ODONATOLOGICAL ABSTRACTS

1977

(11494) MÓSZÁR, L., 1977. *Kis állathatározó.* Tankönyvkiadó, Budapest. 224 pp., 455 col. phot. excl. ISBN 963-17-2825-0. (Hung.).
A richly illustrated field guide to the Hungarian fauna, dealing mostly with insects. In the keys, 18 odon. spp. are included. For these, and for some family taxa, the Hungarian vernacular names are also provided.

1984

(11495) CRISTINI, E. & L. PURICELLI, 1984. *In the pond.* Picture Book Studio, Neugebaurer Press, London. 29 pp. [21.5×22.0 cm, hard cover]. ISBN 0--907234-43-7.
A very young childern book, with no text. The illustrations present a wordless panorama of the marshy wetlands, where a variety of animals and plants share a habitat. Throughout the book, a damselfly plays a dominant role.

1990

(11496) [HARITONOV, A.Yu.], 1990. *Biological Institute Reference Book.* Siberian Dept, USSR Acad. Sci., Novosibirsk. 30 pp. — (Available from: Dr A.Yu. Haritonov, Biol. Inst., Siber. Sect., Russian Acad. Sci., Ul. Frunze 11, RUS-630091 Novosibirsk).
At the 14th Int. Symp. Odonatol. (Maribor, Slovenia; July 1997), Dr A.Yu. Haritonov offered to organize the 16th Int. Symp. (in 2001) at this Inst. in Novosibirsk. It is for this reason, this little booklet is of particular interest: describing the setup (9 laboratories, 5 additional thematic groups, 314 collaborators) and the research programs of the Inst. Its Zool. Mus. is the largest in the former Soviet Asia. Dr Haritonov is Deputy Director and Head of the Insect Ecol. Lab. The Inst. harbours 90% (311 spp.) of the former USSR odon. fauna. Various current odonatol. research programs are outlined, and the main publications are listed.

1993

(11497) BERNARD, E. & D. BERNARD, 1993. *Dragonfly.* Holiday House, New York. 32 pp. [26×21 cm, hard cover]. ISBN 0-8234-1033-1. — Price: NLG 47.40 net. — (Publishers: 425 Madison Ave., New York, NY 10017, USA).
A juvenile, heavily illustrated book, presenting an introduction to the physical characteristics, life cycle, natural environment, and relationship to humans of the dragonfly, considered to be among the most beautiful insects in the world.

(11498) DE MARMELS, J., 1993. *Los generos venezolanos de la familia Aeshnidae (Insecta, Odonata).* Trab. Prof. Asistente. Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Maracay. 57 pp., 26 figs excl. (With Engl. s.). — (Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Aptdo 4579, Maracay 2101-A, Venezuela).
11 gen. and 2 sgen. are listed from Venezuela. Andaeschna gen. n. is defined (type sp.: Aeshna andresi Racenis; totally isolated from the New World aeshnid genera, possibly related to the Old World Anaciaeschna). An illustrated key allows adult identification to gen. and sgen. The genera are grouped within 2 subfam. and 4 tribes. The suprageneric categories are briefly characterized. A detailed description is provided of each gen. and sgen. and a list of the Venezuelan spp. is added.

(11499) LOHMAYER, M., 1993. Libellen über dem

Marchfeldkanal. *Die Presse*, issue of 26 Nov., p. 13. A daily's reference to the work, described in *OA* 11609.

1994

(11500) BLETTGEN, M., A. BOCK & P. PODRAZA, 1994. Die Auswirkung künstlicher Stillwasserbereiche auf die Besiedlung und Drift von Makroinvertebraten in renaturierten Stadtbächen. *Erweit. Zusammenfass. Jtag. dt. Ges. Limnol. Hamburg* 2: 809-813. — (FB-9 Hydrobiol., Inst. Ökol., Univ. Essen, D-45117 Essen).
Enallagma cyathigerum is recorded from the Läppkes Mühlebach (Essen/Mülheim area), Germany, with information on the temperature and O_2 amplitudes of the habitat.

(11501) ENGLER, G., 1994. Libellenbeobachtungen in der Westlausitz (Insecta, Odonata). *Veröff. Mus. Westlausitz* 17: 9-16. — (Talstr. 3, D-01936 Gräfenhain).
Notes on 39 spp.; W Lusatia, Germany.

(11502) HARITONOV, A. Yu., 1994. Intra- and interspecific interactions of dragonflies (Insecta, Odonata) as a factor of formation of species areals and stabilization of their boundaries. *Siber. J. Ecol.* 1(4): 313-321. — (Biol. Inst., Siberian Sect. Russ. Acad. Sci., Ul. Frunze 11, RUS-630091 Novosibirsk).
The hypothesis of the possibility of a strong influence of biotic factors on dragonfly dispersal is illustrated by examples of estimation of intra- and interspecific interactions, which result in saturation of the station capacity by a finite number of spp. and formation of odon. communities, comparatively stable with respect to composition and structure, restricting the penetration of new spp. into them. The interspecific interactions stabilize the areal boundaries and determine their internal structure ("areal mosaics"). The potent "biotic barrier" supports the areal stability in spite of the high viability of dragonflies and their almost unlimited capacity of expansion. Relatively stable assemblages of odon. spp. are integrated, together with other predatory insects, into a general system of trophical relationships, ensuring the homeostasis of biocenoses.

(11503) PODRAZA, P., 1994. Auswirkungen von Regenentlastungen der Mischwasserkanalisation auf die Makroinvertebratenzönose eines Stadtbaches. *Erweit. Zusammenfass. Jtag. dt. Ges. Limnol. Hamburg* 1: 824-828. — (Fb-9 Hydrobiol., Inst. Okol., Univ. Essen, D-45117 Essen).
Cordulegaster boltonii is recorded from the Schondelle/Olpkebach, S of Dortmund, Germany. Various physical and chemical properties of the habitat are stated.

(11504) SCHONFELDER, J., 1994. Das Makrozoobenthon unterschiedlich gestalteter Ufer der Unteren Spree (Müggelspree östlich von Berlin). *Erweit. Zusammenfass. Jtag. dt. Ges. Limnol. Hamburg* 2: 572-576. — (Abt. Limnol. Flussseen, Inst. Gewässer-ökol., Müggelseedamm 260, D-12587 Berlin).
Larval Gomphus flavipes is recorded from the Müggelspree, and some habitat management measures are suggested.

1995

(11505) BINKOWSKI, R., 1995. Ein Vorkommen der Kleinlibelle Cercion lindeni (Selys, 1840) an der Hase bei Osnabrück. *Osnabrück. naturw. Mitt.* 20/21: 339-342. (With Engl. s.). — (Lindenstr. 32, D-49124 Georgsmarienhütte).
A detailed description of a C. lindenii habitat and its odon. fauna on the Hase R. nr Osnabrück, Lower Saxony, Germany.

(11506) [DE MARMELS, J.], 1995. [Libélula de San Esteban y libélula de Aroa]. *In*: J.P. Rodríguez & F. Rogas-Suárez, Libro Rogo de la fauna venezolana, pp. 175-176, Provita, Caracas, ISBN 980-07-2458-3. (Span.). — (Author: Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Aptdo 4579, Maracay 2101-A, Venezuela).
The Venezuelan endemics, Archilestes tuberalatus (endangered) and Philogenia polyxena (vulnerable) are included in the Red Book of the Venezuelan fauna. A distribution map and the statements on their status, threats and conservation requirements are provided.

(11507) IVANOVNA, M.E., 1995. *Strekozy (Odonata, Insecta) Dal'nego Vostoka Rossii. — [Dragonflies (Odonata, Insecta) of the Russian Far East].* Autoreferat dissertacii na soiskanie uchenoy stepeni kandidata biologicheskih nauk. Inst. Anim. Syst. & Ecol., Siberian Sect., Russian Acad. Sci., Novosibirsk. 24 pp. (Russ.). — (c/o Dr A.Yu. Haritonov, Biol. Inst., Siber. Sect., Russ. Acad. Sci., Ul. Frunze 11, RUS-630091 Novosibirsk).
This is the "commercial" edn of the summary of a Kand. Biol. Nauk dissertation. The main chapters are: "History of odon. research in the Russian Far East", "Review of species" (101 spp.), "Biogeographic analy-

sis of the odon. fauna of the Russian Far East", and "Some ecological features of dragonflies in the Russian Far East".

(11508) MIYAKAWA, K., 1995. Odonata fauna appeared to the artificial pond at northern side of Sayama Hills, 1994. *New Ent.* 44(3/4): 39-41. (Jap., with Engl. s.). — (Cakushuin High Sch., Mejiro 1-5-1, Toshima-ku, Tokyo, 171, JA).
The pond was constructed in early spring 1994, and the odon. arrivals were monitored between May 21 and July 30 (11 spp. Anisopt., 3 spp. Zygopt.). Detailed observations are presented on reproductive behaviour of Libellula quadrimaculata asahinai, and they are compared with those in the European nominate form. The differences are tentatively ascribed to the difference in climatic conditions.

(11509) MOSTERT, K., 1995. De Groene Glazenmaker in Zuid-Holland teruggevonden. — [Aeshna viridis rediscovered in the province of Zuid-Holland]. *Veenweiden* 8(1): 4-5. (Dutch). — (Palamedesstraat 74, NL-2612 AX Delft).
In 1994, the sp. was evidenced in a number of localities in the Meije area, in the surroundings of Driebruggen and in the Krimpenerwaard (Zuid-Holland prov., the Netherlands). The populations are not actually endangered, but it is emphasized that the Stratiotes vegetation with which it is associated could get affected by Atrazin, a herbicide used locally in the maize plantations. A suggestion is made as to the management that would provide in conservation of the dragonfly, which tends to oviposit particularly in the central sections of the Stratiotes stands.

(11510) NORMA-RASHID, Y., 1995. A dynamic encounter with the odonates in Sungai Selieh, Kelantan, Peninsular Malaysia. *Wallaceana* 76: 17-22. — (Dept Zool., Univ. Malaya, 59100 Kuala Lumpur, Malaysia).
A checklist of 22 spp. (Nov. 1994, Apr. 1995), with notes on spatial and temporal partitioning, and annotations on incidental field observations on the behaviour of some spp.

(11511) REBHAN, H. & E. WALTER, 1995. Zur Pflanzen- und Tierwelt neu angelegter Kleingewässer. *Ber. naturf. Ges. Bamberg* 70: 15-35, map incl. — (First Author: Stolzingstr. 10i, D-95445 Bayreuth).
In 1993/1994, several man-made ponds were set up in the area of Mistendorf, Bavaria, Germany; they were entirely left to the natural succession. In 1995, 16 odon. spp., incl. Anax parthenope and 3 other regionally redlisted taxa were evidenced.

(11512) RIOU, B. & A. NEL, 1995. Nouveaux odonates fossiles du Miocène supérieur de l'Ardèche (Odonata: Sieblosiidae, Lestidae, Libellulidae, Corduliidae et Aeshnidae). *EPHE Biol. Evol. Insectes* 7/8: 125-144. (With Engl. s.). — (First Author: Mus. Paléont., 4 quai Anatole France, F-07800 La Voulte).
The Upper Miocene palaeolake at the Montagne d'Andance (Ardèche, France) is the richest Cenozoic odon. locality so far known. Here described as new are: Stenolestes andancensis sp.n., Miorhodopygia andancensis gen.n., sp.n., Cellulocordulia fasciata gen.n., sp.n., and Aeshna turoliana sp.n. All holotypes are in Palaeont. Mus., La Voulte-sur-Rhône, France.

1996

(11513) (Anonymous), 1996. Hyönteiskartoitus/ Insektkartering 81: Vuoden 1995 ... [&] 1996 ... *Sahlbergia* 3: 9-20 [&] 63-75. (Finn. & Swed., with Engl. s.). — (c/o Div. Ent., Zool. Mus., P.O. Box 17, FIN-00014 University of Helsinki).
The 1995 & 1996 installments in the series as listed in *OA* 10146. — In 1995, the records reflect favourable weather conditions. The Calopteryx virgo populations were stabilized, while no significant change was apparent in C. splendens either. Record maps and phenology graphs are provided for both spp. — In 1996, the records were fewer, a phenology graph for C. virgo is provided only.

(11514) ANDERSON, T.M. & I.M. SMITH, 1996. Arrenurus hamrumi (Hydrachnida: Arrenuridae), a new species of water mite from rangeland springs in central Oregon. *Int. J. Acarol.* 22(4): 285-290. — (First Author: Dept Ent., Oregon St. Univ., Corvallis, OR 97311, USA).
A. hamrumi sp.n. is described from Argia vivida, where intensities of parasitism often exceed over 250 mites per host. Engorging larvae are found occasionally in low numbers also on Amphiagrion abbreviatum, Enallagma cyathigerum and Ischnura perparva, all inhabiting the type locality of the mite, i.e. the Bridge Creek springs, Meyer's Canyon, Oregon, USA.

(11515) BAZZANTI, M., S. BALDONI & M. SEMINARA, 1996. Invertebrate macrofauna of a temporary pond in central Italy: composition, community

parameters and temporal succession. *Arch. Hydrobiol.* 137(1): 77-94. — (Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
The study was conducted at a typical autumnal pond, at Castelporziano, 20 km S of Rome. 4 odon. spp. are considered.

(11516) BOSSNECK, U., 1996. Beitrag zur Libellen--Fauna des Standortübungsplatzes Drosselberg bei Erfurt (Insecta: Odonata). *Veröff. NaturkMus. Erfurt* 15: 144-151. (With Engl. s.). — (Am Hügel 28, D--99084 Erfurt).
20 spp. are listed (1993-1996) from the Military Training Area at Drosselberg nr Erfurt, Germany. The faunal assemblage is discussed and 4 locally interesting spp. are pointed out.

(11517) BROCK, V., J. HOFFMANN, O. KÜHNAST, W. PIPER & K. VOSS, 1996. *Die Libellen Schlewswig--Holsteins: Rote Liste.* Landesamt Nat. u. Umwelt Schleswig-Holsteins, Flintbek. 65 pp. ISBN 3-923339--49-6. – Price: DEM 5.— net. — (Orders to: Landesamt für Natur und Umwelt, Hamburger Chaussee 25, D-24220 Flintbek).
The Schleswig-Holstein odon. were redlisted for the first time in 1982 (cf. *OA* 4173). This is a greatly enlarged, totally revised and updated book edn, using new criteria and slightly modified categories. 65 spp. are listed, those redlisted are discussed in detail.

