for some 20 yr, but the early spp. were not later than in the past few yr (first Pyrrhosoma nymphula on 1-V). The dragonfly season is reviewed, and the highlights are emphasized. Migrant activity was much reduced compared with 2000.

(15424) ROMONENKO, V.N., O.L. KONUSOVA & A.V. GRISHAEV, 2002. Krasotka blestyashchaya--Calopteryx splendens. *Krasnaya kniga Tomskoy oblasti* – [*Red Data Book of the Tomsk province*], pp. 130-131, Izd. Tomsk Univ., Tomsk. (Russ.).
It is restricted to a few local populations in the southern, economically heavily impacted regions of the province; its status is assessed as the "3rd category". The modes of habitat degradation are summarized, and the appropriate habitat protective measures are defined.

(15425) SCHNABEL, H., 2002. Quantitative Untersuchungen zum Schlupf von Libellen an Fischteichen. *Veröff. Mus. WLausitz Kamenz* 24: 85-90.

– (Am Sportplatz 231, Alte Försterei, D-02906 Mücka).

During 2001-2002, over 10.000 larvae, referable to 18 spp. were evidenced at 62 fishponds in the distr. of Kamenz, E Germany. At 5 ponds exuviae were collected in order to ascertain the spp. that are able to survive the winter, when the ponds are set dry. In all, the exuviae of 24 spp. were recorded. When a pond is set dry, Cordulia aenea, Somatochlora metallica, Libellula quadrimaculata and Orthetrum cancellatum larvae bury themselves actively in the mud. Erythromma najas and Ischnura elegans exuviae appeared only in Aug., therefore these are considered to represent the 2nd generation. Species composition in a fishpond depends on the quantity of fish and on the duration of the dry period in winter.

(15426) SWIFT, M.C., 2002. Stream ecosystem response to, and recovery from, experimental exposure to selenium. *J. aquat. Ecosyst. Stress Recovery* 9: 159-184. – (Biol. Dept, St Olaf Coll., Northfield, MN 55057, USA).

The effects of selenium on stream ecosystems were studied in 8 outdoor, experimental stream mesocosms during a dosing period in which sodium selenite was added at nominal concentrations of 30, 10 and 2.5 µg/l. The duration of the high, medium and low treatments were 573, 972 and 311 d, respectively. Enallagma larvae are the sole macroinvertebrate predators for which extensive tissue selenium data are available. The larvae accumulated selenium rapidly; bioaccumulation factor (BAF) values ranged from about 700 to 2100. It was not until 1 yr (medium, low) or 2 yr (high) after the end of selenium dosing that tissue selenium levels decreased to near control levels. There was no significant effect of selenium treatment on the abundance of Enallagma.

2003

(15427) AREFINA, T.I., P.Yu. IVANOV, S.L. KOCHARINA, G.Sh. LAFER, M.A. MAKARCHENKO, V.A. TESLENKO, T.M. TIUNOVA & E.V. KHAMENKOVA, 2003. Aquatic insect fauna from Taui River Basin (Magadan Territory). *Chten. Pamyati V. Ya. Levanidova* 2: 45-60. (Russ., with Engl. s.). – (Last Author: Magadan Res. Inst. Fish. & Oceanogr., Ul. Portovaya 36/10, RUS-685000 Magadan).

Lestes dryas, L. sponsa, Sympetrum flaveolum, Aeshna sp., and Coenagrionidae sp. are listed from the Kava R., 120-150 km SW of Magadan, Russian Far East. The records are briefly discussed.

(15428) BEZMATERNYKH, D.M. & O.V. EYDUKAITENE, 2003. Fauna and ecology of aquatic invertebrates in the Barnaulka river (the Ob Basin). *Biol. vnut. Vod* 2003(3): 28-33. (Russ., with Engl. s.). – (Inst. Water & Envir. Problems, Siber. Sect., Russ. Acad. Sci., Molodezhnaya 1, RUS-656032 Barnaul).

A brief assessment is provided of the invertebrate fauna of this tributary of the Ob R., Siberia. 226 spp. were evidenced during 1995-2000; Brachytron pratense is the only odon. sp. mentioned.

(15429) BLAŠKOVIČ, T., E. BULÁNKOVÁ & J. ŠIBL, 2003. First record of Cordulegaster heros ssp. heros Theischinger, 1979 (Cordulegastridae, Odonata) from Slovakia. *Biologia, Bratislava* 58(2): 293-294. – (First Author: Moravský Sv. Ján 427, SK-90871 Senica).

The exuviae and adults, collected between early June and early Sept. 2002 from 3 streams in the Morava R. Basin, are brought on record. The Cordulegaster material in the Slovak Natn. Mus. was revised, and the specimens pertaining to C. heros, from 3 localities in the Malé Karpaty Mts, are also listed here.

(15430) BUCZYNSKI, P., 2003. [Kronika] 22. Jahrestagung der Gesellschaft deutschsprachiger Odonatologen, Dessau, 14.-16. März 2003. *Wiad. ent.* 22(2): 124-125, (Pol., with Germ. title). – (Dept Zool., Univ. Lublin, Akademicka 19, PO-20-033 Lublin).

A detailed, topic-wise report on the proceedings of the Symposium. – For the abstracts of papers, see *OA* 15326.

(15431) BURMEISTER, E.-G. & L. BÖRZSÖNY, 2003. Polythore spaeteri spec. nov. from the Peruvian tropical rainforest (Panguana), with remarks on its ecology (Odonata, Zygoptera, Polythoridae). *Spixiana* 26(1): 43-48. (With Span. s.). – (First Author: Zool. Staatssammlung, Münchhausenstr. 21, D-81247 München).

The new sp. is described and illustrated. Holotype ♂: Peru, Panguana, Rio Llullapichis, 6-X-2000; deposited in ZSM, München. Allotype ♀ in copula with holotype. ♂ and ♀ wing coloration and penis structure are distinct from all other spp. A detailed habitat description is provided.

(15432) BUTTSTEDT, L., 2003. Wiederbesiedlung der mittleren Unstrut und unteren Helme in Thüringen durch stenöke Fliessgewässerarten. *Thüring. faun. Abh.* 9: 73-76. (With Engl. s.). – (Ziegeleistr. 26, D-06536 Rossla).
During 1960-1980, the Unstrut and Helme rivers (Thuringia, Germany) were exposed to heavy human impact, resulting in serious habitat deterioration and causing many spp. to become locally extinct or to move to the secondary streams. Since 1990 the water quality has essentially improved. Mid 1990s, Calopteryx splendens and Platycnemis pennipes became common again, and in 2003 Gomphus vulgatissimus (also exuviae) and Ophiogomphus cecilia were recorded.

(15433) DEVIN, S., C. PISCART, J.N. VEISEL & J.C. MORETEAU, 2003. Ecological traits of the amphipod invader Dikerogammarus villosus on a mesohabitat scale. *Arch. Hydrobiol.* 158(1): 43-56. – (Lab. B.F.E., Equipe Démoécol., Univ Metz, Campus Bridoux, Ave Général Delestraint, F-57070 Metz).
Since 1995, D. villosus, a Ponto-Caspian amphipod sp., has been invading most of W Europe's hydrosystems. Its geographic extension and quickly increasing population density have enabled the sp. to become a major component of macrobenthic assemblages in recipient ecosystems. The ecological characteristics of S. villosus on a mesohabitat scale were investigated at a station in the Moselle R. this amphipod is able to colonize a wide range of substratum types, thus posing a threat to all freshwater ecosystems. Rivers whose dominant substratum is cobbles and which have tree roots along the banks could harbour particularly high densities of D. villosus. A relationship exists between substratum particle size and the length of the individuals, and spatial segregation according to length was shown. This allows the sp. to limit intra-specific competition between generations, while facilitating reproduction. A strong association exists between D. villosus and other Ponto-Caspian spp., such as Dreissena polymorpha and Corophium curvispinum, in keeping with Invasional Meltdown Theory. The Coenagrionidae and Calopteryx splendens exhibited spatial niches that overlap significantly that of D. villosus. Due to the predatory behaviour of the newcomer, their populations may be severely impacted.

(15434) GIBERSON, D.J. & M. DOBRIN, 2003. Species composition, distribution, and seasonal patterns of dragonflies and damselflies of Prince Edward Island National Park. *Pks Can. tech. Rep. Ecosyst. Sci.* 37: iv+30 pp. ISSN 1200-3298:37; ISBN 0-662-34505-3. (With Fr. s.). – (First Author: Dept Biol., Univ. Prince Edward Island, 550 University Ave, Charlottetown, PE, C1A 4P3, CA).
An updated edn of the work(s) described in *OA* 13675 and 13796. With 38 spp., the fauna of the Park represents ca 2/3 of spp. so far reported from Prince Edward Island, Canada.

(15435) GRZYWOCZ, J., 2003. Contribution to the knowledge on the dragonfly fauna in Poland. *Acta ent. siles.* 11(1/2): 97-99. (Pol., with Engl. title). – (Author's address not stated).
An annotated list of 13 Upper Silesian spp.

(15436) HARP, G.L. & P.A. HARP, 2003. Dragonflies (Odonata) of the Ouachita National Forest. *J. Ark. Acad. Sci* 57: 68-75. – (Dept Biol. Sci., Arkansas St. Univ., State University, AR 72467, USA).
The Ouachita National Forest (ONF) was established in 1907 and encompasses 728.450 ha in Arkansas and Oklahoma, USA. The adult odon. species richness, seasonal and spatial distribution, and relative abundance were surveyed during 2002. 54 collections were made at 43 sites (May-Sept.), literature records and records from pertinent museums and individuals were searched. 83 spp. are reported here for the ONF, Nehalennia integricollis is newly reported for Arkansas. The species richness results from a diversity of aquatic habitats, particularly within the Caddo Ranger distr. Plastic spp. (e.g. Plathemis lydia) typically are widely distributed and have a long flight season. More specialised spp. (e.g. Ophiogomphus westfalli) often are quite restricted in both distribution and flight season.

