

ODONATOLOGICAL ABSTRACTS

1981

- (11767) RUDNIGGER, W., 1981. *Gebete aus dem Garten Gottes. Fröhliche Verse aus Flora und Fauna*. Verlag Carinthia, Klagenfurt. 112 pp. ISBN 3-85378-020-2.
A dragonfly poem, "Die Libelle", appears on pp. 80-81, with an illustration by W. Neumann.

1990

- (11768) REEVES, D.M., 1990. Dragonflies and damselflies (Odonata) from Moreton island, Queensland. *Qld Naturalist* 30(3/4): 71-74. – (P.O. Box 1220, Brisbane, Qld 4001, AU).
A commented list of 25 spp., incl. *Petalura gigantea*.

1993

- (11769) MARTÍNEZ-DELCLÓS, X. & M.J. RUIZ DE LOIZAGA, 1993. Les insectes des calcaires lithographiques du Crétacé inférieur d'Espagne: faune et taphonomie. *Geobios* 16: 195-201. (With Engl. s.). – (Dept Estratigraf. & Paleontol., Fac. Geol., Univ. Barcelona, Zona Universitaria de Pedralbes, ES-08071 Barcelona).
In Spain, there are 2 Lower Cretaceous sites with insect fauna, in the Sierra del Montsec (Berriasian-Valanginian) and in the Serranía de Cuenca (Barremian). At both sites the odon. are represented. Here the higher taxa are listed only.
- (11770) TOŃCZYK, G., 1993. [Reviews]. R.R. Askew: The dragonflies of Europe. *Przeł. zool.* 37(1/2): 117-118. (Polish). – (Inst. Invert. Zool. & Hydrobiol., Łódz Univ., ul. S. Banacha 12/16, PO-90-237 Łódz).
A book review of the work listed in OA 6357, with

corrective notes on the occurrence of some spp. in Poland.

- (11771) WHITELEY, G. & M.J. SAMWAYS, 1993. Dragonfly conservation in Natal. *Proc. 9th ent. Congr. sth Afr., Johannesburg*, p. 173 [abstract only]. – (*Zool. & Ent.*, Univ. Fac. Sci., Univ. Natal, Private Bag X01, Scottsville, Pietermaritzburg-3209, SA).
[Verbatim:] To date, 157 spp. have been recorded in SA, of which 28 (18%) are endemic. Natal has 122 spp., with only 2 endemics. 17 spp. from tropical Africa are found only in Natal, but not in the other 3 provinces of SA. The 2 Natal endemics, *Chlorolestes dragonicus* and *Urothemis luciana*, are both red-listed by the WCU. Assemblage profiles of Odon. are sensitive indicators of environmental condition and are now being used for formulating conservation strategies for rivers and wetlands in Natal.

1994

- (11772) KRENN, H.W. & G. PASS, 1994. Morphological diversity and phylogenetic analysis of wing circulatory organs in insects, 1: Non-Holometabola. *Zoology* 98(1): 7-22. – (*Zool. Inst.*, Univ. Wien, Althanstr. 14, A-1090 Wien).
The accessory pulsatile organs for hemolymph transport in the wings were investigated in 45 spp. of 12 orders, incl. *Platynemis pennipes*, *Ischnura elegans* and *Calopteryx virgo*. A detailed order-wise description, and a functional and a phylogenetic analysis are presented.

1995

- (11773) GERECKE, R., S.B. PECK & H.E. PEHOFER, 1995. The invertebrate fauna of the inland waters of

- the Galápagos Archipelago (Ecuador): a limnological and zoogeographical summary. *Arch. Hydrobiol.* (Suppl.) 107(2): 113-147. — (Second Author: Dept Biol., Carleton Univ., 1125 Colonel By Dr., Ottawa, ON, K1S 5B6, CA).
Includes a review of the 8 known and identified odon. spp., with annotations on their distribution and ecological properties in the Archipelago.
- (11774) KEIM, C., 1995. Les libellules de Pouta Fontana. *Chasse-Nature Diana* 1995(3): 9-11. — (Finettes 10, CH-1920 Martigny).
A description of the odon. fauna of this cantonal nature reserve, central Valais, Switzerland, presenting species assemblages as appearing during the seasons.
- (11775) KETELAARS, H.A.M. & N.M.L.H.F. FRANTZEN, 1995. One decade of benthic macroinvertebrate biomonitoring in the river Meuse. *Neth. J. aquat. Ecol.* 29(1): 121-133. — (First Author: Water Storage Corpor. Brabantse Biesbosch, P.O. Box 61, NL-4250 DB Werkendam).
Includes a passing reference to the Odon. in the Rhine and Loire/Allier rivers.
- (11776) KIPPING, J., 1995. Der Erstnachweis der Schabrackenlibelle, *Hemianax ephippiger* (Odonata) für Thüringen. *Mauritiana* 15(3): 383-384. — (Ringstr. 5/6, D-04600 Altenburg/Thür).
Sight record: 1 specimen, Lossener Senke, W Altenburg, 23-IX-1995; with some other odon. spp. and a detailed circumstantial evidence.
- (11777) LUKÁŠ, J., 1995. K výskytu vzácných a ohrozených druhov vážok (Odonata) na Slovensku. — To the occurrence of rare and endangered species of dragonflies (Insecta, Odonata) in Slovakia. *Entomofauna carpath.* 7: 83-84. (Slovak, with Engl. s.). — (Inst. Zool., Fac. Nat. Sci., Comenius Univ., Mlynská dolina B-2, SK-84215 Bratislava).
Annotations on *Lestes macrostigma*, *Aeshna subarctica* and *Leucorrhinia dubia*.
- (11778) PLATT, A.P. & S.J. HARRISON, 1995. Robber fly and trout predation on adult dragonflies (Anisoptera: Aeshnidae) and first records of *Aeshna umbrosa* from Wyoming. *Ent. News* 106(5): 229-236. — (First Author: Dept Biol. Sci., Univ. Maryland Baltimore Co., 5401 Wilkens Ave, Rm BS 431, Catonsville, MD 21228-5398, USA).
Stenopogon inquinatus is recorded capturing a ♂ *A. umbrosa*. *Aeshna eremita* and an *Aeshna* sp. were recovered among the stomach contents of the brook trout, *Salvelinus fontinalis*, all in the foothills of the Big Horn Mts. It is stated, *A. umbrosa* has not been previously reported from Wyoming.
- (11779) WAGNER, D.L., D.M. SIMMONDS & M.C. THOMAS, 1995. Three rare gomphids from the lower Connecticut River. *Jl N.Y. ent. Soc.* 103(3): 334-336. — (First Author: Ecol. & Evol. Biol., Univ. Connecticut, Storrs, CT 06269, USA).
Gomphus fraternus, *Stylurus amnicola* and *S. spiniceps*, all new to the Connecticut state fauna, are recorded from Middlesex Co., and comprehensive notes are provided on their emergence and behaviour.

1996

- (11780) AMBRUS, A., 1996. Observations on the mate recognition and copulatory behaviour in *Aeshna cyanea* (Müller) (Anisoptera: Aeshnidae). *Acta zool. Acad. Sci. hung.* 42(4): 331-340. — (Jurisich u. 16, HU-9495 Kópháza).
2 different flight patterns were studied at the mating place with the application of capture-mark-release techniques. The mate recognition ability of the ♂♂ was investigated experimentally with the fishingline technique and ♀♀ in hand: the ♂ appears to recognize the sitting (egg-laying) ♀ in a special ♀-searching flight. The ♂♂ tried to copulate with a tethered ♀ held in hand and even with a ♂ held in hand. Super 8 mm movie film was taken on certain acts of the life cycle, incl. the recognition of sitting ♀♀ and other mating acts. The hypothesis of the dual function of the precopulatory sperm translocation, as a tool of mate recognition, is detailed here. Steps of the hypothetical mate recognition system are drafted for closely related aeshnid, gomphid, corduliid and cordulegastrid spp. based on preserved insects.
- (11781) BECHLY, G., A. NEL & X. MARTÍNEZ-DELCLÓS, 1996. Redescription of *Nannogomphus bavaricus* Handlirsch, 1906-1908 from the Upper Jurassic of Germany, with an analysis of its phylogenetic position (Odonata: Anisoptera: Gomphidae or Libellulidae). *Archaeopteryx* 14: 51-66. (Bilingual: Engl./Germ.). — (First Author: Breslauer Str. 30, D-71034 Böblingen).
The alleged gomphid affinities are uncertain, since they are based on symplesiomorphies and convergences. With Libelluloidea, the sp. seems to share several

synapomorphies.

- (11782) CHOWDHURY, S.H. & M.H. RAHMAN, 1996. Anatomy and histology of the larval alimentary canal and Malpighian tubules of *Pantala flavescens* (Fab.) (Odonata: Libellulidae). *Bangladesh J. Zool.* 24(2): 153-162. – (First Author: 21/1 M.M.Ali Rd, Dampara, Chittagong-4000, Bangladesh).
These structures were examined in the ultimate larval instar, in order to gain insight into the process of digestion. The functional role of various zones of the gut has been deduced on the basis of their histological make-up. Some of the confusion in the literature, pertaining to the finer structure and function of particular regions of the gut, are discussed in the light of the present evidence.
- (11783) DeBANO, S.J., 1996. Male mate searching and female availability in the dragonfly, *Libellula saturata*: relationships in time and space. *SWest. Nat.* 41(3): 293-298. – (Envir. Sci., Trinity Coll., 125 Michigan Ave., N.E., Washington, DC 20017-1094, USA).
Sexual selection theory proposes that mate-locating tactics will be driven by the temporal and spatial patterns of receptive ♀♀. This hypothesis was tested by examining 2 predictions: (1) that ♂ densities should be highest at times when the probability of encountering receptive ♀♀ is the greatest, and (2) that ♂ densities should be highest at places where ♀♀ prefer to oviposit. Data on the spatial and temporal distribution of *L. saturata* were collected at Sycamore Creek, Arizona, USA. Variation in the ♂ spatial and temporal density was correlated with the availability of receptive ♀♀, as estimated by number of copulations. ♂♂ did visit the streamside when receptive ♀♀ were most common; significant correlations were evident on a seasonal scale as well as within the course of a day. ♂♂ also tended to aggregate at sections of the stream where receptive ♀♀ were most likely to visit, both on a seasonal scale and within the course of a day. The data provide support for the hypothesis that ♂ mate-locating tactics are sexually selected. However, there is also evidence that ♀ behaviour prevents ♂♂ from maximizing their encounters with receptive ♀♀. Thus conflicts between the needs of ♂♂ and ♀♀ may lead to compromises in the behaviour of the different sexes.
- (11784) DUURSEMA, G., 1996. *Vennen in Drenthe: onderzoek naar ecologie en natuur op basis van macrofauna*. – [The Drenthe fens: an inquire into their ecology and nature, based on the macrofauna]. Zuiveringsschap Drenthe, Assen. 140 pp. ISBN none. (Dutch). – (Author's address not stated).
42 fens were studied, Drenthe prov., the Netherlands. A checklist of the 16 encountered odon. spp. appears on p. 62.
- (11785) GHARADJEDAGHI, B., C. ALBRECHT & T. ESSER, 1996. Amphibien und Libellen im Südosten des Ilm-Kreises/Thüringen (Amphibia; Insecta: Odonata). *Thür. faun. Abh.* 2: 30-48. (With Engl. s.). – (Second Author: Ewaldistr. 30, D-50670 Köln).
139 ponds and brooks were investigated in Thuringia, Germany; 1994-1995. 25 odon. spp. are listed along with annotations on their regional occurrence.
- (11786) GRETHER, G.F. & R.M. GREY, 1996. Novel cost of sexually selected trait in the rubyspot damselfly *Hetaerina americana*: conspicuousness to prey. *Behav. Ecol.* 7(4): 465-473. – (First Author: Dept Ecol., Evol. & Marine Biol., Univ. California, Santa Barbara, CA 93106, USA).
Conspicuousness to predators frequently has been invoked as a cost of sexually selected traits, but conspicuousness to prey was not. Here, it was tested for the latter, using *H. americana* as the predator. Previous work on this sp. (cf. *OA* 11246, 11247, 11450) showed that the red spots on ♂ wings are intrasexually selected and reduce survival. Since ♀ wings lack red spots, ♂ and ♀ weight gain rates were first compared per unit hunting time. ♀♀ gained weight significantly faster than ♂♂ in both mg per h and relative to body weight. The weight gain rates were compared of ♀♀ painted with red wing spots to those of control ♀♀, painted with clear ink or not manipulated. Controls gained weight significantly faster than red-painted ♀♀. Behavioural observations revealed that red ♀♀ attempted to capture prey at normal rates and experienced normal rates of agonistic interference from conspecifics of both sexes. Nevertheless, red ♀♀ captured fewer prey per min and per capture attempt than did sham-manipulated and unmanipulated controls. It is inferred that the red spots reduced ♀ weight gain rates by increasing their visibility to prey. Close similarity between ♂ and red ♀ weight gain rates relative to unmanipulated ♀♀ suggests that red spots may also be a hunting handicap for ♂♂.
- (11787) HIGASHI, K. & K. YOSHIDA, [Eds], 1996 [Report of the 7th Dragonfly Citizen Summit]. Environ. Dept, Saga City Office, Saga. viii+100 pp. ISBN none. (Jap.). – (Publishers: Sakae 1-1, Saga, 840, JA).

