ODONATOLOGICAL ABSTRACTS

1972

(13891) SCHMITT, J., 1972. *Fossilfunde aus dem Solnhofener Schiefer.* Flatau, Köppern. 36 pp. ISBN none. A picture book on the Solnhofen Lithographic Limestone fossils (Upper Jurassic, Germany), incl. phot. of Stenophlebia amphitrite (Hag.) and Cymatophlebia longialata (Germar).

1983

(13892) JIRON, L.F. & M.E. SANCHO DE BARQUERO, 1983. *Indice de publicaciones entomologicas de Costa Rica.* Univ. Costa Rica, San José. 305 pp. ISBN none. (With Engl. title, s. & Introduction).
A descriptive bibliography (1598 titles, up to and incl. 1980); it includes 29 odonatol. publications (pp. 91--95).

1989

(13893) MENDOZA TREJO, R. & E. GONZALEZ SORIANO, 1989. Libélulas del área urbana y suburbana del Valle de México (Insecta: Odonata). [*In*: R. Gio-Argáez et al., Ecologia urbana]. *Revta Soc. mex. Hist. nat.* (Publ. esp.), pp. 135-140. – (Second Author: Depto Zool., Inst. Biol., Univ. Nac. Autonoma Mexico, Apdo Postal 70-153, MX 04510 Mexico, D.F.).
45 spp. are checklisted from the Valle de México (23 of which recorded during the present study), and the ecological composition of the fauna is analysed.

1991

(13894) PUJOL-LUZ, J.R., 1991. *Revisão do gênero Zenithoptera Bates in Selys Longchamps, 1869 (Odonata, Libellulidae).* Tese Mestre Ciên. Biol, Univ. Fed. Rio de Janeiro. xii+118 pp. (Port., with Engl. s.). – (Depto Biol. Animal, Inst. Biol., Univ. Fed. Rural Rio de Janeiro, BR-23851-970 Seropédica, Itaguai, RJ). Z. americana, Z. lanei and Z. viola are redescribed, and an advance description is given of Z. anceps sp. n. (for its journal description see *OA* 9161). Libellula fasciata L., 1758 is proposed a synonym of L. americana L., 1758. Structural features are illustrated, distribution maps are provided, and a key to the adults of both sexes is included.

1996

(13895) ROMERO MARTINEZ, O., [Ed.], 1996. *Colecciones de flora y fauna del Museo nacional de historia natural del Paraguay.* MNHNP, Asunción. ix+573 pp.
The Odon. catalogue appears on pp. 116-120. It presents precise localities and dates for 27 spp., almost all identified by M.J. Westfall & B. Mauffray. Tramea abdominalis is for the first time recorded for Paraguay.

(13896) SABIN, V.K., [Ed.], 1996. *Krasnaya kniga Respubliki Altay: Zhivotnye.* – [*Red Book of the Republic of Altai: Animals*]. Sibirskoye otd., Akad. Nauk Rossiyskoy Federacii, Novosibirsk. 260 pp. Hardcover (17.5×22.3 cm). ISBN 5-9009-02-4. (Russ.).
Ischnura pumilio, Nehalennia speciosa, Anax parthenope, Macromia sibirica, and Sympetrum croceolum are redlisted in Altai Republic, Siberia, Russia. In addition to their col. portraits and regional distribution maps, information is provided on their local status, ecology, biology, general range, known Altai localities, etc. The spp. are briefly described and the required conservation measures are outlined. For each

sp., its regional bibliography is also included.

(13897) SIMIČ, V., 1996. A study of the Trgoviški Timok: assessment of river conditions by ecological benthic fauna analysis. *Arch. biol. Sci., Belgrade* 48 (3/4): 101-109. (With Serb. s.). – (Inst. Biol., Fac. Sci., Univ. Kragujevac, YU-34000 Kragujevac, Serbia).
Gomphus flavipes and Onychogomphus forcipatus are listed from the Trgoviški Timok R., a tributary of the Danube in Serbia.

(13898) ZASYPKINA, I.A., A.S. RYABUHIN, E.A. MAKARCHENKO & M.A. MAKARCHENKO, 1996. *Obzor amfibioticheskih nasekomyh severo--vostoka Azii.* – [*Review of aquatic insects of north-eastern Asia*]. Inst. Biol. Probl. Severa, Ross. Akad. Nauk, Magadin. 118 pp. ISBN none. (Russ.). – (First Author: Inst. Biol. Probl. Severa, DVO, Ross. Akad. Nauk, Ul. K. Marksa 24, RUS-685000 Magadan).
An annotated list is presented of the 24 odon. spp. known to occur in NE Asia, of which Aeshna juncea angustyla and A. squamata septentrionalis are endemic. Their regional distribution and habitat types are stated, and an exhaustive bibliography is provided.

1997

(13899) DIMITRIYEV, Yu., 1997. *Nasekomye.* – [*Insects*]. Olimp, Moscow [Sosedi po planete]. 288 pp. Hardcover (17.0×25.7 cm), ISBN 5-7390-0176-5. – Price: RUB 47.- net. (Russ.).
The odon. are dealt with on pp. 194-198. Directed at the general reader, with emphasis on the Russian fauna, the work contains some information of extralimital interest. Folk appellations for "dragonflies" in Russian are "*chertovy igly*" and "*nebesnye kon'ki*". A reference is made to the large-scale migrations over St Petersburg in 1895, 1914 and 1939.

(13900) MIELEWCZYK, S., 1997. Odonata – Ważki. *In*: J. Razumowski, [Ed.], *Checklist of animals of Poland*, Vol. 5 (32/24 Postscript), p. 161. Pol. Akad. Nauk, Inst. Anim. Syst. & Evol., Kraków, ISBN 83--907187-1-5. (Pol. & Engl.). – (Os. Wichrowe Wzgórza 35/28, PO-61-699 Poznan).
Additions to the Coenagrionidae and Aeshnidae, as listed in the work described in *OA* 7925.

1998

(13901) KAMI, K.S. & S.E. MILLER, 1998. Samoan insects and related arthropods: checklist and bibliography. *Bishop Mus. Techn. Rep.* 13: vi+121 pp. – (Bishop Mus., 1525 Bernice St., Honolulu, HI 96817, USA).
This is a preliminary synthesis of the literature on the subject. It includes 35 (some unidentified) odon. spp., indicating their occurrence on particular isls.

1999

(13902) AZEVEDO-RAMOS, C. & W.E. MAGNUSSON, 1999. Tropical tadpole vulnerability to predation: association between laboratory results and prey distribution in an Amazonian savanna. *Copeia* 1999(1): 58-67. – (Second Author: Coordenação de Pesquisas em Ecologia, Insto Pesquisas da Amazonia, C.P. 478, BR-69011-970 Manaus, Amazonas).
Interspecific patterns of vulnerability were investigated in the laboratory in 6 common Amazonian savanna tadpole spp. (Hylidae, Bufonidae, Pseudidae, Leptodactylidae). Fish (Geophagus altifrons), coleopt. larvae (Hydrophilus sp.) and Pantala flavescens larvae were the predators used. Mean tadpole survivorship varied depending on the anuran sp., the predator and, sometimes, on the stage. Egg predation by both vertebrate and insect predators was generally low, except for Leptodactylus macrosternum, which had 50% of eggs eaten by fish and odon. This is probably due to the circumstance that its eggs become transparent during development, which may allow the visualization of some movement inside the egg and stimulate a visual predator.

(13903) ISLEY, M., 1999. Flutter by, dragonfly, that we may know you better. *Lake Co. News Chronicle*, issue of 19 July, pp. 1, 3. – (Author's address not stated).
This is an almost literary article in a local newspaper, describing Author's experience at the Post-Congress Tour of the 1999 WDA Int. Congr. Odonatol. to the Wolf Ridge Envir. Learning Center, Minnesota, USA, and narrating also some basic features of odon. biology. It was reprinted in *Nord. Odon. Soc. Newsl.* 7(1): 18 (2001).

(13904) MOLA, L.M., A.G. PAPESCHI & E. TABOADA CARRILLO, 1999. Cytogenetics of seven species of dragonflies; a novel sex chromosome determining system in Micrathyria ungulata. *Hereditas* 131: 147-153. – (Genética, Depto Cien. Biol., Fac. Cien. Exactas y Naturales, Univ. Buenos Aires, Ciudad Universitaria, AR-1428 Buenos Aires).

The karyotypes and ♂ meiotic chromosome behaviour were examined in Anax amazili and Coryphaeschna perrensi (2n = 27, n = 13+X), Planiplax erythropyga, Micrathyria spuria and M. hesperis (2n = 25, n = 12+X), Oligoclada laetitia (n = 11+X), and in M. ungulata (n = 10+X_1X_2Y). The M. ungulata sex chromosome system is described and its origin is discussed. It represents a new sex determining mode in the Order.

(13905) SCHOLTZ, C.H., 1999. Review of insect systematics research in South Africa. *Trans. R. Soc. S. Afr.* 54(1): 53-63. – (Dept Zool. & Ent., Univ. Pretoria, Pretoria-0002, SA).
The review covers the period 1994-1998. It is stated, no odon. systematists were present in S Africa, who would have published any descriptions, revisions, lists, catalogues, or papers related to the phylogeny and odon. conservation.

2000

(13906) ARNETT, R.H., 2000. *American insects. A handbook of the insects of America North of Mexico.* CRC Press, Boca Raton-London-New York-Washington, DC. xx+1003 pp. Softcover (27.5×21.0 cm). ISBN 0-8493-0212-9. – (Publishers: 2000 NW Corporate Blvd, Boca Raton, FL 33431, USA).
Published posthumously, this is the 2nd and revised edn of the work listed in *OA* 5489, which became a standard reference for North American insects and won the R.R. Hawkins Award from the American Association of Publishers in 1985. – A brief chapter on Protodonata appears on p. 105; the odon. are treated on pp. 119-131, with family keys and brief descriptions of selected taxa.

(13907) ASHMOLE, P. & M. ASHMOLE, 2000. *St Helena and Ascension Island: a natural history.* Antony Nelson, Oswestry/UK. 475 pp., Index (16 pp.), 32 col. pls excl. ISBN 0-90461461-1. – (Publishers: P.O. Box 9, Oswestry, Shrops, SY11 1BY, UK).
From the Atlantic volcanic island, Ascension (age 1.4 mi yr), adult Pantala flavescens is reported. In St Helena (age 14 mi yr), a small breeding population of P. flavescens was discovered. Sympetrum dilatatum is the St Helena endemic. In 1875 it was "common and abundant all over the island", but a ♀ was seen last on 13-X-1963. It seems possible that the main reason for the decline (or extinction?) of S. dilatatum was the introduction (about 1880) of the African Grass Frog, which is now ubiquitous in freshwater habitats and would probably eat the larvae. It has also been suggested that pollution from flax mills could have had an effect.

(13908) BECHLY, G., 2000. A new fossil damselfly species (Insecta: Odonata: Zygoptera: Coenagrionidae: Ischnurinae) from Dominican Amber. *Stuttg. Beitr. Naturk.* (B) 299: 1-9. (With Germ. s.). – (Staat. Mus. Naturk., Rosenstein 1, D-70191 Stuttgart).
Ischnura velteni sp. n. is described from an unknown locality, Dominican Republic, Eocene-Miocene (♀ holotype: Do-5687, in SMNS, Stuttgart). It represents the first fossil record of this genus, and it is one of the smallest known fossil odon. Its systematic position is thoroughly outlined and discussed.