(15437) HARPER, D.M. et al. [13 joint authors], 2003. Aquatic biodiversity and saline lakes: Lake Bogoria National Reserve, Kenya. *Hydrobiologia* 500: 259-276. – (Dept Biol., Univ. Leicester, Leicester, LE1 7RH, UK).
On p. 260: an appreciation of Prof. H.J. Dumont's life-long work on aquatic biodiversity and limnology.

(15438) JODICKE, R., 2003. Mid-winter occurrence of dragonflies in southern Tunisia (Insecta: Odonata). *Kaupia* 12: 119-128. (With Germ & Fr. s's). –

(Am Liebfrauenbusch 3, D-26655 Westerstede).
In Jan. and early March 2000, 14 spp. were recorded in freshwater habitats in the provinces of Tozeur, Kebili and Gabès. Compared with the situation in spring and autumn, adult Odon. were very rare. It is supposed that 10 spp. are on the wing throughout the yr. The presence of adult Ischnura fountaineae, I. saharensis, Anax parthenope, Crocothemis erythraea, Orthetrum chrysostigma and Trithemis annulata during mid-winter is reported here for the first time within the borders of the W Palaearctic. Sympetrum sinaiticum is the only univoltine sp., all the others are multivoltine. 8 spp. emerged during mid-winter, indicating an absence of diapause in the larval stage under the subtropical desert climate in S Tunisia.

(15439) KURY, D., 2003. Wirbellosen-Gemeinschaften der Gewässer Wildensteins. *Mitt. naturf. Ges. beider Basel* 7: 205-219. (With Engl. s.). – (Life Science AG, Greifengasse 7, CH-4058 Basel).
Cordulegaster bidentata and C. boltonii are reported from 3 streams in the region of the Wildenstein Castle (canton Basel-Landschaft, Switzerland), and 15 odon. spp. are listed from 3 ponds on the property. Where appropriate, the national Red List status of the respective taxa is emphasized. Environmental data and macroinvertebrate inventories of the aquatic bodies studied are provided and briefly discussed.

(15440) LAZAREVA, V.I., N.N. ZHGAREVA, V.A. GUSAKOV & V.K. IVANOV, 2003. Food web structure of invertebrate communities in three small lakes with different pH level of water: zoobenthos and littoral communities. *Biol. vnut. Vod* 2003(4): 73-84. (Russ., with Engl. s.). – (First Author: Inst. Inland Water Biol., Russ. Acad. Sci., RUS-152742 Borok).
3 small lakes in Darwin Reserve (Vologda region), Russia were investigated during 1990-1996. Lake Hotavets is eutrophic (pH 6.5-8.5) and did not yield any odon. In Lake Dubrovskoye (mesotrophic, pH 4.4-4.8) Cordulia aenea and Somatochlora metallica occurred, and from Lake Motykino (oligotrophic, pH 4.4-4.8) C. aenea, Libellula quadrimaculata and Leucorrhinia dubia are reported.

(15441) MUSLANOV, Yu.A., A.V. LEONT'EV & E.S. DYATLOVA, 2003. Morfologicheskie osobennosti kryl'ev strekoz iz udalennyh populyaciy na primere krasotki blestyashchey (Calopteryx splendens Harris). – [Morphological peculiarities in dragonfly wings from geographically widely separated populations, examplified on Calopteryx splendens (Harris)]. *Ecologicheskie i social'no-gigienicheskie aspekty sredy obitaniya cheloveka*, pp. 184-187, St. Pedag. Univ., Ryazan. (Russ.). – (Third Author: Francuzkij bul'var 37, kv. 3, UKR-65044 Odessa).
3 structural features in the wings of ♂♂ from the river basins of the Volga, the Don and the Danube (Russia and the Ukraine) are statistically analysed. The results do not provide an answer as to the causes of the pronounced differences between some populations, while some geographically widely separated populations are morphologically similar.

(15442) NELSON, B., 2003. [Wildlife reports] Dragonflies, Ireland 2002. *Brit. Wildlife* 14: 207-208. – (Dept Zool., Ulster Mus., Bot. Gardens, Belfast, BT9 5AB, UK).
A comprehensive overview of the 2002 dragonfly season in Ireland, with annotations on the first occurrence of the spp. in the spring (6-VI for Pyrrhosoma nymphula is one of the earliest dates ever, and so is 30-IV for Brachytron pratense), etc. There was some migrant activity, but it was not on the scale of that in 2000.

(15443) NELSON, B., C. RONAYNE & R. THOMPSON, 2003. Colonization and changing status of four Odonata species, Anax imperator, A. parthenope, Aeshna mixta and Sympetrum fonscolombii, in Ireland 2000-2002. *Ir. Nat. J.* 27(7): 266-272. – (First Author: Dept Zool., Ulster Mus., Bot. Gardens, Belfast, BT9 5AB, UK).
The first Irish occurrences of A. imperator, A. parthenope and A. mixta, and an influx of S. fonscolombii in 2000 are documented. Occurrences of all 4 spp. in 2001 and 2002 are described, incl. proof of A. imperator and A. mixta breeding. The records are discussed in the context of trends in NW Europe and presented as a circumstantial evidence for the impact of global warming on an element of the Irish fauna.

(15444) TANGEN, B.A., M.G. BUTLER & M.J. ELL, 2003. Weak correspondence between macroinvertebrate assemblages and land use in Prairie Pothole Region wetlands, USA. *Wetlands* 23(1): 104-115. – (First Author: US Geol. Surv., Northern Prairie Wildl. Res. Cent., 8711 37th St SW, James-

town, ND 58401, USA).
To evaluate the potential development of a macroinvertebrate Index of Biotic Integrity (IBI) for Prairie Pothole Region wetlands, the aquatic macroinvertebrate (incl. Odon.) and fish communities were sampled in 24 semipermanent wetlands in N. Dakota. Redundancy analysis was used to identify the influence of fish, and to look for relationships between wetland macroinvertebrate communities and land-use. 17 potential invertebrate metrics were tested by geographical analysis. A strong influence on macroinvertebrate community was identified due to the presence of fish, but no strong relationship between the varying degree of land-use in the wetland catchments and the invertebrate communities could be detected, therefore no effective IBI metrics indicative of land-use disturbance could be identified. Lack of correspondence between land-use and macroinvertebrates in this habitat is most likely due to a high degree of natural disturbance (e.g., presence of fish, temporal changes) and a low diversity community of resilient taxa in Prairie Pothole Region wetlands.

2004

(15445) ARAI, Y., 2004. *Tombo Nyumon.* – [*Dragonfly observation manual*]. Dobutsu-sha, Tokyo. 142 pp., 32 col. pls excl. ISBN 4-88622-328-1. Softcover (12.8×18,8 cm). Price: ¥ 1600.-- net. (Jap.). – (Publishers: Kita 4-27-4, Koenji, Suginami-ku, Tokyo, 166-0002, JA).
The book is directed at non-professionals; in its scope and presentation it is probably unique in the odonatol. literature. – It opens with 32 col. pls (over 160 phot.), presenting a good number of Jap. spp.; the morphological details important for identification are marked. – The text is organised into 13 sections, dealing with the following subjects: (1) Various types of aquatic habitats and their odon. fauna (pp. 7-16); – (2) Morphology and systematics (pp. 17-25); – (3) Photography (pp. 26-28); – (4) Collecting and specimen preparation (pp. 30-37); – (5) Larval breeding (pp. 38-51); – (6) Life history (pp. 52-59); – (7) Various aspects of dragonfly life (pp. 60-88); – (8) Subjects of particular observation interest (pp. 89-94); – (9) Dragonfly ponds (pp. 95-101); – (10) Miscellaneous ethno-odonatol. topics, DNA studies, global warming and northward range expansions, etc. (pp. 102-115); – (11) Hints for identification of adults (pp. 116-120); – (12) Hints for identification of larvae (pp. 121-132); – (13) Odonatol. books and societies (pp. 133-139). – This is an exhaustive and well-balanced handbook for the Japanese "dragonflyer", presenting many information details of professional interest as well. The Author, a graduate of the Waseda Univ. of Tokyo, is a noted odonatologist, with an outstanding field-research experience of serveral decades, which is apparent also throughout this book. – (A book review, by M. Tanikado, appeared in *Gekkan-Mushi* 404 [2004]: 49; in Jap.).

(15446) *ARGIA*. The news journal of the Dragonfly Society of the Americas (ISSN 1061-8503), Vol. 16, No. 3 (20 Nov. 2004). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA).
[Scientific articles:] *Johnson, J.*: Aeshna Blitz '04 not a bust (pp. 6-7; Oregon records); – *Michalski, J.*: Return to New Guinea (pp. 8-10); – *Orr, R.*: Notes on the 2004 impact of the 17-year periodical cicada on Potomac River dragonflies (pp. 11-12); – *Catling, P.M.* et al.: Neurocordulia michaeli Brunelle, new to Ontario (pp. 13-16); – *Abbott, J.C.*: A summer for the record books in Texas (pp. 16-17; records); – *Bocanegra, O.R.*: Phyllocycla breviphylla collected in the United States (p. 18); – *Catling, P.M. & B. Kostiuk*: Three additions to the Odonata of Saskatchewan, and some notable records (pp. 18-20); – Dragonflies recorded in 2004 from the Saskatchewan portion of the Cypress Hills Interprovincial Park (pp. 20-21); – Another addition to the Odonata of the Northwest Territories (p. 21); – *Biggs, K.*: A new California state record and a bit of California Odonata history (pp. 21-22; Ischnura ramburii, Pseudoleon superbus); – *Pfeiffer, B.*: The view from Vermont (pp. 22-24); – *Ellzey, K.D.*: Enallagma doubledayi population in Kisatchie National Forest, Natchitoches Parish, Louisiana (pp. 24-25); – *Mauffray, B.*: Epitheca semiaquea (Selys) added to the Louisiana list (p. 25); – *Johnson, J.*: A new damselfly for Utah (pp. 25-26; Argia binei); – *Prather, I. & B. Prather*: First Colorado record of Erpetogomphus compositus Hagen (p. 26); – *Fernández-Martinez, M.A.*: First record of Triacanthagyna septima for the Dominican Republic (p. 27); – *Paulson, D.*: New common names for some North American Odonata (pp. 29-30); – *Mauffray, B.*: Florida State Collection of Arthropods (FSCA) collection expansion (p. 31).