- The meeting was held 24-25 Aug. 1996 at Saga, the present Report was published by the Organizing Committee. — The 8th "Summit" took place in Shiunji-machi, Niigata pref. (1997); the 9th was convened at Kobe, 22-23 Aug. 1998.
- (11788) HIRVONEN, H. & E. RANTA, 1996. Within-bout dynamics of diet choice. *Biol. Ecol.* 7(4): 494-500. — (Div. Pop. Biol., Dept Ecol. & Syst., P.O. Box 17, FIN-00014 University of Helsinki).
In addition to the ten-spined stickleback (*Pungitius pungitius*) and the smooth newt (*Triturus vulgaris*), larval *Aeshna juncea* and *Leucorrhinia dubia* were used in diet choice experiments, providing data on prey-size selection. The predators re-evaluate prey profitability and adjust their selectivity accordingly in the course of foraging, but do not abandon rate maximization.
- (11789) JORDAN, F. & A.C. McCREARY, 1996. Effects of odonate predator and habitat complexity on survival of the flagfish *Jordanella floridae*. *Wetlands* 16(4): 583-586. — (First Author: Dept Zool., Univ. Florida, Gainesville, FL 32611, USA).
The control of fish populations by predatory insects has not been well studied. To address this gap, groups of flagfish were exposed to larval *Anax junius*, and it was examined how habitat complexity affected the foraging efficiency of *Anax* larvae. During a 10-day experiment, these reduced fish survival by 40%. Survival rates did not differ between simple and complex habitats.
- (11790) KITCHING, R.L. & A.G. ORR, 1996. The foodweb from water-filled treeholes in Kuala Belalong, Brunei. *Raffles Bull. Zool.* 44(2): 405-413. — (First Author: Aust. Sch. Envir. Sci., Griffith Univ., Brisbane, AU).
The animals inhabiting water-filled treeholes in lowland mixed dipterocarp forest around the Kuala Belalong Field Studies Centre in Brunei were studied. A minimum of 20 spp. were found over the 52 sites studied, with individual hole faunas ranging from 2 to 8 spp., around an average of 4. These included 1 or more spp. of anurans, dytiscid beetles, odon. (*Pericnemis triangularis*, *Lyriothemis cleis*, *Indaeschna grubaueri*), culicids, chironomids, ceratopogonids, phorids, syrphids, oligochaetes and copepods. Of special note were the 3 odon. spp. and 2 of frog larvae. The foodweb that can be inferred from the occurrence of these organisms was compared with those from other
- Old World tropical locations, including northern Australia, Papua New Guinea and Sulawesi. The Bruneian webs were exceptional in their richness of the larger saphrophagous spp., possibly because the relatively aseasonal, perhumid climate of the region provides a more energy rich and predictable environment than is found at the other locations.
- (11791) MATT, D., 1996. Bergstelze *Motacilla cinerea canariensis* verzehrt Grosslibelle. *Ornith. Mitt.* 48(12): 315-316. — (Birkenauer Talstr. 57, D-69469 Weinberg/Bergstrasse).
A detailed account of the dispatch of an adult *Anax imperator*, by the Canarian Grey Wagtail, at La Palma, the Canaries, 25 Dec. 1995. — While in Europe, dragonflies do not represent a very significant item in the Grey Wagtail's diet, they do so in the Canary Isls, where the bird and its prey are associated with the locally scarce aquatic habitats.
- (11792) MESTERTON-GIBBONS, M., J.H. MARDEN & L.A. DUGATKIN, 1996. On wars of attrition without assessment. *J. theor. Biol.* 181(1): 65-83. — (First Author: Dept Math., Florida St. Univ., Tallahassee, FL 32306-3027, USA).
Contests in nature are frequently won by the animal with the higher resource holding potential (RHP), consistent with animals assessing opponents' RHP accurately. Nevertheless, RHP asymmetry can determine a contest without any assessment of opponents' RHP. To establish this result, an analytical model of the war of attrition for an arbitrary distribution of initial RHP was developed. If its coefficient of variation, K , is sufficiently high or if cost of persistence per unit time is sufficiently small compared with the rate at which a victor can translate its remaining reserves into fitness, then there is a unique evolutionarily stable strategy (ESS) at which, despite no assessment, the victor is always the animal with higher RHP. Thus victory by the contestant with higher RHP does not by itself imply that an animal assesses its opponent's RHP accurately. Data from *Calopteryx maculata*, suggest that K is large enough for the ESS to exist when RHP is determined by energy reserves.
- (11793) MOGI, M. & T. SOTA, 1996. Physical and biological attributes of water channels utilized by *Culex pipiens pallens* immatures in Saga city, southwest Japan. *J. Am. Mosquito Contr. Ass.* 12(2): 206-214. — (First Author: Div. Parasitol., Dept Microbiol., Saga Med. Sch., Nabeshima, Saga, 849, JA).

- 15 odon. spp. are listed and annotated as to their occurrence in mosquito-productive and mosquito-free channel segments.
- (11794) MOLA, L.M., 1996. Meiotic studies in nine species of Erythrodiplax (Libellulidae, Odonata): neo-XY sex chromosome system in *E. media*. *Cytologia* 61(4): 349-357. – (Bulnes 761, 10'A, AR-1176 Buenos Aires).
E. atroterminata, *connata fusca*, *corallina*, *lygaea*, *media*, *melanorubra*, *nigricans*, *ochracea* and *umbrata* were studied. In all of them, $n \delta = 12+X$, except in *E. media*, where $n \delta = 10+neo-XY$. The genus presents a great karyotypic constancy, although polytypisms for the *m*-chromosome size occur in *E. atroterminata*, *connata fusca* and *umbrata*, and the neo-XY system in *E. media*. The chromosome rearrangements, probably responsible for these polytypisms, and their evolutionary importance are discussed.
- (11795) MÖLLER, E., 1996. Die Libellen des Kreises Herford (Insecta: Odonata). *Ber. naturw. Ver. Bielefeld* 37: 179-204. (With Engl. s.). – (Biologiezentrum Bustedt, Gutsweg, D-32120 Hiddenhausen).
 30 spp. are listed and discussed; – Herford distr., Northrhine-Westphalia, Germany.
- (11796) NYSTRÖM, P., C. BRÖNMARK & W. GRANELI, 1996. Patterns in benthic food webs: a role for omnivorous crayfish? *Freshw. Biol.* 36(3): 631-646. – (Dept Ecol., Univ. Lund, S-22362 Lund).
 The macrophyte and invertebrate biomass and species richness were investigated in 22 ponds in S Sweden. The Zygoptera prevailed in the low alkalinity environment, while the Anisoptera were most abundant in the high alkalinity ponds. The odon. biomass declined in ponds where crayfish were abundant.
- (11797) PHILLIPS, E.C., 1996. Habitat preference of large predatory aquatic insects (Megaloptera and Odonata) in Ozark streams of Arkansas. *Texas J. Sci.* 48(4): 255-260.
 [Not available for abstracting.]
- (11798) REN, D. & Z. GUO, 1996. Three new genera and three new species of dragonflies from the Late Jurassic of northeast China (Anisoptera: Aeshnidae, Gomphidae, Corduliidae). *Entomol. sin.* 3(2): 95-105. (With Chin. s.). – (Geol. Mus. China, Xisi, Beijing-100034, P.R. China).
 From the Upper Liassic deposits of Beipiao, Liaoning prov., are described *Radiaeschna limnobia* gen. n., sp. n., *Liogomphus yixianensis* gen. n., sp. n., and *Mesocordulia boreala* gen. n., sp. n. The holotypes are in authors' institution.
- (11799) SCHAEFER, P.W., S.E. BARTH & H.B. WHITE, 1996. Incidental capture of male *Epiaeschna heros* (Odonata: Aeshnidae) in traps designed for arboreal *Calosoma sycophanta* (Coleoptera: Carabidae). *Ent. News* 107(5): 261-266. – (Third Author: Dept Chem. & Biochem., Univ. Delaware, Newark, DE 19716, USA).
 10 ♂, Queen Anne's Co., Maryland, USA, 23-V/19-VI-1995.
- (11800) SCHAEFER, P.W., S.E. BARTH & H.B. WHITE, 1996. Predation by *Enallagma civile* (Odonata: Coenagrionidae) on adult sweetpotato whitefly, *Bemisia tabaci* (Homoptera: Aleyrodidae). *Ent. News* 107(5): 275-276. – (Third Author: Dept Chem. & Biochem., Univ. Delaware, Newark, DE 19716, USA).
 A detailed description of the behaviour of a ♀, actively searching *Bemisia*-infested leaves of soybean plants, Queen Anne's Co., Maryland. Clearly, *E. civile* is an opportunistic predator that has behaviourally adapted to feeding on stationary and previously unavailable prey. – For identic behaviour in *E. glaucum*, in S Africa, see M.A. Van den Berg, 1993, *Notul. odonatol.* 4: 29-31.
- (11801) TANG, J.X. & B.D. SIEGFRIED, 1996. Bioconcentration and uptake of a pyrethroid and organophosphate insecticide by selected aquatic insects. *Bull. environ. Contam. Toxicol.* 57(6): 993-998. – (Dept Ent., Univ. Nebraska, 202 Plant Industry Bldg, Lincoln, NE 68583, USA).
 The uptake of a pyrethroid (permethrin) and an organophosphate (chlorpyrifos) from aqueous solutions at equal, sublethal concentrations was compared for 5 orders, incl. larval *Enallagma* & *Ischnura*. The rate of uptake varied considerably. In dragonflies, the bioconcentration factor was the lowest for chlorpyrifos, and the second lowest for permethrin.
- (11802) VAN DE BUND, W. & S.H.J. SPAAS, 1996. Benthic communities of exposed littoral sand-flats in eighteen Dutch lakes. *Neth. J. aquat. Ecol.* 30(1): 15-20. – (Second Author: Dept Fundamental & Appl. Ecol., Kruislaan 320, NL-1098 SM Amsterdam).
 Orderwise, the odon. densities are stated for each of

the 18 lakes.

- (11803) WEBER, D., 1996. Nachweis von *Aeshna affinis* (Van der Linden, 1820) im Leipziger Raum (Odonata, Anisoptera). *Veröff. NaturkMus. Leipzig* 14: 136-140. — (Strasunder Str. 144, D-04425 Plaussig).
3 ♂, NW Leipziger Auwald, Germany, 2-VIII-1995, with reference to 5 other noteworthy spp. from the same locality.