(13909) COLLIER, K.J., B.J. SMITH, J.M. QUINN, M.R. SCARSBROOK, N.J. HALLIDAY, G.F. CROKER & S.M. PARKYN, 2000. Biodiversity of stream invertebrate fauna in a Waikato hill-country catchment in relation to land use. *N. Z. Ent.* 23: 9-22. – (Natn. Inst. Water & Atmospheric Res., P.O. Box 11-115, Hamilton, NZ).
Stream invertebrates were collected from 24 sites surrounded by a mixture of native forest and pasture (1992-1999), Mangaotama nr Hamilton, New Zealand. Antipodochlora braueri, Austrolestes colensonis and Xanthocnemis sp. were collected from pasture and mixed pasture, while no odon. were recorded from native and mixed native forest.

(13910) [CORBET, P.S.] BOOTHROYD, I., 2000. [Book review]. Dragonflies: behaviour and ecology of Odonata. *N. Z. Ent.* 23: 89-90. – (NIWA, Hamilton, NZ).
A comprehensive book review of the work described in *OA* 12810.

(13911) GASSMANN, D., 2000. Revision of the Papuan Idiocnemis bidentata-group (Odonata: Platycnemididae). *Zool. Meded. Leiden* 74(2): 375-402. – (Natn. Mus. Nat. Hist., P.O. Box 9517, NL-2300 RA Leiden).
8 spp., sharing common traits in ligula structure and colour pattern (here referred to as the I. bidentata--group), are described, keyed, and their taxonomy and distribution are updated. New among these is I. polhemi sp. n. (holotype ♂: Papua New Guinea, Southern Highlands Prov., Ludesa Mission, 20-III-1995; deposited at BPBM).

(13912) GRONERT, R., 2000. Noordse- en venwitsnuit-libel in Windbreker-gebied. *Windbreker* 129: 2-3. (Dutch). – (Plein 1945, No. 9, NL-1755 NH Petten).

Records of Leucorrhinia dubia and L. rubicunda from the Pettener Duinen, nr Petten, Noord Holland prov., the Netherlands, 14/15-V-2000. As apparent from a subsequent re-examination of the photographs (R. Gronert, 2001, *Windbreker* 138: 10-11), L. "dubia" actually was a teneral ♂ L. pectoralis.

(13913) HALSE, S.A., R.J. SHIEL, A.W. STOREY, D.H.D. EDWARD, I. LANSBURY, D.J. CALE & M.S. HARVEY, 2000. Aquatic invertebrates and waterbirds of wetlands and rivers of the southern Carnarvon Basin, Western Australia. *Rec. West. Aust. Mus.* 61: 217-265. – (First Author: Dept Conserv. & Land Manag., Wildlife Res. Cent., P.O. Box 51, Wanneroo, WA 6946, AU).
56 sites, representing 53 wetlands, were surveyed in 1994-1995, with the aim of documenting the fauna of the region. 19 odon. spp. are listed with locality data.

(13914) HROKALO, L.A., 2000. Faunisticheskiy oglyad babok (Insecta: Odonata) Sumshchini. – [A review of the dragonfly fauna (Insecta: Odonata) of Sumy province]. *Visn. kyyiv. nac. Univ.* (Biol.) 31: 36-37. (Ukr., with Engl. s.). – (Author's address not stated).
A briefly commented checklist of 37 spp., evidenced during 1995-1997; – Sumy prov., N Ukraine.

(13915) POLHEMUS, D.A., A. ASQUITH & S. MILLER, 2000. A new species of Ischnura from Rota (Odonata: Coenagrionidae), and a discussion of zygopteran zoogeography in the insular tropical Pacific. *Occ. Pap. Bernice P. Bishop Mus.* 62: 5-12. – (First Author: Dept Ent., MRC 105, Natn. Mus. Nat. Hist., Smithson. Instn, Washington, DC 20560, USA).
I. luta sp. n. is described from the island of Rota in the northern Marianes. Holotype ♂, allotype ♀: Mariana Isls, Rota: Talakhaya, Water Cave Stream, 1/2-IV-1996; deposited at BPBM, Honolulu. It is similar to I. ezoin from the Bonin Isls, but can be easily distinguished from all Micronesian congeners by the structure of the ♂ genitalia. The key characters are illustrated, and its biogeographic significance is discussed in the overall context of zygopt. distribution patterns in the tropical Pacific.

(13916) RAAB, R. & E. CHWALA, 2000. Die Libellen (Insecta: Odonata) des dynamischen Altarmsystems der Donau bei Regelsbrunn (Niederösterreich). *Abh. zool.-bot. Ges. Osterreich* 31: 125-147. (With Engl. s.). – (First Author: Anton-Brucknergasse 2/2, A-2232 Deutsch-Wagram).
During 20 all-day field trips (1995 & 1997), 32 spp. were recorded from a dynamic floodplain of the Danube R. nr Regelsbrunn, Austria. Platycnemis pennipes (52%) and Erythromma viridulum (20%) were most abundant, P. pennipes, Calopteryx splendens, Ischnura elegans and Orthetrum cancellatum were most widespread (over 50% of the 98 sampling stations). Species composition and the expected effects of hydrological connectivity are discussed.

(13917) *RUNDBRIEF LIBELLENKUNDLICHE ARBEITSGEMEINSCHAFT HAMBURG* (ISSN none), No. 13 (20 Dec. 2000). – (c/o F. Röbbelen, Wrangelstr. 97a, D-20253 Hamburg).
[For changes of the title of this periodical, see *OA* 13329] – Under the title, "Beiträge zur Libellenfauna des Nordens", the issue contains the following notes: *Brock, V.*: Eine ungewöhnliche Begegnung am Krötenzaun (p. 2); – Sympecma fusca (p. 3); – *Wirth, W.*: Konzentration von S. fusca am Geomathicum--Teich in Hamburg (p. 3); – *Anonymous*: Neuere Beobachtungen von S. fusca in Hamburg (p. 3); – Neuere Funde von S. flavomaculata in Hamburg und Umgebung (p. 4); – *Röbbelen, F.*: Aeshna affinis in Hamburg (p. 5); – Keine Nehalennia speciosa, aber immerhin Aeshna subarctica im Duvenstedter Brook (p. 5); – *Hanoldt, W.*: Beobachtungen von Libellen im NSG Stellmoorer Tunneltal, 1969-2000 (pp. 6-8); – *Röbbelen, F., W. Hammer & W. Hanoldt*: Libellen im NSG Duvenstedter Brook, 1996-2000 (pp. 8-9); – *Röbbelen, F., W. Hammer & B.-U. Netz*: Beobachtungen von Libellen im NSG Wittmoor, 1991-1999 (pp. 10-13); – *Röbbelen, F.*: Libellenbeobachtungen in einigen Naturdenkmalen in der Hummelsbüttler Feldmark, 1994-1999 (p. 14); – *Hammer, W., F. Röbbelen & W. Hanoldt*: Beobachtungen von Libellen im NSG Volksdorfer Teichweisen und in der Umgebung der Berner Au, 1995-2000 (pp. 15-17); – *Röbbelen, F.*: Libellen im NSG Tävsmoor SW Pinneberg im Jahr 2000 (pp. 18-19); – Fotos aus Vorpommern von Epitheca bimaculata (p. 20).

(13918) SAIM, P., 2000. Methodentests zur Erfassung von Arten der Anhänge II, IV und V der FFH-Richtlinie. *Schr. LandschPfl. NatSchutz* 68: 137-151. (With Engl. s.). – (Landschaftsökol. Planungsbüro Stelzig, Aldegreverwall 1, D-59594 Soest).
The Federal Agency for Nature Conservation at Bonn, Germany carried out a research project (F+E entitled "Selection of parameters and tests of methods to record and evaluate the conservation status of species and

habitat types according to the Habitats Directive") from 1996 to 1999. Art. 17 of the Habitats Directive requires the member states to produce a report at 6-yr intervals concerning the implications of the required measures and their effects on the Annex I habitat types and on the Annex II species. The aim of the project (in connection with the 'LIFE Project' "Evaluation of the conservation status of natural habitat types according to the Habitats Directive") was to suggest how these reporting obligations should be implemented. As a part of this project, spp. from the Habitat Directive Annexes were studied. The aim was to develop a standardised method for the conservation-orientated implementation of the reporting obligations. An overview of the spp. studied is given in this paper. As an example, a study of Aeshna viridis is presented. Based on the results of all studies, consequences for the reporting method are shown.

(13919) SCHOORL, J.W., 2000. Notes on Central Asian dragonflies (Insecta: Odonata). *Zool. Meded. Leiden* 74(1): 205-213. – (F. Simonszstraat 86/II, NL-1017 TK Amsterdam).
38 spp. are recorded from various localities in Tajikistan and Turkmenistan. A presumably undescribed Ischnura sp. is briefly diagnosed and partly illustrated, but it is not named. A brief description is also provided of a presumably new (but not named) Sympetrum sinaiticum ssp.

(13920) STEPHAN, R., W.R. XYLANDER & H. ZUMKOWSKI-XYLANDER, 2000. Nachweise von Gomphus vulgatissimus (Linné, 1758) im ehemaligen Braunkohletagebau Berzdorf. *Abh. Ber. NaturkMus. Görlitz* 72(1): 151-152. (With Engl. s.). – (Staat. Mus. Naturk., Postfach 300154, D-02806 Görlitz).
Adult G. vulgatissimus were evidenced from different sites of the former lignite open-cast mining area of Berzdorf, Saxony, E Germany. The odon. community of this secondary biotope comprises 49 spp.

(13921) STRIGANOVA, B.R. & A.A. ZAKHAROV, 2000. *Dictionary of animal names in five languages. Insects.* Russo, Moscow. viii+548 pp. Hardcover. ISBN 5-88721-162-8. (Text Russ., title pages Engl. & Russ., title also Latin, Germ. & Fr.). – (no addresses stated).
On pp. 6-9, 83 (mostly European) odon. spp. are listed along with their vernacular names (incl. those of the resp. suborders, families and genera), in Russian, Engl., German and French. In taxonomic names, there are some nomenclatural and spelling errors, the list of vernacular names is incomplete, and some of these are obsolete or not in use now.

(13922) SUDHAUS, W., G. PETERS, M. BALKE, A. MANEGOLD & P. SCHUBERT, 2000. Die Fauna in Berlin und Umgebung: Veränderungen und Trends. *Sber. Ges. naturf. Freunde Berlin* (N.F.) 39: 75-87. – (Second Author: Mus. Naturk., Invalidenstr. 43, D-10115 Berlin).
The 20th century fluctuations in the occurrence of Anax imperator, A. parthenope, Hemianax ephippiger and Gomphus flavipes in the Berlin area are pointed out and discussed from the point of view of climatic changes and habitat improvements.

(13923) VOZMILOV, A.M., et al., [Eds], 2000. *Krasnaya kniga Chitinskoy oblasti i Aginskogo Buryatskogo avtonomnogo okruga.* – [*Red Book of Chita province and of the Aginskoye-Buryat Autonomous District*]. Chitagoskomekologiya, Chita. 215 pp. ISBN 5-93119-045-7. (Russ.).
Cercion v-nigrum, Anisogomphus maackii, Anax parthenope, Somatochlora sahlbergi, and Pantala flavescens are redlisted (pp. 140-145); central Asia, Russia. The spp. are described, their range is stated, their biology is outlined, and regional distribution maps are provided.