(11518) GRAUVOGEL-STAMM, L. & K.-P. KELBER, 1996. Plant-insect interactions and coevolution during the Triassic in western Europe. *Paleontol. lombarda* (N.S.) 5: 5-23. — (First Author: Inst. Géol., Univ. Louis Pasteur, 1 rue Blessig, F-67084 Strasbourg).
The review is based on the Triassic ecosystems, rich on plant and insect remains, viz. the Early Anisian of Vosges (France), the Lower Keuper of Franconia (Germany) and the Upper Ladinian of Lettenkohle (Alsace, France). — Demonstrated are the protodonate oviposition habits, showing they were endophytic. The numerous egg traces in the Ladinian horsetails of Franconia indicate the protodonates were still represented in the Triassic fauna. Detailed descriptions and comparisons with the habits of the extant odon. are provided.

(11519) GRAVELAND, J., 1996. Watervogel en zangvogel: de achteruitgang van de Grote Karekiet Acrocephalus arundinaceus in Nederland. — The decline of an aquatic songbird: the Great Reed Warbler Acrocephalus arundinaceus in the Netherlands. *Limosa* 69(3): 85-96. (Dutch, with Engl. s.). — (IBN-DLO, Postbus 23, NL-6700 AA Wageningen).
Among the reasons for the decline of the bird, the supposed decline of dragonflies is mentioned. In De Weerribben, one of the Netherlands localities where the biology of the warbler was studied, its diet mainly consisted of odon. larvae (collected in the reed zone) and of adult odon. In another locality, where dragonflies were rare, the birds mainly fed on the Inachis io caterpillars.

(11520) HAHN, D., 1996. Bemerkenswerte Libellennachweise in der Senne aus den Jahren 1990-1995 (Insecta: Odonata). *Mitt. ArbGem. ostwestf.-lipp. Ent.* 12(1): 22-24. — (Mömmenweg 42a, D-33104 Paderborn).
With reference to the papers listed in *OA* 7793 and 10278, annotations are given on 10 spp. from the area of the Senne Military Training Centre.

(11521) JOHANSSON, F., 1996. The influence of cannibalism and prey density on growth in the damselfly Coenagrion hastulatum. *Arch. Hydrobiol.* 137(4): 523--535. — (Dept Anim. Ecol., Umeå Univ., S-90187 Umeå).
The effects of prey density and cannibalism on individual growth rate in similar sized larvae were studied in a 66 day laboratory experiment. The frequency of cannibalism decreased with increasing alternative prey densities. No significant difference in damselfly growth rate was found between intermediate and high alternative prey densities, but larvae with the lowest alternative prey densities grew more slowly. This pattern is attributed to cannibalism. Cannibals should have gained extra nutrients from consuming conspecifics. In addition, cannibalism might have decreased exploitation competition at intermediate prey densities. In fact, some of the largest individuals from intermediate prey densities grew as fast or faster than the smallest individuals in the high alternative prey treatments. Individuals that were cannibals early were larger at the end of the experiment than late cannibals. Also, individuals that ate several conspecifics were larger at the end of the experiment. The results suggest that cannibalistic individuals from low alternative-prey--density habitats can grow and develop as fast as those from high alternative-prey-density habitats.

(11522) KEIM, C., 1996. *Libellules (Odonata) du Valais*

(Suisse). Mus. cant. Hist. nat., Sion & Maurithienne Soc. valais. Sci. nat., Sion. 100 pp. ISBN 2-88426--0242. — (Available, at CHF 20.—, from: Mus. cant. Hist. nat., Av. de la Gare 42, CP 2160, CH-1950 Sion--2).
This is a commercial book edn of the work listed in *OA* 10559.

(11523) KIELB, M.A. & M.F. O'BRIEN, 1996. Discovery of an isolated population of Anax longipes in Michigan (Odonata, Aeshnidae). *Gt Lakes Ent.* 29(3): 161-164. — (Insect Div., Mus. Zool., Univ. Michigan, Ann Arbor, MI 48109-1079, USA).
Adults and larvae were found in abundance at a series of experimental ponds within the E.S. George Reserve, Livingston Co. This is the first record of the sp. from Michigan.

(11524) LEHMANN, G. & A. WENDLER, 1996. Libellenbeobachtungen aus Zimbabwe (Insecta, Odonata). *Entomofauna* 17(10): 153-162. (With Engl. s.). — (Zool. Inst. II, Staudtstr. 5, D-91058 Erlangen).
Brief field observations on 31 spp. (Dec. 1994) from the Zambesi R., the Hwange and the Matopo National Park.

(11525) MACHADO, A.B.M., 1996. Mnesarete mariana nova espécie de libélula da Chapada Diamantina, Bahia, Brasil (Odonata, Calopterygidae). *Revta bras. Zool.* 13(3): 621-624. (With Engl. s.). — (Depto Zool., Inst. Cienc. Biol., Univ. Fed. Minas Gerais, Caixa Postal 256, BR-31270-901 Belo Horizonte, MG).
The new sp. is described and illustrated from 2 ♂ (holotype ♂: Bahia, Chapada Diamantina, Rio de Contas, alt. 1300 m; 21-IV-1995; deposited in Author's coll.), and compared with M. guttifera (Sel.).

(11526) MARTINEZ-DELCLOS, X. & A. NEL, 1996. Discovery of a new Protomyrmeleontidae in the Upper Jurassic from Germany (Odonatoptera: Archizygoptera). *Archaeopteryx* 14: 67-73. (Engl. & Germ.). — (First Author: Depto Geol. dinàmica, Fac. Geol., Univ. Barcelona, Zona Universitaria Pedralbes, ES-08071 Barcelona).
Malmomyrmeleon viohli gen.n. & sp.n. is described and illustrated from the Lithographic Limestone of Winteshof, Bavaria (holotype in Jura-Mus., Eichstätt). It is characterised by very long and slender legs, similar to those in the Solnhofen Tarsophlebiidae. This feature could represent an adaptation to the (unknown) palaeoenvironment.

(11527) NEL, A., G. BECHLY & X. MARTÍNEZ--DELCLÒS, 1996. A new genus and species of Aeschnidiidae (Insecta: Odonata: Anisoptera) from the Solnhofen Limestone, Upper Jurassic, Germany. *Senckenbergiana lethaea* 76(1/2): 175-179 (With Germ. & Fr. s's). — (Second Author: Breslauer Str. 30, D-71034 Böblingen).
Bergeriaeschnidia inexpectata gen.n. & sp.n. is described and illustrated from the Tithonian of Eichstätt, Bavaria (holotype in Berger Mus., Eichstätt) and compared with the known Aeschnidiidae. The high diversity is a peculiar feature of this Upper Jurassic and Lower Cretaceous family.

(11528) NEL, A., F. PAPIER, L. GRAUVOGEL--STAMM & J.-C. GALL, 1996. Voltzialestes triasicus gen.nov., sp.nov., le premier Odonata Protozygoptera du Trias inférieur des Vosges (France). *Paleontol. lombarda* (N.S.) 5: 25-35. (With Engl. s.). — (First Author: Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris).
The new taxa are defined/described and illustrated from the Grès à Voltzia (Upper Bundsandstein [=Lower Anisian]) of Vosges, France (holotype in Inst. Geol., Univ. Strasbourg). The phylogenetic position of the genus is discussed in terms of a redefinition of the protozygopteran venational features. The new genus is close to Triassolestodes Pritykina.

(11529) PAPE, S. & P. RASCH, 1996. Der Einfluss kommunaler Abwässer auf die benthische Besiedlung und längszonale Gliederung eines Fliessgewässers am Beispiel der "Düte" im Kreis Osnabrück (Niedersachsen). *TagBer. dt. Ges. Limnol.* 1995(2): 493-497. — (Abt. Ökol., Univ. Osnabrück, Postfach 4469, D--49069 Osnabrück).
Only 4 odon. spp. were encountered during Apr.-Sept. 1993, but the names are not stated.

(11530) PENALVER, E., A. NEL & X. MARTINEZ--DELCLÒS, 1996. Insectos del Mioceno inferior des Ribesalbes (Castellón, España). Paleoptera y Neoptera poli- y paraneoptera. *Treb. Mus. Geol. Barcelona* 5: 15-95. (With Engl. s.). — (Second Author: Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris).
8 orders are dealt with, and 2 new odon. taxa are described and illustrated viz. Oligaeschna saurai sp.n. (holotype in MNM, Madrid) and Sympecma? ribesalbesensis sp.n. (holotype in Mus. "La Salle", Valencia). Platycnemis? cincuneguii Gil is redescribed.

(11531) PRASAD, M., 1996. An account of the Odonata of Maharashtra state, India. *Rec. zool. Surv. India* 95 (3/4): 305-327. — (Zool. Surv. India, M Block, New Alipore, Calcutta-700053, India).
Annotated list of 46 spp., 10 of which are reported from the state for the first time.

(11532) PRASAD, M., 1996. Studies on the Odonata fauna of Bastar, Madhya Pradesh, India. *Rec. zool. Surv. India* 95(3/4): 165-213. — (Zool. Surv. India, M Block, New Alipore, Calcutta-700053, India).
66 spp. from Bastar distr. are listed, annotated and keyed, and some field notes are provided.

(11533) SAMWAYS, M.J. & N.S. STEYTLER, 1996. Dragonfly (Odonata) distribution patterns in urban and forest landscapes, and recommendations for riparian management. *Biol. Conserv.* 78(3): 279-288. — (Dept Zool. & Ent., Fac. Sci., Univ. Natal, Private Bag X01, Scottsville, Pietermaritzburg-3209, SA).
Odon. spp. are particularly sensitive to human disturbances. Their diversity relative to 4 landscape types (plantation forest, parkland, residential area, industrial area) along the small Dorpspruit R that runs through Pietermaritzburg, Sth Africa, is described. Individual sp.-environment relations were investigated, using the multivariate analysis package CANOCO. 4 biotope types were identified and characterised. The analysis also illustrated the extent to which the urban, suburban and forestry environments affected the Odon. spp. Multispecies assemblages were good environmental indicators. Individual indicator spp. included Chlorolestes tessellatus and Crocothemis erythraea. C. tessellatus is a good indicator of the minimal width (>30 m) of the indigenous strip of riparian vegetation between the stream edge and commercial plantations. This study suggests that there should be a riparian strip between the water's edge and plantation trees of at least 20 m (preferably 30 m). This finding is integrated with earlier ones to arrive at a general dragonfly conservation management recommendation for rivers in Sth Africa.

(11534) SINHA, C. & P. CHAKRABORTY, 1996. Aciagrion approximans (Selys) (Insecta: Odonata: Coenagrionidae), a new record from West Bengal, India. *Sci. & Cult.* 62(8/9): 258. — (Zool. Surv. India, M-Block, New Alipore, Calcutta-700053, India).
1 ♂, South Rydak, Buxa Tiger Reserve, Jalpaiguri distr., (no date); with a descriptive note. — For the West Bengal checklist see *OA* 11049.

(11535) STOKS, R. & L. DE BRUYN, 1996. Intensive feeding of the robberfly Eutolmus rufibarbis (Diptera: Asilidae) on the damselflies Enallagma cyathigerum and Lestes sponsa (Odonata). *Bull. Annls Soc. r. belge Ent.* 132(4): 427-431. — (Evol. Biol. Gr., Dept Biol., Univ. Antwerp, Groenenborgerlaan 171, B-2020 Antwerpen).
During sporadic observations at a fen at Brasschaat, Belgium, 44 individuals of the 2 spp. were killed by the robberfly. All were caught in flight, and more ♂♂ than ♀♀ were eaten. This reflects the ♂ biased sex ratio in the 2 zygopt. spp. and suggests that robberfly predation may represent an important mortality factor in the population studied.

(11536) STRAUBE, S., B. GHARADJEDAGHI & E. SPRANGER, 1996. Libellen- und Heuschreckenvorkommen im Naturschutzgebiet "Grosser Teich Torgau", Nordwest-Sachsen. *Mauritiana* 16: 45-55. (With Engl. s.). — (First Author: Staat. Umweltfachamt, Postfach 241215, D-04332 Leipzig).
Annotated list of 24 odon. spp. from a site SW of Torgau, Leipzig distr., Germany, with comments on 9 of them.

(11537) TRAYLER, K.M., J.A. DAVIS, P. HORWITZ & D. MORGAN, 1996. Aquatic fauna of the Warren Bioregion, south-west Western Australia: does reservation guarantee preservation? *Jl R. Soc. West. Aust.* 79(4): 281-291. — (Sch. Biol. Envir. Sci., Murdoch Univ., Murdoch, WA 6150, AU).
21 odon. spp. are listed from the extreme SW region of Western Australia. Their occurrence in various types of habitats and their presence/absence in a nature reserve are indicated.

(11538) UNRUH, M., 1996. *Libellen und Bergbaufolgelandschaft.* Mitteldt. Braunkohlenges., Zeitz. 16 pp. — (Available from: Abt. Öffentlichkeitsarbeit, Mitteldeutsche Braunkohlengesellschaft, Wiesenstr. 20, D-06727 Theissen; — Author: Max-Planck-Str. 11, D-06712 Zeitz).
An attractive booklet (A5 size) on the odon. of the aquatic habitats originating in the abandoned open-cast coal mines in E Germany, with suggestions on the management of this kind of ecosystems.