(15447) ARMATYS, P., 2004. State of knowledge of the entomofauna of the Gorczański National Park. *Wiad. ent.* 23 (Suppl. 2): 113-116. (Pol., with Engl. s.). – (Gorczański Natn. Park, Poreba Wielka 590, PO-34-735 Niedźwiedź).
33 odon. spp. were recorded from the Gorce National Park, the Carpathians, Poland, by A. Łabedzki (1995, *Parki nar. Rez. Przyr.* 14: 97-102).

(15448) [ASKEW, R.R.] DIJKSTRA, K.-D.B., 2004. [Book review] The dragonflies of Europe, revised 2nd edn, by R.R. Askew. *Ent. Ber.* 64(5): 167-168. (Dutch). – (Gortestraat 11, NL-2311 MS Leiden).
A comprehensive and rather critical book review of the work described in *OA* 15341.

(15449) *ATROPOS* (ISSN 1478-8128), No. 23 (Oct. 2004). – (c/o M. Tunmore, 26 Tinker Lane, Maltham, Holmfirth, W Yorks, HD9 4EX, UK).
Thompson, R. & B. Nelson: Ireland's odonates and the formation and success of the DragonflyIreland project (pp. 3-11); – *McGeeney, A.*: Identification of the Red Darters, pt 1 (pp. 27-32) [with these 2 papers go col. pls 1-7]; – *Mill, P., P. Taylor & A. Parr*: Vernacular names for British and European dragonflies (pp. 33-35); – *Tunmore, M.*: Dragonfly conservation from the BDS: The search for Sourthern Damselfly Coenagrion mercuriale (Charp.) in Cornwall (pp. 45-47); – *Eds*: News in brief (pp. 47-49; notes on Erythromma viridulum, Lestes barbarus, Anax parthenope, Libellula fulva, Crocothemis erythraea, Sympetrum flaveolum and S. fonscolombei in UK); – *Book reviews* (pp. 51-55; by *P. Taylor, P. Mill* and *A. Parr*); – *Dunkley, J.*: Libellula quadrimaculata f. praenubila (p. 56).

(15450) BANASZAK, J. et al. [10 joint authors], 2004. A review of inventory research on insects in the national parks of Poland. *Wiad. ent.* 23 (Suppl. 2): 5--56. (Pol., with Engl. s.). – (First Author: Inst. Ecol. & Envir. Cons., Acad. Bydgoska, Chodkiewicza 30, PO-85-064 Bydgosszcz).
A brief, order-wise review is presented and a comprehensive bibliography is appended. There are 23 national parks in Poland. The odon. fauna was fairly well investigated in 6 of these, some taxa were well investigated in 10, while little odonatol. research was carried out in 5, and none in 2 national parks. Polish national parks harbour 70 spp., representing 97% of the national odon. fauna.

(15451) BASS, D., 2004. Diurnal stream drift of benthic macroinvertebrates on the small oceanic island of Dominica, West Indies. *Caribb. J. Sci.* 40(2): 245-252. – (Biol. Dept., Univ. Central Oklahoma, Edmond, OK 73034, USA).
An investigation was conducted to determine whether the invertebrate drift occurred in streams of small oceanic islands. 2 nets were placed (14/15-V-2001) in midstream of the Check Hall R. on the Caribbean island of Dominica and checked every 3 h for a 24-h period. The results indicate that only some invertebrates are undergoing drift. The odon. were reperesented by Argia concinna that occurred in the samples at 21.00 h, i.e. in those collected during the hours of darkness only.

(15452) BEKETOV, M.A., 2004. Comparative sensitivity to the insecticides deltamethrin and esfenvalerate of some aquatic insect larvae (Ephemeroptera and Odonata) and Daphnia magna. *Russ. J. Ecol.* 35(3): 200-204. [Russian version published in *Ekologiya* 35(3): 229-234; 2004]. – (P.O. Box 156, RUS-630048 Novosibirsk).
The sensitivity to the 2 pyrethroid insecticides (aqueous solution) and LC_{50} was tested in acute (96-h) toxicological tests on Ephem. larvae (Cloeon dipterum, Caenis miliaria), Odon. larvae (Lestes sponsa, Cordulia aenea), and on juvenile cladoceran D. magna (lab. culture). The sensitivity to deltamethrin increases in order C. aenea < D. magna < L. sponsa < C. miliaria < C. dipterum, and that to esfenvalerate in the series C. aenea < D. magna < L. sponsa = C. militaria = C. dipterum.

(15453) BOESEMAN, M. & W. DE LIGNY, 2004. Martinus Houttuyn (1720-1798) and his contributions to the natural sciences, with emphasis on zoology. *Zool. Verh. Leiden* 349: 1-222. [also as book: ISBN 90-73239-93-1]. – (First Author: Prins Berhardlaan 54, NL-2341 KL Oestgeest).
His life and the appreciation of the work of M. Houttuyn (MH) are dealt with monographically, his 6 principal zoological publications are reviewed, and his complete bibliography is presented. An attempt is also made to entangle the vicissitudes of his natural history cabinet, and a facsimile reprint of the catalogue of the 1787 auction of his zoological specimens is added; for its odon. inventory, see *OA* 15477. – MH's principal odonatol. work is encompassed in Vol. 12 (1768) of his 37-vol. "*Natuurlyke historie of uitvoerige beschryving der dieren, planten*

en mineraalen, volgens het Samenstel van den Heer Linnaeus. Met naauwkeurige Afbeeldingen", Amsterdam, 1761-1785, where the Odon. are dealt with in Chapter XLV [Libellula], pp. 5-34, pl. 93. The specimens are recorded as examined by MH on p. 17 (L. quadrimaculata), p. 18 (flaveola), [presented by van Dieden in Utrecht], p. 22 (depressa), p. 26 (grandis), all in his own cabinet. On p. 21, MH states to have consulted "A neat collection of drawings [...] which our cousin, the late Mr Oudaan, in Rotterdam has left", including 3 figs of the discussed L. depressa. According to the present Authors, this may imply that, in addition to Oudaan's picture collection, MH also obtained specimens at the 18 Nov. 1766 auction in Rotterdam (cf. H. Engel et al., 1986, *Nieuwe ned. Bijdr. Geschied. Geneesk. Natuurwet.* 19, p. 203). – For his non-European material, see *OA* 15477.

(15454) BORISOV, S.N. & A.Yu. HARITONOV, 2004. Dragonflies (Odonata) in high mountains of the East Pamirs. *Euroasian ent. J.* 3(2): 97-100. (Russ., with Engl. s.). – (Inst. Anim. Syst. & Ecol., Russ. Acad. Sci., Ul. Frunse 11, RUS-630091 Novosibirsk).
6 spp. occur at the elevation 3360-5000 m a.s.l., viz. Enallagma cyathigerum (recorded at 3360-3550 m), Ischnura pumilio (3360 m), Orthetrum brunneum (3360-3950 m), Pantala flavescens (3360-5000 m), Sympetrum fonscolombii (3700-4100 m) and S. haritonovi (3360-3550 m). I. pumilio, O. brunneum and S. haritonovi are restricted to bogs fed by thermal springs, where they breed. P. flavescens appears as a seasonal migrant.

(15455) BORKOWSKI, A., 2004. Entomologische Beobachtungen (Lepidoptera, Odonata) im NSG "Torfowiesko pod Zieleńcem" (ehemals "Seefelder bei Reinerz") in den Sudeten. *Przyr. Sudetow zach.* 6: 119-129. (Pol., with Germ. s.). – (Author's address not stated).
Based on the recent observations (1982-2002), the odon. assemblage of the Reserve remained as reported by S. Mielewczyk (1969, *Pol. Pismo ent.* 39: 17-81). Comments are presented on Aeshna subarctica elisabethae, Somatochlora alpestris, S. arctica and Leucorrhinia dubia. The occurrence of L. albifrons, reported by W.G. Schneider (1885, *Z. Ent., Breslau* [N.F.] 10: 17-32), could not be confirmed.

(15456) BOYERO, L. & J. BOSCH, 2004. The effect of riffle-scale environmental variability on macroinvertebrate assemblages in a tropical stream. *Hydrobiologia* 524: 125-132. – (First Author: Sch. Trop. Biol., James Cook Univ., Townsville, QLD 4811, AU).
Different environmental factors were quantified in riffle habitats in a segment of the Rio Frijoles, within the Soberania Natn. park, Panamá. Under 84 stones, 860 individuals of 49 invertebrate "taxonomic groups" were found, incl. 1 "Megapodagrionidae" and 4 "Zygoptera" specimens. No other reference to Odon. is made.

(15457) BUCZYNSKI, P., 2004. The introductory estimation of the present state and the threat to the invertebrates of the Ełk district, 4. Dragonflies (Odonata). *In*: M. Kistowski & J. Musdorf, [Eds], *Zasoby i zagrożenia środowiska przyrodniczego w powiecie ełckim i mieście Niemenczyn*; Raport 2004, pp. 70--77 (Pol.), 370-376 (Engl.), Starostwo Powistowe, Ełk. (Bilingual: Pol./Engl.). – (Dept Zool., UMCS, Akademicka 19, PO-20-033 Lublin).
Historically, 41 spp. were recorded from the Ełk region, Poland (cf. O. Le Roi, 1911, *Schr. phys.-ökon. Ges. Königsb.* 25: 13-30); the 2003 survey yielded 22 spp., of which Sympecma paedisca and Leucorrhinia caudalis are new for the area. The fauna is assessed from the point of view the Red List status of some of its members.

(15458) BUCZYNSKI, P. & K. LEWANDOWSKI, 2004. Long studied "terra incognita": the state of knowledge of dragonflies (Odonata) of the lakelands in north-eastern Poland. *Wiad. ent.* 23(2): 107-111. (Pol., with Engl. s.). – (First Author: Dept Zool., UMCS, Akademicka 19, PO-20-033 Lublin).
Since 1839, 42 publications were published on the odon. fauna of the lake district in NE Poland, and 61 spp. were reported. The history of the research is outlined, an annotated checklist is presented, and an exhaustive bibliography is provided. The composition of the regional fauna is briefly analysed.