(13924) WENZEL, H., W. WESTHUS & F. FRITZLAR, 2000. Thüringer Bausteine für das europäische Schutzgebietsnetz Natura 2000: FFH-Gebiete und Europäische Schutzgebiete. *Landschaftspfl. NatSchutz Thüringen* 37(4): 93-128. – (Abt. Okol. & Naturschutz, Thüringer Landesanstalt für Umwelt, Prüssingstr. 25, D-07745 Jena).
Coenagrion mercuriale, Ophiogomphus cecilia and Leucorrhinia pectoralis appear in the Fauna-Flora-Habitat (FFH) Directive of Thuringia, E Germany. Here, in a comprehensive chapter, the provincial status and the occurrence of the first of these are outlined.

2001

(13925) ABBOTT, J.C., 2001. Distribution of dragonflies and damselflies (Odonata) in Texas. *Trans. Am. ent. Soc.* 127(2): 189-228. – (Sect. Integrative Biol., Univ. Texas, Austin, TX 78712, USA).
The history of odonatol. exploration of Texas is traced from 1861, and 205 spp. (5098 records) are listed from 210 counties, based on valid literature records, verified material in museum and personal collections, and verified photographic records. The physiography of

odon. habitats and biogeography of the spp. are discussed, and flight periods are stated for each sp.

(13926) ABIVARDI, C., 2001. *Iranian entomology, an introduction*, Vol. 1. *Faunal studies*. Springer, Berlin--Heidelberg-New York. xvi+444 pp., 37 col. pls incl. ISBN 3-540-67592-2. – (Author: Dept Geobotany, ETH, Zürichbergstr. 38, CH-8044 Zürich).
This is a comprehensive survey of entomological studies in Iran, from prehistoric periods to modern times. A very brief chapter is devoted to the odon. (pp. 43-44, pl. 5), incl. an incomplete bibliography.

(13927) *ABSTRACTS, WORKSHOP, PHAON--MEETING, PLENARY SEMINAR & ADDRESSES OF THE 2nd WDA INTERNATIONAL SYMPOSIUM OF ODONATOLOGY, Gällivare, Sweden, July 22-27, 2001*. Göran Sahlen, Halmstad. 50 pp. – (Available from: Dr G. Sahlen, Sch. Business & Engineering, Halmstad Univ., P.O. Box 823, S-301-18 Halmstad).
[Abstracts of oral presentations:] *Bream, A.S.*: Laboratory observations on two mosquito larvae predators (p. 9); – *Clausnitzer, V.*: Aspects of the ecology of Coryphagrion grandis (pp. 9-10); – *Corbet, P.S.*: Stadia of Odonata (p. 10); – *Cordero Rivera, A., J.A. Andrés, S. Santolamazza Carbone & C. Utzeri*: Sperm competition in Calopteryx h. haemorrhoidalis (pp. 10-11); – *Cordero Rivera, A., M.O.L. Carballa & C. Utzeri*: Evidence for parthenogenetic reproduction in populations of Ischnura hastata from the Azores (p. 11); – *Dijkstra, K.-D.B.*: Zonation and ordination: two examples of Odonata along landscape gradients (pp. 11-12); – *Hartung, M.*: Three new species of Odonata from Venezuela (Megapodagrionidae and Libellulidae) (p. 12; Heteragrion palmichale, Ypirangathemis flaugeri, Uracis atabobo; all nomina nuda); – *Hawking, J.H. & B.A. Ingram*: Ecological partitioning of dragonfly larvae (Odonata) in fish rearing ponds: assemblage structure and temporal development patterns (pp. 12--13); – *Hilfert-Rüppell, D.*: Influences on fight outcome in Calopteryx s. splendens (p. 13); – *Ketelaar, R.*: Monitoring of dragonflies in the Netherlands: first results 1997-2000 (pp. 13-14); – *Manu Thomas, G. & D. Mohan*: Comparative studies on the genital and subgenital abdominal segments of four species of dragonflies (Anisoptera: Odonata) (p. 14); – *Marinov, M. & B. Grebe*: Cordulegaster insignis (Schneider, 1845) in Bulgaria, with description of a breeding place (p. 14); – *Martens, A. & H. Wildermuth*: Ceratopogonidae as parasites of European Odonata (p. 15); – *Nelson, B.*: Dragonfly species assemblages in N. Ireland (p. 15); – *O'Grady, E.W. & M.L. May*: Characters and cladistic analysis of subfamilies of Coenagrionidae (Zygoptera) (pp. 15-16); – *Olberg, R.M.*: Object perception and velocity discrimination in the dragonfly CNS (p. 16); – *Pritchard, G.*: The price that tropical dragonflies pay for living in the north: early winter mortality in Hetaerina americana in South Dakota (p. 17); – *Rüppell, G. & D. Hilfert-Rüppell*: Latitudinal consequences for odonates (p. 17); – *Sahlen, G. & F. Suhling*: Empty eggshells reveal new clues to habitat selection of some large and little known dragonflies in Europe (p. 18); – *Stange, G., J. Chahl & A. Mizutani*: Target tracking in dragonflies: the roles of compound eyes and ocelli (p. 18); – *Suhling, . . K. Schenk & T. Padeffke*: Dragons of desert ponds: colonization patterns, life histories and effects of structural diversity (p. 19); – *Szállassy, N., Z.D. Szabó, E. Bárdosi & G. Dévai*: Survival, fluctuating asymmetry and mating success in males of dragonfly Libellula fulva (p. 20); – *Van Tol., J.*: The collection of Odonata of the National Museum of Natural History/Naturalis at Leiden (pp. 20-21); – *Ubukata, H., Y. Tsubaki, T. Uéda & K. Higashi*: Effects of changes in bank shape and vegetation caused by flood control projects on odonate richness in Japan (p. 21); – *Ward, L. & P.J. Mill*: The population dynamics of the adult Calopteryx splendens Harris (pp. 21-22); – *Watanabe, M.*: Behavioural protandry in the damselfly Mnais pruinosa costalis Selys in relation to territorial behaviour (p. 22); – *Wildermuth, H.*: Morphological and behavioural evidence for sperm competition in Corduliidae (pp. 22-23); – *Worthington, A.*: Neuroethology of prey capture in aeshnid dragonfly nymphs (p. 23); – *Yaya, A., E.A. Klorkwei, E.A. Owusu & J.T. Mensah*: Feeding habits in the order Odonata, dragonflies (pp. 23--24). – [Titles of posters and of informal presentations appear on pp. 25-38; many without an abstract]. – *Norling, U.*: Larval Workshop (p. 39); – *Dijkstra, K.-D.B. & A. Martens*: First PHAON meeting on African Odonata (p. 40); – *Norling, U.*: Survival strategies of dragonflies at high latitudes (pp. 41-43).

(13928) ANDRES, J.A. & A. CORDERO RIVERA, 2001. Survival rates in a natural population of the damselfly Ceriagrion tenellum: effects of sex and female phenotype. *Ecol. Ent.* 26(4): 341-346. – (First Author: Anim. Ecol., Dept Ecol. & Envir. Sci., Umeå Univ., S-90187 Umeå).
C. tenellum ♀♀ show genetic colour polymorphism. Androchrome (erythrogastrum) ♀♀ are brightly (♂--like) coloured while gynochrome ♀♀ (typica and melanogastrum) show cryptic colouration. – Several hypotheses have been proposed to explain the existence of more than one ♀ morph in damselfly populations.

The reproductive isolation and intraspecific mimicry hypotheses predict greater survival of gynochrome ♀♀, while the density dependent hypothesis predicts no differential survival between morphs. – Mature ♂♂ had greater recapture probability than ♀♀, while the survival probability was similar for both sexes. Survival and recapture rates were similar for androchrome and gynochrome ♀♀. – Gynochrome ♀♀ showed greater mortality or migration rate than androchrome ♀♀ during the pre-reproductive period. This result is not predicted by the above hypotheses or by the null hypothesis that colour polymorphism is only maintained by random factors: founder effects, genetic drift, and migration.

(13929) *ARGIA*. The news journal of the Dragonfly Society of the Americas (ISSN 1061-8503), Vol. 13, No. 3 (10 Oct. 2001). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA). [Signed scientific articles:] *Abbott, J.*: The 2001 DSA Annual Meeting at Junction, Texas (pp. 2-4; records); – *Daigle, J.J.*: Cades Cove dragonfly bio-blitz II (p. 6; Great Smoky Mts Natn. Park records); – *Rose, J.S.*: Dragonfly Days (pp. 6-7; Weslaco, TX records); – *Beckemeyer, R.*: "How far to Wiwili?" [...]: a Nicaraguan adventure (pp. 9-14; records); – *Worthen, W.B.*: New dragonfly records from Sierra county, New Mexico (pp. 14-15); – *Paulson, D.*: Maine trip (p. 15; records); – *Donnelly, N.*: There are definitely no flying fishes on the road to Mandalay (pp. 15-18; Burma records); – *Barlow, A.E.*: Second annual report of the New Jersey Odonata Survey, including a state record and numerous county records (pp. 18-22); – *Brown, G.*: Rhode Island update (p. 22); – *O'Brien, M.*: Somatochlora tenebrosa at Ives Road Fen, Lenawee co., Michigan (Corduliidae) (pp. 22-24); – *Paulson, D.*: Hetaerina pilula from Costa Rica (p. 24); – Orthemis schmidti is a widespread species (pp. 24-25); – *Tennessen, K.*: A visit to the Mississippi Museum of Natural History (pp. 25-26); – *Paulson, D.*: Dragonfly pond conservation promotes conservation awareness in Japan (pp. 26-27). – The issue also includes some meeting announcements, book reviews, technical notes, and (by *N. Donnelly*) a brief *Tramea* (website) section.

(13930) BAALIENS, A., 2001. Een nieuwe waterjuffer voor Zeeland. – [A new damselfly for the province of Zeeland, the Netherlands]. *Zeeuwse Prikkebeen* 9(2): 12. (Dutch). – (Grote Abeele 40, NL-4388 VW Oost-Souburg).
Coenagrion lunulatum, in Retranchement (West-Zeeuws-Vlaanderen), date and specimens not stated.

(13931) BAE, Y.J. & B.H. LEE, 2001. Human impacts on stream ecosystem and freshwater arthropods on Korea. *Korean J. Ent.* 31(2): 63-76. (Korean, with Engl. s.). – (First Author: Dept Biol., Seoul Women's Univ., Seoul, 139-774, Korea).
Physical habitat changes and water quality deterioration, triggered by demographic pressure and governmental policies, are concisely analysed, and a 3-graded list of 34 threatened odon. spp. is presented. The suggested conservation measures should include a more strict legislation, the development of monitoring and management systems, development of restoration techniques for damaged stream ecosystems, and the development of a nation-wide communication network and educational programs.

(13932) BEDJANIC, M., 2001. Erforschungsstand der Libellenfauna von Sri Lanka (Insecta: Odonata). *Abstr. Pap. 17th SIEEC Symp.*, Radenci, pp. 9-10. – (Fram 117/A, SI-2313 Fram).
So far 115 spp. were evidenced; 46.5% (53 spp.) are endemic, particularly so in the Chlorocyphidae, Platystictidae, Gomphidae and Corduliidae. The affinities with S India are apparent, but e.g. Sinhalestes orientalis, Anisogomphus solitaris, Cyclogomphus gynostylus and Microgomphus wijaya have no close continental relatives. In 70 spp. (60.9%) the immature stages are unknown. 16 spp. were not encountered since more than 50 yr. The establishment of more nature reserves and the study of life histories are advocated.