(11539) VAN HELSDINGEN, P.J., L. WILLEMSE & M.C.D. SPEIGHT, [Eds], 1996. *Background information on invertebrates of the Habitat Directive and the Bern Convention. 2. Mantodea, Odonata, Orthoptera*

and Arachnida. Council of Europe, Strasbourg [Nature & Environment No. 80], pp. 219-398. ISBN 92-871-3062-0. — (Available from the Eds of *Odonatologica*, at NLG 55.— net).
The Odon. are treated on pp. 223-378. For each sp., some synonyms are stated, and exhaustive information is provided on its identification, biology, range, status and conservation. Also included are the European distribution maps, and almost complete regional bibliographies. — *Schorr, M.*: Aeshna viridis (pp. 226-238); — *Lohmann, H.*: Coenagrion hylas (pp. 239-244); — *Grand, D.*: C. mercuriale (pp. 245-253); — *Schorr, M.*: Cordulegaster trinacriae (pp. 254-258); — *Dommanget, J.-L.*: Gomphus graslini (pp. 259-265); — *Schorr, M.*: Leucorrhinia albifrons (pp. 266-278); — L. caudalis (pp. 279-291); — L. pectoralis (pp. 292-307); — Lindenia tetraphylla (pp. 308-314); — *Grand, D. & J.-L. Dommanget*: Macromia splendens (pp. 315-323); — *Schorr, M.*: Ophiogomphus cecilia (pp. 324-340); — *Dommanget, J.-L.*: Oxygastra curtisii (pp. 341-349); — *Schorr, M.*: Stylurus flavipes (pp. 350-364); — Sympecma braueri (p. 365-378).

(11540) WEIPERT, J., 1996. Flora und Fauna des geplanten Naturschutzgebietes "Apfelstädtaue Wechmar-Wandersleben" (Landkreis Gotha/ Thüringen). *Veröff. NaturkMus. Erfurt* 15: 78-139. (With Engl. s.). — (Inst. Biol. Stud., Mittelfeldstr. 17, D-98693 Ilmenau).
7 odon. spp. are listed from a locality SE of Gotha, E Germany.

(11541) WELSH, J., 1996. Damsels and dragons. *Minnesota Volunteer* 1996 (July/Aug.): 32-39. — (c/o Ms S. Ryan, Minnesota Volunteer, 500 Lafayette Rd, St Paul, MN 55155-4046, USA).
General, with portraits of some Minnesota spp.

(11542) WESTFALL, M.J. & K.J. TENNESSEN, 1996. Odonata. *In*: R.W. Merritt & K.W. Cummins [Eds], An introduction to the aquatic insects of North America, pp. 164-211. Kendall & Hunt, Dubuque/IA.
A revised (3rd) edn of the work listed in *OA* 2243.

(11543) WILLIAMS D.D., 1996. Environmental constraints in temporary fresh waters and their consequences for the insect fauna. *Jl N. Am. benthol. Soc.* 15(4): 634-650. — (Div. Life Sci., Univ. Toronto, 1265 Military Trail, Scarborough, ON, M1C 1A4, CA).
Temporary fresh waters are defined as bodies of fresh water that experience a recurrent dry phase of varying length that is sometimes predictable in both its time of onset and duration. The aquatic insects that live in these habitats are strongly influenced by 2 main groups of constraints, physicochemical and biological factors. Taxa particularly well-represented in temporary running waters are the Ephem., Hem., Col., Trich., and tipulid and chironomid Dipt. With the exception of Ephem., all these groups are common also in temporary lentic waters, but the latter also support many species of Odon., together with culicid, ceratopogonid and ephydrid Dipt. In general, however, the diversity of aquatic insects is lower in temporary than in permanent waters. Seasonal succession of species is commonplace in temporary waters, affecting food web structure, Adaptations to drought are reviewed, and traits common to the most successful taxa include a highly flexible life cycle, temperature-linked development, possession of a diapausing or otherwise protected egg, and high powers of dispersal. A trend towards terrestrialisation of immature stages is noted amongst at least some members of even strongly aquatic taxa. Several directions for future research are discussed including study of the controlling influence of the biological environment on the fauna and the former's interaction with physicochemical influences, temporal variation in the structure of food webs, and genetic analysis of populations. A recommendation is made for greater quantification in data collection, particularly on seasonal changes in species abundance, their life histories, and trophic relationships, as this will allow greater opportunity for modelling the community dynamics of these ecologically distinct habitats. Finally, the concept that temporary waters constrain their faunas is exposed as being based more on human perception than on fact.

(11544) YANG, Z.-D., 1996. The tandem of dragonflies when they are in copulation. *Ent. Knowledge/ Kunchong Zhishi* 33(6): 366-370. (Chin., with Engl. title in Contents tab.). — (Dept Biol., Hanzhong Teachers' Coll., Hanzhong, Shaanxi-723001, P.R. China).
[Abstract not available.]

(11545) YULE, C.M., 1996. Spatial distribution of the invertebrate fauna of an aseasonal tropical stream on Bougainville Island, Papua New Guinea. *Arch. Hydrobiol.* 137(2): 227-249. — (Enviromin, 7 Rosetta Ave., Killara, N.S.W., 2071, AU).
Lieftinckia kimminsi is the only odon. sp. mentioned; it is listed among the 32 most common invertebrate taxa in Konaiana Creek. Its larvae were significantly

more abundant in riffles (than in waterfalls runs and pools), where they were generally found on the undersides of cobbles and boulders. — (Cf. also *OA* 11546).

(11546) YULE, C.M. & R.G. PEARSON, 1996. A seasonality of benthic invertebrates in a tropical stream on Bougainville Island, Papua New Guinea. *Arch. Hydrobiol.* 137(1): 95-117. — (Second Author: Dept Zool., James Cook Univ., Townsville, 4811, AU).
Monthly size distribution of larval Lieftinckia kimminsi in Konaiana Creek is shown in a graph. The sp. probably completes several generations per yr. — (Cf. also *OA* 11545).

1997

(11547) *ABSTRACTS OF PAPERS AND POSTERS presented at the 14th International Symposium of Odonatology*, Maribor, Slovenia, July 12-23, 1997. Edited by M. Kotarac. Issued by the Slovene Dragonfly Society, Ljubljana. 40 pp. — (Available from the Eds of *Odonatologica*).
Bernard, R.: An analysis of pulsating occurrence of some allochthonous species of Anisoptera in the northern part of central Europe (p. 6); — *Brockhaus, T.*: Pluriatil larvae cohorts as a development principle of the White-legged Damselfly and the consequences of the mobility by adults (Platycnemis pennipes Pallas; Zygoptera, Platycnemididae) (p. 7); — *Buchwald, R.*: The significance of different water temperatures for some flowing water Odonata species (p. 8); — *Carvalho, A.L.*: Dragonflies from Rio de Janeiro state, Brazil: records and habitats (p. 9); — *De Marmels, J.*: Rare Venezuelan Odonata evaluated for their inclusion into a National Red List (p. 10); — *Dijkstra, K.-D.B.*: The phylogeny of Malesian Coeliccia Kirby, 1890 species (Platycnemididae: Calicnemidinae): preliminary results (p. 11); — *Förster, S.*: Three types of oviposition behaviour of Costa Rican libellulid dragonflies (p. 12); — *Hacet, N. & N. Aktac*: The Odonata fauna of Turkish Thrace and some new records (p. 13); — *Haritonov, A.Yu.*: Odonatology in Russia: the past and the future (p. 14); — *Haritonov, A.Yu. & O.N. Popova*: Some problems of taxonomy and zoogeography of the dragonflies of genus Sympetrum (p. 15); — *Hawking, J.H.*: The conservation status of dragonflies (Odonata) from Australia (p. 16); — *Jacquemin, G. & J.-P. Boudot*: The dragonflies (Odonata) of Morocco (p. 17); — *Jeziorski, P. & V. Uvira*: Dragonflies (Odonata) of the Litovelské Pomoravi Protected Landscape Area (Moravia, Czech Republic) (p. 18); — *Jödicke, R.*: Away from the water: Lestes virens vestalis at the maturation place (p. 19); — *Kalkman, V.J., K.-D.B. Dijkstra & T. Ketelaar*: Some results of the Dutch dragonfly mapping scheme (p. 20); — *Ketelaar, R., K.-D.B. Dijkstra & V.J. Kalkman*: Monitoring of dragonflies in the Netherlands (p. 21); — *Knitter, H.*: A new technique for in situ fixation of intact tandem linkages of Zygoptera in the field (p. 22); — On the relationships and systematics of Cercion lindeni (Sélys, 1840) (Zygoptera: Coenagrionidae) (p. 23); — *Leipelt, K.G.*: Reproductive behaviour of female Gomphus vulgatissimus (Linné) and female Ophiogomphus cecilia (Fourcroy) (Anisoptera: Gomphidae) (p. 24); — *Lohmann, H.*: A new model for sperm removal in Anisoptera (p. 25; title only, paper not presented); — *Mahato, M.*: Diets of six coexisting odonate larvae of Gandaki River of central Nepal (p. 26); — *Martens, A.*: Oviposition site selection in Sympecma fusca (Vander Linden) (Zygoptera: Lestidae) (p. 27); — *May, M.L.*: Growth and food conversion by adult dragonflies (Anisoptera) (p. 28); — *Mitra, T.R.*: Status of taxonomy of Odonata fauna of West Bengal (India) and patterns of their distribution (p. 29); — *Ott, J.*: Dragonflies in urban habitats: targets for landscape planning in urban areas? (p. 30); — *Popova, O.N.*: Dragonflies in the Caucasus (p. 31); — *Rith-Najarian, J.C.*: The impact of anthropogenic disturbance on the geographic distribution of dragonflies (Anisoptera, Odonata) in the Mississippi River headwaters corridor, northern Minnesota, USA (p. 32); — *Rose, S. & M. Thomas*: predatory efficiency of Bradinopyga geminata (Rambur), Ranatra elongata (Fabricius) and Laccotrephes griseus (Guerin) on mosquito larval prey (p. 33); — *Sahlén, G.*: Using dragonflies to measure biodiversity: some preliminary results from central Sweden (p. 34); — *Schridde, P. & F. Suhling*: Overwintering in larval dragonflies: effects of different ambient (p. 35); — *Slovene Dragonfly Society*: Odonata communities in Slovenia (p. 36); — *Thomas, M., M. Gladstone & M. Daniel*: Spatial distribution and resource partitioning in two species of dragonfly larvae, Brachythemis contaminata (Fabricius) and Ictinogomphus rapax (Rambur) (Anisoptera: Odonata) (p. 37); — *Tyagi, B.K.*: Effects of Bacillus thuringiensis israelensis, a mosquito larvicide, on certain non-target organisms, including dragonflies (p. 38; title only, paper not presented); — *Wasscher, M.T.*: On the mass migration of Sympetrum flaveolum over northwestern Europe in 1995 (p. 39); — *Wildermuth, H.*: How dragonflies detect water (p.

40). — (The traditional Programme and Field Trip booklets were not published. For some newspaper articles, published in conjunction with the Symposium cf. *OA* 11565. For the odon. atlas of Slovenia, distributed during the Symposium, cf. *OA* 11587. — For the announcement brochure of the 15th Int. Symp. Odonatol. cf. *OA* 11596).

(11548) *ARGIA*. The news journal of the Dragonfly Society of the Americas, Vol. 9, No. 1 (15 March 1997), No. 2 (20 May 1997), — (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA). [Signed articles:] No. 1: *Donnelly, N.*: Don't cry for me Argentina, or, a month in the hot sun while you froze (pp. 5-11); — *Daigle, J., B. Mauffray & K. Tennessen*: Go South, young men, go South (pp. 11-13; faunistic notes from Ecuador); — *Beckemeyer, R.*: Functional morphology of tandem flight in Odonata (pp. 13-17); — *Donnelly, N.*: History of Odonata study, pt 1 (pp. 17-19); — *Catling, P.M. & V.R. Brownell*: Unidirectional flight of Sympetrum vicinum in tandem (pp. 19-21); — *May, M.*: Spring migration (p. 21); — *Cruden, R.*: Notes on Iowa Odonata (p. 21); — *Carpenter, G.*: New records from Rhode Island (pp. 21-22); — *Levin, S.*: Least Grebe eats Green Darners! (p. 22); — *Muller, B.*: Choosing a net (pp. 22-23); — *Mauffray, B.*: New Cordulegaster sayi population discovered, possibly the largest (pp. 23-24); — *Beckemeyer, R.*: Dragonflier (pp. 24-25; poem); — *Tramea*, featuring the Web for Argia readers (pp. 25-27). – No. 2: *Donnelly, N./Tennessen, K./Dunkle, S./ Paulson, D./Daigle, J.*: Tributes to Minter Westfall (pp. 4-8); – *Lederer, P.T.*: William T. Davis, a short biography (pp. 8-13); – *Daigle, J.J.*: Snowbirds sighted in the sunny Everglades (pp. 13-14); – *Vogt, T.*: Preliminary observations of Odonata at Lignumvitae Key State Botanical Site (pp. 14-16); – *Nikula, B. & J. Abbott*: Texas news (p. 16); – *Paulson, D.*: Washington Odonata inventory (pp. 16-17); – *Donnelly, N.*: Checklist of Kansas dragonflies (pp. 17-18); book review of the work listed in *OA* 11430); – *Beckemeyer, R.*: A book of interest to odonatologists: "Female control: sexual selection by cryptic female choice", by W.G. Eberhard, Princeton Univ. Press (pp. 18-19); – *Catling, P.M.*: Manual of Ontario damselflies: a request (p. 19); – *Beckemeyer, R.*: Ode to Erpetogomphus lampropeltis ovipositing in a Gila River riffle (p. 20; poem); – *Sones, J.*: Odonatological surfing (pp. 20-22).

(11549) ASAHINA, S., 1997. Records of the northern Vietnamese Odonata taken by the expedition members from the National Science Museum, Tokyo. 5. Coenagrionidae, Protoneuridae and Platycnemididae. *Bull. natn. Sci. Mus. Tokyo* (A) 23(1): 17-34. – (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
24 spp. are dealt with. As new are described: Calicnemia uenoi sp. n. (holotype ♂: Ban Khoang, Sa Pa, Lao Cai prov., alt. 1400 m, 12-V-1995), Coeliccia tomokunii sp. n. (holotype ♂: Mt Tan Vien, Ba Vi, Ha Tay prov., alt. 500 m, 15-X-1995), C. uenoi sp. n. (holotype ♂: Cuc Phuong, Gia Vien, Ninh Binh prov., alt. 450 m, 25-V-1995), C. onoi sp. n. (holotype ♂: Tam Dao, Vinh Phu prov., alt. 900 m, 21-IX-1995), C. satoi sp. n. (holotype ♂: Ban A Chia, Hung Nga, Muong Lay, Lai Chau prov., alt. 890 m, 8-V-1995), C. acco sp. n. (holotype ♂: Cuc Phuong, Gia Vien, Ninh Binh prov., alt. 370 m, 27-V-1995), and C. ambigua sp. n. (holotype ♂: Tam Dao, Vinh Phu prov., alt. 950 m, 20-V-1995).