(15459) BUCZYNSKI, P. & E. SERAFIN, 2004. Is the incorporation of the "Krowie Bagno" Marsh into the Poleski National Park well-founded: on the basis of Odonata, aquatic Coleoptera and Trichoptera? *Wiad. ent.* 23(Suppl. 2): 125-126. (Pol., with Engl. s.). – (First Author: Dept Zool., UMCS, Akademicka 19, PO-20-033 Lublin).
In 2003, 36 odon. spp. were recorded from the

Marsh, incl. 7 "protected" and/or red-listed taxa. Such a rich fauna can solely be maintained by conservation of its aquatic habitats.

(15460) *BULLETIN OF AMERICAN ODONATOLOGY* (ISSN 1061-3781), Vol. 8, No. 2/3 (1 Sept. 2004). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA).
Donnelly, T.W.: Distribution of North American Odonata, 3: Calopterygidae, Lestidae, Coenagrionidae, Protoneuridae, Platystictidae with data sources and bibliography, pts 1-3 (pp. 33-99; Dot-map presentations of the distributions for spp. of 5 families in N America, with additional comments for some spp.; the bibliography is not exhausted, but it includes 1226 titles).

(15461) CAMPOS, R.E., L.A. FERNÁNDEZ & V.E. SY, 2004. Study on the insects associated with the floodwater mosquito Ochlerotatus albifasciatus (Diptera: Culicidae) and their possible predators in Buenos Aires province, Argentina. *Hydrobiologia* 524: 91-102. – (First Author: Inst. Limnol. "Dr R.A. Ringuelet", Univ. Nac. La Plata, CC 712, AR-1900 La Plata).
Insects associated with the mosquito were studied from intermittent puddles in temperate Argentina in an attempt to detect the main predators. Odon. larvae were scarce in numbers and spp. (taxa not stated), and only appeared in the puddles in late spring; index of species abundance (ISA) 0.21.

(15462) CERRETTI, F., F. MASON & A. TAGLIAPIETRA, 2004. Recerche entomologiche nelle riserve naturali dello stato. *Quad. Conser. Natura* 18: 45-54. (Bilingual: Ital./Engl.). – (First Author: Cent. Naz. Stud. Cons. Biodiv. Forestale, Bosco della Fontana, Strada Mantova 29, I-46045 Marmirolo, MN).
A report on the preliminary results of the research by the (Italian) National Centre for the Study and Conservation of Biodiversity in 5 of the State Nature Reserves. The odon. were surveyed solely in Bosco della Fontana, where 28 spp. were recorded, but these are not listed here.

(15463) COWELL, B.C., A.H. REMLEY & D.M. LYNCH, 2004. Seasonal changes in the distribution and abundance of benthic invertebrates in six headwater streams in central Florida. *Hydrobiologia* 522: 99-155. – (Dept Biol., Univ. Sth Florida, Tampa, FL 33620, USA).
Seasonal variations in invertebrate assemblages at 2 sites (upstream and downstream) on 6 headwater streams of the Alafia R. were compared by sampling at quarterly intervals with core and dip net samplers. 9 odon. taxa (mostly identified to species level) are listed along with the quantitative data per sample site, but no specific references to the order are made in the text.

(15464) CZACHOROWSKI, S., 2004. The introductory estimation of the present state and the threat to the invertebrates of the Ełk district, 1. Introduction: general characteristic of the invertebrates and their sites. *In*: M. Kistowski & J. Musdorf, [Eds], *Zasoby i zagrożenia środowiska przyrodniczego w powiecie ełskim i mieście Niemenczyn*; Raport 2004, pp. 57-62 (Pol.), 357-361 (Engl.), Starostwo Powiatowe, Ełk. (Bilingual: Pol./Engl.). – (Dept Ecol. & Nat. Protect., Univ. Warmia & Mazury, Żolnierska 14, PO-10-561 Olsztyn).
Lestes dryas, Sympecma paedisca, Coenagrion armatum, C. hastulatum, C. lunulatum, Nehalennia speciosa, Onychogomphus forcipatus, Aeshna juncea, Anax imperator, Brachytron pratense, Epitheca bimaculata, Somatochlora flavomaculata, Leucorrhinia albifrons, L. caudalis, L. dubia, L. pectoralis and L. rubicunda are listed as being of particular interest in the Ełk district, Poland.

(15465) DE BLOCK, M. & R. STOKS, 2004. Life-history variation in relation to time constraints in a damselfly. *Oecologia* 140: 68-75. – (First Author: Dept Biol. Univ. Antwerp, Groenenborgerlaan 171, B-2020 Antwerp).
Life-history responses to time constraints manipulated by photoperiod and associated with hatching date were studied in Lestes viridis larvae of 2 populations with a different hydroperiod. In a common garden experiment, early- and late-hatched larvae from both populations were reared at 2 photoperiods mimicking the start and the end of the egg-hatching season. In a reciprocal transplant experiment, early- and late-hatched larvae from both populations were reared in both ponds. In all these experiments, larvae were reared from egg hatching until adult emergence. Within both populations, larvae reared at the photoperiod indicating a late time point in the growing season, reduced development time to compensate for their perceived shorter development period. Growth rate, however, did not respond to photoperiod, re-

sulting in a lower mass at emergence. As expected, both in the laboratory and in the field, larvae from eggs that hatched later in the season generally had a shorter development time and a faster growth rate, resulting in a higher mass at emergence compared to early-hatched larvae. This may explain the intriguing seasonal increase in mass at emergence in this sp., and affect the predictions of optimality models. None of these life-history responses differed between the 2 populations, despite clear differences in time constraints linked to hydroperiod, suggesting the robustness of the observed patterns. Given the ubiquity of asynchronous hatching in nature, and the adaptive value of the observed differences between early- and late-hatched larvae, it is expected the effects of hatching date on life-history plasticity are widespread.

(15466) DE MARCO, P., Jr & D.C. RESENDE, 2004. Cues for territory choice in two tropical dragonflies. *Neotrop. Ent.* 33(4): 397-401. (With Port. s.). – (Lab. Ecol. Quant., Depto Biol. Geral, Univ. Fed. Viçosa, BR-36571-000 Viçosa, MG).
The odon. mating systems are generally based on the ♂ ability to control the ♀ access to oviposition resources. Here, the criteria of ♂ territory selection, controlling the availability of perches and aquatic vegetation, in Perithemis mooma and Orthemis discolor are described and discussed. P. mooma ♂♂ defend vegetated territories, thus their choice is probably related to oviposition resource. O. discolor ♂♂ prefer sites with tall perches, possibly so because their choice is related to a mate-seeking resource. Interactions with another libellulid, the more active and aggressive Planiplax phoenicura cause O. discolor ♂♂ to direct the preference to the vegetated areas, indicating the influence of community composition and interactions on the territorial site selection.

(15467) DIJKSTRA, K.-D.B. & V.J. KALKMAN, 2004. An odonatological excursion to the southern Netherlands, half a century later. *Ent. Ber.* 64(5): 157-161. (Dutch, with Engl. s.). – (First Author: Gortestraat 11, NL-2311 MS Leiden).
During 26 Aug.-1 Sept. 1951, the late Dr M.A. Lieftinck guided several, mostly foreign odonatologists to some "classical" odon. sites in the provinces of Noord Brabant and Zuid Limburg, and published on the results in *Ent. Ber.* 320 (1952): 17-22. The present authors repeated the field trip exactly 50 yr later, and are reporting here on the changes in the fauna that have taken place due to the changed landscape, environment and climate.

(15468) *DRAGONFLY NEWS*. The newsletter of the British Dragonfly Society (ISSN none), No. 45 (Apr. 2004), No. 46 (Oct. 2004). – (c/o D. Hepper, 31 High Park Rd, Farnham, Surrey, GU9 7JJ, UK).
[Some selected titles:] [No. 45]: *Beynon, T.*: From the President's pool (pp. 2-3, with Author's portrait); – *Daguet, C.*: From the conservation officer (pp. 4-5); – *Averill, M.*: Diary of events (pp. 6-13); – *Field Meetings review 2003* (pp. 14-15); – various authors, with some records); – *Perrin, V.*: Dragonfly species news 2003 (pp. 16-17); – *Parr, A.*: First and last dates 2003 (pp. 18-19); – Migrant update for 2003 (p. 20); – *Taylor, P.*: Report of the Dragonfly Conservation Group (pp. 21-22). – [No. 46]: *Mill, P.*: Message from the President (pp. 1-2); – *Daguet, C.*: From the conservation officer (pp. 2-4); – *Field Meeting review 2004* (pp. 6-13; various authors, with some records); – *Parr, A.*: First and last dates 2003/2004 (pp. 19-20); – Migrant update for mid-2004 (p. 21); – *Taylor, P.*: Report of the Dragonfly Conservation Group (pp. 21-23); – *Tyrrell, M.*: Dragonfly exuviae as accommodation for other insect groups (p. 27).

(15469) DUMONT, H.J., 2004. A note on dragonflies collected at light in a forest in the Ivory Coast (West Africa). *Bull. Soc. roy. belg. Ent.* 140: 66-67. – (Dept Anim. Ecol., Univ. Gent, Ledeganckstraat 35, B-9000 Gent).
9 spp., collected 23 Jan.-12 Feb. 2000 at 13 stations across the Forêt Classée de Bossematié, SE Ivory Coast, are listed and discussed. Agriocnemis zerafica had not been found at light before. A fair fraction of specimens (all Orthetrum and ca half of the Tholymis) was teneral, suggesting maturation away from water when they were captured by light traps. In the collection, ♀♀ prevailed, which reflects their cryptic way of life, frequently away from water.