(13933) BEDJANIČ, M., 2001. Gostje na vrtu ... Modri ploščec. – [Guests in the garden ... Libellula depressa]. *Vrtnar* 10(3): 47. (Slovene). – (Fram 117/A, SI-2313 Fram).
An outline of the life of this sp., in a horticulture bimonthly, Slovenia.

(13934) BOGDANOVIĆ, T., S. KRČMAR & M. FRANKOVIĆ, 2001. Dragonfly fauna of the lower Drava River and Kopački Rit wetlands. *Abstr. Pap. 17th SIEEC Symp., Radenci*, p. 11. – (Third Author: Pašmanska 11, CRO-10000 Zagreb).
During 1997-1999, 48 spp. were evidenced, 5 of which are new for this area, Croatia. The lower Drava R. and the Kopački Rit harbour more than 66.6% of the Croatian spp., hence the importance of the region for the national biodiversity conservation is emphasized.

(13935) BONSEL, A., 2001. Aeshna subarctica Walker, 1908 w dolinie Biebrzy (Odonata: Aeshnidae). – Aeshna subarctica Walker, 1908 in the Biebrza Valley (Odonata: Aeshnidae). *Wiad. entomol.* 19(3/4): 187--188. (Pol., with Engl. title). – (Vasenbusch 15, D--18337 Gresenhorst).
4 ♂, 1 ♀, VIII-1998; along with Libellula quadrimaculata, Leucorrhinia rubicunda and Sympetrum danae; – Poland.

(13936) BUBINAS, A. & I. JAGMINIENE, 2001. Bioindication of ecotoxicity according to community structure of macrozoobenthic fauna. *Acta zool. lituan.* 11(1): 90-96. (With Lithuan. s.). – (Inst. Ecol., Akademijos 2, 2600 Vilnius, Lithuania).
87 spp. of benthic macroinvertebrates (incl. 5 odon. spp.) were identified in the riparian zone of the Nemunas R., Lithuania. 4 species groups were discerned with reference to their pollution sensitivity. The odon. are referable to the second most sensitive group.

(13937) BUCZYNSKI, P., 2001. Ważki (Insecta: Odonata) Krzczonowskiego Parku Krajobrazowego. – Dragonflies (Insecta: Odonata) of the Krzczonowski Landscape Park. *Parki nar. Rez. Przyr.* 20(1): 63-78. (Pol., with Engl. s.). – (Dept Zool., Maria-Curie Univ., Akademicka 19, PO-20-033 Lublin).
37 spp. are listed from the Park (Lubelska Upland, SE Poland). The fauna is analysed, and the occurrence of Calopteryx virgo, Sympecma paedisca, Leucorrhinia albifrons and L. pectoralis is emphasized.

(13938) CASTNER, J.L., 2001. *Photographic atlas of entomology and guide to insect identification.* Feline Press, Gainesville/FL. xii+174 pp. Spiral binding. ISBN 0-9625150-4-3. – (Publishers: P.O. Box 357219, Gainesville, FL 32635, USA).
The atlas was designed "to make it easier to recognize and learn about insects", and it is directed at undergraduate and graduate level students. The odon. are dealt with on pp. 55-61, incl. a key to the larger N Amer. families.

(13939) CLETO FILHO, S.E.N. & I. WALKER, 2001. Efeitos da ocupação urbana sobre a macrofauna de invertebrados aquáticos de um igarapé da cidade de Manaus/AM, Amazônia central. *Acta amazon.* 31(1): 69-89. (Port., with Engl. s.). – (First Author: INPA/CPEC/PPG, Caixa postal 478, Manaus, AM, Brazil).
During 1993-1995, water quality and the invertebrate fauna of the Mindú R., Amazonia, Brazil were studied. Deforestation and invasive colonization along the headwater stream, and pollution in the city centre of Manaus are responsible for drastic changes in limnology and faunal composition, viz. water temperature, conductivity, pH and quantity of suspended sediments rose significantly, while oxygen levels dropped. 10 odon. families were evidenced in the sections and river branches studied, but only the representatives of 5 of them still occur in the sections impacted by the city.

(13940) CURRY, J.R., 2001. *Dragonflies of Indiana.* Indiana Acad. Sci., Indianapolis, xiv+304 pp. ISBN 1--883362-11-3. Hardcover (15.0×22.0 cm). – Price: US $ 32.- net. – (Author: Dept Biol., Franklin Coll., 501 E. Monroe St., Franklin, IN 46131, USA).
This is the first regional guide to the Anisoptera of mid--continental North America; it covers all the 97 spp. so far known from Indiana. T. Say (1787-1834), E.B. Williamson (1877-1933) and B.E. Montgomery (1899--1983) are the principal personalities in the long and distinguished history of odonatol. exploration of the state. The useful chapters on odonatol. history of Indiana, anisopt. anatomy, life cycle, conservation, collecting and specimen preservation, classification, and photography (pp. 5-30), are followed by family identification keys (adults & larvae, pp. 34-36), and by species accounts. For each sp. are provided a brief description and statements on its status, habitats, behaviour and range. Col. portraits, distribution maps and phenology graphs are supplied for all spp. – The book contains a wealth of previously unpublished evidence, gathered by the Author during his 40.000 mi travels in Indiana over the past decade.

(13941) D'AGUILAR, J., 2001. Notes de bibliographie entomologique, 8. Sur la date de description de Calopteryx splendens (Harris). *Entomologiste* 57(2): 85-88. – (7 rue Adrien Lejeune, F-93170 Bagnolet).
Without tracing and checking the original work of Moses Harris, most authors indicate "1782" as publication date of his "*An exposition of English insects* ...", containing the original description of this sp. This, however, refers to the 3rd edn, while the 1st edn appeared in 1776, as properly referred to by G.S. Kloet & W.D. Hinks (1945, *A check list of British insects*). The error is probably due to the wrong citation by J.F. Stephens (1829, *A systematic catalogue of British insects*). Thus, the original description of C. splendens was published in 1776.

(13942) DE JONG, T.H., 2001. Groene glazenmaker en

krabbescheer. – [Aeshna viridis and Stratiotes aloides]. *Natura, Amst.* 98(4): 104-109. (Dutch). – (Viridis, Rijnlaan 25, NL-4105 GS Culemborg).
A concise review is presented of biology and ecology of S. aloides, of its stands and the associated biotic community, and of A. viridis in the Netherlands. The environmental requirements and the current distribution of this vegetation are outlined in detail, and a bibliography (of mostly recent works) is included. – For a more comprehensive work on this subject, see *OA* 13787.

(13943) DE MARCO, P., Jr, M.A.R. ARAUJO, M.K. BARCELOS & M.B.L. DOS SANTOS, 2001. Aquatic invertebrates associated with the water-hyacinth (Eichhornia crassipes) in an eutrophic reservoir in tropical Brazil. *Stud. neotrop. Fauna Envir.* 36(1): 73--80. – (First Author: Lab. Ecol. Quantitativa, Depto Biol. Geral, Univ. Fed. de Viçosa, BR-36571-000 Viçosa, MG).
The invertebrate assemblage of a reservoir in Belo Horizonte, Minas Gerais was dominated by detritivores, but the coenagrionid and libellulid larvae also showed high densities at various times and in distinct habitats. Their dynamics is briefly outlined, and quantitative data are presented.

(13944) DE MARMELS, J., 2001. Sympetrum paramo sp. n. (Odonata: Libellulidae) from the Venezuelan high Andes, with a key to the species of Sympetrum Newman, 1833 found in Venezuela. *Entomotropica* 16(1): 15-19. (With Span. s.). – (Inst. Zool. Agr., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay 2101-A, Venezuela).
The new sp. is described and illustrated from 4 ♂ and 1 ♀. Holotype ♂: Venezuela, Mérida State, Sierra Nevada Natn. Park, Páramo El Tisure, Laguna Tisure, alt. 3650 m; deposited at MIZA. The 5 Venezuelan spp. are keyed, and the difference at species level between S. illotum (Hag.) and S. gilvum (Sel.) is confirmed and illustrations of important features of both are given.

(13945) DETHIER, M., 2001. Entomofaune de l'ancienne position fortifiée de Liège. *Notes faun. Gembloux* 42: 3-58. – (Zool. gén. & appl., Fac. univ. Sci. agron., B-5030 Gembloux).
5 odon. spp., incl. Crocothemis erythraea, are recorded from the ancient fortification of Liège, Belgium.

(13946) DOS SANTOS, L.N., A.F. GONZALEZ & F.G. ARAUJO, 2001. Dieta do tucunaré-amarelo Cichla monoculus (Bloch & Schneider) (Osteichthyes, Cichlidae), no Reservatório de Lajes, Rio de Janeiro, Brasil. *Revta bras. Zool.* 18 (Suppl. 1): 191-204. (Port., with Engl. s.). – (Lab. Ecol. de Peixes, Posto Aqüicult., Univ. Fed. Rural Rio de Janeiro, Antiga Rodovia Rio--São Paulo, km 47, BR-23851-970 Seropédica, RJ).
C. monoculus, in Lajes Reservoir (a major impoundment in the state of Rio de Janeiro), showed strong piscivorous feeding habits, Macrobrachium (Crustacea) and odon. larvae representing minor items in its diet, which varied with habitats and seasons. Statistical data are stated.

(13947) DUDLEY, R., 2001. The biomechanics and functional diversity of flight. *In*: I.P. Woiwod, D.R. Reynolds & C.D. Thomas, [Eds], *Insect movement mechanisms and consequences*, pp. 19-41, CABI Publishing, Wallingford, ISBN 0-85199-456-3. – (Sect. Integrative Biol., Univ. Texas, Austin, TX 78712, USA).
The evolution of wings in the Late Palaeozoic was a defining event for subsequent hexapod radiations on and above the surface of the Earth. Forces of both natural and sexual selection have contributed synergistically to the evolution of insect flight performance and manoeuvrability. For example, dragonflies defend territories and chase out ♂ conspecifics (intrasexual selection), pursue ♀ ♀ (intersexual selection), capture prey items in the air (natural selection for aerial attack), and avoid both aerial and terrestrial predators via flight (natural selection for aerial escape). Multiple modes of selection have thus probably acted to enhance their flight performance.

(13948) *ERJAVECIA*. Newsletter of the Slovene Odonatological Society (ISSN 1408-8185), No. 11 (30 Apr. 2001). (Slovene). – (c/o M. Bedjanič, Fram 117/A, SI-2313 Fram).
The zoological inventory of the 1847 R.G. Puff's Marburg (= Maribor) monograph is reviewed by *M. Bedjanič* (pp. 1-7). The same author is presenting a list of odon. records from the territory of the present Slovenia, as contained in various publications of R. Puschnig (pp. 8-10), and is bringing on record his experience with Sympetrum danae and S. pedemontanum in the Pragarsko area (pp. 10-12). 3 articles are reproductions of dragonfly presentations in the Slovene belletristics (pp. 14-18; *S. Riha, A. Puhar, I. Geister*). Nos 352-383 are added to the Slovene odonatol. bibliography (pp. 21-24).