1997

- (11804) ABBOTT, J.C., K.W. STEWART & S.R. MOULTON, 1997. Aquatic insects of the Big Thicket region of East Texas. *Texas J. Sci.* 49(3/Suppl.): 35-50. — (First Author: Dept Biol. Sci., Univ. North Texas, Denton, TX 76203, USA).
111 odon. spp. are listed from the Big Thicket National Preserve. *Gomphus exilis* and *Celithemis amanda* had been until recently undocumented W of the Mississippi R. *Somatochlora margarita* is considered a "species of concern".
- (11805) AESCHNA, Osaka, No. 34 (20 Dec. 1997). (Jap., with Engl. titles & s's). — (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545-0004, JA).
Karube, H. & M. Sugimura: A new record of *Agrionoptera sanguinolenta* Lieftinck from Japan (pp. 1-4); — *Kitagawa, K.*: Records of the Odonata from Sarawak, Malaysia (pp. 5-10); — *Kitagawa, K., A. Sugitani, K. Hayashi, N. Masaki, A. Muraki & N. Katatani*: Records of the Odonata of Hong Kong, 4 (pp. 11-23); — *Ozono, A.*: Re-discovery of *Macromia daimoji* Okumura from Osaka prefecture (p. 24); — *Karube, H., S. Itoh & M. Yoshida*: Research data of the dragonflies from Nakanoshima Island, Tokara Group, in 1989 and 1993 (pp. 25-28); — *Tone, S. & T. Yagi*: Records of the exceptional migration of *Anax guttatus* (Burmeister) and *Tramea virginia* (Rambur) out of seasons in 1994 at Mie prefecture, central Japan [sic!] (pp. 29-35); — *Moriyasu, T.*: A record of the larvae of *Macromia daimoji* Okumura from Shikoku, Japan (p. 36); — *Ohkubo, K.*: Notes on two species of the dragonflies of Chichi-jima island, Ogasawara in 1996 (pp. 37-38).
- (11806) ALI, D.W., 1997. [Review]. The aminergic and peptidergic innervation of insect salivary glands. *J. exp. Biol.* 200(14): 1941-1949. — (Montreal General Hospital Res. Inst., 1650 Cedar Ave., Montreal, QC, H3G 1A4, CA).
The published and unpublished evidence on several orders is reviewed. The information on the odon. is based on *Sympetrum obtusum*; it is published here for the first time.
- (11807) ARAI, Y. & H. KITA, 1997. Ecological notes on the *Gynacantha japonica* Bartenef at the paddy fields, 1. *Gekkan-Mushi* 320: 8-12. (Jap., with Engl. title). — (First Author: Sueno 1233-2, Yorii-machi, Ohsato-gun, Saitama, 369-12, JA).
[Abstract not available.]
- (11808) BECHLY, G., 1997. Dragonflies from the Lower Cretaceous of Brazil. *Inclusion-Wrosteck* 27: 9 [abstract only]. — (Breslauer Str. 30, D-71034 Böblingen).
[Abridged:] Among the few known localities for Cretaceous insects the Santana-Formation is of outstanding importance because of the enormous number of specimens, the large diversity of taxa, and the high quality of preservation. The locality is situated nr Nova Olinda, Araripe Basin, Ceara state, NE Brazil. The insect-bearing limestones of the Crato-Member are of the Late Aptian origin. A remarkable phenomenon is the large percentage of aquatic insects, representing autochthonous elements of this limnic habitat. The spectrum of the terrestrial arthropods indicates an open xerophytic vegetation. The Odon. are represented by 198 known specimens (incl. 70 larvae), referable to 12 described and ca 18 undescribed spp. Almost half of the material belongs to Cordulagomphidae, the "Anisozygoptera" are completely lacking, but adult Zygoptera are represented by several spp. (incl. a single, doubtful larva). The specimens are mostly complete and well preserved, incl. metallic colours of the body, ommatidia of the compound eyes and even the microsculptures of the pterostigmata. The known inventory includes Hemiphlebiidae, Protoneuridae, Euarchistigmatidae, Sonidae, Aeschmididae, Cretapetaluridae, Gomphaeschnidae, Hageniidae, Araripegomphidae, Cordulagomphidae, Araripelebellulidae, a new family close to Chlorogomphidae, and some Zygoptera of unknown affiliation. — Several specimens of *Gomphaeschnaoides obliquus*, with preserved fore wings, are confirming its aeshnid affinities. Likewise, the new material casts considerable doubt on the recent attribution of *Araripegomphus cretacicus* to the stem-group of the libelluloid dragonflies.
- (11809) BELLE, J., 1997. The genus *Lestes* (Odonata: Lestidae) Leach, 1815, in Surinam. *Zool. Meded.*

- 71(11): 89-103, 33 figs incl. — (Onder de Beumkes 35, NL-6883 HC Velp).
- 8 spp. are treated and some are keyed. As new are described: *L. basidens* sp. n. (holotype ♂: Sipalivini, Nickerie distr., 11-III-1961), *L. curvatus* sp. n. (holotype ♂, allotype ♀: Coropina Creek, Republiek, 26-III-1957), *L. edentatus* sp. n. (holotype ♂, allotype ♀: Nassau Mts, Marowijne distr., 22-III-1949), and *L. trichonus* sp. n. (holotype ♂: Sipaliwini, Nickerie distr., 15-II-1961). The types are in RMNH, Leiden.
- (11810) BISCHOF, A., 1997. Libellenbeobachtungen im Domleschg und Heinzenberg, Graubünden, Schweiz (Odonata). *Mitt. ent. Ges. Basel* 47(4): 139-146. (With Engl. s.). — (Heckenweg 4, CH-7000 Chur).
An annotated list of 29 spp., evidenced in the Domleschg and Heinzenberg, canton Grisons, Switzerland, during 1977-1996.
- (11811) BRACHYTRON, Vol. 1, No. 2 (Dec. 1997). (Dutch, with Engl. s's). — (c/o W.J.A. Hoeffnagel, Krekmeent 72, NL-1218 ED Hilversum).
Dingemans, N.J. & V.J. Kalkman: Separating adult *Aeshna subarctica* Walker from *Aeshna juncea* (L.) in the Netherlands: review and evaluation of field characters (pp. 35-39); — *Wakkie, B. & J.T. Hermans*: The Northern Emerald (*Somatochlora arctica*) in the Netherlands (pp. 40-43); — *Ketelaar, R. & M. van der Weide*: Monitoring of dragonflies in the Netherlands (pp. 44-50); — *Davids, C.*: Water-mites as parasites on dragonflies (pp. 51-55); — *Edelaar, P.*: Flight recognition of Emperor Dragonflies (*Anax Leach*) (pp. 56-59); — *Goudsmits, K.*: [A sight record of *Anax parthenope* in the Netherlands] (pp. 59-60); — *Krekels, R.*: [Book review of the work listed in OA 11557] (pp. 60-62).
- (11812) BROCK, V., J. HOFFMANN, O. KÜHNAST, W. PIPER & K. VOSS, 1997. *Atlas der Libellen Schleswig-Holsteins*. Landesamt Natur & Umwelt Schleswig-Holstein, Flintbek. 176 pp. ISBN 3-923339-39-9. (With Engl. & Danish s's). — Price: DEM 15.— net. — (Orders to: Landesamt für Natur u. Umwelt, Hamburger Chaussee 25, D-24220 Flintbek).
A very carefully prepared work, with distribution maps, information on habitat requirements and the distribution of 65 spp. in Schleswig-Holstein, Germany. Of particular, and more than regional interest are the biogeographic analysis of, and the considerations on the impact of climate and anthropogenic developments on the status of the fauna. In the exhaustive bibliography, all the regional works, published since 1875, are listed. — For the Red List see OA 11517.
- (11813) BULÁNKOVÁ, E., 1997. Dragonflies (Odonata) as bioindicators of environment quality. *Biologia, Bratislava* 52(3): 177-180. — (Inst. Ecol., Fac. Nat. Sci., Comenius Univ., Mlynská dolina B-2, SK-84215 Bratislava).
Based on the larvae field work in the Danube and Morava rivers, the odon. communities of a number of habitat types are described and their bioindicatory propensities are assessed and discussed.
- (11814) ČERVEK, U., 1997. Poročilo odonatološke skupine. — [Report of the Odonata team]. *In*: I. Kodele Krašna, [Ed.], Raziskovalni ekološki tabor "Goče 97", pp. 36-40, Zveza prijateljev mladine, Ajdovščina. (Slovene). — (c/o M. Bedjanič, Fram 117/A, SI-2313 Fram).
Commented records of 20 spp., from 25 localities, Vipavska Valley, W Slovenia, July 1997. — Cf. also OA 10793.
- (11815) CHOVANEC, A. & R. RAAB, 1997. Dragonflies (Insecta, Odonata) and the ecological status of newly created wetlands: examples for long-term bioindication programmes. *Limnologica* 27(3/4): 381-392. — (First Author: Umweltbundesamt, Spittelauer Lände 5, A-1090 Wien).
Based on the evidence from the man-made Tritonwasser pond (cf. OA 9837, with further references) and from the man-made running water Marchfeldkanal (cf. OA 11609), Vienna area, Austria, the role of dragonflies as bioindicators in wetland creation programmes is analysed and discussed.
- (11816) CLAUS-WALKER, D.B., P.H. CROWLEY & F. JOHANSSON, 1997. Fish predation, cannibalism, and larval development in the dragonfly *Epytheca cynosura*. *Can. J. Zool.* 75(5): 687-696. (With Fr. s.). — (Third Author: Dept Anim. Ecol., Umea Univ., S-90187 Umea).
The risk of fish predation and cannibalism was manipulated in semi-field and laboratory experiments with larvae. Results of a 22-week semi-field experiment showed that larvae from different densities were indistinguishable in mean size by the end of the experiment, but that individuals from low densities were larger until week 12. Larvae from low densities varied less in size than did those from high densities. Larvae showed rapid convergence of densities in the absence of fish. Fish predation also generated rapid conver-

- gence of densities. The presence of fish initially reduced larval size variation. There was a significant trend for the presence of fish scent to increase larval survival at low larval densities over survival in the absence of fish. Behavioral observations in the laboratory supported the results of the semi-field study in that (1) dragonfly larvae reduced their activity under daytime conditions, (2) the presence of large larvae caused small larvae to increase their hiding inside a refuge and inhibited their crawling while exposed, (3) small larvae ate fewer prey in the presence of fish. The results of this study suggest that the interaction between intra- and inter-specific predation risk may prove to be important for survival and development of animals in natural systems. — (Cf. also OA 8531).
- (11817) DAUPHIN, P., M. LAGUERRE, J.-P. TAMISIER & F. TEISSIER, 1997. Remarques botaniques et entomologiques sur la Réserve Naturelle du marais de la Mazière (Lot-et-Garonne). *Bull. Soc. linn. Bordeaux* 25(1): 15-24. — (First Author: Poitou, F-33570 Lussac).
18 odon. spp. were recorded, but a list is not given.
- (11818) DE MARMELS, J., 1997. Hallazgo de Odonata nuevos para Venezuela o poco conocidos, 9. *Boln Ent. venez.* (N.S.) 12(2): 151-152. — (Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay, 2101-A, Venezuela).
13 spp. are listed, incl. *Lestes bipupillatus*, *Palaemnema brevignoni*, *Mesoleptobasis inca*, *Phyllocyca sordida*, *Coryphaeschna diapyra* and *Micrathyrina dictynna*, which are for the first time recorded from Venezuela.
- (11819) DELAUNAY, P., 1997. *La zoologie au seizième siècle*. Hermann, Paris. viii+338 pp. ISBN 2-7056-5236-1. — (Publishers: 293 rue Lecourbe, F-75015 Paris).
Some information on the 16th century odonatol. knowledge and insect classification appears on pp. 222-224.
- (11820) DEUTSCHMANN, U., 1997. Zur Geschichte des Entomologischen Vereins Mecklenburg. *Virgo* 1(1): 9-13. — (Feldstr. 5, D-19067 Buchholz).
The history of the Mecklenburg Ent. Soc. is traced from 1978. Brief references to the regional odon. exploration are included.
- (11821) DIJKSTRA, K.-D.B., 1997. De libellen van Katwijk. — Dragonflies of Katwijk. *Duinstag* 1997(1): 4-9. (Dutch). — (Oude Rijsburgerweg 38, NL-2342 BC Oegstgeest).
A brief review of the odon. fauna of Katwijk, Zuid Holland prov., The Netherlands (28 spp.).
- (11822) DIJKSTRA, K.-D.B. & V.J. KALKMAN, 1997. Dragonflies. In: K.-D.B. Dijkstra & V.J. Kalkman, [Eds], Report on the flora and fauna of Bialowieza: NJN-summercamps 1996, pp. 4-7, 24-28, NJN, 's-Graveland. ISBN none. — (Authors: EIS-Nederland, P.O. Box 9517, NL-2300 RA Leiden).
A commented review of 37 spp. (622 records), gathered at 90 localities in the Bialowieza area, Poland, mostly during 21 Apr.-3 July 1995 and 4 July-1 Aug. 1996, with some 1993 and 1997 data.
- (11823) DONATH, H., 1997. Erstnachweis der Südlichen Mosaikjungfer (*Aeshna affinis* VanderLinden, 1823) in der nordwestlichen Niederlausitz. *Biol. Stud. Luckau* 26: 73-74. — (Hauptstr. 36, D-15926 Luckau).
1 ♂, Nature Reserve "Wanninchen", NW Lower Lusatia, E Germany, 10-VIII-1996.
- (11824) EDA, S., 1997. New habitat of *Calopteryx cornelia* Selys in Matsumoto city. *New Ent.* 46(3/4): 45. (Jap., with Engl. title). — (Dept Oral Pathol., Matsumoto Dental Coll., 1780 Gobara, Hirooka, Shiojiri, Nagano, 399-07, JA).
[Abstract not available.]
- (11825) FEDERSCHMIDT, A., 1997. Die Libellen des Kühnauer Sees. *Naturw. Beitr. Mus. Dessau* (Sonderh. 1997): 78-84, fold. map 2 excl. — (LPR Landschaftsplanung, Am Vogelgesang 2a, D-39124 Magdeburg).
A commented list of 26 spp., evidenced during 1995, with a discussion on the management effects on some of them; — Dessau, Sachsen-Anhalt, E Germany.
- (11826) FERRERAS-ROMERO, M., 1997. The life history of *Boyeria irene* (Fonscolombe, 1838) (Odonata: Aeshnidae) in the Sierra Morena mountains (southern Spain). *Hydrobiologia* 345(1/2): 109-116. — (Depto Biol. Animal/Zool., Fac. Cien., Univ. Cordoba, Avda San Alberto Magno s/n, ES-14004 Cordoba).
The life history is inferred from size-frequency analyses of sweep-net samples, taken during 5 yr in a permanent stream. There, the sp. is apparently mainly semivoltine, although a few larvae require 3 yr to complete development. The instar distribution during winter is that of a "summer species". The metamorphosis

is confined to spring and there is a long flying season. Similarities with the nearctic congeners are discussed.