(11550) ASAHINA, S., 1997. Records of the northern Vietnamese Odonata taken by the expedition members from the National Science Museum, Tokyo. 6. Platystictidae, Megapodagrionidae, Lestidae and Synlestidae. *Bull. natn. Sci. Mus. Tokyo* (A) 23(2): 107-113. – (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
This is the concluding part of the series, as listed in *OA* 10674, 10832, 11071, 11367 and 11549. 7 spp. are dealt with. As new are described: Drepanosticta vietnamica sp. n. (holotype ♂: Ban A Chia, Hung Nga, Muong Lay, Lai Chau prov., alt. 890 m, 8-V-1995), Protosticta khaosoidaoensis satoi ssp. n. (holotype ♀: Tam Dao, Vinh Phu prov., alt. 960 m, 21-V-1995) and Rhipidolestes owadai sp. n. (holotype ♂: Tam Dao, Vinh Phu prov., alt. 980 m, 22-IV-1995).

(11551) BEDE, L.C., M. WEBER, S. RESENDE, W. PIPER & W. SCHULTE, 1997. *Manual para mapeamento de biótopos no Brasil: base para um planejamento ambiental efficiente*. Fundação Alexander Brandt, Belo Horizonte. 146 pp. ISBN none. – (Orders to the publishers: Rua Santa Rita Durão 321/1410, BR-30140-110 Belo Horizonte, MG).
Enlarged 2nd edn of the work listed in *OA* 10781. The odon. are dealt with on pp. 96-97.

(11552) BEDJANIČ, M., L. BOŽIČ, A. FERK & A. PIRNAT, 1997. Prispevek k poznavanju favne kačjih pastirjev (Odonata) območja med rekama Dobro in Kolpo (S Hrvaška). – Contribution to the knowledge of the odonate fauna of the area between Dobra R and

Kolpa R. (N Croatia). *In*: M. Kotarac [Ed.], Mladinska biološka raziskovalna tabora Podzemelj '95 in Duplje '96, pp. 43-49, ZOTKS, Ljubljana, ISBN 961-6243--02-0. (Slovene, with Engl. s.). – (First Author: Fram 117/a, SI-2313 Fram).
29 spp. are listed from 18 localities; July 1995. Lestes macrostigma is of particular regional interest.

(11553) BESCHOVSKI, V.L. & V. GASHTAROV, 1997. Selysiothemis nigra (Vander Linden, 1825), a new genus and species for the Bulgarian fauna (Odonata: Anisoptera: Libellulidae). *Ent. Z., Essen* 107(7): 309--310. – (First Author: Inst. Zool., Bulg. Acad. Sci., Blvd Tzar Osvoboditel 1, BG-1000 Sofia).
A ♂ is reported from the Melnishka flood plain, nr Melnik, 4-VI-1996. This brings the status of the Bulgarian fauna up to 65 spp.

(11554) BLAND, K.P., 1997. A precisely timed case of nocturnal migration by Aeshna cyanea (Müller) (Odonata: Aeshnidae). *Ent. Rec. J. Var.* 109(5/6): 154--155. – (35 Charterhall Rd, Edinburgh, EH9 3HS, UK).
On 3-VIII-1996, at 03.40 h, a ♀ Aeshna cyanea was found at the illuminated wall, immediately behind the operating moth trap, at Tarvin, Cheshire, UK. As the trap was more than 1 mi from the nearest open water, it is probable that this individual was pulled into the light while actively migrating at this early h.

(11555) BORCHERDING, J., 1997. Die Libellenfauna als Bioindikator für den Zustand einer Kulturlandschaft. *LÖBF-Mitt.* 97(2): 48-53. – (Abt. Grietherbusch, Zool. Inst., Univ. Köln, D-46459 Rees-Grietherbusch).
During 1993-1996, 29 spp. were evidenced at a locality nr Rees. The bioindicative value of the assemblage is assessed and discussed.

(11556) BORKENT, A. & W.E. WIRTH, 1997. World species of biting midges (Diptera: Ceratopogonidae). *Bull. Am. Mus. Nat. Hist.* 233: 1-257. – (First Author: 1171 Mallory Rd, Enderby, BC, V0E 1V0, CA; – Second Author deceased).
Numerous Ceratopogonidae spp. are parasitic in dragonflies. Here is provided a checklist of all available names published in the fam. until end 1995, with many of those named in 1996 and some in 1997 also incorporated. The catalogue includes precise bibliographic data of original descriptions, incl. the country or territory of the type locality and the location of type material. Fossil taxa are also covered, and numerous taxonomic decisions offered.

(11557) BOS, F. & M. WASSCHER, 1997. *Veldgids libellen.* – [*Dragonfly field guide*]. KNNV, Utrecht. 256 pp. ISBN 90-5011-101-7. – Price: NLG 56.— net. (Dutch). – (Publishers: KNNV Uitgeverij, Oudegracht 237, NL-3511 NK Utrecht).
A carefully prepared and well balanced work, in what is becoming the traditional style in the European field guide literature. It covers the European fauna up to the W border of Russia. A page of text and 2 col. phot. (adult ♂, ♀), at the opposite page, are awarded to each sp. A brief but adequate description of the adult, and statements on adult phenology, habitat and status, accompanied by a regional distribution map, comprise the standard information provided for each sp. In the introductory chapters, a concise outline of dragonfly biology, behaviour and ecology is followed by a lucid analysis of vectors triggering alterations in range and/or in the local population status in an appreciable number of spp. – Although the resp. taxonomic name is stated in the heading of each species and a taxonomic checklist is separately provided, the exclusive use of vernacular appellations throughout the text and in fig. captions does require a continuous "alertness" of the reader used to conventional technical literature. The book does not contain any conventional keys either, but the kind and style of presentation of the species-peculiar features are adequate for an easy and reliable identification.

(11558) BRODY, J.E., 1997. A delicate creature yields its secrets. *New York Times* (Science Times), issue of 12 Aug., pp. B7 & B10.
A masterly styled article on dragonfly biology and on some of its still unanswered secrets, based on interviews with some US odonatologists. A reference is also made to a new sp., discovered along the Eau Claire R. in W Wisconsin, to be described by Drs W. Smith, T. Vogt & K. Tennessen.

(11559) CHANG, Y.-J. & L.-J. WANG, 1997. [*Dragonflies of Yangminshan National Park*]. Yangminshan National Park Administration Office, Taiwan [Illustrated Series of Books on Yangminshan National Park, No. 6]. 263 pp. (12.8×22.1 cm, soft cover). ISBN 957--00-9368-4. (Chin., with taxonomic nomenclature). – (Second Author: Lab. Insect Conserv., Dept Plant Pathol. & Ent., Natn. Taiwan Univ., Taipei, Taiwan, ROC).
An attractive, well organised and nicely produced field

guide, the manuscript of which has been reviewed by the doyen of the Taiwanese odonatologists, Dr J.-C. Lien, though a few insignificant errors appear in the last-minute, post-review text additions. Out of the 142 known Taiwanese spp., 90 are treated here. – In the introductory chapters (pp. 12-59), the adult morphology is briefly outlined, but the main emphasis is given to the ecology and behaviour (pp. 18-55). A simple pictorial key is introducing the reader to the concise species narratives, which constitute the main part of the book (pp. 60-243). These are richly illustrated with col. field phot. (adults & larvae). The family (species) coverage is as follows: Calopterygidae (4 spp.), Chlorocyphidae (2), Euphaeidae (2), Synlestidae (1), Lestidae (1), Megapodagrionidae (1), Platycnemididae (4), Protoneuridae (1), Coenagrionidae (10), Cordulegastridae (3), Gomphidae (12), Aeshnidae (10), Corduliidae (2) and Libellulidae (37). A chapter on dragonfly conservation is added. – The Taiwanese odon. fauna has been catalogued in the work listed in *OA* 4688, this is the first field guide, and one of the 2 currently on the market available books on the dragonflies of Taiwan (cf. *OA* 11624). – *(Abstracter's Note:* Dr L.-J. Wang brought together an appreciable odon. collection already at the age of 10. At that time he was faced with serious identification problems. The "trauma" caused by these has, in a way, triggered the production of the present work, which he considers as a fulfilment of his boyhood dreams. – Two minor errors should be corrected: the bottom phot. on p. 130 shows a Chlorogomphus brevistigma rather than C. risi and, according to the information from the second Author, the phot. on p. 159 is probably referable to an undescribed Oligoaeschna sp.).

(11560) [CHAO, H.-f.], 1997. Biography of Prof. Hsiu-fu Chao (= Zhao Xiu-fu). *Wuyi Sci. J.* 13: 1-4 [separate pagination], 4 col. pls excl. (Chin., with Engl. title in contents tab.). – (Biol. Control Res. Inst., Fujian Agric. Univ., Fuzhou, Fujian-350002, P.R. China).
This is one of the (anonymous) texts in the Tribute Issue, published in celebration of prof. Chao's 81st birthday. – Cf. also *OA* 11629.

(11561) [CHAO, H.-f.], 1997. New taxa described by Prof. H.-f. Chao. *Wuyi Sci. J.* 13: 12-22 [separate pagination]. – (Biol. Control Res. Inst., Fujian Agric. Univ., Fuzhou, Fujian-350002, P.R. China).
A catalogue of 162 taxa, with bibliographic (page) references, type localities and statements on type deposition. Included are 70 odon. taxa (61 spp., 8 gen., 1 subfam.), the other taxa are referable to Plecoptera (2), Hymenoptera (87) and Siphonaptera (3).

(11562) [CHAO, H.-f.], 1997. Scientific publications of Prof. Hsiu-fu Chao. *Wuyi Sci. J.* 13: 5-11 [separate pagination]. (Chin., with Engl. title in contents tab.). – (Biol. Control Res. Inst., Fujian Agric. Univ., Fuzhou, Fujian-350002, P.R. China).
191 titles (1941-1997), a large and most important part of these related to the odon.

(11563) chr, 1997. Rückkehr der Libellen. *Kieler Nachrichten*, issue of 21 June, 1 p. (exact pagination not available).
A local daily's note: due to the recent environment quality improvement, "21 out of the 65 odon. spp. are not endangered in Schleswig-Holstein", Germany. On the other hand, in consequence of a "climatic change" (?), the "Siberian" species are decreasing and the mediterranean faunal elements increasing. – Cf. also *OA* 11571; for the Swiss "Blue List" cf. *OA* 11270.

(11564) CHUNG, M.G., S.S. KANG & Y. YEEH, 1997. Genetic diversity and structure in Korean populations of Sympetrum darwinianum and S. eroticum eroticum (Odonata: Libellulidae). *Jap. J. Ent.* 65(2): 427-435. – (First 2 Authors: Dept Biol., Gyeongsang Natn. Univ., Chinju 660-701, Korea; – Third Author: Inst. Basic Sci., Inje Univ., Kimhae, 621-749, Korea).
Starch gel electrophoresis was conducted on 343 individuals in 8 populations of the 2 spp. Electrophoretic data revealed that the 2 spp. exhibit considerably higher levels of genetic variation than those of most other insects. Expected mean population heterozygosity (He, 0.361 vs 0.333) and percent polymorphic loci (P, 81.5% vs 87.2%) found in S. darwinianum were very comparable to those in S. e. eroticum. Analyses of Wright's fixation indices, calculated for all polymorphic loci across populations in each species, indicated that, overall, a near conformance of genotype frequencies to Hardy-Weinberg expectations, suggesting that mating was nearly panmictic. The results indicate that the 2 spp. might have very similar phylogenetic histories, and/or ecological and life history traits.

(11565) D.U., 1997. Svetovni simpozij o kačjih pastirjih. – [World symposium on dragonflies]. *Delo* 39(161): 3, issue of 15 July. (Slovene).
An informative article on the 14th Int. Symp. Odonatol. (Maribor, Slovenia, July 12-23, 1997), in the largest Slovene daily. A similar announcing article was pub-

lished in the Maribor daily, *Večer* 53(157): 13 (issue of 10 July); and a notice on the Post-Symposium Tour, with a phot., has appeared in *Delo* 39(164): 6 (issue of 18 July). The Org. Secretary, Dipl.-Biol. M. Kotarac, has also given an interview for one of the Slovene TV channels. – (For the abstracts of papers cf. *OA* 11547).

(11566) DAVIS, J., 1997. Conservation of aquatic invertebrate communities in central Australia. *Mem. Mus. Victoria* 56(2): 491-503. – (Sch. Biol. & Environ. Sci., Murdoch Univ., Murdoch, WA 6150, AU).
Recent sampling of the West MacDonnell Ranges (1993, 1994) and the George Gill Range (1986) revealed the presence of 'relict streams', containing elements of invertebrate fauna that have persisted since the last 'wet' phase in central Australia. The occurrence of 16 odon. spp. is analysed and discussed.

(11567) EDA, S., 1997. Annual review of entomology for 1996 in particular insect groups. Dragonflies. *Gekkan-Mushi* 315: 31-38. (Jap., with Engl. title). – (3-4-25 Sawamura, Matsumoto, Nagano, 390 JA).
Sequel in the series as listed in *OA* 10843.

(11568) *EXUVIAE*. Journal of the Slovene Odonatological Association, Vol. 2, No. 2 (not published), Vol. 3, No. 1 (dated 1996, published July 1997), Vol. 3, No. 2 (not published), Vol. 4, No. 1 (July 1997). (Engl. & Slovene, with Engl. s's). – (Orders outside Slovenia: c/o *Odonatologica*, P.O. Box 256, NL-3720 AG Bilthoven).
3(1): *Červek, U., A. Ferk & M. Sameja*: Dragonflies (Odonata) of Komarnik accumulation lake near Lenart (NE Slovenia) (pp. 1-12); – *Bedjanič, M. & M. Štern*: Odonata of a small pool near village Gračišče, SW Slovenia (pp. 13-16). – 4(1): *Pirnat, A.*: Hemianax ephippiger (Burmeister, 1839), a new species in the dragonfly fauna of Slovenia (Anisoptera: Aeshnidae) (pp. 1-3); – *Šalamun, A. & M. Bedjanič*: Dragonflies (Odonata) from Slovenia and Croatia in the collection "Finzi" of the Natural History Museum Trieste (pp. 4--10; incl. Ital. s.); – *Tomc, V.*: Phenology of emergence of some rheophilous Odonata species in Kolpa R. (pp. 11-16). – For the earlier issues cf. *OA* 9715 and 10805; Vol. 1, No. 2 was not published.