(13949) FINCKE, O.M. & H. HADRYS, 2001. Unpredictable offspring survivorship in the damselfly Megaloprepus coerulatus shapes parental behavior, constrains sexual selection, and challenges traditional fitness estimates. *Evolution* 55(4): 762-772. – (First Author: Dept Zool., Univ. Oklahoma, Norman, OK 73019-0235, USA).
Evolutionary biologists typically assume that the number of eggs fertilized or developing embryos produced is correlated with an individual's fitness. Using microsatellite markers, estimates of realized fitness, quantified as the number of offspring surviving to adulthood, are for the first time documented in an insect under field conditions. In a territorial damselfly, whose ♂♂ defend tree hole oviposition sites, patterns of offspring survivorship could not be anticipated by adults. Fewer than half of the parents contributing eggs to a larval habitat realized any reproductive success from their investment. The best fitness correlate was the span over which eggs in a clutch hatched. Among parents, ♀ fecundity and ♂ fertilization success were poor predictors of realized fitness. Although body size was correlated with ♀ clutch size and ♂ mating success, larger parents did not realize greater fitness than smaller ones. The uncoupling of traditional fitness surrogates from realized fitness provides strong empirical evidence that selection at the larval stage constrains selection on mated adults.

(13950) GEENE, P., 2001. Verslag libellenexcursie Zeepeduinen/Burg op 26 mei 2001. *Zeeuwse Prikkebeen* 9(2): 10-12. (Dutch). – (Halve Maanstraat 57, NL-4356 BN Oostkapelle).
Records of 6 spp.; Zeeland prov., the Netherlands.

(13951) GEISTER, I., 2001. *Levitve.* – [*Metamorphoses*]. Mladinska knjiga, Lubljana. 89 pp. ISBN 86-11-16003-7. Hardcover (14.2×20.5 cm). – Price SIT 4900.- net. (Slovene). – (Author: Kocjančiči 18, SI-6276 Pobegi).
This is a collection of pure literary essays, the basis of which is nature as an autonomous, itself reproducing system. The 2 antagonisms, culture and nature, are getting in Geister's work unusual points of convergence and metamorphoses, in which the marvelous authentic nature is changing into a kind of culture itself. In such a metamorphosed world, the human nature becomes an allien, dangerous and unpredictable phenomenon of irrational propensities. The title of the book was inspired by dragonfly metamorphosis, and this, and several other pictures from dragonfly life are described in a unique style and language, and with a profound factual knowledge of biology. On 22 Sept. 2001, the work was acknowledged by the prestigeous Rožanc (literary) Award (cf. *Delo* 43[216]: 8; – 2001).

(13952) *GOMPHUS.* Mededelingsblad van de belgische libellenonderzoekers – Bulletin de liaison des odonatologues belges (ISSN 0772-4691), Vol. 17, No. 1 (June 2001). (Dutch & Fr., with Engl. s's). – (c/o G. De Knijf, Ploegstraat 33, B-9050 Gent).
Goffart, P., R. de Schaetzen & M. Tailly: Editorial (pp. 1-2); – *Gubbels, R.*: First observation of Gomphus flavipes (Charpentier, 1825) in Belgium: a borderline case (pp. 3-8); – *De Knijf, G.*: Leucorrhinia pectoralis (Charpentier, 1825) in 2000 in Flanders: back again or never disappeared? (pp. 9-22); – *Goffart, P.*: Compte-rendu des observations d'espèces prioritaires d'odonates en Wallonie durant la saison 2000, dans le cadre du programme d'Inventaire et Surveillance de la Biodiversité, ISB (pp. 23-36); – *Tailly, M.*: The dragonflies of the Kraaibos at Moen-Zwevegem, West Flanders (pp. 37-45); – An observation of Ischnura pumilio in Moen-Zwevegem, West Flanders (pp. 46-50); – *Lafontaine, R.-M. & P. Goffart*: Compte-rendu de l'excursion en Gaume de juillet 2000: le record n'est pas battu, mais il le sera bientôt ... (pp. 51-53); – *Lafontaine, R.-M. & G. De Knijf*: Libellules observées lors de l'excursion Gomphus en Lorraine française du 25 juin 2000 (pp. 54-55); – *Recensions* (pp. 56-59; by *R. Stoks* and *M. Tailly*); – *Annonces* (pp. 60-62); – *Anonymous*: Diffusion d'un communiqué de presse de Gomphus en relation avec le changement climatique et la Conférence de La Haye (pp. 63-68); – *Excursions calendrier* 2001 (pp. 69-72).

(13953) *GRACILE.* [Newsletter of Odonatology], Osaka (ISSN 1344-123X), No. 63 (1 May 2001). (Jap., with Engl. titles, some papers with Engl. s's). – (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka 545-0004, JA).
Shimura, S.: The relationship between the egg forms and the oviposition types in Sympetrum species (pp. 1-7); – Collection of the eggs of Odonata (pp. 8-10); – *Matsumoto, M.*: Emergence phenology of Ictinogomphus pertinax (Selys) observed in Nankoku city, Kochi pref. in 2000 (pp. 11-15); – *Matsuki, K.& M. Matsumoto*: On the deviation of dorsal and lateral spines of larvae of Asiagomphus species collected in Kochi pref. (pp. 16-20); – *Okamoto, Y.*: Two types of oviposition of Somatochlora clavata observed in Sakai city, Osaka pref. (p. 21); – *Sasamoto, A.*: A record of

Trigomphus ogumai, having aberrant thoracical pattern like T. interruptus (p. 22); – *Tabata, O.*: Ictinogomphus pertinax recorded in the southern part of Kyoto pref. (pp. 23-24); – *Inoue, K.*: Flight of Pantala flavescens over the Pacific Ocean (pp. 25-27); – Report of survey trip on the odonate fauna of Tawata-kogen, Hiroshima pref. (pp. 28-31); – *Matsuda, I.*: "Tombo-tsuri" (Catching dragonflies by threads and stones) meeting held in Osaka pref. (7), 2000 (p. 32-34); – Report on the survey trip on the odonate fauna of Kaizuka city, Osaka pref. in summer 2000 (pp. 35-37); – *Tabata, O.*: Report on the survey trip on the odonate fauna of Ujitawara-cho, Kyoto pref., focused on Sympetrum s. speciosum (pp. 38-40); – *Inoue, K. & I. Kanazawa*: Report of the survey trip on the odonate fauna of Mt Kongo, Osaka and Nara pref., pt 1: in spring 2000 (pp. 41-44); – *Miyatake, Y.*: Report of the survey trip on the odonate fauna of Mt Kongo, Osaka and Nara pref., pt 2: in summer 2000 (pp. 45-47); – *Tsuda, S. & I. Matsuda*: Report on the extra surveys on the odonate fauna of Mt Kongo: localities in Osaka pref. in 2000 (pp. 48-49); – *Tsuda, S.*: Some old records of Odonata from Mt Kongo and its surroundings (pp. 50-52); – *Inoue, K.*: Surveys on the odonate fauna of Mt Kongo and the specimens to be donated (pp. 53-56); – Records of Mr Bedjanič's visit to Japan (pp. 57-66).

(13954) HAMPTON, S.E. & J.J. GILBERT, 2001. Observations on insect predation on rotifers. *Hydrobiologia* 446/447: 115-121. – (Dept Biol. Sci., Dartmouth Coll., 6044 Gilman, Hanover, NH 03755-3576, USA).

The rotifers, Hexartha mira, Plationus patulus and Synchaeta pectinata were offered to 3 heteropteran spp. and to small (1.5 mm) aeshnid larvae. Except Plationus offered to dragonflies, all rotifer prey were consumed to some degree.

(13955) HANSEN, M.D.D., 2001. Masseforekomst og traek af fireplattet libel (Libellula quadrimaculata L.) på Skagen Odde i 2000. – Mass occurrence and migration of Libellula quadrimaculata at the Skaw peninsula, N Jutland, Denmark in 2000. *Flora Fauna, Silkeborg* 107(1): 22-26. (Danish, with Engl. s.). – (Naturhistorisk Mus., Universitetsparken, Bygning 210, DK-8000 Århus-C).

During May and June 2000, L. quadrimaculata was extremely abundant at the Skaw peninsula. A sudden, massive emergence from the small, shallow lakes took place on 8 May, after a long period of warm and sunny weather. At the northernmost coast, migrations occurred during 12-16 May, with a pronounced peak on 16 May, when thousands of individuals migrated towards W, against a light westerly breeze; 160 individuals/50 m front/min. The observations are discussed in relation to the migration ecology of this sp.

(13956) HEIJLIGERS, H. & J. HERMANS, 2001. Libellen in Noord-Limburg: verslag van een weekend-inventarisatie van libellen. – Dragonflies in northern Limburg. *Natuurh. Maandbl.* 90(6): 101-109. (Dutch, with Engl. s.). – (Second Author: Hertestraat 2, NL-6067 ER Linne).

During a weekend survey (June 2000), 22 participants visited 37 water bodies and evidenced 33 spp., for 9 of which new localities were discovered in the prov. of Noord Limburg, the Netherlands. The localities are described, the records are listed, and some spp. are discussed in more detail. Ceriagrion tenellum, Crocothemis erythraea, Leucorrhinia pectoralis, etc. are of particular interest.

(13957) HOPPER, K.R., 2001. Flexible antipredator behavior in a dragonfly species that coexists with different predator types. *Oikos* 93(3): 470-476. – (Dept Biol. Sci., Univ. Kentucky Lexington Community Coll., Lexington, KY 40506-0235, USA).

2 of the main predators of dragonfly larvae, insectivorous fish in communities with fish and large dragonfly species in communities without fish, differ markedly in their mode of predation. In general, dragonfly spp. coexist successfully with one predator or the other, but Pachydiplax longipennis larvae can coexist successfully with both. The behavioural response of these larvae to a simulated predator attack was examined to determine whether their response (1) differs between the 2 communities, and (2) is sensitive to waterborne cues about the type of predator present. Larvae from 2 different communities were compared: fish ponds where insectivorous fish were the top predators, and fish-free ponds where large dragonflies were the top predators. Larvae from fish-free ponds actively moved away from an attack significantly more than did larvae from fish ponds, provided each was attacked in its native pond water. Larvae collected from a fish-free pond but then attacked in fish water moved less than did controls (larvae attacked in fish-free water). Likewise, larvae collected from a fish pond but attacked in fish-free water moved more than did controls (larvae attacked in fish water). Larvae attacked first in water from their native pond and then in water from the contrasting pond changed their response in the

expected directions. These results indicate that escape behaviour in P. longipennis differs between communities with different predator types and is sensitive to water-borne cues in a manner consistent with the mode of predation employed by each predator.

(13958) HUTCHINSON, R., 2001. Découverte d'une Boyeria vinosa Say femelle (Odonata: Aeschnidae) suspendue au plafond d'un bâtiment en fin de soirée. *Nouv'Ailes* 11(1): 3. – (12 ch. de la Savane, app. 12, Gatineau, QU, J8T 1P7, CA).
Close to midnight, a ♀ B. vinosa was found hanging immobile near electric light, on the ceiling inside a building; Rawdon, Quebec, Canada; 8-VIII-2000. Another similar case is also mentioned, and this kind of dormitory choice is discussed.