- (11827) FINCKE, O.M., J.K. WAAGE & W.D. KOENIG, 1997. Natural and sexual selection components of odonate mating patterns. *In*: J.C. Choe & B.J. Crespi, [Eds], *The evolution of mating systems in insects and arachnids*, pp. 58-74, Cambridge Univ. Press, Cambridge. — (First Author: Dept Zool., Univ. Oklahoma, 730 Van Vleet Oval, Room 314, Norman, OK 73019, USA).

Traditionally, students of odon. reproductive behaviour have focussed on how ♂♂ compete for access to mates and fertilizations. This tendency has yielded considerable information on ♂ reproductive strategies and on the proximate and ultimate mechanisms involved in ♂-♂ competition, but has left numerous gaps in our knowledge of other aspects of odon. mating systems. Relevant aspects of odon. biology are reviewed, and the extent to which current data on mating patterns support predictions arising from sexual selection theory is examined. Although long-term studies offer some such support, they also indicate that natural selection for longevity and stochastic factors such as weather play critical roles in influencing reproductive success. Relatively little of the variance in ♂ reproductive success in odon. has been traced to variance in ♂ phenotype. The role of ♀♀ as determinants of odon. mating patterns is emphasized, and sexual conflicts of interest over mating, fertilization, and oviposition decisions are discussed. Finally, the ways in which natural selection underlies ♀ mating decisions and how larval and adult ecology interact to influence adult reproductive behaviour are explored.

- (11828) FINCKE, O.M., S.P. YANOVIK & R.D. HANSCHU, 1997. Predation by odonates depresses mosquito abundance in water-filled tree holes in Panama. *Oecologia* 112: 244-253. — (Dept Zool., Univ. Oklahoma, 730 Van Vleet Oval, Room 314, Norman, OK 73019, USA).

For an advance abstract, see *OA* 11085.

- (11829) FITZHUGH, G.H. & J.H. MARDEN, 1997. Maturation changes in troponin T expression, Ca²⁺-sensitivity and twitch contraction kinetics in dragonfly flight muscle. *J. exp. Biol.* 200(10): 1473-1482. — (Dept Biol., Pennsylvania St. Univ., University Park, PA 16802, USA).
Maximum lift production and its thermal sensitivity

increase dramatically during adult maturation of *Libellula pulchella*. Here, it is reported that the mechanistic basis for this transition appears to involve a developmental change in protein expression, which alters the Ca²⁺-sensitivity of muscle activation and twitch contraction kinetics. The alternatively spliced Ca²⁺ regulatory protein troponin T (TnT) undergoes an isoform shift during adult maturation. Skinned (demembrated) fibers of mature flight muscle are up to 13 times more sensitive to activation by Ca²⁺ than skinned fibers from teneral (newly emerged adult) flight muscle, and their Ca²⁺-sensitivity is more strongly affected by temperature. Intact muscle from mature individuals has a shorter time to peak tension and longer time to half-relaxation during twitch contractions, which is consistent with a greater Ca²⁺-sensitivity of mature muscle. Because it becomes activated more quickly and relaxes more slowly, mature flight muscle is able to generate, with each twitch, more force per unit area than teneral muscle; this difference in force becomes greater at high temperatures. There do not appear to be any age-related differences in actomyosin crossbridge properties, since teneral and mature flight muscles do not differ in shortening velocity, tetanic tension or instantaneous power output during isotonic contraction.

- (11830) FLIEDNER, H., 1997. *Die Bedeutung der wissenschaftlichen Namen europäischer Libellen*. GdO, Mönchengladbach. 111 pp. (with Latin & Engl. s's). [*Libellula* (Suppl.) 1]. — Price: DEM 20.— net. — (Author: Louis-Seegelken-Str. 106, D-28717 Bremen; — Orders to Mrs U. Krüner, Gelderner Str. 39, D-41189 Mönchengladbach).

The work endeavours to explain the etymology and background meaning of the taxonomic names in Europ. Odon. The Author is a professional Latin/Greek philologist. His analysis of the frequently occurring elements in the odon. taxonomic nomenclature is also of extralimital bearing, therefore of general interest. The book is an important contribution towards the history of odonatology. — For a similar work, covering all the taxa of the former USSR, cf. *OA* 4499.

- (11831) FOECKLER, F., H. SCHMIDT & O. DEICHNER, 1997. Naturschutzfachliche Analyse und Bewertung der Auswirkungen von Fischteichen auf die Gewässerfauna von Flussperlmuschelbächen Nordostbayerns. *Z. Ökol. NatSchutz* 6: 111-123. (With Engl. s.). — (First Author: Ges. Landschaftsökol., Dechbettner Str. 9, D-93049 Regensburg).

- A biological water quality assessment has been carried out at 16 mountain stream sites in NE Bavaria. An annotated odon. checklist is presented, but *Cordulegaster boltonii* is the only sp. referred to in the discussion.
- (11832) GELWICK, F.P., M.S. STOCK & W.J. MATTHEWS, 1997. Effects of fish, water depth, and predation risk on patch dynamics in a north-temperate river ecosystem. *Oikos* 80(2): 382-398. - (First Author: Dept Wildlife & Fish. Sci., Texas A & M Univ., College Station, TX 77843-2258, USA). Contains a passing statement on the "Gomphidae" dominance in the experimental pens, Baron Fork, Illinois R., USA.
- (11833) GOLLADAY, S.W., B.W. TAYLOR & B.J. PALIK, 1997. Invertebrata communities in forested limesink wetlands in southwest Georgia, USA: habitat use and influence of extended inundation. *Wetlands* 17(3): 383-393. - (First Author: J.W. Jones Ecol. Res. Cent., Rte 2, Box 2324, Newton, GA 31770, USA). Includes quantitative data on the occurrence of 3 higher odon. taxa (gen. fam).
- (11834) GOUTNER, V. & R.W. FURNESS, 1997. Mercury in feathers of Little Egretta garzetta and night heron Nycticorax nycticorax chicks and in their prey in the Axios Delta, Greece. *Archs environ. Contamin. Toxicol.* 32(2): 211-216. - (First Author: Dept Zool., Aristotelian Univ., GR-54006 Thessaloniki). In the 2 bird spp., the mean mercury concentrations were 3.32 and 3.01 resp. Among the prey categories, the highest values were identified in the pumpkinseed sunfish, *Leptomis gibbosus* (2.31) and in the odon. larvae (1.50), while the lowest in the terrestrial and saltwater prey (*Gryllotalpa gryllotalpa* 0.05, *Aphanius fasciatus* 0.00).
- (11835) GRACILE [Newsletter of Odonatology], Osaka, No. 58 (7 Dec. 1997). (Jap., with Engl. titles). - (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545-0004, JA). *Tabata, O.*: *Sympetrum cordulegaster* first caught in Osaka prefecture (pp. 1-2); - *Une, S.*: A record of andromorphic female *Sympetrum kunkeli* (p. 2); - *Matsuki, K. & K. Inoue*: On the number of dorsal and lateral spines of *Gomphus postocularis exuviae* collected in Uji City, Kyoto prefecture (pp. 3-7); - *Matsuki, K. & K. Yoshida*: On the number of dorsal and lateral spines of *Gomphus postocularis exuviae* collected in Tokushima City, Tokushima prefecture (pp. 8-13); - *Tsuda, S.*: Larvae in swimming pools in southeastern part of Osaka prefecture (pp. 14-18); - A behaviour of *Somatochlora clavata* at dusk (p. 19); - *Sogame, S.*: Faunal record of dragonflies along Hatsutani River, Nose, Osaka prefecture (p. 20); - *Une, S.*: Observation records of *Sympetrum infuscatum* perching on electric wires (p. 21); - *Tani, T.*: Dragonflies recorded at Yawata City, Kyoto prefecture, 2 (p. 22-31); - *Inoue, K. & T. Tani*: Report of the survey trip on the odonate fauna of South Kyoto prefecture, 5: Uji City, Ujitaera-cho and Yawata City (pp. 32-35); - *Azuma, T.*: Report of the survey trip for five forms of *Mnais pruinosa nawai* (pp. 36-37); - *Tabata, O.*: Report of the survey trip for *Davidius moiwanus taruii* in Kitayama, Kyoto prefecture (pp. 38-39); - *Une, S.*: An observation on the oviposition of *Epophthalmia elegans* (p. 39); - *Anaze, N.*: Report of the survey trip on the odonate fauna of Nokumi, Kozagawa-cho and Tahara, Koza-cho, Wakayama prefecture (pp. 40-41); - *Tabata, O.*: Report of the failed survey trip for Tangajima island, Hyogo prefecture (p. 42); - *Matsuda, I.*: Report of the survey trip on the odonate fauna of Shinodayama and Komyoike pond, Osaka prefecture, in autumn 1994 (pp. 43-44); - [same], in summer 1997 (pp. 44-46); - [same], in autumn 1997 (pp. 46-48); - *Yamamoto, T. & S. Shimura*: In memoriam Mr W. Kitawaki (pp. 48-50); - *Tsuda, S.*: In memoriam Mr Hiroshi Itoh (pp. 51-52).
- (11836) HEYMER, A., 1997. *Ein Beitrag zur Kenntnis der Libelle Oxygastra curtisi (Dale, 1834) (Odonata; Anisoptera)*. - *Contribución al conocimiento del odonato Oxygastra curtisi (Dale, 1834) (Odonata; Anisoptera)*. SIO Iberian Regional Office, Córdoba. 18 pp. - (Bilingual: Germ./Span.). - (Available from: Prof. Dr M. Ferreras-Romero, Depto Biol. Animal/Zool., Fac. Cienc., Univ. Córdoba, Avda San Alberto Magno s/n, ES-14004 Córdoba). A bilingual edn of the work, published originally (1964) in *Beitr. Ent.* 14(1/2): 31-44.
- (11837) HICKS, J.M., N.H. EULISS & S.W. HARRIS, 1997. Aquatic invertebrate ecology during a simulated botulism epizootic in a Sacramento Valley wetland. *Wetlands* 17(1): 157-162. - (First Author: U.S. Army Corps of Engineers, San Francisco Distr., Regulatory Brch. 211 Main St., Room 803, San Francisco, CA 94105, USA). The effect of decomposing duck carcasses on aquatic invertebrate numbers, biomass, and taxonomic com-