(15470) EASON, P.K. & P.V. SWITZER, 2004. The costs of neighbors for a territorial dragonfly, Perithemis tenera. *Ethology* 110(1): 37-47. – (Second Author: Dept Biol. Sci., Eastern Illinois Univ., Charleston, IL 61920-3099, USA).
Past researchers have often considered neighbours to be beneficial to territorial residents, particularly compared with non-neighbour conspecific competi-

tors. However, neighbours have the potential to be costly to residents in terms of both defensive costs and lost resources. Here, the relative costs of defending a mating territory against neighbours and non-neighbours for P. tenera are assessed, and the possibility is examined that the presence of contiguous neighbours might reduce the detection of potential mates. When neighbours were present, residents experienced a greater total number of intrusions by ♂♂; this increase in intrusions was due to higher numbers of intrusions by neighbours, as the number of intrusions by non-neighbour ♂♂ did not differ. Residents with immediately adjacent neighbours also made more sorties toward neighbours than did residents whose nearest neighbours' territories were not immediately adjacent. Interestingly, although the number of visits by ♀♀ did not vary with the presence of neighbours, residents with neighbours made fewer sorties toward ♀♀ than did residents without neighbours. Results suggest that defensive costs increased when neighbours were present, that residents with neighbours may have missed opportunities to acquire mates, and thus that living with neighbours can be costly in this sp.

(15471) EDA, S., 2004. Annual review on entomology for 2003 in particular insect groups: dragonflies. *Gekkan-Mushi* 399: 40-49. (Jap., with Engl. title). – (3-4-25, Sawamura, Matsumoto, Nagano, 390-0877, JA).
The 2003 odonatol. publications published in Japan are analysed: 12 in the field of taxonomy & morphology, 62 on distribution, 32 on biology & behaviour, and 19 titles on conservation, mostly on man-made dragonfly ponds. 5 books are also presented, and a report is provided on the 2003 Annual Meeting of the Japanese Society for Odonatology (57 participants, with 53 oral and poster presentations, a panel discussion and 3 mini-symposia).

(15472) *ERJAVECIA*. Bulletin of the Slovene Odonatological Society (ISSN 1408-8185), No. 18 (31 Oct. 2004). (Slovene). – (c/o M. Bedjanič, Kolodvorska 21b, SI-2310 Slovenska Bistrica).
In the feature article, by *B. Kiauta* (pp. 1-8), the odonatol. work is outlined of the (mostly incidental) collaborators of the Museo entomologico "Pietro Rossi", Duino Italy. Their brief biographies are included. A. *Pivko-Knežević* (pp. 8-9) and *A. Šalamun* (pp. 9-11) are reporting on the field workshops Moslinja and Dekani, resp. A paper on the occurrence of Lestes barbarus, Coenagrion scitulum and Sympetrum flaveolum in Styria was contributed by *M. Bedjanič* (pp. 11-14). *A. Pirnat* (pp. 14-17) dwells on the recent (2004) regulation on protection of free-living animals and dragonflies in Slovenia. Among the other items, there are 2 classical Slovenian literary text on dragonflies, various announcements, and recent additions to the national odonatol. bibliography (by *M. Bedjanič*, pp. 27-28, Nos 548-564).

(15473) FENOGLIO, S., T. BO & M. CUCCO, 2004. Small-scale macroinvertebrate distribution in a riffle of a neotropical rainforest stream (Rio Bartola, Nicaragua). *Caribb. J. Sci.* 40(2): 253-257. – (First Author: Dept Sci. & Adv. Tech., Eastern Piedmont Univ., via Cavour 84, I-15100 Alessandria).
The relationship between the taxonomical composition and functional organization of stream benthic communities and some environmental variables are analysed. The odon. were represented by Palaemnema sp., Argia sp., Macrothemis sp. and Miathyria sp.

(15474) GONÇALVES, J.F., Jr, A.M. SANTOS & F.A. ESTEVES, 2004. The influence of the chemical composition of Typha domingensis and Nymphaea ampla detritus on invertebrate colonization during decomposition in a Brazilian coastal lagoon. *Hydrobiologia* 527: 123-137. – (First Author: Benthic Ecol. Lab., Dept Gen. Biol., Fed. Univ. Minas Gerais, ICB 486, BR-30161-970 Belo Horizonte, MG).
The aim of this study were to investigate the structure and composition of the invertebrate community during the detritus decomposition (colonization features) of the 2 most abundant aquatic macrophytes in Jurubatiba Lagoon, to verify whether the chemical composition of the substratum has any influence on invertebrate colonization, and which are the functional groups possibly affected. The T. domingensis substratum had higher percentages of cell wall fraction and organic matter, while nitrogen and phosphorus contents were higher in N. ampla. These differences in the substrata chemical composition influenced the decomposition rate; the N. ampla detritus decomposed ca 26 times faster than that of T. domingensis. The odon. were among the groups that colonized both substrata. The results showed that the slow breakdown rate of T. domingensis detritus provided a higher probability for colonization

(5 odon. fam. as to 3 in N. ampla) and that the main driving force structuring the invertebrate community was degradative ecological succession.

(15475) GUTOWSKI, J.M. & B. JAROSZEWICZ, 2004. Białowieża Primeval Forest as a refuge of the European entomofauna. *Wiad. ent.* 23 (Suppl. 2): 67-87. (Pol., with Engl. s.). – (First Author: Zakład Lasów Naturalnych IBL, PO-17-230 Białowieża).
The Białowieża Primeval Forest (Puszcza Białowieska) is situated in the Poland-Belarus border area and covers ca 1500 km². It is considered a model of the European natural forest. So far 50 odon. spp. were recorded there, representing 69% of the Polish fauna.

(15476) HALL, D.L., M.R. WILLIG, D.L. MOORHEAD, R.W. SITES, E.B. FISH & T.R. MOLLHAGEN, 2004. Aquatic macroinvertebrate diversity of playa wetlands: the role of landscape and island biogeographic characteristics. *Wetlands* 24(1): 77--91. – (First Author: Dept Water Resour., St Johns River Water Mngmt Distr., Palatka, FL 32178, USA).
The study was conducted in the 4-county area adjacent to and including Lubbock Co., Texas, USA. In the Appendix, 6 odon. taxa are listed (Enallagma civile, Lestes disjunctus, Anax junius, Pantala, Sympetrum, Tramea), but no reference to the order is made in the text.

(15477) [HOUTTUYN, M], 1787 [facsimile reprint 2004]. *Catalogus van eene uitmuntende verzameling van allerley soort van dieren en dierlyke zaaken tot opheldering van natuurlyke historie in meer dan dertig jaaren vergaderd [...] door den heer Martinus Houttuyn [...]*. J. van der Burgh, Amsterdam. 178 pp. *Zool. Verh. Leiden* 349: 127-219. (Dutch).
The 1787 auction catalogue of M. Houttuyn's (1720--1798) cabinet. On pp. 103-104, the odon. items / item groups are listed and briefly described. These include "*Libellula laurentia* Drur." from Surinam, "*Virgo*" & "*Puella*" from the Netherlands, "*Capensis*" specimens from the Cape and Surinam, "*Reversa*" from China, "*Arria* Drur." from China and 2 Netherlands Zygoptera, "*Caja* Drur." from S America, 2 "*Servilia* Drury" from China, and a "*Libellularum idigenarum diversarum transmutatio*", i.e. specimens in various stages of metamorphosis of Zygopt. & Anisopt. from the Netherlands. – See also *OA* 15453.

(15478) HOVMOLLER, R. & F. JOHANSSON, 2004. A phylogenetic perspective on larval spine morphology in Leucorrhinia (Odonata: Libellulidae) based on ITS1, 5.8S, and ITS2 rDNA sequences. *Mol. Phylogen. Evol.* 29(3): 653-662. – (First Author: Dept Ent., Swed. Mus. Nat. Hist. & Dept Zool., Stockholm Univ., P.O. Box 500 07, SE-10405 Stockholm.
The morphological characters, as outlined by A. Westman et al. (2000, *Odonatologica* 29: 129-136), are combined with sequence data from the ITS1, 5.8S rDNA, and ITS2 regions of the nuclear ribosomal repeat. Cloning was used to investigate the intra-individual variation and such variation was found in all investigated spp. Parsimony jackknifing was used to identify supported groups. The effect of sequence alignment and gap coding was explored by a modified sensitivity analysis. Loss of spines in Leucorrhinia larvae has occurred twice: once in Europe and once in N America. The role of spines as a defence against predation is discussed in a phylogenetic context.

(15479) *INTERNATIONAL JOURNAL OF ODONATOLOGY* (ISSN 1388-7890), Vol. 7, No. 3 (1 Oct. 2004).
Boudot, J.-P., D. Grand, B. Grebe, N. Hacet & M. Marinov: Description of the female of Somatochlora boris with distributional notes on the species (Odonata: Corduliidae) (pp. 431-438); – *De Marmels, J.*: Heteragrion makeritare sp. nov., with descriptions of hitherto unknown females and larvae of other species from Venezuela (Odonata: Megapodagrionidae, Lestidae) (pp. 439-458); – *Dijkstra, K.-D.B. & J.J. Kisakye*: Idomacromia jillianae sp. nov. from Uganda (Odonata: Corduliidae) (pp. 459-466); – *Garrison, R.W. & N. von Ellenrieder*: Orthemis sibylla, a junior synonym of O. ambirufa (Odonata: Libellulidae) (pp. 467-470); – *Miller, M.N. & O.M. Fincke*: Mistakes in sexual recognition among sympatric Zygoptera vary with the time of day and color morphism (Odonata: Coenagrionidae) (pp. 471--491); – *Orr, A.G.*: Territorial behaviour associated with feeding in both sexes of the tropical zygopteran, Libellago hyalina (Odonata: Chlorocyphidae) (pp. 493-504); – *Paulson, D.R.*: Why do some zygopterans (Odonata) perch with open wings? (pp. 505-515); – *Sawabe, K., T. Uéda, K. Higashi & S.-M. Lee*: Genetic identity of Japanese Sympetrum frequens and Korean S. depressiusculum inferred from mitochondrial 16S rRNA sequences (Odonata:

Libellulidae) (pp. 517-527); – *Worthen, W.B. & E.R. Patrick*: Competitive interactions affect perch-height preferences of three Odonata taxa (Coenagrionidae, Libellulidae) (pp. 529-541).