(13959) *IDF-REPORT.* Newsletter of the International Dragonfly Fund (ISSN 1435-3393), Vol. 3, No. 1/2 (July 2001). – (c/o M. Schorr, Waldfrieden 25, D--54314 Zerf).
Brunelle, P.-M.: Status of Somatochlora brevicincta (Odonata: Corduliidae), the Quebec Emerald, in North America (pp. 1-8); – *Marinov, N.*: Somatochlora borisi spec. nov., a new European dragonfly species from Bulgaria (Anisoptera: Corduliidae) (pp. 9-16); – Commented bibliography of the Bulgarian fauna of the Odonata (pp. 17-45); – The genus Somatochlora Selys in Bulgaria (pp. 46-53); – *Lindeboom, M.*: Protokoll der Jahresmitgliederversammlung des IDF (pp. 54-56).

(13960) JOHANSSON, F., R. STOKS, L. ROWE & M. DE BLOCK, 2001. Life history plasticity in a damselfly: effects of combined time and biotic constraints. *Ecology* 82(7): 1857-1869. – (First Author: Anim. Ecol., Dept Ecol. & Envir. Sci., Umeå Univ., S-90187 Umeå).
Optimal values for life history traits are expected to depend upon environmental conditions during development and the period within which development is constrained (e.g., biotic factors and time constraints, respectively). Theory predicts that life history responses to both biotic factors and time constraints may be both direct and behaviourally mediated. Few experimental studies of life histories have considered the joint effects of biotic factors and time constraints, and fewer still have been able to disentangle direct from behaviourally mediated effects. Here, such interactions were studied by manipulating the perceived time to the onset of winter, predation risk, and food resources level in larvae of Lestes sponsa. In the first experiment (predation × time constraint), the presence of a predator caused an overall reduction in foraging activity, development rate, and mass at emergence. However, larvae that had less time available before the end of the season, increased foraging activity and development rate, while mass at emergence decreased. These results suggest that the observed changes in life history characters were behaviourally mediated in the presence of predators. In contrast, life history responses of time-constrained larvae occurred independently of the behavioural changes and, therefore, were direct. In the second experiment (food level × time constraint) larvae under high food levels had a higher foraging activity, increased development rate, and higher growth rates, compared to low food-level treatments. Time--constrained larvae accelerated development and had a smaller mass at emergence at high food levels than larvae that were not time constrained. In contrast, and opposite to predictions, time-constrained larvae at low food levels had the slowest development rate and the largest mass at emergence. We suggest that larvae in the latter group were aiming to delay emergence to the next season (cohort splitting). The results suggest that both behaviourally mediated and direct responses to biotic factors and time constraints are a feature of the life history of this damselfly.

(13961) KAY, W.R., S.A. HALSE, M.D. SCANLON & M.J. SMITH, 2001. Distribution and environmental tolerance of aquatic macroinvertebrate families in the agricultural zone of southwestern Australia. *Jl N. Am. benthol. Soc.* 20(2): 182-199. – (Dept Conserv. & Land Manag., CALMScience Div., P.O. Box 51, Wanneroo, WA 6949, AU).
Ranges of 8 selected water chemistry variables (pH, conductivity, colour, alkalinity, turbidity, total N, total P, dissolved O_2), are stated for the W Australian Coenagrionidae (measured at 36 sites), Lestidae (33), Aeshnidae (32), Corduliidae (83) and Libellulidae (30).

(13962) KEIPER, J.B. & D.A. CASAMATTA, 2001. Benthic organisms as forensic indicators. *Jl N. Am. benthol. Soc.* 20(2): 311-324. – (First Author: Dept Invert. Zool., Cleveland Mus. Nat. Hist., 1 Wade Oval Dr., University Circle, Cleveland, OH 44106, USA).
Forensic entomology is the use of the presence/absence of specific sarcophagous insect life stages to gain information on the time since death, cause of death, and other facets of criminal investigation. It is particularly useful in providing important supporting evidence during investigations of mysterious or suspicious

deaths. – Based on literature, a review is given of 5 forensic odon. records, pertaining to the larvae of Calopteryx, Argia, Ischnura, Zoniagrion and Gomphus, all from the USA. Records of Ischnura and Gomphus were associated with human remains.

(13963) KETELAAR, R., 2001. Verspreidingsgegevens van libellen als instrument bij het herstel van vennen. – Distribution records of dragonflies as a management tool in moorland pool restauration projects. *Levende Nat.* 102(4): 166-170. (Dutch, with Engl. s.). – (De Vlinderstichting, Postbus 506, NL-6700 AM Wageningen).
In the Netherlands, most moorland pools are affected by acidification, eutrofication and desiccation. Odon. spp. of moderately acid pools have declined severely during the last century. The paper describes the policies and methodology of their restauration, based on the experience gained recently in southern parts of the country.

(13964) KIAUTA, B., 2001. Omenjanje kače v ljudskih izrazih za kačjega pastirja: kaže pojavljanje takih imen na obseg kulture žarnih grobišč v prvem tisočletju pr. Kr.? – Snake associations in the European "dragonfly" folk appellations: distributional patterns reflecting the Urnfield culture expansion during the first millenium B.C.? *Abstr. 1st Int. Conf. 'The Veneti within the ethnogenesis of the central European population'*, Ljubljana, pp. 37-38. (Bilingual: Slov. & Engl.). – (P.O. Box 256, NL-3720 AG Bilthoven).
Slightly modified and abridged from that in *OA* 10630.

(13965) KORKEAMAKI, E. & S. JOKINEN, 2001. Kaakois-Suomen uhanalaiset ja harvinaiset sudenkorennot. – [Endangered and rare dragonflies of southeastern Finland]. *Kaakkuri. Kaakkois-Suomen ympäristökeskuksen asiakaslehti* 2001: 24-25. (Finn.). – (First Author: Kotkantie 23 a 11, FIN-48200 Kotka).
Abridged version (without distribution maps), in the annual customer magazine of the SE Finland Regional Environ. Centre, of the publication listed in *OA* 13966.

(13966) KORKEAMÄKI, E. & S. JOKINEN, 2001. *Kaakkois-Suomen uhanalaiset ja harvinaiset sudenkorennot: elinympäristöt ja suojelu. – Endangered and rare dragonflies of south-eastern Finland: habitats and conservation.* Southeast Finland Reg. Envir. Cent. [*Reg. environ. Publs* 217], Kouvela. 30 pp. ISBN 952-11-0900-9. – Price: FIM 60.– net. (Finn., with Engl. & Swed. s's). – (Publishers: P.O. Box 1023, FIN-45101 Kouvola; – First Author: Kotkantie 23 a 11, FIN-48200 Kotka).
The information (1950-2000) on 15 endangered or rare spp. in SE Finland is presented, regional distribution maps are provided, and habitat conservation measures are outlined.

(13967) LEE, S.-M., 2001. *The dragonflies of Korean peninsula (Odonata).* Junghaeng-Sa, Seoul. ii+230 pp., 18 col. pls incl. ISBN 89-88154-17-7-94490. Hardcover (19.5×26.5 cm). (Bilingual: Engl. & Korean, Chin. character & hangle mixture). – Price: Won 200,000.-. – (Orders to: Dragonflies & Environment Care Group, Gileum 1-dong 612-12, Seongbuk-gu, Seoul, 136-111, Korea).
Basically, this is a catalogue of the Korean fauna (107 spp.), with synonymies, localities (crossreferenced to bibliography, where appropriate), information on general distribution, and a section on habitat & biology for all spp. There are no keys and no descriptions, but some structural figs and col. phot. of all spp. enhance the value of the work, which is likely to serve as a reference work for the Korean fauna for long time to come. – There are several printing errors and some errors in the identification, e.g. pl. 4, No. 10 represents a Polycanthagyna melanictera ♂ rather than Aeshna crenata ♂, pl. 17, No. 3 is a Crocothemis servilia ♂ rather than Sympetrum croceolum ♂, and in pl. 17, nos 5-6 C. servilia ♂, ♀ should stand for Sympetrum uniforme ♂, ♀.

(13968) *LINDENIA.* Notiziario dell'Ufficio nazionale italiano della Società odonatologica internazionale, Napoli, No. 34 (21 June 2001). – (c/o Dr C. D'Antonio, Via A. Falcone 386/b, I-80127 Napoli).
Includes 2 scientific notes, viz. *Herren, B. & K. Herren*: Libellule in Sicilia (autunno 2000) (pp. 144-145); – and *D'Antonio, C.*: Dati inediti di libellule catturate in Sicilia nella primavera del 1998 (pp. 145-146).

(13969) LIU, R.K., 2001. The symbolic importance of insects in jewelry. *Trans. Am. ent. Soc.* 127(32): 167-171. – ("Ornament" Ed. Office, P.O. Box 2349, San Marcos, CA 92079, USA).
5 insect orders are symbolically important in jewelry, viz. Homoptera, Coleoptera, Lepidoptera, Odon., and Diptera, of which the portrayals of butterflies are the most numerous. In the dragonfly, its importance symbolically was probably due to its swift flight and the capacity of rapid change of direction. Thus, Native Americans equate it to the whirlwind, swiftness and

activity. By Plains Indians, who used its image on shirts, it was regarded as a spirit helper in warfare. The dragonfly is also used in the jewelry of the Navajo and Zuni. There is a XII dynasty Egyptian dragonfly amulet, but its significance is unknown. It is the emblem of summer for Chinese, who also regard the dragonfly as a symbol of instability and weakness, almost matched by the Japanese regard of it as denoting irresponsibility and unreliability, but both these cultures use its image in adornment. Western jewelers employed it as a motif in 19th and 20th century jewelry.

(13970) McPEEK, M.A., M. GRACE & J.M.L. RICHARDSON, 2001. Physiological and behavioral responses to predators shape: the growth/predation risk trade-off in damselflies. *Ecology* 82(6): 1535-1545. – (Dept Biol. Sci., Dartmouth Coll., Hanover, NH 03755, USA).
Most organisms must simultaneously find enough food for themselves while trying not to become food for some other organism. Previous field experiments have shown that Enallagma and Ischnura larvae are able to coexist in the littoral zones of lakes because they resolve this growth/predation risk trade-off differently: Ischnura grow more quickly than Enallagma, but Ischnura spp. suffer higher mortality rates than Enallagma. A series of laboratory studies was performed to explore the mechanistic basis for the difference in growth between the genera. When held in complete isolation and with unlimited food, larvae of a number of Enallagma spp. that coexist with fish accumulated mass at much faster rates than Ischnura spp. This difference in isolation was due to the fish-lake Enallagma simply ingesting more food. In contrast, when held in the presence of other damselflies or a fish predator, Ischnura had significantly higher growth rates than Enallagma from fish lakes. All spp. decreased the amount of food they ingested in the presence of the fish predator as compared to when fish were absent, which resulted in decreased growth in the presence of the predator for all spp. However, the interspecific differences in growth rate were due primarily to differences in the abilities of the spp. to convert ingested food into their own biomass, in the presence of fish, comparably sized larvae ingested nearly identical amounts of food, but Ischnura larvae grew faster because they converted significantly more ingested food into their own biomass than did larvae of Enallagma from fish lakes. This difference in conversion efficiency between the genera was not apparent when larvae were raised in complete isolation. These results indicate that Enallagma and Ischnura spp. differ in physiological stress responses to the presence of predators, and this difference may facilitate the coexistence of Enallagma and Ischnura spp. in the field.