- position was investigated in a seasonally flooded, impounded wetland (Aug.-Nov. 1988, 1989). No reference is made to the odon. in the text, but in the Appendix, the percent occurrence in a seasonal wetland in Sacramento National Wildlife Refuge, California, USA, is genus-wise stated for 8 odon. genera.
- (11838) HIRVONEN, H., 1997. *Behavioural mechanisms of predation rate and prey choice*. PhD thesis, Univ. Helsinki. 132 pp. ISBN 952-90-9476-0. – (Author: Div. Pop. Biol., Dept Ecol. & Syst., P.O. Box 17, FIN-00014 University of Helsinki). The work is almost entirely based on the Odon. It consists of an exhaustive introductory review of the subject (pp. 3-31) followed by 5 “chapters”, represented by facsimile reproduced papers as listed in OA 10856 and 11788, and 3 manuscripts, submitted to (unnamed) periodicals. These will be abstracted upon their publication in the primary journal(s).
- (11839) HO, C.J., P.H. KIANG & T.S. CHEN, 1997. The aquatic insects of Rainbow Lake [Taiwan]. *Nat. Conserv. Q.* 18: 37-41. (Chin., with Engl. title & taxonomic nomencl.). – (First Author: c/o Taiwan Endemic Species Res. Inst., 1 Ming-Shen E. Rd, Chi-Chi, Nan-Tou Co., Taiwan, ROC). Contains annotations on *Aeshna taiyal* and *Polycanthagina erythromelas paiwan*.
- (11840) HOLUŠA, O., 1997. Faunistic records from the Slovak Republic: Odonata, Libellulidae. *Entomofauna carpath.* 9: 60. (Bilingual: Czech/Engl.). – (Bruzovská 420, CZ-73801 Frýdek-Místek). 2 ♂, Brzotin, Rožnávská Basin, Slovakia (alt. 290 m), 4-VII-1996. – (Cf. also OA 11842).
- (11841) HOLUŠA, O., 1997. Nové znalosti o rozšíření vážek rodu *Somatochlora* na území bývalého Československa (Odonata: Corduliidae). – New records of dragonflies of the genus *Somatochlora* in the territory of the former Czechoslovakia (Odonata: Corduliidae). *Klapalekiana* 33: 23-28. (Czech, with Engl. s.). – (Bruzovská 420, CZ-73801 Frýdek-Místek). Records and annotations on *S. alpestris*, *S. arctica*, *S. flavomaculata* and *S. metallica*, in Bohemia, Moravia, Silesia and Slovakia, with comprehensive regional bibliography.
- (11842) HOLUŠA, O., 1997. Vážka plavá (*Libellula fulva* Müller, 1764), vzácný zástupce řádu vážek (Odonata) na území České a Slovenské republiky. – Scarce chaser (*Libellula fulva*), a rare species in the Czech Republic and Slovak Republic. *Ochr. Přír.* 52(8): 240-241. (Czech, with Engl. s.). – (Bruzovská 420, CZ-73801 Frýdek-Místek). 2 ♂, are reported from a pond nr Brzotin, Slovakia (4-VII-1996), the habitat and its odon. fauna are described in detail, and the previous Czech and Slovak records of the sp. are reviewed.
- (11843) HOLUŠA, O., 1997. Výskyt vážky *Hemianax ephippiger* (Odonata: Aeshnidae) v České republice. – The occurrence of dragonfly *Hemianax ephippiger* (Odonata: Aeshnidae) in the Czech Republic. *Klapalekiana* 33: 17-21. (Czech, with Engl. s.). – (Bruzovská 420, CZ-73801 Frýdek-Místek). In 1995, the sp. was recorded at 5 localities in Moravia and Silesia. The records are reviewed, the habitats described, and some information on biology is provided.
- (11844) HOLUŠA, J. & O. HOLUŠA, 1997. Výsledky faunistického průzkumu vážek (Odonata), sarančí (Caelifera), kobylek (Ensifera) a švábů (Dictyoptera: Blattodea) na území Slavkovského lesa. – The results of a faunistic research of dragonflies (Odonata), grasshoppers (Celifera), crickets (Ensifera) and cockroaches (Dictyoptera: Blattodea) of the Slavkovský les Mts. *Klapalekiana* 33: 29-36. (Czech, with Engl. s.). – (Second Author: Bruzovská 420, CZ-73801 Frýdek-Místek). Includes an annotated and commented list of 25 odon. spp.; – W Bohemia, Czech Republic.
- (11845) HUDOKLIN, A. & A. SOVINC, 1997. Novo življenje opuščениh glinokopov: urejanje drugotnega biotopa v Zalogu pri Novem mestu. – New life for deserted clay pits. *Proteus, Ljubljana* 60(3): 104-110, 143. (Slovene, with Engl. s.). – (Second Author: Pod kostanji 44, SI-1000 Ljubljana). 7 odon. spp. are listed from a clay pit in Zalog, nr Novo mesto, Lower Carniola, Slovenia.
- (11846) *IDF-REPORT*. Newsletter of the International Dragonfly Fund, Vol. 1, No. 2 (15 July 1997). 32 pp. (Text mostly in German). Edited by Dr M. Lindeboom (Wolfstr. 6, D-72119 Ammerbuch). *IDF-Förderprojekte 1997* (pp. 1-10); – *Vereinsmitteilungen* (pp. 11-15); – *Schorr, M.*: Schutz des Hulasee in Israel: Projekt der Stiftung Europäisches Naturerbe (pp. 16-17); – *Lindeboom, M.*: Die Libel-

- lenbeobachtungen des Fischers Leonhard Baldner (1612-1694) (pp. 18-24); – Bemerkungen zur Libellenpaarung von C.Th. von Siebold (1838) (p. 24); – *Literatur* (pp. 25-31); – *Schorr, M. & M. Lindeboom*: In eigener Sache (p. 32).
- (11847) JANSKÝ, V. & S. DAVID, 1997. Vážky (Insecta: Odonata) Oravy a oravských rašeliníšť. – The dragonflies (Insecta: Odonata) from Orava and Orava's peat bogs (northwestern Slovakia). *Entomofauna carpath.* 9: 48-53. (Slovak, with Engl. s.). – (Second Author: Inst. Landscape Ecol., Slovak Acad. Sci., P.O. Box 23/B, SK-94901 Nitra).
A commented list of 19 spp. *Leucorrhinia rubicunda* is for the first time reported from Slovakia.
- (11848) JUEG, U., 1997. Die Entomofauna des LSG "Schlosspark Ludwigslust". 1. Insecta ausser Coleoptera und Lepidoptera. *Virgo* 1(1): 27-49. – (Johannes-Gillhoff-Str. 7, D-19288 Ludwigslust). Includes an annotated list of 22 odon. spp.; – Ludwigslust, Mecklenburg-Vorpommern, E Germany.
- (11849) KATO, K., Y WATANABE & H. YOKOTA, 1997. Preliminary note on artificial parthenogenesis in *Stylurus ocellatus* (Odonata, Gomphidae). *New Entomol.* 46(1/2): 16-19. (Jap., with Engl. s.). – (First Author: Senzoku 1-10-2-103, Meguro-ku, Tokyo 152, JA; – Second Author: Nishidacho 4-14, Nishinomiya-shi, Hyogo 662, JA; – Third Author: Umezono-cho 1-6, Moriguchi-shi, Osaka 570, JA).
It was examined whether the mature eggs, dissected from ovaries of *S. ocellatus* can be activated to develop parthenogenetically, and whether such eggs can be fertilized if macerated with sperm from female spermathecae. Eggs to be examined were divided into 3 groups. Group 1 eggs were simply placed in tap water, group 2 eggs were macerated with sperm and placed in tap water, and group 3 eggs were macerated but without sperm and placed in tap water. In all 3 groups essentially the same results were obtained. Most eggs (83-95%) began development and many (48-51%) reached the stage where compound eyes coloured, and some (17-19%) hatched. These figures in normally oviposited eggs kept in tap water under the same conditions were 100%, 97% and 97%, respectively. Normally oviposited eggs hatched in about 2 weeks, while the treated eggs took much longer to hatch, some taking more than 6 weeks. It is concluded that artificial parthenogenesis but not artificial fertilization took place in the eggs examined. Less extensive examinations indicated that the eggs of *S. annulatus*, also developed parthenogenetically when similarly treated. – For a suggestion of parthenogenesis in *Anomalagrion hastatum* see OA 7617.
- (11850) KELEMINA, J., 1997. *Bajke in pripovedke slovenskega ljudstva*. – [*Myths and sagas of the Slovene people*]. Humar, Bilje. 334 pp. ISBN 961-6097-11-3. (Slovene). – Price: SIT 3150.— net. – (Publishers: Studio Ro, Bilje, SI-5292 Renče, Slovenia).
A reprint of the work published originally in 1930. A brief chapter on some dragonfly superstitions appears on pp. 115-116.
- (11851) KHALIQ, A., 1997. *Survey of rice pests in Azad Jammu and Kashmir and potential of dragonflies as bio-control agents*. Dept Ent., Univ. Coll. Agric., Rawalkot. vi+32 pp. [Final Techn. Rep., Project founded by Pakistan Sci. Found.]. – (Dept Ent., Univ. Coll. Agric., Rawalakot, Azad Kashmir, Pakistan).
A survey is presented of rice insect pests (ca 28 spp.) and of dragonflies visiting rice (28 spp.) at various localities in Azad Jammu & Kashmir, Pakistan. The feeding capacity of 11 libellulid spp. on some insect pests was determined by forced feeding, and exact quantitative data per sp., sex and time of the day are stated. In all spp., the ♀♀ are more voracious than the ♂♂. The odon. population density was the highest from mid Aug. through end Sept. The population then declined as the crop matured and the pest population became low. The relationship between the odon. and pest populations is described by the multiple regression equation. The statistical analysis revealed that the odon. have negative regression coefficient with the populations of all pest spp.; the pest populations decrease with the increase of the odon. population, but the odon. feeding behaviour is different at different localities.
- (11852) [KOTARAC, M.] SIVEC, I., 1997. M. Kotarac: Atlas kačjih pastirjev (Odonata) Slovenije. *Acta ent. slov.* 5(2): 102. (Slovene). – (Slovene Mus. Nat. Hist., P.O. Box 290, SI-1001 Ljubljana).
A comprehensive book review of the work listed in OA 11587.
- (11853) LEBENHAGEN, A., 1997. Die Entomofauna und Malakofauna des LSG "Wanzeberg". *Virgo* 1(1): 7-8. – (Schäferstr. 24, D-19053 Schwerin).
27 odon. spp. were evidenced in nature reserve

"Wanzeberg", SW Mecklenburg-Vorpommern, E Germany, but *Anax imperator* is the only sp. listed.

- (11854) **LEGRAND, J.**, 1997. *Zygonyx geminunca* n. sp., nouveau Zygonychinae des Monts Nimba, Afrique occidentale (Odonata, Anisoptera, Libellulidae). *Revue fr. Ent.* (N.S.). 19(1/2): 73-76. (With Engl. s.). — (10, rue du Chemin de fer, F-94110 Arcueil).
Holotype ♂: Guinea, Mts Nimba, Zougouépo, Zougé R., alt. 750 m, 28-V-1991. Allotype ♀ and several paratypes of both sexes from various Mts Nimba localities, alt. 500-1450 m, all taken in June. The repository is not stated, most probably MNHN, Paris. — The new sp. is described, illustrated and compared with *Z. flavicosta mwinilungae* and *Z. ikomae*.
- (11855) **LESLIE, A.J., T.L. CRISMAN, J.P. PRENGER & K.C. EWEL**, 1997. Benthic macroinvertebrates of small Florida pondcypress swamps and the influence of dry periods. *Wetlands* 17(4): 447-455. — (First Author: Cent. Wetlands, Univ. Florida, Gainesville, FL 32611, USA).
Benthic macroinvertebrate communities were sampled bimonthly (Dec. 1993-Apr. 1995) in 3 swamps. Taxon richness and total density were similar during drawdown and wet months, though a large number of taxa are unique to the dry period. The system seems to be adapted to unpredictable drawdown. Mean density values are stated for 8 odon. genera.
- (11856) *La LETTRE DES SOCIETAIRES Société française d'odonatologie*, No. 12 (25 Dec. 1997). — (c/o J.-L. Dommange, 7 rue Lamartine, F-78390 Bois-d'Arcy).
6 pp. of highly interesting news items, brief reports and announcements. The SFO is a steadily growing society. In 1997 its mailing list contained 312 addresses, of which 265 individual members (274 and 235, resp. in 1996). The 1998 membership fees amount to FF 190.— net, covering the quarterly *Martina*, and at least 1 issue of the newsletter.
- (11857) **LIBELLULA**. Mitteilungsblatt der Gesellschaft deutschsprachiger Odonatologen (GdO), Vol. 16(3/4) (Dec. 1997). — (c/o Mrs U. Krüner, Gelderner Str. 39, D-41189 Mönchengladbach).
Schiel, F.-J., M. Rademacher, A. Heitz & S. Heitz: *Leucorhina caudalis* (Charpentier) (Anisoptera: Libellulidae) in der mittleren Oberrheinebene-Habitat, Bestandsentwicklung, Gefährdung (pp. 85-110); — *Jödicke, R.*: Tagesperiodik der Flugaktivität von *Anax imperator* Leach (Anisoptera: Aeshnidae) (pp. 111-129); — *Gasse, M.*: Libellen als Beute der Schafstelze *Motacilla flava* während der Nestlingsfütterung (pp. 131-141); — *Lempert, J.*: Die Einwanderung von *Sympetrum fonscolombii* (Selys) nach Mitteleuropa im Jahre 1996 (Anisoptera: Libellulidae) (pp. 143-168); — *Müller, J.*: *Gomphus (Stylurus) flavipes* (Charpentier) in der Elbe von Sachsen, Sachsen-Anhalt, Brandenburg, Mecklenburg-Vorpommern, Niedersachsen und Schleswig-Holstein sowie in der Weser bei Bremen (Anisoptera: Gomphidae) (pp. 169-180); — *Schaub, M.*: Ein Massenzug von *Libellula quadrimaculata* L. entlang der Kurischen Nehrung (Anisoptera: Libellulidae) (pp. 181-184); — *Stephan, U. & R. Treiber*: Beobachten zum Eiablagehabit von *Aeshna affinis* Vander Linden (Anisoptera: Aeshnidae) (pp. 185-190); — *Mauersberger, R.*: Ein älterer Fund von *Erythromma viridulum* (Charpentier) in Brandenburg (Zygoptera: Coenagrionidae) (pp. 191-192); — *Reinhardt, K.*: Ein Massenvorkommen mehrerer Libellenarten in einem Gewässer (pp. 193-198); — *Reder, G.*: Erster Nachweis von *Gomphus flavipes* (Charpentier) in Rheinland-Pfalz (pp. 199-202); — *Niehuis, O. & E. Schneider*: Nachweis von *Gomphus flavipes* (Charpentier) in Hessen (pp. 203-205).
- (11858) **LIBELLULA (SUPPL.)**, Vol. 1: H. Fliedner, *Die Bedeutung der wissenschaftlichen Namen europäischer Libellen* (111 pp.), Dec. 1997. GdO, Mönchengladbach. Orders to: Mrs U. Krüner, Gelderner Str. 39, D-41189 Mönchengladbach. — Price: DEM 20.— net.
See OA 11830.
- (11859) **MAIBACH, A. & C. MEIER**, 1997. 10e Symposium du Groupement des odonatologues de Suisse. — 10. Symposium der Vereinigung Schweizerische Libellenkundler. *Nouvelles Cent. suisse Cartogr. Faune* 14: 13-19. — (First Author: La Croix, Rte de Moudon 9, CH-1610 Oron-la-Ville; — Second Author: Löwen-gässli 2, CH-8708 Männedorf/ZH).
In the introductory part, a review is presented of the first 10 Swiss symposia, viz. 1988/March (Zürich), 1988/Nov. (Bern), 1989 (Neuchâtel), 1991 (Aarau), 1992 (Basel), 1993 (Yverdon-les-Bains), 1994 (Bern), 1995 (Zürich), 1996 (Bern), 1997 (Bienne/Biel). At these, 167 presentations were given: 1 in the field of systematics, most of the others were related, in one way or the other, to the Swiss fauna. — This is followed by the abstracts of papers, presented at the 10th