(15480) *JOURNAL OF THE BRITISH DRAGONFLY SOCIETY* (ISSN none), Vol. 20, No. 2 (Oct. 2004). – (c/o Dr W.H. Wain, Haywain, Hollywater Rd, bordon, Hants, GU35 0AD, UK).
Cham, S.: Oviposition behaviour of the two British species of Red-eyed Damselflies Erythromma najas (Hansemann) and E. viridulum (Charpentier) (pp. 37-41); – *Parr, A.J.*: Migrant and dispersive dragonflies in Britain during 2003 (pp. 42-50); – *Tyrrell, M. & S. Brayshaw*: Population expansion of Brachytron pratense (Müller) and other breeding dragonflies of the Nene Valley in Northamptonshire (pp. 51-60); – *Ward, L. & P.J. Mill*: Distribution of Calopteryx splendens (Harris) in northern England: an example of range expansion? (pp. 61-69); – *Gibson, V.*: Wing clapping in Ischnura elegans (Vander Linden) (pp. 70-72); – *Mill, P.J., P. Taylor & A.J. Parr*: Vernacular names for the dragonflies of northwestern Europe (pp. 73-76); – *Beynon, T.G. & D.P. Goddard*: Notes on the oviposition and flight attitude of Somatochlora metallica (Vander Linden) in Scotland (pp. 77-78); – *Tyrrell, M.*: Group oviposition behaviour in Aeshna grandis (L.) (p. 79); – *Book reviews* (pp. 80-84; by *N.W. Moore* and *T. Beynon*).

(15481) KOCOREK, A. & J. CZAJA, 2004. Entomological studies in the nature reserves of the Opole Silesia. *Wiad. ent.* 23(Suppl. 2): 150-151. (Pol., with Engl. s.). – (Dept Invert. Zool., Univ. Opolski, Oleska 22, PO-45-720 Opole).
There are 34 nature reserves in the Opole Silesia, Poland. Entomol. surveys were carried out in 6 of these; the odon. are among the groups covered, but no odonatol. work is listed in the References.

(15482) LAJEUNESSE, M.J., M.R. FORBES & B.P. SMITH, 2004. Species- and sex biases in ectoparasitism of dragonflies by mites. *Oikos* 106(3): 501-508. – (Second Author: Dept Biol., Carleton Univ., 1125 Colonel By Dr., Ottawa, ON, K1S 5B6, CA).
An important problem in understanding the evolution of parasite host range is determining the extent to which parasite fitness varies among host spp. and the factors affecting the fitness variation. Here, a detailed investigation on the patterns of host use and successful parasitism of Leucorrhinia frigida and Nannothemis bella by the ectoparasitic water mite, Limnochares americana, is presented. In field surveys, there were found both species biases and sex biases in parasitism by mites, which appear explained by differences in exposure. Differential habitat use by dragonflies helped explain biases in parasitism in both host spp., but was not useful in explaining species biases in parasitism. Species biases in parasitism may be explained by more subtle variation in habitat use not explored in this study, or perhaps by differences in timing of emergence, as it was found for the 2 odon. spp. Despite species differences in parasitism in nature, it was found that mites attached equally successful to both spp. during experimental infestations. However, mites failed to engorge more often on the sp. less often used as a host in nature. This host sp. also was more likely to have dead mites in natural infestations as compared to the other host sp., which was more often and more heavily parasitized. These results are consistent with previous research suggesting parasites are less successful on less often used hosts. Such research has implications for understanding determinants of host range for animal parasites.

(15483) *LIBELLENNACHRICHTEN*. Mitteilungsblatt der Gesellschaft deutschsprachiger Odonatologen (GdO) (ISSN 1437-5621), No. 12 (15 Oct. 2004). (c/o Mrs G. Peitzner, Hamfelderedder 7A, D-21039 Börnsen).
16 pp., mostly announcements, notes on dragonflies in literature and arts, etc. Included are a report of the 2004 GdO Plenary Meeting, the 2003 balance account, a Platycnemis pennipes cartoon by *H. Wildermuth*, and an exhaustive book review of the work described in *OA* 15273.

(15484) *LIBELLULA*. Zeitschrift der Gesellschaft deutschsprachiger Odonatologen (GdO). (ISSN 0723-6514), Vol. 23, No. 1/2 (Oct. 2004). (With Engl. s.). – (c/o Mrs G. Peitzner, Hamfelderedder 7A, D-21039 Börnsen).
Sternberg, K. & M. Sternberg: Veränderungen der Artzusammensetzung und erhöhte Abwanderrate bei Libellen durch die Mahd der Uferwiesen zweier Fliessgewässer (Odonata) (pp. 1-43); – *Müller, O.*: Steinschüttungen von Buhnen als Larval-Lebensraum für Ophiogomphus cecilia (Odonata: Gomphidae) (pp. 45-51); – *Holuša, O. & P. Jeziorski*: Bibliographie der odonatologischen Literatur der Tschechischen Republik 1849-2000 (Odonata) (pp.

53-76); – *Brockhaus, T.*: Interspezifische Konkurrenz zwischen Sympetrum fonscolombii und Orthetrum cancellatum in Mitteleuropa? (Odonata: Libellulidae) (pp. 77-86); – *Erratum* (pp. 87-88).

(15485) MACHADO, A.B.M., 2004. Studies on neotropical Protoneuridae. 15. Amazoneura gen. nov. with description of A. juruaensis sp. nov. (Odonata, Zygoptera). *Revta brasil. Zool.* 21(2): 333-336. (With Port. s.). – (Depto Zool., Inst. Ciênc. Biol., UFMG, Caixa Postal 486, BR-31270-901 Belo Horizonte, MG).
The new gen. is erected to contain A. ephippigera (Sel.), A. westfalli (Machado), and the new sp. The new gen. is close to Forcepsioneura, but differs from it mainly by the poorly-developed postero-lateral tubercles of the medium prothoracic lobe, by the dark colour of the metepimeron and of the rear of the head. A. juruaensis sp. n. (holotype ♂: Acre, Brazil, VI-1996) differs from the other 2 congeners mainly by the structure of the superior anal appendages.

(15486) *MARTINIA*. Revue scientifique de la Société française d'odonatologie (ISSN 0297-0902), Vol. 20, No. 1 (March 2004). (Mostly with Engl. s's). – (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois-d'Arcy).
In memoriam Lucien Kerautret (pp. 3-6); – *Jourde, P.*: Denistés remarquables d'odonates en val de Seugne (dépt de Charente-Maritime) (pp. 7-12); – *Meurgey, F.*: Première observation d'Anax junius (Drury, 1773) en France (pp. 13-15); – *Baierl, E. & M. Lohr*: Nouvelles observations de Trithemis annulata (Palisot de Bauvois, 1805) dans le département de l'Hérault (p. 15); – *Meurgey, F. & M. Levasseur*: Note sur quelques odonates de République Dominicaine (Grandes Antilles) (p. 16); – *Dommanget, J.-L.*: Reconnaissance d'Anax junius (Drury, 1773) et note sur sa récente découverte en France (pp. 17-20, 52); – *De Knijf, G.*: Somatochlora arctica (Zetterstedt, 1840) espèce nouvelle pour la Picardie (pp. 21-23); – *Dommanget, J.-L.*: Répercussions d'un curage de la guesle sur les populations de Coenagrion mercuriale (Charpentier, 1825) en forêt de Rambouillet (p. 24); – *Leroy, T. & A. Giraud*: Platycnemis latipes Rambur, 1842 et Gomphus graslinii Rambur, 1842: deux nouvelles espèces pour la région Auvergne (pp. 25-28); – *Meurgey, F.*: Nouvelle localité marocaine pour Sympetrum meridionale (Sélys, 1841) (p. 28); – *Bernier, C. & G. Guilloux*: Évaluation de peuplement odonatologique d'un canal d'irrigation dans le nord des Bouches-du-Rhône (pp. 29-42); – *Grand, D.*: Calopteryx haemorrhoidalis occasi Capra, 1945, le grand retour lyonnais (pp. 43-45); – *Bacquet, P.*: Observations d'Hemianax ephippiger (Burmeister, 1839) dans la région de Montpellier (dépt de l'Hérault) (p. 45); – *Boudot, J.-P.*: Analyse d'ouvrage (pp. 46-47); – *d'Aguilar, J.*: Les descriptions originales des odonates d'Europe, 10. Zetterstedt Johan Wilhelm (1785-1874) (pp. 48-51).

(15487) MATSUKI, K., 2004. [Libellula quadrimaculata asahinai range expansion in Kyushu district]. *Saga no Konchu* 39: 721-732. (Jap.). – (1575-14 Hazama 3-chome, Funabasi, Chiba, 274-0822, JA).
Several odon. spp. are known to expand their ranges northward, but L. qu. asahinai is apparently expanding in Kyushu distr. in the opposite direction. Since 1943 it is known from Oita pref., since 1956 from Fukuoka, by 1970 it was recorded from 3 additional prefectures, followed by 2 more by 1980, and by Kumamoto pref. in 1992. The route and the background of the expansion are discussed.

(15488) MIKOLAJEWSKI, D.J. & F. JOHANSSON, 2004. Morphological and behavioral defenses in dragonfly larvae: trait compensation and cospecialization. *Behav. Ecol.* 15(4): 614-620. – (First Author: Zool. Inst., Tech. Univ. Braunschweig, Fasanenstr. 3, D-38108 Braunschweig).
Many animals have 2 basic traits for avoiding being killed by a predator: behavioural modification and morphological defence. The relationship between antipredator behaviour and morphological defence was examined in 3 closely related Leucorrhinia spp. The 3 spp. differ with regard to their morphological defence as expressed in the length of the larval abdominal spines. Results showed that longer abdominal spines provided protection against an attacking fish predator (perch) because the probability of being rejected after an attack was significantly higher in the sp. with the longest abdominal spines. In contrast to other studies, the sp. with the strongest morphological defence did not show the least behavioural predator avoidance. Instead, the sp. with intermediate morphological defence showed the least predator behavioural avoidance. The results suggest that the Leucorrhinia system is a mixture of trait cospecialization (a positive correlation between antipredator behaviour and morphological defence) and trait compensation (a negative correlation be-

tween antipredator behaviour and morphological defence). Differences in the relationship between morphological and behavioural defence between spp. might be related to abundance patterns of the 3 spp. in lakes with and without fish predators.