(13971) MOSTERT, K., 2001. Alle poelen op Goeree bekeken: evaluatieonderzoek natuurwaarden. – [Biological assessment of all the ponds in Goeree, Zuid Holland prov., the Netherlands]. *Duin* 24(2): 5-7. (Dutch). – (Palamedesstraat 74, NL-2612 XS Delft).
During the 1990s, a systematic assessment was conducted of ca 150 ponds in the area. 20 odon. spp. were evidenced; 4 of these are redlisted for the province, while 3 spp. are restricted to the dune areas. In a checklist (vernacular nomenclature only), the number of ponds where encountered, is stated for each sp.

(13972) MULLER, J. & M. SCHORR, 2001. Verzeichnis der Libellen (Odonata) Deutschlands. *Fauna germanica* 5: 9-44. (With Engl. s.). – (First Author: Frankefelde 3, D-39116 Magdeburg-Ottersleben).
The current distribution of 80 spp. and a comprehensive (selected) bibliography are state-wise presented, and detailed annotations on the status of 15 spp. are provided.

(13973) [NEEDHAM, J.G., M.J. WESTFALL & M.L. MAY] DE JONG, G.D. & S.P. CANTON, 2001. [Book review]. Dragonflies of North America. *Jl N. Am. benthol. Soc.* 20(2): 326-327. – (Chadwick Ecol. Consultants, Littleton, CO, USA).
A comprehensive book review of the volume described in *OA* 13710, with some suggestions, and a brief outline of the reviewers' experience using the keys.

(13974) *NORDISK ODONATOLOGISK FORUM NYHETSBREV – NORDIC ODONATOLOGICAL SOCIETY NEWSLETTER* (ISSN 0808-2464), Vol. 7, No. 1 (June 2001) (Nordic languages, mostly with Engl. s's). – (c/o H. Olsvik, N-6694 Foldfjorden).
[Signed articles:] *Nielsen, O.F.*: Surveillance of 6 of the redlisted dragonflies in Denmark (pp. 6-9); – *Burkart, W. & G. Burkart*: Two new Odonata species for Gotland, Sweden (p. 10; Sympecma fusca, S. paedisca); – *Saugestad, T.*: New observations of Leucorrhinia pectoralis (Charpentier, 1825) in Hordaland, western Norway (p. 11); – *Nielsen, O.F.*: Anax imperator: records in Denmark in the period 1994-2000 (12-13); – Ischnura pumilio: a description of the larva and a comparison with the larva of I. elegans (p. 14); – *Olsvik, H.*: From the 6th Nordic Odonata Meeting in Scania, Sweden (pp. 15-16); – Late

dragonflies and new autumn extremes in Møre and Romsdal, 2000 (p. 17). – The issue also includes the Program of the 2nd WDA International Symposium of Odonatology (pp. 3-4), the announcements of the 2001 Nordic Odonata Meeting, in Gällivere, Sweden (23 July), and that of 2002 in Hillerød, Denmark (28-30 June) (p. 5), and a photostat reprint of *M. Isley*'s article as listed in *OA* 13903 (p. 18).

(13975) *PANTALA*. International Journal of Odonatology (ISSN 1388-7890), Vol. 4, No. 2 (1 Oct. 2001). *Cashatt, E.D. & T.E. Vogt*: Description of the larva of Somatochlora hineana with a key to the larvae of the North American species of Somatochlora (Odonata: Corduliidae) (pp. 93-105); – *Clausnitzer, V.*: Notes on Trithemis bifida and T. donaldsoni (Odonata: Libellulidae) (pp. 107-117); – *De Marmels, J.*: Aeshna (Hesperaeschna) condor sp. nov. from the Venezuelan Andes, with a redescription of A. (H.) joannisi, comments on other species, and descriptions of larvae (Odonata: Aeshnidae) (pp. 119-134); – *Muzón, J. & N. von Ellenrieder*: Revision of the subgenus Marmaraeschna (Odonata: Aeshnidae) (pp. 135-166); – *Orr, A.G.*: An annotated checklist of the Odonata of Brunei with ecological notes and descriptions of hitherto unknown males and larvae (pp. 167-220); – *Reinhardt, K. & U. Gerighausen*: Oviposition site preference and egg parasitism in Sympecma paedisca (Odonata: Lestidae) (pp. 221-230); – *Worthen, W.B., T. Blue, D.C. Haney & C. Brannon Andersen*: Abundance of Boyeria vinosa larvae in the Enoree River basin, USA: chemical, physical, and biological correlations (Odonata: Aeshnidae) (pp. 231-240).

(13976) PAVLYUK, R.S., 2001. Viyavlennya cisticerkoidiv ranshe nevidomogo vidu rodu Tatria (Cestoda, Amabiliidae) u babki Sympetrum meridionale z Turkmenistanu. – The discovery of cysticercoids of unknown species of the genus Tatria (Cestoda, Amabiliidae) in the dragonfly Sympetrum meridionale from Turkmenistan. *Vest. Zool.* 35(2): 71-73. (Ukr., with Russ. & Engl. s's). – (Zool. Mus., Fac. Biol., St. Univ. Lvov, Grushevskogo 4, UKR-79005 Lvov).
In specimens from Ashgabad, ca 250 cysticercoids were found, which are apparently referable to an undescribed Tatria sp., close to T. decacantha. The 2 spp. are compared, and their rostellum hooks are illustrated. S. meridionale is for the first time reported as a tapeworm intermediate host.

(13977) PEREPELOV, E. & A.G. BUGROV, 2001. C-heterochromatin in chromosomes of Ophiogomphus c. cecilia (Four.) (Anisoptera: Gomphidae) with notes on the sex chromosome origin in the species. *Caryologia* 54(2): 169-172. – (First Author: Dept Nat. Sci., Novosibirsk St. Univ., 2 Pirogova, RUS-630090 Novosibirsk).
The karyotype is analysed, using C-banding techniques (2n ♂ = 23; X0). All chromosomes possess terminal C-bands. The X is by far the largest of the set. It has a heterochromatic region at one of its ends, and an euchromatic part with 3 interstitial heterochromatic blocks. Its possible origin is discussed.

(13978) PLIURAITE, V., 2001. The seasonal change of macrozoobenthos is the Merkys river in 1998. *Acta zool. lituan.* 11(1): 39-52. (With Lithuan. s.). – (Inst. Ecol., Akademijos 2, 2600 Vilnius, Lithuania).
The information is presented on seasonal dynamics, abundance and biomass in various habitats of the Merkys R., Lithuania. The odon. are represented by Calopteryx splendens and Gomphus vulgatissimus.

(13979) RANTALA, M.J., M. HOVI, E. KORKEAMÄKI & J. SUHONEN, 2001. No trade-off between the size and timing of emergence in the damselfly Calopteryx virgo L. *Annls zool. fenn.* 38(2): 117-122. – (Dept Biol. & Envir. Sci., Univ. Jyväskylä, P.O. Box 35, FIN-40351 Jyväskylä).
The length of hindwings was measured from mid June to mid Aug. in 942 ♂ and 285 ♀, from 6 creeks in central Finland. The size did not decrease towards the end of the season.

(13980) RELYEA, R.A., 2001. The lasting effects of adaptive plasticity: predator-induced tadpoles become long-legged frogs. *Ecology* 82(7): 1947-1955. – (Dept Biol. Sci., Univ. Pittsburgh, Pittsburgh, PA 15260, USA).
Rana sylvatica tadpoles reared with caged predators (Anax longipes and A. junius larvae) developed relatively deeper tail fins and had shorter bodies, lower mass, and longer developmental times than tadpoles reared without predators. Metamorphs emerging from larval predator environments exhibited no differences in mass but developed relatively large hindlimbs and forelimbs and narrower bodies than metamorphs emerging from predator-free larval environments. These differences arose primarily due to predator-induced changes in larval development time and not due to the predator-induced changes in larval morphology.

(13981) RETTIG, K., 2001. Glänzende Smaragdlibelle (Somatochlora metallica). *Beitr. Vögel- Insektenwelt Ostfrieslands* 166: 19. – (Danziger Str. 11, D-26725 Emden).
1 copula, LSG "Restmoor Ochtelbur", Ihlow, Germany, 10-VII-2001.

(13982) SALAMANCA-OCANA, J.C., F. CANO--VILLEGAS & M. FERRERAS-ROMERO, 2001. Contribución al conocimiento de la distribución ibérica actual de Onychogomphus costae Sélys, 1885 (Odonata: Gomphidae). *Boln Asoc. esp. Ent.* 25(1/2): 187-188. (With Engl. title). – (Depto Cien. Ambientales, Univ. Pablo de Olavide, Ctra. de Utrera km 1, ES-41013 Sevilla).
The published records are reviewed and annotated, and records from Palma de Rio and Córdoba (V/VI-2000) are added; – Spain.

(13983) SAMWAYS, M.J., 2001. Testing the new Categories of Threat on dragonflies in Africa. *Species* 35: 23. – (Sch. Bot. & Zool., Fac. Sci. & Agric., Univ. Natal, Private Bag X01, Scottsville, Pietermaritzburg--3209, SA).
[Verbatim:] In a recent assessment of dragonflies across Africa and neighboring islands, it was important to distinguish between those species that are simply rare, those that are 'Data Deficient', and those that are actually threatened. The Extinct category needs very careful consideration, as premature inclusion of a species or ESU (Evolutionarily Significant Unit) could thwart further searches. In short, the IUCN 2000 Categories of Threat were found to be very workable for African dragonflies. Problems encountered were more in terms of difficulties of field assessments than with the categorization process. However, while the Red List is of great value when considering one species at a time, it should not be considered as a general database for analyzing comparative figures on assemblages. Such an analysis is likely to reveal more on assessment efforts than on the organisms themselves.

(13984) SCHIEL, F.-J. & R. BUCHWALD, 2001. Die Grosse Moosjungfer in Südwest-Deutschland: Konzeption, Durchführung und Ergebnisse der LIFE-Natur-Projekts für gefährdete Libellenarten am Beispiel von Leucorrhinia pectoralis. *NatSchutz Landschaftspfl.* 33(9): 274-280. (With Engl. s.). – (Second Author: INU, Hochschule Vechta, Driverstr. 22, D-49377 Vechta).
The LIFE-Nature Project (1997-2000) included population counts, various management measures, and extensive public information, aiming to support the long-term survival of L. pectoralis. 15 populations were evidenced in the Ravensburg distr. The habitats are negatively affected by nutrient imputs and by internal mineralisation, which trigger an accelerated growth of shore vegetation. 24 management measures were applied in 12 moors/moorland areas. In 4 cases, the vegetation removal led to a clear rise in number of observed adults. In at least one case, the increase in number of emerging individuals became evident 3 yr subsequent the introduction of management measures. In order to assure the long-term survival of L. pectoralis in SW Germany, the application of Wildermuth's rotary model (cf. *OA* 13996) is advocated.

(13985) SHIBATTA, O.A. & A.J.A. ROCHA, 2001. Alimentação em machos e fêmeas do pirá-brasilia, Simpsonichthys boitonei Carvalho (Cyprinodontiformes, Rivulidae). *Revta bras. Zool.* 18(2): 381-385. (Port., with Engl. s.). – (First Author: Depto Biol. Animal e Vegetal, Univ. Estadual Londrina, BR-86051--970 Londrina, Paraná).
The stomach contents of 12 ♂ and 16 ♀ were examined. 90.9% of food items are common to both sexes, but the frequency of odon. remains is in ♂♂ almost twice higher (31.0%) than in ♀♀ (16.7%). In view of the large size of odon. prey, a single individual was usually ingested, and occupied 10-90% of the stomach volume.