- Symposium: *Vonwil, G. & P. Vonwil*: 10 Jahre Libellenbeobachtung im aargauischen Reusstal (p. 14); – *Grütter, E.*: Bemerkenswerte Libellenbeobachtungen an Wiesengraben (p. 14); – *Eigenheer, K.*: *Gomphus vulgatissimus* in der Region Solothurn (pp. 14-15); – *Hostettler, K.*: Beobachtungen an Libellen und Libellenlarven im alpinen Bereich: Einfluss intensiver Beweidung in alpinen Mooren (p. 15); – *Maibach, A.*: La plaine de l'Orbe (VD), un centre de biodiversité pour les libellules (pp. 15-16); – *Pongratz, E.*: Les libellules en philatélie (p. 16); – *Vonwil, G. & P. Vonwil*: Libellen im Reusstal (p. 16); – *Wildermuth, H.*: Wie finden *Coenagrion puella* und *Pyrrhosoma nymphula* ihren Eiablageplatz? (p. 16); – *Lubini, V.*: Einige überraschende Libellenfunde bei gewässerbiologischen Untersuchungen (pp. 16-17); – *Knapp, E. & H. Wildermuth*: Libellen an der Waldgrenze: die Odonaten der Alp Flix (p. 17). – Extra article/report: *Lepori, F., T. Maddalena, M. Moretti & N. Patocchi*: Activités odonatologiques au Tessin (pp. 17-18). – A description of the preparatory work for a new edn of the odon. atlas of Switzerland is appended.
- (11860) *MALKMUS, R.*, 1997. Zur Verbreitung der Amphibien, Reptilien und Libellen (Odonata) in den Ostalpen. *Nachr. naturw. Mus. Aschaffenburg* 104: 109-120. (With Engl. s.). – (Schulstr. 4, D-97859 Wiesthal).
Records and field notes on *Coenagrion puella*, *Aeshna caerulea*, *A. juncea* and *Somatochlora alpestris* from the Northeastern Alps (Schobergruppe, Kreuzeckgruppe, Reisseckgruppe), Austria.
- (11861) *MARTIN, R.*, 1997. Contribución al conocimiento de la fauna de libélulas (Insecta: Odonata) del Alto Ampurdán (Gerona). *Boln Asoc. esp. Ent.* 21 (3/4): 269-274. (With Engl. s.). – (Avda Martí Pujol 250, 3' 4a, ES-08911 Badalona, Barcelona).
A checklist of 35 spp. hitherto known from the region (Spain), with new records for 23 spp.
- (11862) *MARTIN-CASACUBERTA, R.M.*, 1997. Presencia de *Coenagrion hastulatum* (Charpentier, 1825) en la Península Ibérica (Odonata: Coenagrionidae). *Boln Asoc. esp. Ent.* 21(1/2): 101. – (Avda Martí Pujol 250, 3' 4a, ES-08911 Badalona, Barcelona).
3 ♂, 1 ♀, Lagos de Meranges, Gerona Pyrenees, Spain, alt. 2100 m, 20-VII-1996. From the same locality, *Lestes dryas*, *Enallagma cyathigerum*, *Aeshna juncea* and *Libellula quadrimaculata* are also listed.
- (11863) *MARTINEZ, M. & B. GAUVRIT*, 1997. Combien y a-t-il d'espèces d'insectes en France? *Bull. Soc. ent. Fr.* 102(4): 319-332. (With Engl. s.). – (First Author: INRA-ENSAM, UFR Zool., 2 place Pierre Viala, F-34060 Montpellier).
The status of the odon. fauna of the metropolitan France is assessed at 87 spp.
- (11864) *MATSUKI, K., H. KURASHINA & T. HISAKAWA*, 1997. On the resting posture of *Libellula angelina* at night. *Nature & Insects* 32(14): 38-41. (Jap., with Engl. title). – (First Author: 1575-14, Hazama 3-chome, Funabasi, Chiba, 274, JA).
[Abstract not available.]
- (11865) *MAY, M.L.*, 1997. The status of some species of *Enallagma* (Odonata: Zygoptera: Coenagrionidae). *Ent. News* 108(2): 77-91. – (Dept Ent., Cook Coll., New Jersey Agric. Exp. Stn, Rutgers Univ., P.O. Box 231, New Brunswick, NJ 08903-0231, USA).
The identity and generic affiliation of 5 little known spp. usually assigned to *Enallagma* were investigated. Of these, *E. camerunense* is shown to be probably an aberrant *Pseudagrion*. *E. kauderni*, commonly regarded as a ssp. of *E. nigradorsum*, appears to be as well-differentiated from the latter as either is from *E. vansomereni*, therefore it is considered to be a full sp. Examination of the type of *E. melanotum* demonstrated it to be identical with *Agriion* (now *Cercion*) *sexlineatum*. *E. pseudelongatum* has been incorrectly placed as a synonym of *E. elongatum* in recent catalogues, probably owing to misinterpretation of F.C. Fraser's (1947, *Proc. R. ent. Soc. Lond.* [B] 16[11/12]: 143-148) comparison of these distinct spp. Finally, *E. strouhali* is apparently conspecific with the earlier described *E. risi*; the possible relations of these taxa to *E. cyathigerum* and *E. boreale* are also discussed.
- (11866) *MEGANEURA*. Palaeontomological newsletter. No. 1 (winter 1997): 28 pp. Edited by Dr X. Martinez-Delclòs, published by the European Science Foundation (Network on Fossil Insects). – (Orders to: Ms J. Dalton, European Science Foundation, 1 quai Lezay-Marmésia, F-67080 Strasbourg).
[Odon. articles:] *Bechly, G.*: New CD-Rom: The insects and spiders of the Santana Formation, Lower Cretaceous in Brazil (pp. 18-19); – Palaeontomological/entomological associations Web sites (p. 19); – *Nel, A., G. Gand, J. Lapeyrie & J. Garric*: Discovery of arthropods and bivalves in continental Permian de-

- posits (Lodévois, France) (pp. 24-25); — *Bechly, G.*: Dragonflies from the Lower Cretaceous of Brazil (pp. 27-28). — The issue also contains current bibliography (pp. 9-14).
- (11867) MERMOD-FRICKER, F., 1997. Bibliographie concernant la faune entomologique suisse, 1995. *Bull. romand Ent.* 15(2): 87-97. — (Centre suisse Cartogr. Faune, Terreaux 14, CH-2000 Neuchâtel). Contains 5 odonatol. titles.
- (11868) MIELEWCZYK, S., 1997. Jakościowe i ilościowe zmiany zasiedlenia Ephemeroptera, Odonata, Heteroptera i Coleoptera w świeżym stawie śródpolnym. — [Qualitative and quantitative changes in the population of Ephemeroptera, Odonata, Heteroptera and Coleoptera in a newly created pond]. *Mater. 17 Zjazd Hydrobiol. pol.*, Poznan, p. 96. (Polish). — (Res. Cent. Agric. & Forest Environ., PAN, Bukowska 19, PO-60-809 Poznan). Refers to the same research project as OA 11869, and *Erythronna viridulum* and *Anax imperator* are mentioned.
- (11869) MIELEWCZYK, S., 1997. Proces zasiedlania nowo utworzonego stawu śródpolnego przez główne grupy owadów (Ephemeroptera, Odonata, Heteroptera, Coleoptera). — [Colonisation of a newly created pond by the main insect groups (Ephemeroptera, Odonata, Heteroptera, Coleoptera)]. *In*: Fauna denna małych zbiorników sławkowodnych i małych rzek, pp. 12-13, Wyższa szkoła Rolniczo-pedagogiczna, Siedlce. (Polish). — (Res. Cent. Agric. & Forest Environ., PAN, Bukowska 19, PO-60-809 Poznan). Faunal succession was studied in a pond 46 km S of Poznan during the first 2 yr after its creation. A passing information is given also on the Odon. — Cf. also OA 11868.
- (11870) MOORE, N.W., 1997. Dragonflies (Odonata). *In*: L. Friday, [Ed.], Wicken Fen: the making of a wetland nature reserve, pp. 138-142, Harley Books, Martin/Essex. ISBN 0-946589-33-X (hardback), 0-946589-58-5 (paperback). — (Farm House, 117 Boxworth End, Swavesey, Cambridge, CB4 5RA, UK). Wicken Fen (East Anglia) is Britain's oldest nature reserve (since 1899), the Author has served as the Chairman of its Management Committee during many years. The Fen is having dragonfly records for over a 100 yr. Here the fauna of the past is compared with that of today, relating the differences to changes in land use. Although 5 spp. have been lost, about half of all the Engl. spp. still breed there, for which reason the locality qualifies as a Site of Special Scientific Interest.
- (11871) MUNGENAST, F., 1997. Libellen als Gewässerindikatoren: ihre Bedeutung als "Frühwarnsysteme" im Natur- und Landschaftsschutz, mit Beobachtungsanleitungen an Schul- und Gartenteichen. *Gemeinde-NetzwerkZig, Innsbruck* 1997(8): 17-21. — (Author's address not stated). Largely directed at the secondary-school teachers, the paper is based on the work in the Gurgltal, between Imst and Nassereith, Tyrol, Austria, and also presents a number of regional records.
- (11872) MUZÓN, J., 1997. Odonata (Insecta) from Patagonia: species richness and distributional patterns. *Biogeographica* 73(3): 123-133. (With Fr. s.). — (Inst. Limnol. "Dr R.A. Ringuelet", C.C. 712, AR-1900 La Plata). 35 spp. are so far known from Patagonia, Argentina. These are here listed, and the biogeographic composition of the regional fauna is analysed.
- (11873) MUZÓN, J. & N. VON ELLENRIEDER, 1997. Description of the last instar of *Sympetrum villosum* Ris (Odonata: Libellulidae). *Neotrópica* 43(109/110): 43-45. (With Span. s.). — (Inst. Limnol. "Dr R.A. Ringuelet", C.C. 712, AR-1900 La Plata). The description is based on S Chilean specimens, and the larva is compared with *S. gilvum*. The key of R.A. Cannings (1982, *Adv. Odonatol.* 1: 9-14) is updated.
- (11874) NARAOKA, H., 1997. Reproductive behavior of *Sympetma paedisca paedisca* (Odonata, Lestidae). *New Ent.* 46(1/2): 20-25. (Jap., with Engl. s., captions & tabs). — (36-71, Aza Motoizumi, Fukunoda, Itayanagi-machi, Kita-gun, Aomori, 038-36, JA). The subject was studied at a small pond in Shiura village, Kita-gun, Aomori pref., N Japan, from May to Aug. 1996. Hibernated adults appeared at the pond from mid May, and a few adults remained until early Aug. Reproductive behaviour was observed on fine and warm days from late May to mid July (peak during the first half of June). ♂ seized the ♀ without courtship and display, immediately after he found her. Sperm transfer ($\bar{x}=60.8$ s) was carried out just after the tandem was formed at a perching site. Copulation was observed between 7:30 and 14:30 h with the peak from 9:00 to 10:00 h and it was divided into 3 stages;