(11569) FEY, T. [text] & A. CAMERON [figs], 1997. Gevechtshelikopter uit de oertijd. *Natuurbehoud* 28(3): 30-33. (Dutch). – (Authors' addresses not stated).
General presentation of the Netherlands dragonfly world, with beautiful watercolour paintings, illustrating various features of dragonfly biology.

(11570) FORBES, M.R.[L.], G. SCHALK, J.G. MILLER & J.M.L. RICHARDSON, 1997. Male-female morph interactions in the damselfly Nehalennia irene (Hagen). *Can. J. Zool.* 75(2): 253-260. (With Fr. s.). – (Dept Biol., Carlton Univ., 587 Tory Bldg, 1125 Colonel By Dr., Ottawa, ON K1S 5B6, CA).
Several hypotheses concerning factors that favour coexistence of ♀ morphs in Zygoptera invoke differential attraction to (or harassment of) ♀ morphs from mate-searching ♂♂. Experiments were designed to determine whether ♂♂ were differentially attracted to either of 2 discrete ♀ morphs in N. irene. One ♀ morph was similar in colour and pattern to the conspecific ♂ ("androchrome") and the other was dissimilar ("gynochrome"). ♂♂ were indiscriminate in their mating attempts. Overall, ♂♂ were more attracted to gynochrome ♀♀; however, ♂♂ that showed high response intensity to model ♂♂ were equally likely to grasp models of the gynochrome and androchrome ♀♀. During ♂-♀ encounters in the field, androchrome ♀♀ were more likely to chase ♂♂, whereas gynochrome ♀♀ showed more refusal displays. Other direct and indirect evidence suggests that gynochrome ♀♀ may be greater targets of sexual aggression than androchrome ♀♀ while at the pond's edge, but that androchrome ♀♀ more often frequent the pond's edge. Whether or not these differences in behaviour translate into differential costs and benefits of being a particular morph is unknown.

(11571) GEHM, E., 1997. Biologe schlägt Alarm: die Libellen sterben aus. *Bild*, issue of 24 June, p. 6.
Though on an entirely different note, this daily's article is apparently based on the same interview with Dr J. Hoffmann (Hamburg) as that listed in *OA* 11563. Again, reference is made to Schleswig-Holstein, where "21 out of the 65 odon. spp. are not endangered, due to the restauration of natural habitats".

(11572) GLOTZHOBER, R.C., 1997. Odonata of Cedar Bog and other west-central Ohio fens. *Proc. Cedar Bog Symp.* 3: 91-96. – (Ohio Hist. Soc., 1982 Velma Ave., Columbus OH 43211-2497, USA).
A review of literature, existing collections and current field work yielded a total of 49 spp. at Cedar Bog Nature Preserve, Ohio, USA. These are here listed and annotated. In Ohio, Nannothemis bella appears restricted to this locality.

(11573) GRABOW, K., J. KORB, A. MARTENS & M.-O. RÖDEL, 1997. The use of termite mounds by the dragonfly Crocothemis divisa Karsch, 1898 during the pre-reproductive period (Odonata, Libellulidae). *Trop. Zool.* 10: 1-10. – (First Author: Lehrstuhl Zool. III, Univ. Würzburg, Am Hubland, D-97074 Würzburg).
In the Guinea Savanna Zone of the Ivory Coast, C. divisa survives the dry season as sexually inactive adult. Both sexes use mounds of the termite Macrotermes bellicosus as daytime resting sites. Individuals were often observed to aggregate on a few particular mounds, while the majority of mounds remained unoccupied. The insects, which perch in the shade on the ribs of the steep mound sides, repeatedly change their positions during the course of the day in response to direct solar illumination. Flights are very short and not accompanied by the aggressive behaviour typical of sexually active individuals. The choice of termite mounds is compared with this sp. known preference for bare perches and is considered to be of importance for thermoregulation and to reduce the risk of predation.

(11574) GRAVELAND, J., A. DATEMA & M.T. WASSCHER, 1997. *Voorkomen en ecologie van Grote Karekieten en libellen in de Waterleidingplas van Gemeentewaterleidingen Amsterdam.* – [*The occurrence and ecology of the Great Reed Warbler and dragonflies in the Waterleidingplas of the Amsterdam municipal watersupply company*]. IBN-DLO & Gemeentewaterleidingen, Amsterdam. 59 pp. (Dutch). – (Third Author: Minstraat 15 bis, NL-3582 CA Utrecht).
At 4 localities in the Amsterdam area, dragonflies represent 34-78% in the bird diet weight. Faunal composition and population biology of the resp. odon. assemblages are described and discussed. – (Cf. also *OA* 11519).

(11575) [*GREEN READING BOOK*], Vol. 33, No. 9: [*Ecological grading-up of dragonflies*]. (July 1997). Rhokka Kankyo Joho Centre, Tokyo. 100 pp. ISSN/ISBN none. – Price: ¥ 2310,— net. (Jap.). – (Available from the publisher: No. 244, Akasaka RH Bldg, 9-1-7 Akasaka, Minato-ku, Tokyo, 107, JA).
Mori, S.: Akitsu-shima / Land of dragonflies! (pp. 1-5); – *Inoue, K.*: Japanese culture connected with the ecology of Japanese dragonflies (pp. 6-11); – *Hosoda, A.*: Biology and habitat of Libellula angelina and Rhyothemis fuliginosa (pp. 12-17); – *Taguchi, M.*: Biology and habitat of Sympetrum species (pp. 18-24); – *Higashi, K.*: Biology and habitat of Calopteryx atrata (pp. 25-30); – *Nishu, S.*: Biology and habitat of Mortonagrion hirosei (pp. 31-36); – *Otaki, S.*: Aquatic plants and dragonflies (pp. 37-39); – *Ishuzuki, N.*: Dragonfly pond set up at the Shimojo River Dam (pp. 41-44); – *Arai, Y.*: Dragonfly parks for conservation of hill sides: an example in Yorii-machi (pp. 45-49); – *Sano, S.*: Living museum: Bokke Nature Park, Ichikawa (pp. 51-56); – *Ishiduka, T.*: Nature restauration at a former factory site: Okunohora Park (pp. 57-61); – *Uehara, A.*: Ecological grading-up of the Shirahata Pond Park (pp. 63-66); – *Onoe, S.*: Construction and applications of a nature-like site: Daido Primary School, Yokohama (pp. 67-71); – *Kondo, Y.*: Construction of a biotope park: Iwakura (pp. 72-77); – *Fukuhiro, S.*: Kamino Pond Park Biotope in the Abuyama Residence, Takatsuki (pp. 78-84); – *Takahata, T.*: Kobe Eco-up Association and Oku-suma Park: Kobe (pp. 85-88); – *Sugimura, M.*: Dragonfly Natural Park, Nakamura (pp. 89-93); – *Ejima, K.*: Dragonfly Kingdom, Saga (pp. 94-98).

(11576) *HAGENIA*. Mitteilungsblatt des deutschen Büros der SIO und der GdO, No. 14 (1 Sept. 1997). – (c/o Mrs U. Krüner, Gelderner Strasse 39, D-41189 Mönchengladbach).
The issue contains reports on the 14th Int. Symp. Odonatol., on the SIO Business Meeting held in its framework, and on the SIO restructured management modalities. The articles (28 pp.) are organised in the traditional sections, incl. also 3 scientific notes, viz. *Kappes, E. & W. Kappes*: Sympetrenwanderung am 11.08.1996 bei Gummern (pp. 20-21); – *Müller, J. & R. Steglich*: Zwischenergebnis 1997 zum aktuellen Vorkommen von Gomphus flavipes in der Elbe von Sachsen-Anhalt, Brandenburg, Mecklenburg-Vorpommern, Niedersachsen, Schleswig-Holstein und der Weser bei Bremen (pp. 21-22); – *Buck, K.*: Drei Reisen nach New South Wales (pp. 23-27).

(11577) HÄMÄLÄINEN, M. & S. DIVASIRI, 1997. Rhinocypha arguta n.sp., a new jewel damselfly from north-east Thailand (Odonata: Chlorocyphidae). *Ent. Z. Essen* 107(5): 201-204. – (First Author: Sunankalliontie 13, FIN-02760 Espoo; – Second Author: Natn. Biol. Contr. Res. Cent., P.O. Box 9-52, Bangkhen, Bangkok-10900, Thailand).
The ♂ of the new sp. is described and illustrated (holotype ♂: Loei prov., Phu Kradung, 29-X-1996; deposited at EMB, Bangkok, 1 ♂ in RMNH, Leiden) and compared with R. drusilla Needham.

(11578) HAN, F.-y. & H.-q. ZHEU [=ZHU], 1997. A study of the penes of some Sympetrum (Odonata: Libellulidae). *Wuyi Sci. J.* 13: 1-5. (Chin., with Engl. s.). – (Dept Biol., 42-38, Shanxi Univ., Taiyuan-030006, Shanxi, P.R. China).
Brief descriptions and SEM photographs of 12 Chinese spp. (croceolum, depressiusculum, eroticum ardens, fonscolombei, hypomelas, imitans, infuscatum, kunckeli, parvulum, pedemontanum, ruptum, uniforme).

(11579) HAWKING, J.H., 1997. The conservation status of dragonflies (Odonata) from south-eastern Australia. *Mem. Mus. Victoria* 56(2): 537-542. – (Coop. Res. Cent. Freshw. Ecol., Murray-Darling Freshw. Res. Cent., P.O. Box 921, Albury, NSW 2640, AU).
The conservation status is documented and the spp. with limited distributions and/or larval habitats which are vulnerable are discussed. 107 spp. are recorded from S Australia, Victoria, Tasmania and S New South Wales. No sp. is considered endangered, but 9 spp. have high conservation priority. These are endemic to Australia and all have restricted distributions. The vulnerability of the larval habitats is discussed and suggestions for their conservation and management are made.

(11580) HESSELINK, T., 1997. Het Dwingelderveld. *Amoeba, Amst.* 71(3): 98-99. (Dutch). – (B. v. Bloklandlaan 28, NL-2995 VB Heerjansdam).
Records of 12 odon. spp. from this locality (28-V--1997), the Netherlands.

(11581) HOESS, R., 1997. Libelleninventar des Kantons Bern. *Jb. naturh. Mus. Bern* 12: 3-100. (With Engl. s.). – (Normannenstr. 35, CH-3018 Bern).
For a preprint see *OA* 9865.

(11582) HOOPER, R.E. & M.T. SIVA-JOTHY, 1997. "Flybys": a prereproductive remote assessment behavior of female Calopteryx splendens xanthostoma (Odonata: Calopterygidae). *J. Insect Behav.* 10(2): 165--175. – (First Author: Lab. Wildl. Cons., Natn. Inst. Envir. Stud., Tsukuba, 305, JA).
Before reproductive event, ♀ C. s. xanthostoma show a distinctive flight behaviour over patches of oviposition substrate, guarded by territorial ♂♂. The Authors term such flights "flybys". Since ♀♀ fly most frequently (and nonrandomly) over the site which they eventually utilize, the flight type appears to be related to ♀'s selection of a reproductive site. When ♂♂ were experimentally excluded, ♀♀ made flybys over more sites than when ♂♂ were present. The levels of antagonistic interaction between ♂♂ were manipulated, to determine the effect of fighting on flybys. The frequency of flybys by ♀♀ over each patch did not change with different levels of ♂ agonistic activity, but ♀♀ landed and copulated on patches where fighting between ♂♂ was lowest. Moreover, when ♀♀ secured access to an oviposition site without copulating with the resource holding ♂, they made flybys over more sites than when they secured access to a site by copulating with the territorial ♂. These observations suggest that one function of flybys is to allow ♀♀ to assess remotely potential ♂ interference at oviposition sites.

(11583) HORWITZ, P., 1997. Comparative endemism and richness of the aquatic invertebrate fauna in peatlands and shrublands of far south-western Australia. *Mem. Mus. Victoria* 56(2): 313-321. – (Dept Envir. Managm., Edith Cowan Univ., Joondalup Dr., Joondalup, WA 6027, AU).
The odon. (22 spp.) are among the 6 groups analysed. No locally restricted taxa and only 5 regionally endemic spp. were found (Argiolestes minimus, Austrogomphus ?collaris, Austroaeschna anacantha, Procordulia affinis, Synthemis cyanitincta). Austrolestes analis and Orthetrum caledonicum were most frequently collected.

(11584) JÖDICKE, R., 1997. *Die Binsenjungfern und Winterlibellen Europas. Lestidae*. Westarp Wissenschaften, Magdeburg. 277 pp., 3 col. pls incl. ISBN 3--89432-460-0. [Neue Brehm Bücherei 631 / Libellen Europas 3]. – Price: DEM 46.— net (available from the Eds of *Odonatologica*, Bilthoven).
Based on many years of meticulous preparatory work and on an extraordinary knowledge of literature and material, the text of this monograph was composed in a single, relatively short effort, the result of which is a concise, innovative review of all what is known on the European Lestidae, throughout their (also extralimital) range. The treatment of biology, behaviour, ecology, biogeography, taxonomy and systematics is integrated into a highly legible and well-balanced account, characteristic also for the earlier titles in this series (cf. *OA* 10878, 11311, also 6147), which certainly is an absolute novelty in what actually is but a high standard technical monograph. Many of the 135 textfigs are modified from earlier publications, but an unusually high number of these are original, mostly skilfully

prepared by H. VON HAGEN, an excellent technical illustrator of odonatol. publications. – Though covering all the published information on the taxa concerned, the book does not represent merely a review and compilation of the available (often anecdotal) evidence. Particularly in its taxonomic sections, the Author is solving many of the outstanding problems relative to the nomenclature, status and biogeography of various taxa. For example, in the case of the hitherto enigmatic Sympecma paedisca-complex, he is presenting also the description and structural figs of material from the Asiatic Russia, Turkey, China, Korea and Japan. After long last, the infraspecific taxa in Lestes virens are clearly defined and their ranges mapped. Some chapters, particularly those on population biology, will be of interest to non-odonatologists as well. – It is likely, the Publishers of this book (and of this series in general) are aiming at the European readership. If so, this is considered an unfortunate error. The present work (like to some extent also the previours titles in this series) represents a cornerstone in the biological research in the family concerned. Consequently, no serious work in the biology of, say, East Asiatic or the New World taxa is henceforth possible without a reference to the present monograph. It would be highly desirable, therefore, if a possible second edition and/or the subsequent titles in this series would be provided with an exhaustive Engl. summary and with bilingual fig. captions and tab. texts.