(13986) SRYGLEY, R.E. & E.G. OLIVEIRA, 2001. Orientation mechanisms and migration strategies within the flight boundary layer. *In*: I.P. Woiwod, D.R. Reynolds & C.D. Thomas, [Eds], *Insect movement mechanisms and consequences*, pp. 183-206, CABI Publishing, Wallingford, ISBN 0-85199-456-3. – (First Author: Dept Zool., Univ. Oxford, Oxford, OX1 3PS, UK).
In the flight boundary layer, a migrating insect may be capable of orienting directionally either with local landmarks, celestial cues or a geomagnetic beacon. Migratory behaviour has evolved independently many times. Among insects, long-distance, self-propelled migrations occur more frequently in the Odon. and Lepidoptera. A Pantala migration across Panama Canal provided an opportunity to measure wind-drift compensation. Dragonflies compensated for changes in crosswind drift with a corresponding change of heading. There is a strong evidence that they used a ground reference rather than landmarks for wind-drift compensation. Course correction also indicates they were attempting to fly toward a particular location, using the sea surface as a reference.

(13987) STANAWAY, M.A., M.P. ZALUCKY, P.S. GILLESPIE, C.M. RODRIGUEZ & G.V. MAYNARD, 2001. Pest risk assessment of insects in sea cargo containers. *Aust. J. Ent.* 40(2): 180-192. – (First Author: Queensland Dept Primary Industries, P.O. Box 652, Cairns, Qld 4870, AU).
The floors of 3001 empty sea cargo containers, in storage in the Brisbane area, Australia, were examined. 7426 insects of 18 orders were found in 1174 (39%) of the containers, but a single coenagrionid damselfly was recorded from a single container.

(13988) THEISCHINGER, G., 2001. The larva of Gynacantha mocsaryi Förster (Odonata: Aeshnidae). *Linz. biol. Beitr.* 33(1): 603-606. – (2A Hammersley Rd, Grays Point, NSW 2232, AU).
The larva is redescribed, illustrated, and some of the morphological details presented by F.C. Fraser (1963, *Aust. Zool.* 13: 23-25) are corrected and discussed.

(13989) THEUERKAUF, J. & S. ROUYS, 2001. Habitats of Odonata in the Białowieża Forest and its surroundings (Poland). *Fragm. faun.* 44(1): 33-39. (With Pol. s.). – (Am Schäperkamp 3, D-27711 Osterholz-Scharmbeck).
48 spp. are listed from the area; NE Poland. For Crocothemis erythraea this is the northernmost breeding site so far on record.

(13990) VAN KLEEF, H., R. LEUVEN, H. ESSELINK, R. FELIX & G. VAN DER VELDE, 2001. Herstelbeheer in vennen: macrofauna in gevaar? – [Moor restoration management: macrofauna endangered?] *Levende Nat.* 102(4): 171-172. (Dutch). – (Last Author: Dept Anim. Ecol., Univ. Nijmegen, P.O. Box 9010, NL-6500 GL Nijmegen).
Includes references to the Sympecma fusca oviposition into Typha, and Coenagrion hastulatum into Potamogetonaceae. The larvae of the latter migrate to the litoral, where they develop in the dense Carex vegetation. If any of these vegetations is damaged by moor restoration works, the respective sp. will disappear.

(13991) VICK, G.S. & D.G. CHELMICK, 2001. A preliminary report on the odonate fauna of Guapi Açu, a nature reserve in the Atlantic coast forest of Brazil, with taxonomic notes and annotations. *Opusc. zool. flumin.* 200: 1-11. – (First Author: Crossfields, Little London, Tadley, Hants, RG26 5ET, UK).
Based upon a preliminary survey, the presence of 48 spp. is brought on record, 20 of these are Atlantic coast endemics. A second sp. was discovered in the hitherto monotypic genus Limnetron (♀ only); the differing features of the respective ♀ specimens are outlined.

(13992) VOISIN, J.-F., 2001. The entomology collections of the Muséum national d'Histoire naturelle, Paris (France). *Norw. J. Ent.* 48(1): 31-34. – (Lab. Zool., Mus. natn. Hist. nat., 45 rue Buffon, F-75005 Paris).
The Museum was founded in 1793. The staff of the Ent. Lab. includes 42 persons (25 research scientists, 17 technicians & administrative employees). It is organised according to the major taxonomic units, but in 1996, another division was superimposed onto taxonomically based organisation, viz. "Origin and structure of insect biodiversity" and "Systematics, biodiversity and insect evolution". The section, "Odonata & small orders" harbours a collection of 160.000 specimens. The total insect collection of the Laboratory consists of ca 45.5 mi specimens, covering ca 400.000 insect spp. The best represented regions are W Europe, the Mediterranean, Madagascar, W Africa, New Caledonia and French Guyana.

(13993) *W.D.A.'s AGRION.* Newsletter of the Worldwide Dragonfly Association (ISSN 1462-8449), Vol. 5, No. 2 (July 2001). – (c/o J. Silsby, 1 Haydn Ave, Purley, Surrey, CR8 4AG, UK).
[Signed articles:] *Silsby, J./Jödicke, R.*: The International Journal of Odonatology (Pantala) (pp. 17-18); – *Beckemeyer, R.*: Report on personal educational activities related to Odonata, 2000 (pp. 19-20); – *Prendergast, E.*: Two at large in the Gambia (p. 21; no records); – *Samraoui, B.*: A brief portrait of three special odonatologists (pp. 21-22; P.S. Corbet, H. Dumont, P. Miller); – *Silsby, J.*: A special dragonfly moment (p. 22); – *Kipping, J.*: Okavango (pp. 22-23; list of spp.); – *Corbet, P.*: Encounters with dragonfly royalty: Anax tristis Hagen in Uganda in the 1950s (pp. 23-24); – *Van Trigt, T. & V. Kalkman*: Towards an exchange-office for exuviae of the Western Palaearctic (p. 24); – *Corbet, P./M.J. Parr*: [Book reviews] (pp. 25-26; vols described under OA 11036, 13710); – *Silsby, J.*: [Farewell article at resignation from the WDA Board of Trustees] (p. 26). – A brief section, "News from members" (p. 19), and the "*W.D.A. accounts: income and expenditure 1 July 1999-30 June 2001*" (p. 28), along with various management announcements and statements, are also included in the issue.

(13994) WEIDMANN, P., 2001. [Reservat Munté: Entstehungsgeschichte, Artenvielfalt und Pflege]

Libellen. *Jber. naturf. Ges. Graubünden* 109[1996--1999]: 161-166. – (Falknisstr. 15, CH-7000 Chur).
Based mostly on the work listed in *OA* 9252, the odon. fauna (29 spp.) of the Reserve (Grisons, Switzerland) is reviewed, and the local status and adult phenology of each sp. are stated. – (The issue is dated "2000", but it was mailed to the subscribers on 16 July 2001).

(13995) WESSELING, M., 2001. Libellensex: hitsig, maar knap onhandig. *Grasduinen* 2001(6): 28-33. (Dutch). – (Author's address not stated).
On odon. reproductive behaviour; directed at general readership.

(13996) WILDERMUTH, H., 2001. Das Rotationsmodell zur Pflege kleiner Moorgewässer: Simulation naturgemässer Dynamik. *NatSchutz Landschaftspfl.* 33(9): 269-273. (With Engl. s.). – (Haltbergstr. 43, CH-8630 Rüti).
The model describes a management mode enabling the establishment of a mosaic of all succession stages, with changes in space and time on a confined area. By offering different succession stages at the same time it is intended to provide permanent habitats for a high diversity of aquatic organisms. The model simulates the fictitious dynamics of small water bodies in certain moorland biotopes formerly unimpaired by human activities. It has been applied for about 20 yr in a nature reserve in the Swiss Alpine foothills where peat was exploited by hand up to 1950. Long-term monitoring of selected plant and animal taxa shows that typical biocoenoses of small peat ponds could be preserved and promoted in various succession stages. Special attention was given to the population dynamics of the local odon. fauna bearing the highly endangered Leucorrhinia pectoralis. The prerequisites, possibilities and limits of the model are discussed with respect to biodiversity conservation and landscape management as well as in terms of their practicability.

(13997) *WINGS*. Vol. 24, No. 1 (spring 2001), pp. 1-23. Published by the Xerces Soc., 4828 SE Hawthorne Blvd, Portland, OR 97215, USA.
The issue is devoted to the Odon. and contains the following papers: *Paulson, D.*: Dragonflies and damselflies: bugs of prey (pp. 3-7); – *Dunkle, S.W.*: Spiketails (pp. 8-11); – *Polhemus, D.A.*: Hawaiian damselflies: insular diversity at risk (pp. 12-16); – *Johnson, D.M., D.A. Soluk & D. Debinski*: The endangered Hine's Emerald Dragonfly (pp. 17-21); – *Bean, M.*: Discovering more about Odonata (p. 22).

(13998) WOOTTON, R.J., 2001 How insect wings evolved. *In*: I.P. Woiwod, D.R. Reynolds & C.D. Thomas, [Eds], *Insect movement mechanisms and consequences*, pp. 43-64, CABI Publishing, Wallingford, ISBN 0-85199-456-3. – (Hatherly Lab., Sch. Biol. Sci., Univ. Exeter, Prince of Wales Rd, Exeter, EX4 4PS, UK).
There is now a majority support for the view that insect wings evolved from lateral segmental structures which were already mobile. The most plausible routes for the origin of flight appear to be either through parachuting and gliding, or through skimming on the surface of water. For the development of active flight, wing would initially need to enlarge, and to develop structural rigidity and a firm articulation to the thorax, then progressively to acquire structural adaptations for automatic, useful deformation when aerodynamically and inertially loaded. Thereafter the way would be open for specialization into different modes of flight, e.g. slow flight and hovering (Zygoptera: narrowing of the base, usually accompanied by vein fusion, etc.), or adaptations for flight over a wide speed range (Anisoptera: combining torsionally compliant wings with broad bases, usually associated with faster flight).

(13999) ZASYPKINA, I.A. & A.S. RYABUKHIN, 2001. *Amphibiotic insects of the Northeast of Asia*. Pensoft, Sofia-Moscow & Backhuys, Leiden. vii+183 pp. ISBN 954-642-138-3 (Pensoft) & 90-5782-089-7 (Backhuys). – (Backhuys, P.O. Box 321, NL-2300 AH Leiden).
Engl. edn of the work listed in *OA* 13898.

2002

(14000) ISHIZAWA, N., 2002. Calendar *Dragonflies of the Sayama Hills, 2002*. Ishizawa, Tokorozawa, Saitama, 359-1145, JA.
The traditional and attractive bimonthly wall calendar, with a dragonfly portrait on each page. Taxonomic nomenclature.

(14001) MITRA, T.R., M. PRASAD & C. SINHA, 2002. A note on Odonata recorded from Nagaland, northeastern India. *Opusc. zool. flumin.* 201: 1-6. – (Zool. Surv. India, M Block, New Alipore, Calcutta--700053, India).
The history of the odon. recording in Nagaland is outlined, and 35 spp. are brought on record.