- the characteristic pumping was seen at each stage. Copulation lasted 15 min 47 s on average (stage I: 14 min, 42 s, II: 93.4 s, III: 10.3 s). Sperm displacement was recognized by comparing the volumes of ♀'s sperm storage organ collected at precopula, copula and postcopula. Tandem oviposition took place soon after copulation in the leaves of *Phragmites communis*, above the water, during 8:00-16:00 h, with the peak from 10:00 to 12:00 h; interspecific tandem was recorded in 3 cases.
- (11875) NEL, A., A. ARILLO & V.M. ORTUÑO, 1997. New western Palearctic Cenozoic Odonata (Zygoptera and Anisoptera). *Bull. Soc. ent. Fr.* 102(3): 265-270. (With Fr. s.). — First Author: Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris). *Boyeria europaea*, 3 unidentified taxa, and *Hispano-coenagrion inexpectum* gen. n., sp. n. are described. The holotype of the latter originates from Middle-to-Upper Oligocene (Stampian or Chattian) of Izarra, Alava prov., Spain (in D.J.L. Bueso coll., Alava). It is referable to the *Coenagrionoidea*, but its fam. affiliation is uncertain.
- (11876) NEL, A. & E.A. JARZEMBOWSKI, 1997. Revision of the British Liassic insect genus *Progonophlebia* Tillyard, 1925 (Odonata: 'Anisozygoptera': Isophlebioidea: Progonophlebiidae). *Modern Geology* 21: 225-230. — (First Author: Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris). *P. woodwardi* Till., 1925 and *P. cramptoni* Zeuner, 1958 are synonymized and the description is amended. The phylogenetic position of the family is discussed.
- (11877) NEL, A., X. MARTINEZ-DELCLÒS, F. PAPIER & J. OUDARD, 1997. New Tertiary fossil Odonata from France (Sieblosiidae, Lestidae, Coenagrionidae, Megapodagrionidae, Libellulidae). *Dr ent. Z.* 44(2): 231-258. — (First Author: Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris). In addition to 4 unnamed Coenagrionidae, the following taxa are described: *Stenolestes dauphinensis* sp. n. (Middle Oligocene, Bois-d'Asson; MNHN), *S. belligaudi* sp. n. (Upper Oligocene, Malvezy; MNHN), *Lestes brisaci* sp. n. (Stephanien, Céreste; coll. P. Brisac); *Thanetophilosina menatensis* gen. n., sp. n. (Palaeocene, Menat; MNHN), and *Caussanelia papaziani* gen. n., sp. n. (Upper Oligocene, Aix-en-Provence; MNHN).
- (11878) NORLING, U. & G. SAHLEN, 1997. Odonata, dragonflies and damselflies. In: A. Nilsson, [Ed.], *Aquatic insects of North Europe: a taxonomic handbook*, Vol. 2, pp. 13-65, Apollo Books, Stenstrup, ISBN 87-88757-15-3. — (First Author: Inst. Zool., Univ. Lund, LTH/Malmö, Ostra Varvsgatan 11H, S-21120 Malmö). Comprehensive descriptive & illustrated larval and adult keys to the Nordic taxa, with concise chapters on biology, a regional checklist and a comprehensive bibliography.
- (11879) OTT, J., 1997. Erster Bodenständigkeitsnachweis der Südlichen Mosaikjungfer, *Aeshna affinis* Vander Linden, 1823 (Insecta: Odonata) für Rheinland-Pfalz. *Fauna Flora Rheinland-Pfalz* 8: 863-871. (With Engl. s.). — (Am Moosberg 10, D-67705 Stelzenberg). The 1960-1996 Rhineland-Palatinate (Germany) records are listed, and evidence is presented on the existence of an autochthonous population nr Deidesheim. The ecology and the regional status of the sp. are briefly discussed.
- (11880) PEACOR, S.D. & E.E. WERNER, 1997. Trait-mediated indirect interactions in a simple aquatic food web. *Ecology* 78(4): 1146-1156. — (Dept Biol., Univ. Michigan, Ann Arbor, MI 48109, USA). The experiments were conducted in cattle watering tanks, in order to establish whether competitive and predator-prey interactions between 2 spp. are affected by other spp. in the system. The survival and growth response were examined of small bullfrog (*Rana catesbeiana*) and small green frog (*R. clamitans*) tadpoles in the presence and absence of a competitor (large bullfrogs), the lethal presence of the larval *Traema lacerata* and the nonlethal (caged) presence of the larval *Anax junius* and *A. longipes*. It is demonstrated that large bullfrog competitors and caged *Anax* affect traits (foraging activity level) of small bullfrog and small green frog tadpoles and that these changes in traits, in turn, affect interactions of the small tadpole species with each other and with the other sp. In particular, the following four trait-mediated indirect interactions were evident: (1) Presence of large bullfrog competitors increased the predation rate of *Traema* on small green frogs and small bullfrogs. (2) Presence of nonlethal *Anax* reduced the predation rate of *Traema* on small green frogs. (3) Presence of nonlethal *Anax* increased the competitive advantage of bullfrogs over green frogs. (4) Presence of nonlethal *Anax* facilitated midge invasion of the experimental units. The proposed mechanisms (changes in small tadpole activ-

- ity) involved in these trait-mediated indirect interactions were supported by observational data on tadpole activity and resource levels in the experimental units, and in laboratory experiments examining tadpole activity responses to predators. The occurrence of strong trait-mediated indirect interactions in this simple food web underscores the potential importance of such interactions in animal communities.
- (11881) PRITCHARD, G. & A. KORTELLO, 1997. Roosting, perching, and habitat selection in *Argia vivida* Hagen and *Amphiagrion abbreviatum* (Selys) (Odonata: Coenagrionidae), two damselflies inhabiting geothermal springs. *Can. Ent.* 129(4): 733-743. (With Fr. s.). – (Div. Ecol., Dept Biol. Sci., Univ. Calgary, Calgary, AB, T2N 1N4, CA).
Although the 2 spp. often occur at the same geothermally heated springs in W Canada and the United States, they differ markedly in their abundance at any particular site. There is no relationship between crude data on water temperature, conductivity, or aquatic vegetation and the relative abundance of the 2 spp., but there is a striking correlation with presence or absence of trees. The absence of *A. abbreviatum* from heavily treed areas is associated with the paucity of suitable daytime perching sites, and there may be competitive pressure exerted by *A. vivida* for the perching sites that are available. *A. vivida* does not live at open sites because it requires trees for night-time roosts. *A. vivida* roosted higher than *A. abbreviatum* in cages and held the body at a greater angle from the cage wall. The roosting posture of *A. vivida* is probably related to interception of solar radiation in the morning, and the body positions of both spp. possibly provide defence against predation.
- (11882) PUDWILL, R., 1997. Die Bedeutung der Sandbänke der Aller für Pflanzen- und Tierarten und deren Beeinträchtigung durch Grundräumungen. *Beitr. Naturk. Niedersachs.* 50(2): 76-84. (With Engl. s.). – (Böttcherstr. 3, D-38518 Gifhorn).
6 odon. spp. are listed from the Aller R., Lower Saxony, Germany.
- (11883) RICHARDSON, J.M.L. & R.L. BAKER, 1997. Effect of body size and feeding on fecundity in the damselfly, *Ischnura verticalis* (Odonata: Coenagrionidae). *Oikos* 79(3): 477-483. – (Second Author: Dept Zool., Erindale Coll., Univ. Toronto, Mississauga, ON, L6L 2C6, CA).
Relationship between number of eggs and the independent factors of food availability and body size were examined in lab-reared ♀♀. Multiple regression analysis revealed a strong positive relationship between number of eggs in the abdomen and both short term and long term food intake. There was no relationship between body size (wing length or head width) at maturity and number of eggs in the abdomen. Larval diet during the final instar affected development rate and adult size but not fecundity. Food consumed after emergence was negatively correlated with time to sexual maturity. Significantly more animals given low food diets died before maturity. Field data of gut weights suggest that animals in the field frequently have empty guts and it is inferred that food availability may be an important determinant of realized fecundity. Failure to find food on any one day will have consequences, not only for clutches laid the next day, but also for subsequent clutches, and finally for probability of surviving to the next day.
- (11884) RICHTER, B.D., D.P. BRAUN, M.A. MENDELSON & L.L. MASTER, 1997. Threats to imperiled freshwater fauna. *Conserv. Biol.* 11(5): 1081-1093. (With Span. s.). – (First Author: Biohydrol. Program, Nature Conservancy, P.O. Box 430, Hayden, CO 81639, USA).
Threats to imperiled freshwater fauna in the US were assessed through an experts survey, addressing anthropogenic stressors and their sources. Specifically, causes of historic declines and current limits to recovery were identified for 135 imperiled invertebrate and vertebrate spp., incl. 11 odon.
- (11885) RÜPPELL, G. & D. HILFERT, 1997. Jewelwings. In: Japan Wildlife Festival [transliteration of bibliographic data not available], p. 18 (Jap. & Engl.). – (Zool. Inst., Techn. Univ., Fasanenstr. 3, D-38092 Braunschweig).
A brief description of their Calopteryx haemorrhoidalis movie (Naturzeit, ZDF), with a personal statement and authors' portraits on p. 34.
- (11886) RUTKOWSKI, D.H., 1997. Dobowe zmiany rozmieszczenia larw Zygoptera: mechanizm unikania drapieży? – [Daily site change in Zygoptera larvae: a predator avoidance mechanism?] *Mater. 17 Zjazd Hydrobiol. pol.*, Poznan, p. 121. (Polish). – (Zakład Hydrobiologii, Univ. Warszaw, Warsaw, Poland).
The diurnal and nocturnal dwellings of larval *Enallagma cyathigerum*, *Erythromma najas* and *Ischnura elegans* were studied in a mesotrophic lake.

- (11887) SATO, M. & A. AZUMA, 1997. The flight performance of a damselfly *Ceriagrion melanurum* Selys. *J. exp. Biol.* 200: 1765-1779. — (Second Author: 37-3 Miyako-cho, Saiwai-ku, Kawasaki, 210, JA).
The local circulation method was applied to the free forward flight. The kinematic data used in the calculations were obtained by analyzing video-taped images of damselflies in free flight in a transparent container. The inclination of the stroke plane was smaller and the flapping amplitude was larger than those of dragonflies reported in other studies on odonate flight. However, the phase shift between the fore- and hindwings agreed with none of the previously reported patterns for damselflies: the forewings lead the hindwings by approximately a quarter-period. The calculated forces were within the expected range of error. The muscle-mass-specific power was between 40 and 80 Wkg⁻¹. The vorticity distribution of trailing and shed vortices in the wake was also analyzed. Strong trailing vortices were observed at the wing tips, whereas shed vortices were concentrated near the wing root as the stroke switched direction.
- (11888) ŠAUMAN, I. & F. SEHNAL, 1997. Immunohistochemistry of the products of male accessory glands in several hemimetabolous insects and the control of their secretion in *Pyrrhocoris apterus* (Heteroptera: Pyrrhocoridae). *Eur. J. Ent.* 94(3): 349-360. — (Inst. Ent., Acad. Sci., Branišovska 31, CZ-37005 České Budějovice).
3 antibodies against secretions of the ♂ accessory glands of *Tenebrio molitor* react with specific regions of the ♂ reproductive system in *Coenagrion puella*, and in that of *Blattaria*, *Ensifera* and *Heteroptera* (1 sp. each studied). Of these, the odon. are lacking the reproductive accessory glands, thus, antibodies reacted in a special region at the base of the testes, which does not contain spermatocytes and structurally resembles a gland.
- (11889) SIOJA. [Information bulletin of the SIO Japan Branch Office], 1997, No. 5 (20 Nov.). (Jap.). — (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545-0004, JA).
Internal administration notices.
- (11890) SKOBERNE, P., 1997. *Visoko barje*. — [Risen bog]. Mladinska knjiga, Ljubljana. 6 folding pp. ISBN 86-11-14520-8. — Price SIT 948.— net. (Slovene).
A juvenile folding picture book, based on the rising bogs of Pokljuka Plateau, Slovenia, with reference to, and a picture of odon.
- (11891) SPALDING, A., [Ed.], 1997. *Red Data Book for Cornwall and the Isles of Scilly*. Croceago Press, Camborne. 479 pp. ISBN 1-901685-00-4. — Price: £ 17.50 net. — (Orders to the Ed.: Tremayne Farm Cottage, Praze-an-Beeble, Camborne, Cornwall, TR14 9PH, UK).
The Odon. section is compiled by S. Jones. It contains accounts of 9 key spp., *Oxygastra curtisii* of which is now extinct. Some of the most important odon. sites have been shaped by the search for tin or clay.
- (11892) ŠPROGAR, U., 1997. Odlok o razglasitvi krajinskega parka Središče ob Dravi. — [Proclamation of the Landscape Park "Središče-ob-Dravi"]. *Večer* 53(274): 44; issue of 27 Nov. (Slovene). — (c/o M. Bedjanič, Fram 117/A, SI-2313 Fram).
A casual article in a regional daily, mentioning for the first time the occurrence of *Aeshna viridis* in Slovenia. The locality stated, however, is wrong. A strong population was discovered in 1997 nr Petišovci, Styria, E Slovenia.
- (11893) STOKS, R. & M. DE BLOCK, 1997. Successful reproduction in Belgium of the damselfly *Lestes barbarus* (Fabricius, 1798) (Odonata: Lestidae). *Bull. Annl. Soc. r. belge Ent.* 133: 303-308. — (First Author: Evol. Biol. Gr., Dept Biol., Univ. Antwerpen, Groenenborgerlaan 171, B-2020 Antwerpen).
The evidence is produced of breeding during 3 consecutive yr at Merchtem and Wilrijk. The habitats are described and some field notes are provided. — (For a temporary breeding and population development and fall of this sp. in central Switzerland see OA 6631).
- (11894) SWITZER, P.V., 1997. Past reproductive success affects future habitat selection. *Behav. Ecol. Sociobiol.* 40(5): 307-312. — (Dept Zool., Eastern Illinois Univ., Charleston, IL 61920, USA).
Correlational studies have shown that an individual's past reproductive success often increases its breeding site fidelity (i.e., the tendency to return to a previously occupied location), suggesting that individuals use their reproductive experience to assess habitat quality. However, the causality of the relationship between reproductive success and site fidelity is still uncertain. In a field experiment, the effect of mating success on site fidelity was isolated from potential confounding variables in the territorial *Perithemis tenera*. The experiment controlled for site quality, intrinsic charac-

teristics of ♂♂, previous territorial experience at the site, arrival order, and territorial evictions, ♂♂ that were prevented from mating were much more likely to change sites the following day than control ♂♂ that were allowed to mate. This result was not affected by age, the amount of time a ♂ spent on the site, or mortality. These results imply that individuals use their own reproductive success to assess the quality of the habitat. The benefit to an individual of using its reproductive success to determine habitat quality is discussed relative to other sources of information.