(15489) MIKOLAJEWSKI, D.J., F. JOHANSSON & T. BRODIN, 2004. Condition-dependent behaviour among damselfly populations. *Can. J. Zool.* 82(4): 653-659. (With Fr. s.). – (First Author: Zool. Inst., Tech. Univ. Braunschweig, Fasanenstr. 3, D-38102 Braunschweig).
Body condition is predicted to influence behaviours such as activity, which in turn affects energy gain and survival. In the present study it was investigated (1) whether populations of Lestes sponsa differ in body condition and activity among 8 lakes in the vicinity of Umeå, Sweden, and (2) which body condition factors affect behaviour. Estimated were: last instar larval behaviour (measured as activity), body condition (measured as size, body mass, muscle mass, fat content, and time of emergence), and fish presence/absence. Body condition of larvae differed among lakes, but the presence/absence of fish had no effect on body condition. Activity did not differ among lakes and was not affected by presence/absence of fish. It was negatively related to size, body mass, muscle mass, and fat content, and positively related with time to emergence, suggesting that final-instar larvae in good condition are favouring development over growth to emerge earlier. This study highlights the importance of differences in condition among populations and among individuals.

(15490) MIKOLAJEWSKI, D.J. & J. ROLFF, 2004. Benefits of morphological defence demonstrated by direct manipulation in larval dragonflies. *Evol. Ecol. Res.* 6(4): 619-626. – (First Author: Zool. Inst., Tech. Univ. Braunschweig, Fasanenstr. 3, D-38102 Braunschweig).
Many prey spp. evolved morphological structures to hold off predators. As morphology and behaviour are frequently entwined, it is very difficult to demonstrate the assumed defence benefit of the morphological traits. Using a novel approach of directly manipulating morphological defence in larval dragonflies, it is demonstrated that spines are an effective morphological defence against predatory fish. The results show that the survival probability of larval dragonflies being attacked from behind was 4-fold higher in larvae possessing spines than in those without spines. However, spines were ineffective against attacks from the front. The relevance of this study for understanding inducible defence is discussed.

(15491) MONNERAT, C., R. HOESS & L. JUILLERAT, 2004. Sympetrum depressiusculum (Sélys, 1844) (Odonata: Libellulidae) en 2002 et 2003 dans la région des Trois Lacs. *Bull. romand Ent.* 22(1): 39-45. (With Germ. s.). – (First Author: CSCF, Terreaux 14, CH-2000 Neuchâtel).
In 2002, S. depressiusculum occurred at 8 sites in Seeland, central Switzerland. The individuals probably originated from an appreciable immigration. As apparent from the record of a teneral specimen (13-VII-2003), this was a "breeding population'. Due to the suboptimal ecological conditions, the population could not settle, and only a few individuals were seen in 2003.

(15492) NELSON, B., 2004. [Wildlife reports] Dragonflies-Ireland. *Brit. Wildlife* 15: 207-209. – (Dept Zool., Ulster Mus., Bot. Gardens, Belfast, BT9 5AB, UK).
A comprehensive overview of the 2003 N. Irish dragonfly season, with annotations and comments on the recorded spp.

(15493) OERTLI, B., H. HINDEN & N. PERROTTET, 2004. Gewässerforschung auf Macun. Was lebt in den über 30 Weihern von Macun? *Cratschla* 2004(2): 22-23. – (First Author: Lab. Ecol. & Biol. Aquat., Univ. Geneva, 18 chem. des Clochettes, CH-1206 Geneva).
There are 3 small lakes and over 30 (partly periodical) alpine ponds in the area (alt. ca 2600 m), the Engadine, Switzerland, which is since 2000 included in the Swiss National Park. The Authors did not sight any odon., but are expecting vagrant Aeshna juncea to visit the area.

(15494) OTT, J., 2004. Dragonflies as indicators for climatic change: consequences for biodiversity and nature protection. *Progr. Riassunti 14 Congr. naz. Soc. ital. Ecol.*, Siena, p. 26 [abstract only]. – (L.U.P.O., Friedhofstr. 28, D-67705 Trippstadt).
The odon. were among the first to respond to climatic changes; ca 15 yr ago the first changes in distribution patterns of some spp. in Europe were brought on record. Meanwhile, many cases of northward expansion of mediterranean spp. to N Europe and

invasions of African spp. into S Europe were reported. Also the colonisation of habitats at higher altitudes and changes in the behaviour and life history features (univoltine to bivoltine) were documented. Whereas the range expansions of southern spp. are increasing the biodiversity, the negative effects on the structure of biotic communities are also becoming apparent, e.g. in the mooreland biotopes, where they may lead, in the long term, to a general alteration of biocoenoses. – In the oral presentation, some details were outlined and discussed.

(15495) [OTT, J.] MULLER, J., 2004. Naturschütze der Pfalz, 15. *Pfalz Aktuell* 2004 (1 Aug.): 4. – (c/o Dr J. Ott, L.U.P.O., Friedhofstr. 28, D-67705 Trippstadt).
General on dragonflies, and on the current odonatol. work of Dr J. Ott, with a portrait; in a regional newspaper.

(15496) PANKRATIUS, U., 2004. Moosjungfern im Aischgrund und im Nürnberger Reichswald. *Galathea* 20(2): 75-110. (With Engl. s.). – (Hamburger Str. 157, D-90766 Fürth).
A comprehensive study on the occurrence and ecology of Leucorrhinia albifrons, L. dubia, L. pectoralis and L. rubicunda in Aischgrund (distr. Erlangen--Höchstadt) and in Nürnberger Reichswald; Bavaria, S Germany, based on systematic investigation (1999--2002) of 120 ponds.

(15497) PETRULEVIČIUS, J.F. & A. NEL, 2004. Recognition of the first fossil lestoid damselfly in South America (Insecta: Zygoptera): biogeographic and phylogenetic remarks. *J. Paleontol.* 78(4): 798--801. – (Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris).
Promegalestes singularis gen. n., sp. n. (fam. uncertain) is described and illustrated from Maiz Gordo Formation (Late Paleocene) of Jujuy, NW Argentina. Holotype MLP 29421, in Depto Paleozool., Mus. La Plata, Argentina. The basal position of Promegalestes in the lestinoid lineage could support a S American origin of this group.

(15498) RANTALA, M.J., J. ILMONEN, J. KOSKIMÄKI, J. SUHONEN & K. TYNKKYNEN, 2004. The macrophyte, Stratiotes aloides, protects larvae of dragonfly Aeshna viridis against fish predation. *Aquat. Ecol.* 38: 77-82. – (First Author: Dept Biol., Univ. California, Riverside, CA 92521, USA).
It is well known, A. viridis larvae are strongly associated with the S. aloides vegetation; in this study, they were almost exclusively found in the Stratiotes patches. They are nocturnal and rather inactive. In laboratory experiments, larvae on S. aloides were less susceptible to predation by the perch (Perca fluviatilis) than those on Myriophyllum alterniflorum.

(15499) RATHMACHER, G. & F. DZIOCK, 2004. Libellen-Beifänge (Insecta, Odonata) aus Malaisefallen von der Mittleren Elbe. *Ent. Mitt. Sachsen--Anhalt* 12(2): 96-102. – (First Author: Kantstr. 10, D-35039 Marburg).
In the Malaise traps, set out on various dates (Apr.--Nov. 1998-1999, 2002-2003) in the area of the Middle Elbe R. (Sachsen-Anhalt, E Germany) for Syrphidae collecting, 221 odon. individuals of 12 spp. were caught, representing both suborders. The traps were mounted 1.5 m above the ground.

(15500) [RISERVATO, E.], 2004. La libellula "Cecilia" ritrovata a Novara. *Corriere di Novara*, issue of 30 Sept. – (c/o E. Riservato, Via Maestra 81, I-28100 Novara).
A local daily's interview with Elisa Riservato, a PhD student of the Univ. of Pavia, working on the odon. of the "Parco del Ticino del Piemonte", N Italy. At the locality, "Torrion Quartaro", a specimen of the locally very rare Ophiogomphus cecilia was caught by her cat. Subsequent to a careful investigation of the fauna, a formal conservation of the site might be opportune.

(15501) SELLERS, C., 2004. Field trip reports [of the Toronto Entomologists' Association]. *Ontario Insects* 10(1): 4-7. – (c/o A. Hanks, 34 Seaton Dr., Aurora, ON, L4G 2K1, CA).
11 odon. spp. are listed from the Copetown Bog, Ontario, Canada; 19-VI-2004.

(15502) SOININEN, J. & K. KONONEN, 2004. Comparative study of monitoring South-Finnish rivers and streams using macroinvertebrate and benthic diatom community structure. *Aquat. Ecol.* 38: 63-75. – (Dept Limnol. & Envir. Prot., P.O. Box 65 [Biocenter 3, Viikki], FIN-00014 University of Helsinki).
Calopteryx virgo is among the 91 macroinvertebrate taxa included in the analysis. The canonical correspondence analysis was applied for biological and

environmental data to relate the major changes in community structure to environmental gradients. Detrended correspondence analysis was used to estimate the maximum amount of variation in the species data and for describing the major patterns of the community compositions for simultaneously sampled stations.

(15503) SONOBE, R., 2004. [A record of Anisogomphus maacki from Chiba prefecture, Japan]. *Gekkan-Mushi* 404: 46. (Jap.). – (No. 302, Kowa Gakusei-kaikan, 3-16, Kita 18-jo, Higashi 1-chome, Higashi-ku, Sapporo, 065-0018, JA).
1 ♀, Abiko city, Chiba, 11-IX-1999.

(15504) STANCZAK, M. & J.B. KEIPER, 2004. Benthic invertebrates in adjacent created and natural wetlands in northeastern Ohio, USA. *Wetlands* 24(1): 212-218. – (Dept Invert. Zool., Cleveland Mus. Nat. Hist., 1 Wade Oval Dr., Cleveland, OH 44106, USA).
Benthic invertebrate corer samples were taken (May-Aug. 2001) from 3 adjacent (1 natural, 2 created) wetlands in Stark Co. 42 taxa were identified, incl. Enallagma sp., Lestes sp. and Leucorrhinia sp. These occurred in all habitats. The natural wetland probably served as a source of odon. colonists. The created wetlands were 4 yr old.