(11585) KASUYA, E., K. EDANAMI & I. OHNO, 1997. Territorial conflicts in males of the dragonfly Orthetrum japonicum japonicum (Odonata: Libellulidae): the role of body size. *Zool. Sci.* 14(3): 505-509. – (Lab. Biol., Fac. Educ., Niigata Univ., 2-8050 Ikarasi, Niigata, 950-21, JA).
Territorial residents were larger than intruders in body width, but not in hind wing length. Winners of territorial conflicts were larger than losers in body width, but not in hind wing length. This difference was attributed to the fact that residents were larger than intruders. The results of territorial conflicts were more strongly affected by the role of the opponents (resident or intruder) than by the difference in their body sizes. Territorial ♂♂ arrived at the territorial sites earlier than non-territorial ones on a given day. The body size of ♂♂ arriving at the study area earlier in a day was not larger than that of ♂♂ arriving later.

(11586) KIAUTA, B., 1997. Ten geleide. *In*: F. Bos & M. Wasscher, Veldgids libellen, pp. 6-7, KNNV, Utrecht (Dutch).
Preface in the book listed in *OA* 11557.

(11587) KOTARAC, M., 1997. *Atlas kačjih pastirjev (Odonata) Slovenije, z Rdečim seznamom. – Atlas of the dragonflies (Odonata) of Slovenia, with the Red Data list.* Center za kartografijo favne in flore, Miklavž-na-Dravskem-polju. 206 pp. ISBN 961-90512-0-3 [Atlas faunae et florae Sloveniae 1]. (Bilingual, Slovene/English). – (Available from the Eds of *Odonatologica*, at NLG 75.— net).
A professionally prepared and luxuriously produced work, marking a "new generation" of national atlases, based on exact ecologically defined localities (habitats). 69 spp. are dealt with, 64 of these were recorded since 1989, 39 are redlisted. Each of the 64 spp is treated on 2 opposite pp. (text/graphs). The localities are plotted on relief maps. Provided are a (decade) phenology graph (incl. the emergence periods) and a vertical distribution graph. For each sp., a tab shows the total number of localities, the total number of breeding sites, and the relative frequency of localities in the overall sample. To facilitate international comparison, the relative frequency of the occupied 10 km UTM squares is also stated. Another tab. shows a simple probability of co-occurrence with any other sp. In a separate tab., this probability is weighted [log 1 (Fspec/Ftotal)], so it favours significant links. At least in some spp., this will provide additional information on odon. communities; the examples of 15 of these are given on pp. 175-185. The computer methodology of community analyses (pp. 159-161) is to be considered one of the innovative features of the present work. Species "monographs" are masterly and authoritatively styled. Among the various "extras", the book contains a complete regional bibliography, many habitat photographs (with their fauna), the portraits of all spp. (many by Prof.Dr G. Jurzitza), etc. – Whether or not one is interested in the fauna of this particular part of the world, the technical data base treatment (ESRI ArcView Gis 3.0 computer program), the overall presentation, and the information on the odon. communities, are increasing the relevance of this work far beyond its regional scope.

(11588) KOTARAC, M., M. BEDJANIČ, A. PIRNAT & A. ŠALAMUN, 1997. Prispevek k poznavanju favne kačjih pastirjev (Odonata) v Beli krajini (JV Slovenija). – Contribution to the knowledge of odonate fauna of Bela Krajina (SE Slovenia). *In*: M. Kotarac [Ed.], Mladinska biološka raziskovalna tabora Podzemelj '95

in Duplje '96, pp. 19-32, ZOTKS, Ljubljana, ISBN 961-6243-02-0. (Slovene, with Engl. s.). – (First Author: Antoličičeva 1, SI-2204 Miklavž-na-Dravskem-polju).

39 spp. are recorded from 78 localities, 7/19-VII-1995. The composition of the Bela Krajina (= White Carniola) odon. fauna differs from that of the other parts of Slovenia (strong Lestes populations, Coenagrion scitulum, Cercion lindenii).

(11589) LAURILA, A., J. KUJASALO & E. RANTA, 1997. Different antipredator behaviour in two anuran tadpoles: effects of predator diet. *Behav. Ecol. Sociobiol.* 40(5): 329-336. – (Div. Pop. Biol., Dept Ecol. & Syst., P.O. Box 17, FIN-00014 Univ. Helsinki).

Recent investigations have indicated that animals are able to use chemical cues of predators to assess the magnitude of predation risk. One possible source of such cues is predator diet. Chemical cues may also be important in the development of antipredator behaviour, especially in animals that possess chemical alarm substances. Bufo bufo tadpoles are unpalatable to most vertebrate predators and have an alarm substance. Tadpoles of Rana temporaria lack both these characters. The Authors studied experimentally how predator diet, previous experience of predators and body size affect antipredator behaviour in these 2 tadpole spp. Late-instar Aeshna juncea larvae were used as predators. The dragonfly larvae were fed exclusively on insects, R. temporaria tadpoles or B. bufo tadpoles. R. temporaria tadpoles modified their behaviour according to the perceived predation risk. Depending on predator diet, the tadpoles responded with weak antipredatory behaviour (triggered by insect-fed predators) or strong behaviour (triggered by tadpole-fed predators) with distinct spatial avoidance and lowered activity level. The behaviour of B. bufo in predator diet treatments was indistinguishable from that in the control treatment. This lack of antipredator behaviour is probably related to the effective post-encounter defenses and more intense competitive regime experienced by B. bufo. The behaviour of both tadpole spp. was dependent on body size, but this was not related to predator treatments. The results also indicate that antipredator behaviour is largely innate in tadpoles of both spp. and is not modified by a brief exposure to predators.

(11590) LEGRAND, J., 1997. La larve de Idomacromia proavita Karsch, 1896 (Odonata, Anisoptera, Corduliidae). *Revue fr. Ent.* (N.S.) 18(4) [1996]: 134. (With Engl. s.). – (Lab. Ent., Mus. Nat. Hist. Nat., 45 rue Buffon, F-75005 Paris).

The description is based on specimens collected in the source section of small forest streams in Gabon and Guinea. It is emphasised, the general appearance of the larva resembles that of the Australian terrestrial Pseudocordulia.

(11591) *La LETTRE DES SOCIETAIRES Societé française d'odonatologie*, No. 11 (15 June 1997). – (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois-d'Arcy).

Notes on the current activities of the SFO, reports on the 1997 Extraordinary and General (annual) Meetings (incl. the 1996 Balance Account and the 1997 Estimates), list of the available publications, etc.

(11592) LEUNG, B. & M.R.[L.] FORBES, 1997. Fluctuating asymmetry in relation to indices of quality and fitness in the damselfly, Enallagma ebrium (Hagen). *Oecologia* 110(4): 472-477. – (Dept Biol., Carleton Univ., 1125 Colonel By Dr., Ottawa, ON, K1S 5B6, CA

Fluctuating asymmetry (FA) refers to random deviations from symmetry of otherwise bilaterally symmetric traits. Researchers have hypothesized that FA should be inversely related to individual quality or fitness. In this study, it was tested for FA-quality and FA-fitness relations in E. ebrium. Wet mass of an individual was used as a measure of its quality, and longevity as a measure of its fitness. Contrary to predictions, no relation was found between FA and quality or fitness, even after the control for possible confounding factors, such as measurement error and inadequate sample size.

(11593) *LIBELLULA*. Mitteilungsblatt der Gesellschaft deutschsprachiger Odonatologen (GdO), Vol. 16(1/2) (June 1997). – (c/o Mrs U. Krüner, Gelderner Str. 39, D-41189 Mönchengladbach).

Inden-Lohmar, C.: Nachweis einer zweiten Jahres-generation von Ischnura elegans (Vander Linden) und I. pumilio (Charpentier) in Mitteleuropa (Zygoptera: Coenagrionidae) (pp. 1-15); – *Wildermuth, H.*: Phänologie und Larvenhabitate von Somatochlora flavomaculata (Vander Linden) in einem voralpinen Moorkomplex (Anisoptera: Corduliidae) (pp. 17-32); – *Burbach, K. & M. Winterholler*: Die Invasion von Hemianax ephippiger (Burmeister) in Mittel- und Nordeuropa 1995/1996 (Anisoptera: Aeshnidae) (pp. 33-59); – *von Rintelen, T.*: Ein Vogelreuse als

Libellenfalle: Beobachtungen in der Vogelwarte Pape, Lettland (pp. 61-64); – *Martens, A.*: Erfolgreiche Entwicklung der Eier von Lestes viridis (Vander Linden) nach Ablage in Koniferen (Zygoptera: Lestidae) (pp. 65-68); – *Wildermuth, H.*: Wie weit enfernt sich Sympecma fusca (Vander Linden) während der Reifungszeit vom Brutgewässer? (Zygoptera: Lestidae) (pp. 69-73); – *von Hagen, H.*: Eine bemerkenswerte Ansammlung von Sympetrum fonscolombii (Selys) auf Mallorca (Anisoptera: Libellulidae) (pp. 75-79); – *Schütte, C. & F. Suhling*: Beobachtungen zum Fortpflanzungsverhalten von Macromia splendens (Pictet) (Anisoptera: Corduliidae) (pp. 81-84).

(11594) MAIBACH, A. & C. MEIER, 1997. 9. Symposium der Schweizerischen Libellenkundlerinnen [sic!]. – 9e Symposium des odonatologues de Suisse. *Nouvelles Cent. suisse Cartogr. Faune* 13: 31-36. – (First Author: La Croix, Rte de Moudon, CH-1610 Oron-la-Ville).
Contains the following abstracts of papers presented at the Symposium: *Hoess, R.*: Ophiogomphus cecilia in der Umgebung von Bern: neue Beobachtungen (p. 33); – *Fivaz, J.-M.*: Les libellules de la région des Grangettes (p. 34); – *Bolzern, H.*: Beweidungsversuch im Flachmoor Wauwilermoos (LU): Auswirkung auf Libellen (erste Ergebnisse) (p. 34); – *Grand, D.*: Somatochlora meridionalis, un taxon méconnu du Sud-Est de la France (pp. 34-35); – *Wildermuth, H.*: Bemerkungen zur Biologie von Somatochlora flavomaculata (p. 35); – *Oertli, B. & E. Pongratz*: Les odonates (libellules) du canton de Genève (pp. 35-36).

(11595) *MARTINIA*. Bulletin des odonatologues de France, Vol. 13, No. 1 (March 1997), No. 2 (June 1997) – (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois-d'Arcy).
No. 1: *Faton, J.-M.*: Les odonates du département de la Drôme: bilan des prospections de 1985 à 1996 (pp. 3-22); – *Brugière, D.*: Epitheca bimaculata (Charpentier, 1825) dans le département de l'Allier (Odonata, Anisoptera, Corduliidae) (p. 22); – *Dommanget, J.-L.*: Un site odonatologique francilien remarquable:les milieux aquatiques du bois de Bajelot (commune de Forges-les-Bains, Essonne) (pp. 23-34); – *Lecocq, S.*: Captures de Sympetrum flaveolum (L., 1758) et Sympetrum vulgatum (L., 1758) en Basse Normandie (Odonata, Anisoptera, Libellulidae) (p. 34); – *Kerihuel, C.*: Découverte d'Ophiogomphus cecilia (Fourcroy, 1785) dans le département de la Sarthe (Odonata, Anisoptera, Gomphidae) (pp. 35-36); – *Brugière, D.*: Cordulegaster bidentata (Sélys, 1843) sur la Mont Lozère (Gard-Lozère) (Odonata, Anisoptera, Cordulegastridae) (p. 36). – No. 2: *Gilard, B.*: Odonates de la Narce de Nouvialle (Auvergne, département du Cantal) (pp. 39-46); – *Cochet, G.*: Première mention de Boyeria irene (Fonscolombe, 1838) dans les départements de la Côte d'Or et de l'Yonne (Odonata, Anisoptera, Aeshnidae) (pp. 47-48); – *Grand, D.*: Compte rendu 9ème Symposium des odonatologues suisses le 23 novembre 1996 à l'Université de Berne (pp. 49-51); – *Dommanget, J.-L.*: Rubrique bibliographique (pp. 52-61); – Analyse d'ouvrage (pp. 61-64).

(11596) McMILLAN, V. & J. RITH-NAJARIAN, 1997. *XV International Symposium of Odonatology*, Colgate University, Hamilton, NY, USA; July 14-21, 1999. Published by the Authors. 4 pp. – (First Author: 223 Alumni Hall, Colgate Univ., Hamilton, NY 13346, USA; – Second Author: River's Edge Geographics, P.O. Box 453, Bemidji, MN 56601, USA).
A beautifully produced, col. illustrated informative brochure on the 1999 Symposium, distributed during the 14th Int. Symp., Maribor, 1997.

(11597) McPEEK, M.A., 1997. Measuring phenotypic selection on an adaptation: lamellae of damselflies experiencing dragonfly predation. *Evolution* 51(2): 459-466. – (Dept Biol. Sci., Dortmouth Coll., Hanover, NH 03755, USA).
Previous studies suggest that the evolution of increased caudal lamellae size to increase swimming speed was an adaptation of Enallagma damselflies for coexisting with large, predatory dragonflies in fishless lakes. To test whether dragonfly predation still exerts selection pressures for increased lamellae size, a field experiment was performed in which the abilities of dragonfly larvae were manipulated to inflict mortality on E. boreale larvae and differences in lamellae size and shape were compared between treatments. In cages where dragonflies were free to forage on damselflies, surviving E. boreale larvae had lamellae that were larger in lateral surface area, and that were wider relative to their length, as compared with larvae recovered from treatments in which dragonflies were not permitted to forage on damselflies. Selection differentials of about 0.25 phenotypic standard deviation units were measured for both of these characters. These results indicate that dragonfly predation still exerts significant selection pressures on damselfly antipredator

adaptations. The results of this study are discussed in the context of studies of adaptation.

(11598) MEY, D., 1997. Erste Nachweise der Westlichen Keiljungfer Gomphus pulchellus (Insecta, Odonata) in Thüringen. *Rudolfstädt. naturh. Schr.* 7: 47-48. (With Engl. s.). – (Karl-Hermann-Str. 3, D-99848 Wutha-Farnroda).
The adults are reported from Hildburghausen (1995) and Eisenach (1996) in resp. S and W Thuringia, Germany.

(11599) MOCEK, B., 1997. Fauna vážek (Odonata) lokality Hradec Králové "Na Plachtě", (východni Čechy, Česká republika). – Dragonflies (Odonata) in the locality Hradec Králové, "Na Plachtě" (eastern Bohemia, Czech Republic). *Acta Mus. reginaehradecensis* (A) 25: 79-88. Czech, with Engl. s.). – (Muz. východnich Čech, Eličšino nářeži 465, CZ-500 02 Hradec Králové),
32 spp. are listed and the fauna is discussed.

(11600) *NATURE AND INSECTS*, Vol. 32, No. 7: *Libellula angelina*, (July 1997). ISSN 0023-3218. (Jap., with Engl. titles).
Matsuki, K.: Introduction and problems of the threatened dragonfly species Libellula angelina (pp. 2-5); – *Fukui, M.*: Habitat conditions of Libellula angelina in Okegayanuma Iwata City (pp. 6-10); – *Aoki, T.*: Population dynamics of adult insects in Libellula angelina (pp. 11-18); – *Kondoh, S. & T. Aoki*: On egg and larval stages of Libellula angelina (pp. 19-22); – *Watanabe, Y.*: Observation on embryonic development and morphological characteristic of first instar larva in the dragonfly Libellula angelina (pp. 23-26); – *Mitoki, T. & S. Hirata*: Migration of Libellula angelina Selys, 1883 (Libellulidae, Odonata) in a habitat, Yamaguchi pref., based on a marking method (pp. 27-32); – *Ehira, K. & K. Tsuda*: The present condition and problems of the dragonfly Libellula angelina in the habitat of Imuta Pond (pp. 33-36); – *Aoki, T.*: Notes on the extinct population of Libellula angelina in Kobe (pp. 37-41); – *Kurashina, H.*: Environmental selectivity in Libellula angelina Selys (pp. 42-45).

(11601) NOVELO-GUTIERREZ, R., 1997. Primer registro de la familia Pseudostigmatidae (Odonata: Zygoptera) para el estado de Morelos, Mexico. *Folia ent. mexic.* 96: 109-110. – (Inst. Ecol., A.C., Apdo Postal 63, MX-91000 Xalapa, Veracruz).
Mecistogaster ornata, 1 ♂, Rio Sabinos, Xochitepec, alt. 1080 m, 24-X-1996.

(11602) *NVL NIEUWSBRIEF*. Mededelingenorgaan van de Nederlandse Vereniging voor Libellenstudie, Vol. 1, No. 2 (July 1997). (Dutch). – (c/o W.-J. Hoeffnagel, Krekelmeent 72, NL-1218 ED Hilversum).
The issue mainly contains brief reports on various field surveys in the Netherlands, viz. in Winterwijk (*R. Ketelaar*), Zuid Limburg (*V. Kalkman & K.-D. Dijkstra*), and in the Kromme Rade nr Hilversum (*M. Wasscher*). Of interest is a note on a Calopteryx virgo population on the Gulp R., along the Netherlands-Belgian border (*H. van Buggenum*).

(11603) OTT, J., 1997. Lo studio degli odonati nella pianificazione del paesaggio. *In*: V. Ingegnoli [Ed.], Esercizi di ecologia del paesaggio, pp. 105-129, Città Studi Edizioni, Milano. ISBN 88-251-7178-1. – (Publishers: Piazza L. da Vinci 7, I-20133 Milano).
The possibilities, principles and technicalities of odonatological considerations in the landscape planning are outlined and discussed, based on European conditions. – Cf. also *OA* 11468.

(11604) PAPAZIAN, M., 1997. Anomalie morphologique à caractère gynandromorphique chez Gynacantha kirbyi Krüger, 1898 (Odonata, Aeshnidae). *Bull. Soc. ent. Fr.* 102(2): 103-108. (With Engl. s.). – (Le Constellation, bât. A, 72 av. des Caillols, F-13012 Marseille).
The literature on gynandromorphism in dragonflies is reviewed, and a ♀ G. kirbyi (New Guinea, no locality), with ♂-like auricles on the 2nd abd. segment is described, illustrated and discussed.

(11605) PIRNAT, A., M. BEDJANIČ, M. KOTARAC & A. ŠALAMUN, 1997. Prispevek k poznavanju favne kačjih pastirjev (Odonata) Gorenjske (SZ Slovenija). – Review of the odonate fauna of north-western Slovenia. *In*: M. Kotarac, [Ed.], Mladinska biološka raziskovalna tabora Podzemelj '95 in Duple '96, pp. 61-76, ZOTKS, Ljubljana, ISBN 961-6243-02-0. (Slovene, with Engl. s.). – (First Author: Vošnjakova 4a, SI-1000 Ljubljana).
Based on literature and on previously unpublished surveys, 54 spp. are listed from Upper Carniola, NW Slovenia. The fauna is discussed and some conservation aspects are considered.

(11606) POBOLJŠAJ, K. & M. KOTARAC, 1997. Prispevek k poznavanju favne dvoživk (Amphibia) in

kačjih pastirjev (Odonata) širše okolice Šaleške doline. – [Contribution to the knowledge of the amphibian and odonate fauna in the general area of Šaleška valley]. *In*: M. Svetina, [Ed.], Zbornik Raziskovalnega tabora Bele vode '96, pp. 177-184, Erico, Velenje. (Slovene). – (Second Author: Antoličičeva 1, SI-2204 Miklavž-na-Dravskem-polju).
Annotated and briefly commented records of 22 odon. spp., from 22 localities (14/17-VIII-1996), Slovenia.

(11607) PROESS, R., 1997. Erstnachweis der Gabel-Azurjungfer (Coenagrion scitulum Rambur, 1842) in Luxemburg (Insecta, Odonata, Coenagrionidae). *Bull. Soc. Nat. luxemb.* 98: 129-131. (With Engl. s.). – (1 rue du Moulin, L-7423 Dondelange).
1 ♂, Eischtal, 24-VII-1996.

(11608) PROESS, R. & R. BADEN, 1997. Die Libellen der Fliessgewässer Luxemburgs. 1. Norden und Westen des Landes (Insecta, Odonata). *Bull. Soc. Nat. luxemb.* 98: 113-128. (With Engl. s.). – (Ecotop, 8 rue des Résidences, L-2434 Senningerberg).
A report on the 1996 odon. survey of 17 streams in northern Luxembourg. Locality data are presented for 15 spp., the occurrence of 6 of these is outlined and discussed in detail.

(11609) RAAB, R., 1997. *Die Besiedlung des Marchfeldkanals (Niederösterreich, Wien) durch Libellen (Insecta: Odonata).* DiplArb., Formal- & Naturw. Fak., Univ. Wien. iv+126 pp., App. (25 pp.) excl. (With Engl. s.). – (Anton-Brucknergasse 2/2, A-2232 Deutsch-Wagram).
The man-made (1987-1991) Marchfeld Canal is conducting some of the Danube water from Langenzerdorf (N of Vienna) into the Russbach at Deutsch-Wagram. In its turn, the Russbach flows again into the Danube at Heinburg, Austria. The canal (length ca 18.8 km) was flooded in summer 1992. During 1991-1993, 29 odon. spp. were recorded. The present work deals in great detail with the succession of colonization, distinguishing there at present 2 odon. communities. – This is one of the most meticulously documented works on the odon. colonization dynamics in a man-made habitat in central Europe.

(11610) RAAB, R. & E. CHWALA, 1997. *Libellen (Insecta: Odonata). Eine Rote Liste der in Niederösterreich gefährdeten Arten.* (1. Fassung 1995). Amt NO Landesreg., Wien. 91 pp. ISBN 3-901542-07-8. – Price: öS 120.— net. – (Orders to: Abt. NatSchutz, Amt d. NÖ Landesreg., Lanhausplatz 1, Haus 16, A-3109 St. Pölten).
A checklist is presented of the 69 spp. known to occur in Lower Austria. 51 of these are assigned to various IUCN categories and dealt with in exhaustive, concise, small "monographs" (current regional status, habitat & biology, threat, management requirements, references). Portraits are provided for all spp., habitat photographs and regional distribution maps are included where considered opportune. – This is a well balanced and highly informative work, therefore certainly of extralimital interest.

(11611) REINHARDT, K., 1997. Jenaer Fauna: Libellen. *Jena Information* 30 (June): 56-57. – (Inst. Ökol., Biol.-Pharmazeut. Fak., Univ. Jena, Dornburger Str. 159, D-07743 Jena).
A description of the early summer dragonfly world in the Jena city area, Germany, directed at the tourist visitors.

(11612) RETTIG, K., 1997. Massenhaftes Vorkommen von Vierfleck-Libellen und Fledermaus-Azurjungfern am Grossen Meer. *Beitr. Vögel- Insektenwelt Ostfrieslands* 105: 14. – (Danziger Str. 11, D-26725 Emden).
On 29 May 1997, at Heerenmeeder Meer, Ostfriesland, Germany, the aggregations of ca 700 Libellula quadrimaculata and ca 300 Coenagrion pulchellum were sighted. The libellulas dwelled in wind-protected blackberry bush and sitting on the reeds, the coenagrions (mostly ♂♂) were resting on low grass vegetation. In the completely dry country, some man-made canals represent the sole available odon. breeding habitats.

(11613) ROLFF, J. & A. MARTENS, 1997. Completing the life cycle: detachment of an aquatic parasite (Arrenurus cuspidator, Hydrachnellae) from an aerial host (Coenagrion puella, Odonata). *Can. J. Zool.* 75(4): 655-659. (With Fr. s.). – (Abt. Ökol., Zool. Inst., Univ. Braunschweig, Fasanenstr. 3, D-38092 Braunschweig).
Water mites are very important parasites in aerial stages of aquatic insects. Their larvae parasitize semiaquatic hosts and must detach while the host is in a suitable habitat for reproduction of parasite and host. Therefore, water mites should respond to stimuli indicating this situation. Different stimuli were tested experimentally in the host-parasite system C. puella - A. cuspidator in outdoor cages; this method provides exact data on the initial intensity of mite larvae per host. It was found that mites detach during tandem

oviposition by the host. The detachment rate does not correlate with the host's sex or with the intensity of mite larvae per host. Ectoparasitic water mites are apparently influenced by the host's condition because mites did not detach from dead hosts even in water. Proximity to water also seems to have an impact: mites exposed at a height of 10 mm above water detached, whereas mites exposed at 25 mm or higher did not. It is suggested that detachment of mite larvae is triggered by a group of stimuli associated with the egg-deposition behaviour of the host.

(11614) ŠALAMUN, A., A. PIRNAT, M. BEDJANIČ & M. KOTARAC, 1997. Prispevek k poznavanju favne kačjih pastirjev (Odonata) jugozahodne Slovenije. – Contribution to the knowledge of the odonate fauna of southwestern Slovenia. *In*: M. Bedjanič [Ed.], Raziskovalni tabor študentov biologije Podgrad 96, pp. 55-74, ZOTKS, Ljubljana, ISBN 961-6243-01-2. (Slovene, with Engl. s.). – (First Author: Čevljarska 28, SI-6000 Koper).
An annotated and commented review of 44 spp., evidenced at 126 localities, 24-VII/3-VIII-1996. Ceriagrion tenellum is for the first time recorded outside the Slovene Littoral. Hemianax ephippiger represents the second record from Slovenia.

(11615) SAMWAYS, M.J. & G. WHITELEY, 1997. *Dragonflies of the Natal Drakensberg*. Univ. Natal Press, Pietermaritzburg [Ukhahlamba Ser., No. 6], x+78 pp., col. frontispiece & 10 col. pls incl. – ISBN 0-86980-921-0. – (Publishers: Private Bag X01, Scottsville-3209, Natal, SA).
This is an attractive field guide to the dragonfly world of the Natal Drakensberg, South Africa. 23 spp. occur regularly above 1500 m in the Berg, incl. the endemic Chlorolestes draconicus Balinsky. The adults and larvae of these are described, illustrated and keyed. Concise information is also provided on the habitat, behaviour and local distribution for each sp. – The booklet is directed at visitors of the Ukhahlamba Field Centre at Cathedral Peak, where the facilities for teaching and research in the Drakensberg are available.

(11616) SHIGEI, H., [Ed.], 1997. *Kurashiki-no tombo. – [Dragonflies of Kurashiki city, Okayama prefecture]*. Environ. Div., Kurashiki, Okayama. 30 pp. (Jap.). – (Available free from the Publisher).
This is a guide to the dragonfly world of Kurashiki city, Japan. 72 spp. are listed (Jap. vernacular names only), and a pictorial key is provided for adults and larvae of the most common spp. The booklet is largely made up of beautiful dragonfly- and habitat photographs.

(11617) *SIOJA*. [Information bulletin of the SIO Japan Branch Office], 1997, No. 4 (15 Aug.). (Jap.). – (c/o K. Inoue, 5-9, Fuminosato 4 chome, Abeno-ku, Osaka 545, JA).
Most of the space is devoted to a detailed account, by the SIO President, of the SIO Plenary Business Meeting proceedings at the 14th Int. Symp. Odonatol., which led to the reorganisation of the SIO into an international foundation.