(15505) SUKACHEVA, I.D. & A.P. RASNITSYN, 2004. Jurassic insects (Insecta) from the Sai-Sagul locality (Kyrgyzstan, southern Fergana). *Paleont. J.* 38(2): 182-186. – (Paleontol. Inst., Russ. Acad. Sci., Profsoyuznaya ul. 123, RUS-117997 Moscow).
The locality (sometimes referred to also as "Shurab 3" or "Svodovoe Ruslo") is situated in S Furgana, in the Batkenskii distr. Its ecology and taphonomy are analyzed, and the insects described from Sai-Sagul are listed. The list includes 19 odon. spp. (crossreferenced to bibliography), pertaining to the Liassophlebiidae (7 spp.), Oreopteridae (7), Karatawiidae (1), Archithemistidae (3) and Paralogidae (1).

(15506) SUUTARI, E., M.J. RANTALA, J. SALMELA & J. SUHONEN, 2004. Intraguild predation and interference competition on the endangered dragonfly Aeshna viridis. *Oecologia* 140: 135-139. – (First Author: Dept Biol. & Envir. Sci., Univ. Jyväskylä, P.O. Box 35, FIN-40014 University of Jyväskylä).
In 8 eutrophic lakes studied in S Finland, the Stratiotes aloides-associated A. viridis co-occurs with A. grandis and A. juncea. The susceptibility of A. viridis larvae to intraguild predation (IGP) by similar-sized larvae of the latter 2 spp. was tested in a laboratory predation experiment. The results show that A. viridis is susceptible to IGP and interference competition. In competition, A. grandis larvae dominated the middle and outer portion of S. aloides rosettes, whereas A. virids stayed in the inner parts. When A. grandis larvae were absent, A. viridis colonized the middle and outer parts of the rosettes. It is concluded that asymmetric predation between odonate larvae of equal size can be intense, and that both IGP and interference competition affect A. viridis. Although natural habitat complexity diminishes their impact, these interactions may nevertheless influence the distribution of A. viridis in S. aloides waters and restrict its microhabitat use in S. aloides rosettes.

(15507) TAIRA, H. & R.B. KURANISHI, 2004. Freshwater benthic macroinvertebrates at the upper reaches of the Koito-gawa River. *J. nat. Hist. Mus. Inst. Chiba* (Special Issue) 7: 47-86. (Jap., with Engl. s.). – (First Author: 3-30-16-403 Imai, Chuou-ku, Chiba-shi, Chiba, 260-0834, JA; – Second Author: Nat. Hist. Mus. & Inst., Chiba, 955-2, Aoba-cho, Chuou-ku, Chiba-shi, Chiba, 260-8682, JA).
Among the 104 taxa, collected from Apr. 2002 to Dec. 2003 (Toyofusa, Kimitsu-shi, Chiba, central Japan), pertaining to Tricladida, Decapoda and 9 insect orders, the following odon. spp. are listed: Mnais pruinosa, Asiagomphus melaenops, Davidius nanus, Sieboldius albardae, Anotogaster sieboldii, Planaeschna milnei and Macromia a. amphigena. 7 microhabitat types were identified, their species richness and abundance are discussed.

(15508) TERZANI, F., 2004. Odonati del Molise (Italia meridionale): nuovi dati (Odonata). *Onychium* 1: 1-7. (With Engl. s.). – (Mus. Zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).
12 spp. are listed, including Pyrrhosoma nymphula, Cordulegaster trinacriae, Libellula depressa and Orthetrum cancellatum that are new for the region, S Italy. Figs of the terminalia of Coenagrion mercuriale castellani and Cordulegaster trinacriae are provided.

(15509) TERZANI, F. & F. FABIANO, 2004. Descrizione de due aggressioni di Pararge aegeria (Linneo, 1758) contro Calopteryx haemorrhoidalis (Van

der Linden, 1825) (Lepidoptera: Satyridae; Odonata: Calopterygidae). *Onychium* 1: 33-35. (With Engl. s.). – (Mus. Zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).
The Pararge attacks on Calopteryx (Valle di Montieri, Grosseto prov., Toscana, Italy; 1-VII-1999) are described and explained in terms of the butterfly territory defence.

(15510) THIERE, G. & R. SCHULZ, 2004. Runoff simulation with particle-associated azinphosmethyl in multispecies stream microcosms: implications for the field. *Envir. Toxicol. Chem.* 23(8): 1984-1990. – (Second Author: Dept Envir. Sci., Univ. Koblenz-Landau, Im Fort 7, D-76829 Landau).
The acute (3-d) effects of particle-associated azinphosmethyl (AZP) in multispecies microcosms were investigated and the results assessed in the context to data obtained from a parallel field study undertaken in the Loune R., S Africa. A runoff simulation was carried out in stream microcosms containing the macroinvertebrate fauna of an uncontaminated Lourens R. site exposed to particle-associated AZP. Aeshna sp. was among the 14 core taxa. Differences of the community structures between the sampling site receiving transient insecticide peaks and the uncontaminated control site were observed. Aeshna sp. did not show any effects in its field distribution nor in its abundance in the microcosms and was, thus, classified as unaffected in both studies. Since the odon. were previously found to be sensitive to insecticide pollution (cf. C.W. Heckman, 1981, *Archs envir. Contam. Toxicol.* 10: 393-426), it is assumed that the potential reason for the low susceptibility of Aeshna sp. might be in the circumstance that it was (along with a Dugesia sp.) the sole predatory sp. in the system.

(15511) THUNES, K.H. et al. [45 joint authors], 2004. The arthropod community of Scots pine (Pinus sylvestris L.) canopies in Norway. *Ent. fenn.* 15(2): 65-90. – (First & corresponding Author: Norw. Forest Res. Inst., Fanaflaten 4, N-5244 Fana).
The results of arthropod collecting by fogging the canopy of 24 pine trees at 2 sites in E and W Norway are summarized. Almost 30.000 specimens represented 512 spp.; the odon. were represented by 2 Leucorrhinia dubia specimens.

(15512) TSUBAKI, Y. & R.E. HOOPER, 2004. Effects of eugregarine parasites on adult longevity in the polymorphic damselfly Mnais costalis Selys. *Ecol. Ent.* 29(3): 361-366. – (First Author: Biodiv. Conserv. Res. Gr., Natn. Inst. Envir. Stud., Onogawa, Tsukuba, 305-8506, JA).
The relationship between the abundance of midgut parasites (eugregarine trophozoites) and the survival of hosts (field-collected M. costalis) was investigated under laboratory conditions. – ♂♂ M. costalis are morphologically and behaviourally polymorphic, typically existing as clear-winged non-territorial sneaks and orange-winged territorial fighters (the latter are larger in size). The survival cost of eugregarine infection for the 2 morphs was compared. – Orange-winged ♂♂ showed shorter longevity compared to clear-winged ♂♂ when they were fed at levels lower than the natural feeding rate, or when they were deprived of food. In contrast, morph longevity did not differ when they were fed until satiation every day. – Within each morph, the survival of damselflies was negatively correlated with the parasite abundance except when damselflies were fed until satiation. – The results suggest that the abundance of eugregarine parasites exerts a substantial cost, which is associated with the maintenance of alternative mating strategies, together with the higher developmental cost and energy expenditure of the fighter morph.

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(15513) *ARGIA*. The news journal of the Dragonfly Society of the Americas (ISSN 1061-8503), Vol. 16, No. 4 (10 Jan. 2005). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA).
[Scientific articles:] *Cook, C. & D. Bridgehouse*: Aeshna mutta in Nova Scotia, a new provincial record, and significant range extension (p. 5); – *Harp, G.L.*: Odonata of the Lorance Creek Natural Area, Arkansas (p. 6); – *Hughes, M.L. & P.M. Catling*: First records of Stylurus amnicola for Manitoba (pp. 6-8); – *Krotzer, S.*: Mississippi flooded: 2004 in review (p. 8); – *Brown, V.*: Brief summary report from Rhode Island (pp. 8-9); – *Gregoire, S. & J. Gregoire*: Mass emergence of Lestes unguiculatus in a small pond in central New York (pp. 9-10); – *Harp, G.L.*: Ischnura kellicotti and liky pads (p. 11); – *Small, D.*: Operation Rubyspot 2004 (pp. 11-12; Hetaerina americana); – *R. Beckemeyer*: Aerobatic Anisoptera & zooming Zygoptera: Odonata flight from A to Z (pp. 12-16). The issue also includes sev-

eral meeting announcements and meeting reports, publication notices, and the traditional web site review (*Tramea*, by *R. Beckemeyer*).

(15514) BEDJANIČ, M., H.-U. KOHLER, B. GREBE & D. SMALLSHIRE, 2005. *2005, godina na vodnite koncheta.* – *[2005, the dragonfly year]*. Bulg. Biodiv. Found., Sofia. (Bulgarian). – (Publishers: Sredna gora 75, BG-1303 Sofia).
An attractive monthly wall calendar, with a brief general presentation of dragonflies, and a dragonfly portrait for each month, with a detailed explanatory caption on biology and occurrence of depicted sp.

(15515) *BULLETIN OF AMERICAN ODONATOLOGY* (ISSN 1061-3781), Vol. 8, No. 4 (10 Jan. 2005). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA).
Johnson, J. & S. Valley: The Odonata of Oregon (pp. 100-122; a brief history of odonatol. research in Oregon, a list of 87 spp., with habitat preference, flight periods and county records for each sp.; 5 spp. are discussed as likely additions to the regional fauna).

(15516) GERAEDS, R.P.G. & V.A. VAN SCHAIK, 2005. Ecological aspects of the dragonfly Ophiogomphus cecilia along the river Roer: monitoring exuviae in 2002 and 2003 and a comparison of survey methods. *Natuurh. Maandbl.* 94(1): 1-6. (Dutch, with Engl. s.). – (First Author: Bergstraat 70, NL-6131 AW Sittard).
In 2000, the O. cecilia population was discovered along the Roer, the Netherlands. In June, July and Aug. 2002 and 2003, 4 boat and 47 land surveys were conducted. The former yielded 87 and the latter only 19 exuviae. This indicates that boat surveys are the more suitable method, allowing more locations to be visited and monitored. Most larvae emerge vertically (59%) and close to the banks (0.0-0.25 m), preferably amid the vegetation. The average length of the exuviae was 29.5 mm