(11618) STEINMANN, H., 1997. *World catalogue of Odonata*, Vol. 1: *Zygoptera*, Vol. 2: *Anisoptera*. Walter de Gruyter, Berlin-New York. [*Tierreich* 110: xxii+500 pp. (Zygoptera), 111: xiv+636 pp. (Anisoptera)]. ISBN 3-11-014933-8 & 3-11-014934-6, resp. – Price: DEM 1496.— net (Vol. 1: DEM 698.— net; Vol. 2: DEM 798.— net). – Orders to: Walter de Gruyter, Genthiner Str. 13, D-10785 Berlin. – (Author: Áram u. 25, HU-1193 Budapest).
This monumental and costly work has been apparently prepared entirely independently from the Bridges catalogue (cf. *OA* 10070), to which there is no reference in it. Its coverage of the taxa published up to ca 1960 is fairly exhaustive, of the more recent ones many are missing or they are listed only with reference to the Davies & Tobin catalogue (cf. *OA* 5014, 5042), with no reference to the primary source. The taxa published after ca 1985 are only incidentally included, those after 1990 are almost entirely missing. The adopted system is basically that of Davies & Tobin. The Author is a well-known writer in various fields of entomology (cf. *OA* 3328, 4791), and has also produced some papers pertaining to the Hungarian odon. fauna (e.g. *OA* 4881, 5821). Any statement as to the "history" of this work is missing in the Introduction, and there are no Acknowledgements. It is unclear, therefore, whether or not the Author has received any help from qualified odon. taxonomists, and whether or not the manuscript has been reviewed by qualified reviewers prior to its publication. The reader gets the impression, it is based on a very carefully prepared, handwritten, old card file (there are many spelling errors, particularly a "u" is often mistaken for an "n"), which has been subsequently and rather "ad hoc" somewhat updated, but often so without a reference to the primary source publication. – Unlike the other recently published world catalogues (Davies & Tobin, Tsuda, Bridges),

this one gives the synonymies for most taxa, and also contains various taxonomic decisions and even new names, though, unfortunately, there is no index of these. Some "taxonomic decisions" certainly are peculiar and incomprehensible. Even so, the work will inevitably have to be consulted regularly by all odon. taxonomists in the future. It is most unfortunate, therefore, the high price is likely to be prohibitive to many.

(11619) STOKS, R., L. DE BRUYN & E. MATTHYSEN, 1997. The adaptiveness of intense contact mate guarding by males of the Emerald Damselfly, Lestes sponsa (Odonata: Lestidae): the male's perspective. *J. Insect Behav.* 10(2): 289-298. – (Evol. Biol. Gr., Dept Biol., Univ. Antwerp, Groenenborgerlaan 171, B-2020 Antwerpen).
The mating system of L. sponsa was studied at a pond in Antwerp (17-VII/11-VIII-1994). All ♂♂ showed intense contact mate guarding by holding the ♀ in tandem during the entire oviposition period. The observations support the predictions made by J. Alcock (cf. *OA* 9826) about the occurrence of intense mate guarding: (1) a high ♀ receptivity after copulation, (2) a high ♂ capacity to resist takeovers, (3) sperm precedence, (4) a high operational sex ratio, (5) a high ♂ density, (6) high access by rivals to mated ♀♀, (7) low energy expenditure, (8) a low risk of guarding, and (9) a short interval between copula and oviposition. This indicates a positive cost-benefit balance for this behaviour, at least in ♂♂. A comparison within the genus suggests that the ♂-biased sex ratios and the ease with which mated ♀♀ are detected have been strong selection pressures in the evolution of intense contact mate guarding.

(11620) SUGIMURA, M., 1997. *The language of dragonfly in the Shimanto River*. Rokko Publ. Co., Kobe. 104 pp. ISBN 4-947600-84-5. – Price: ¥ 1200.— net (Jap., with Engl. title). – (Publishers: 3-18, Iwaya--kiamachi 3-chome, Nada-ku, Kobe, 657, JA).
This is an unusual literary work. The Author selected 33 Shimanto R. dragonfly spp., and composed for each of them a brief phrase, reflecting his personal emotions at sighting them. For example: Cercion sieboldii: "Love is blue", – Trigomphus citimus tabei: "Please bring spring", – Mnais p. pruinosa: "Ten persons in ten colours", – Epiophlebia superstes: "Eternity", – Somatochlora viridiaenea: "Traveler from the North". – The book also contains brief responses to these phrases, by 7 prominent Japanese cultural workers, viz. A. Azuma, Y. Kawazu, Y. Kohno, H. Fuse, S. Minato, R. Minami and M. Yajima.

(11621) SWITZER, P.V., 1997. Factors affecting site fidelity in a territorial animal, Perithemis tenera. *Anim. Behav.* 53(4): 865-877. – (Dept Zool., Eastern Illinois Univ., Charleston, IL 61920, USA).
The study follows the framework and is testing the predictions of a theoretical model, produced by the same Author in *Evol. Ecol.* 7(1993): 533-555. – ♂♂ defended territories around oviposition sites during the day and left the pond vicinity in the evening. Individuals were highly site-faithful between days: 32.5% of the time ♂♂ returned to the same oviposition site, and 62.3% of the time they returned to within 3 m of their previous site. Mating success on the pond was temporally predictable and spatially variable. As the model predicted from these habitat characteristics, individuals were more likely to be site-faithful if they had obtained a mating at the site the day before, if their territory was of relatively high quality and when they were older. ♂♂ that voluntarily changed oviposition sites between days moved to higher-quality territories. In contrast to some other odon. and avian studies, territory evictions caused considerable site infidelity in P. tenera both within and between days. Evictions caused most moves within a day, but the majority of moves between days were voluntary.

(11622) TROCKUR, B., 1997. Bemerkenswerte Libellenfunde im Kiesweihergebiet bei Remerschen: Wiederfund von Epitheca bimaculata und Erstnachweis von Anax parthenope für Luxemburg (Insecta, Odonata). *Bull. Soc. Nat. luxemb.* 98: 105-112. (With Engl. s.). – (Schulstr. 4, D-66636 Tholey-Scheuern).
25 spp. are listed from gravel pits in the Moselle valley, incl. a small population of Epitheca bimaculata. Anax parthenope is new for the fauna of Luxembourg.

(11623) VAN GRUNSVEN, R., 1997. Ecologie van libellen begint bij larven – [The inquire into dragonfly ecology commences with the larval stage]. *Amoeba, Amst.* 71(3): 120-121. (Dutch). – (Brederostraat 3, NL--5242 CK Rosmalen).
Some examples, to serve as an encouragement.

(11624) WANG, H.Y. & J.B. HEPPNER, 1997. *Guidebook to dragonflies of Taiwan* (Part 1). Pei-Ni-Shih, Taiwan. 131 pp. (20.7×27.0 cm, hard cover). ISBN 957-97215-7-2. (Bilingual: Engl. & Chin.). – (Agent in the Western World: Flora & Fauna Books, P.O. Box 15718, Gainesville, FL 32604, USA; – price: US $

30.50).
The book has appeared simultaneously (June 1997) with that listed in *OA* 11559. It covers only 40 spp. (incl. 35 textfigs and 151 col. phot., mostly species portraits, the majority of which taken in the field), and seems to be directed mainly at non-professional collectors, with useful hints as to the collecting techniques, specimen preparation and collection arrangements, and chapters on dragonfly habitats, biology and external morphology. The regional bibliography is not exhaustive, but certainly useful. The book will give the reader some general idea as to the dragonfly world of Taiwan, but it cannot be used for species identification. – (*Abstracter's Note*: It is unfortunate that some of the photographs are wrongly identified. The errata list, prepared by Dr W.-C. Yeh, is available from the Eds of *Odonatologica*. – Pt 2 is scheduled to appear in 1998. – For the updated checklist of the odon. fauna of Taiwan see *OA* 11627).

(11625) WASSCHER, M., 1997. Ontvleugelde weidebeekjuffers. – [Calopteryx splendens with cut-off wings]. *Natura, Amst.* 94(4): 114-115. (Dutch). – (Minstraat 15 bis, NL-3582 AC Utrecht).
On the Indre nr Palluau, central France, several ♂♂ were sighted and photographed with ca half of all 4 wings cut off. It is speculated, the injury was inflicted by a rival ♂ at the moment when the ♂ of the ovipositing couple was partly submerged. The rival may have bitten off the wings exactly at the water surface level, hence all 4 wings are cut at the same point.

(11626) WOLF, L.L., E.C. WALTZ, D. KLOCKOWSKI & K. WAKELEY, 1997. Influences on variation in territorial tenures of male white-faced dragonflies (Leucorrhinia intacta) (Odonata: Libellulidae). *J. Insect Behav.* 10(1): 31-47. – (Dept Biol., Syracuse Univ., Syracuse, NY 13244-1270, USA).
Some individuals in spp. with extended periods of territorial occupancy may change territory locations within a single bout of territorial activity. Length of occupancy of mating territories among ♂♂ in a local population of L. intacta varied from more than 6 h to 15 min or less. ♂♂ with short tenures often established territories in several locations on the pond during a day. Several hypotheses have been proposed to explain shifting territorial sites rather than remaining in a single site during one bout of territoriality. Here, it was attempted to test the hypothesis that ♂♂ shift to leave low-quality sites. Site quality may be affected by costs of defense in relation to intruder rate and the mating benefits of holding the territory. To test whether variation in these possible effects of benefits and costs of territoriality influenced tenure, local quality of oviposition substrate and perch density was manipulated. The quality of oviposition substrate, but not perch density, influenced both potential benefits and costs of territoriality. ♀ density was higher in areas with good substrate, but so were rates of ♂♂ intruding into the territories, rates of chasing by territorial ♂♂, and local density of territorial ♂♂. More matings occurred in areas with good substrate, but among ♂♂ with tenures of 15 min or more, mating success per ♂ and tenure lengths did not differ statistically among treatments. Defense costs were low for all treatments and perhaps were not an important influence on tenure duration. Territorial ♂♂ in this population probably adjusted local density to expected mating success by initial choice of site rather than by varying tenure length. Variation in tenure length at a site resulted, in part, from stochastic external factors, such as predation attempts.

(11627) YEH, W.-C., 1997. *The checklist of Odonata of Taiwan, arranged by Wen-Chi Yeh until 1997.* Author's stencil, Taipei. 4 pp. – (Div. Forest Prot., Taiwan Forest. Res. Inst., 53 Nan-Hai Rd, Taipei, Taiwan, ROC).
144 spp., viz. Calopterygidae (4), Chlorocyphidae (3), Euphaeidae (2), Coenagrionidae (16), Megapodagrionidae (1), Platycnemididae (5), Protoneuridae (1), Lestidae (4), Synlestidae (1), Aeshnidae (23), Gomphidae (22), Cordulegastridae (2), Chlorogomphidae (4), Corduliidae (5) and Libellulidae (51).

(11628) YOON, J.H. & H.C. PARK, 1997. Amino acid composition of 13 odonatan species from Korea. *Korean J. Ent.* 27(1): 63-71. (Korean, with Engl. s.). – (First Author: Taegu Inst. Health & Environ., Taegu, 706-090, Korea; – Second Author: Dept Biol., Kyungpook Univ., Taegu, 702-701, Korea).
Amino acid compositions were analysed in the adults of 2 calopterygid, 1 aeshnid and 10 libellulid spp. 17 amino acids were detected in all spp. Although the patterns are similar, there are differences on the generic and species levels. Precise data are stated for each sp.

(11629) [ZHAO, X.] (= Hsiu-fu CHAO), 1997. *A collection of selected publications of Prof. Dr Zhao Xiufu in Odonata, parasitic Hymenoptera and pest control.* Fujian Sci. & Technol. Publ. House, Fuzhou. x+492 pp., 6 col. pls excl. ISBN 7-5335-1211-1/C.28. (Chin.,

with Engl. title). – (Publishers: 75 Dong Sui Lu, Fuzhou, P.R. China).

The beautiful book (hard cover, 19.5×26.5 cm) was published to mark the 81st birthday of the doyen of Chinese odonatology (cf. also *OA* 11560, 11561, 11562). It contains his biography, assessment of his scientific work, a full-size col. portrait, 17 col. phot. from various periods of his life, and a selection of the following of his odonatol. publications (pp. 17-233): 1947, On the systematic position, nymphal characters and new species of the genera Megalestes and Sinolestes (Odonata), *Biol. Bull. Fukien christ. Univ.* 6: 15-25; – 1953, A study of Chinese dragonflies of the genus Philoganga Kirby (Odonata, Zygoptera, Amphipterygidae), *Acta ent. sin.* 3(2): 137-143; – 1953, Morphological studies of the dragonfly wing base, *Acta ent. sin.* 3(1): 41-54; – 1953, The external morphology of the dragonfly Onychogomphus ardens Needham, *Smithson. misc. Collns* 122(6): 1-56 [in Chin. translation; under Melliogomphus ardens]; – 1962, A study of Navasian types of Chinese dragonflies (Odonata), 1, *Acta ent. sin.* 11(Suppl.): 25-31; – 1965, A study of the Chinese dragonflies of the genus Megalestes Selys, with description of a new species, *Acta zootaxon. sin.* 2(3): 191-196; – 1984, Reclassification of Chinese gomphid dragonflies, with the establishment of a new subfamily and the descriptions of a new genus and species (Anisoptera: Gomphidae), *Odonatologica* 13(1): 71-80; – 1987, Descriptions of a new genus and species of gomphid dragonfly reared from nymph in Fujian province, with notes on allied species (Gomphidae, Onychogomphinae), *J. Fujian agric. Coll.* 16(4): 259-266 [cf. *OA* 6261]; – 1990, *The gomphid dragonflies of China (Odonata: Gomphidae)*, Sci & Technol. Publ. House, Fuzhou, chapters on pp. 1-5, 49-68, 69-74, 75-83, 305-311, 410 [cf. *OA* 7911]; – 1991, Recent advances in the study of Chinese Gomphidae (Anisoptera), *Adv. Odonatol.* 5: 11-19; – 1995, Keys to genera of dragonflies from Fujian province, China (order Odonata), *Wuyi Sci. J.* 12: 51-79 [cf. *OA* 11053]; – 1995, New or little known gomphid dragonflies from China, 1 (Odonata: Gomphidae), *Wuyi Sci. J.* 12: 1-47 [cf. *OA* 11054].

(11630) ZIMMERMANN, W., 1997. Die Arktische Smaragdlibelle (Somatochlora arctica) erstmalig in Thüringen nachgewiesen. *LandPfl. NatSchutz Thüringen* 34(1): 24-25. – (von-Hoff-Str. 31, D-99867 Gotha).

1 ♀ exuviae, Thüringer Wald, 11-VI-1996. The habitat is described and the importance of the record is assessed. This is the first record of S. arctica in Thuringia, E Germany.