- (11895) TANAKA, T., 1997. *Comparative assessments on the habitable environments for dragonflies in the northwestern Chiba prefecture (Tokatsu district, Noda, Nagareyama, Matsudo, Kashiwa, Ichikawa and Inza)*. Shizen Tsushinsha, Matsudo. 42 pp. ISBN none. Available in Jap. & Engl. edns. — Price: ¥ 1500.— net — (Publishers: 500 Nakayagiri, Matsudo, Chiba, 271-0095, JA).

In a pilot study towards the regional landscape conservation and management, careful assessments are presented of odon. habitats of 6 cities in the Edo R. Basin, Japan. The analysis indicates the direct relationship between the demography (population numbers of a city) and its odon. fauna. 54 spp. are briefly "monographed", with concise and detailed information on their habitat preferences, ecology and behaviour which, generally, is not readily available in Engl. Aimed at the local Authorities, the significance of the work goes far beyond its regional scope and its modest typographic presentation.

- (11896) TENNESSEN, K.J., 1997. *Lestes jerrelli* n. sp. (Zygoptera: Lestidae), a new damselfly from Ecuador. *Proc. ent. Soc. Wash.* 99(4): 661-665. — (1949 Hickory Ave., Florence, AL 35630, USA).
The new sp. (holotype ♂, allotype ♀: Napo prov., pond 12.3 km W Coca, alt. 250 m, 13-VI-1995; deposited at FSCA, Gainesville/FL) is described, and illustrated, and its affinities are pointed out. It is related to *L. jurutzai* Muzon and *L. paulistus* Calv., but is distinct in thoracic colour pattern and shape of ♂ paraprocts.
- (11897) TENNESSEN, K.J., 1997. The rate of species descriptions in Odonata. *Ent. News* 108(2): 122-126. — (1949 Hickory Ave., Florence, AL 35630, USA).
The rate of new sp. descriptions in Odon. over the last 150 yr yields an essentially straight line, indicating that many spp. are yet to be discovered within the Order. More than 5300 spp. are now known, and the

rates of descriptions in the Zygoptera and Anisoptera have been relatively equal. However, a decline in the number of new spp., appearing in the 3 largest families over the last 6 decades, despite an increasing number of authors, indicates that the Odon. are now at least half known and that fewer than 10,000 spp. exist worldwide.

- (11898) THEISCHINGER, G., 1997. A new species of *Austrosticta* Tillyard from Australia (Insecta: Odonata: Zygoptera: Isostictidae). *Linz. biol. Beitr.* 29(2): 807-810. — (2A Hammersley Rd, Grays Point, NSW 2232, AU).
A. frater sp. n. is described from 2 ♂ (holotype ♂: Queensland, small pond nr Lakeland, 1-IV-1997; in ANIC), and compared with *A. fieldi* Till.
- (11899) THEISCHINGER, G., 1997. The *Pseudagrion ignifer* complex from Australia (Odonata: Zygoptera: Coenagrionidae). *Linz. biol. Beitr.* 29(2): 799-805. — (2A Hammersley Rd, Grays Point, NSW 2232, AU).
P. ignifer is found to be complex. It includes 3 morphologically distinct groups of populations, representing 2 spp., one of them comprising 2 ssp. Of these, *P. lucifer* sp. n. (holotype ♂: Western Australia, Hann R., 9-VIII-1968; in ANIC) and *P. ignifer aureum* ssp. n. (holotype ♂: Queensland, Cape York, 28-VI/4-VII-1986; in ANIC), are described here as new.
- (11900) TOMBO. *ACTA ODONATOLOGICA*, Vol. 40, No. 1/4 (31 Dec. 1997), — (Subscription orders to: Prof. Dr S. Eda, Dept Oral Pathol., Matsumoto Dental Univ., 1780 Gobara, Hirooka, Shiojiri, Nagano, 399-07, JA).
Eda, S.: A male of *Aeschna mixta soneharai* in his territory (p. 1, frontispiece phot.); — *Asahina, S.*: Records of six Chinese dragonfly species (pp. 2-5; incl. descr. *Sympetrum nomurai* sp. n., holotype ♂, allotype ♀: Sewurong Yidui, Dichi Shan, Kangding Xian, China, alt. 3300 m, 29-IX-1996); — *Sonehara, I. & H. Ubukata*: Life-history of *Agrion terue* Asahina, 2 (pp. 6-11); — *Suzuki, K.-J., K. Saitoh & J. Sawano*: Male germ-line chromosomes of *Davidius moiwanus tarui* Asahina & Inoue (Anisoptera: Gomphidae) (pp. 12-14); — *Fukui, M.*: Record of *Sympetrum cordulegaster* from Sizuoka pref. (p. 14); — *Arai, Y.*: Some ecological observations on *Sympetrum pedemontanum elatum* Selys (pp. 15-20); — *Lien, J.C. & K. Watanabe*: A female of *Anotogaster sieboldii* carrying a corbicula on her ovipositor (p. 20); — *Hara, T.*: *Mortonagrion Hirosei*, its new distribution and

- homoeochromatic female from Ube, Yamaguchi pref. (pp. 21-24); – *Ishida, M.*: *Epitheca marginata* and *E. bimaculata sibirica* inhabit together in Hokuragawa lake (pp. 25-26); – *Kita, H.*: Four cases of unusual copulation and/or connection in dragonflies (pp. 27-28); – *Nakamoto, O. & B. Kagimoto*: An observation on *Orthetrum p. poecilops* at Nam-chung, Hong Kong (pp. 29-31); – *Eda, S.*: A female of *Libellula quadrimaculata asahinai*, forma praenubila from Nagano prefecture (p. 31); – *Wada, S.*: Unusual “sitting oviposition in the water” of *Onychogomphus viridocostus* (p. 32); – *Ishizawa, N.*: Record of male of *Sympetrum depressiusculum* from Saitama prefecture (p. 33); – *Asahina, S.*: On the breeding habitat of the halophilous damselfly *Mortonagrion hirosei Asahina* (pp. 34-35); – *Rai, T. & S. Asahina*: Observation on *Sympetrum frequens* at Chiba and Tokyo in 1997 (pp. 35-36); – *Eda, S.*: The 40th anniversary of the Japanese Society of Odonatology (p. 36); – Heterospecific connection of *Sympetrum frequens* ♂ and *S. infuscatum* ♀ (p. 37); – Dragonflies on stamps in the world, 13 (pp. 38-43; for the previous instalments see *OA* 7501, 11315); – *Inoue, K.*: Report and informations on the S.I.O. (pp. 44-45); – *Ubukata, H.*: An introduction to Worldwide Dragonfly Society (W.D.A.) (pp. 45-46); – *Eda, S.*: Division of Nature Conservation in Japanese Society of Odonatology will start next year (p. 46); – Annual meeting of the Japanese Society of Odonatology in 1997 (p. 47).
- (11901) **TREVINO, J.**, 1997. Dragonfly naiads as an indicator of water quality. *Watershed Protect. Techn.* 2(4): 533-535. – (Author's address unknown). [Not available for abstracting.]
- (11902) [TYAGI, B.K.] DANIEL, A.B., 1997. Invertebrate S[pecialist] I[ndia] G[roup]. *News Conserv. Breeding Specialist Group India* 2(2): 2. – (c/o Dr B.K. Tyagi, D-4 Saraswati Nagar, P.O. Kumb Ki Kothi, Jodhpur-342005, India).
A preliminary notice on a Workshop on Indian dragonflies, to be organised in the CBSG framework by Dr B.K. Tyagi in 1998.
- (11903) **VAN DER GEEST, H.G., S.C. STUIJFZAND, M.H.S. KRAAK & W. ADMIRAAL**, 1997. Impact of a diazinon calamity in 1996 on the aquatic macroinvertebrates in the river Meuse, The Netherlands. *Neth. J. Aquat. Ecol.* 30(4): 327-330. – (Dept Aquat. Ecotoxicol., Univ. Amsterdam, Kruislaan 320, NL-1098 SM Amsterdam).
- It is stated that the Zygoptera were among the organisms sensitive to the effects of diazinon, but the subject is not further elaborated.
- (11904) [VOGRIN, M. & N. VOGRIN], 1997. [Odonata]. In: G.V. Petrovski, [Ed.], Ribnik Vrbje z okolico, pp. 34, 45, Radoživ, Žalec. (Slovene). – (c/o M. Bedjanič, Fram 117/A, SI-2313 Fram).
5 spp. are listed from a fishpond in Vrbje, Lower Savinjska Valley, Slovenia.
- (11905) **VOGRIN, N. & M. VOGRIN**, 1997. Krajinski park Račni ribniki-Požeg na Dravskem polju. – [Landscape Park “Rače Fishponds-Požeg”]. *Lovec* 80(7/8): 317-318. (Slovene). – (c/o M. Bedjanič, Fram 117/A, SI-2313 Fram).
Situated in the W part of Drava Lowlands (=Dravsko polje), Styria, this is the sole hitherto known locality of *Sympetrum depressiusculum* in Slovenia.
- (11906) **WHITING, M.E., J.C. CARPENTER, Q.D. WHEELER & W.C. WHEELER**, 1997. The Strepsiptera problem: phylogeny of the holometabolous insect orders inferred from 18S and 28S ribosomal DNA sequences and morphology. *Syst. Biol.* 46(1): 1-67. – (First Author: Dept Zool. & Life Sci. Mus., Brigham Young Univ., Provo, UT 84602, USA).
The holometabolous and hemimetabolous orders were examined, and a new tree from simultaneous analysis of all insect data is provided and discussed. In the odon., *Calopteryx maculata* and *Libellula pulchella* were DNA sequenced.
- (11907) **WILBUR, H.M.**, 1997. Experimental ecology of food webs: complex systems in temporary ponds. *Ecology* 78(8): 2279-2302. – (Dept Biol., Univ. Virginia, Gilmer Hall, Charlottesville, VA 22903-2477, USA).
The emphasis is given to the amphibians, but several references to the odon. are included.
- (11908) **WILLIAMSON, D.L., J.R. ADAMS, R.F. WHITCOMB, J.G. TULLY, P. CARLE, M. KONAI, J.M. BOVE & R.A. HENEGER**, 1997. *Spiroplasma platyhelix* sp. nov., a new mollicute with unusual morphology and genome size from the dragonfly *Pachydiplax longipennis*. *Int. J. syst. Bacteriol.* 47(3): 763-766. – (First Author: Dept Anat. Sci., Health Sci. Cent., St. Univ. New York, Stony Brook, NY 11794-8081, USA).
Spiroplasma is a very large genus of arthropod- (pri-

- marily insect-) associated helical wall-less procarיות. The majority of *Spiroplasma* strains have been isolated from Paraneoptera/Holometabola, a single one from the Odon. This, designated PALS-1^T, is the type of the new sp., and was obtained from the gut of adult *P. longipennis* (sex unknown), taken at Beltsville/MD, 14-VII-1986. It is distinct from the congeners, as determined by reciprocal serological metabolism inhibition and deformation tests. However, this strain cross-reacted extensively with representatives of other groups when it was used as an antigen. Electron microscopy of cells of strain PALS-1^T revealed cells surrounded by a single cytoplasmic membrane. Light microscopy revealed helical cells that exhibited twisting motility rather than rotatory or flexing motility. Variations in the tightness of coiling were transmitted from one end of the helix to the other. The strain was resistant to penicillin, which confirmed that no cell wall was present. The organism grew well in MID and SP-4 liquid media under either aerobic or anaerobic conditions. Growth also occurred in 1% serum fraction medium and in conventional horse serum medium. The optimum temperature for growth was 30°C, at which the doubling time was 6.4 h. Multiplication occurred at temperatures from 10 to 32°C. Strain PALS-1^T catabolized glucose and hydrolyzed arginine but not urea. The guanine-plus-cytosine content of the DNA was 29 ± 1 mol%. The genome size was 780 kbp, the smallest genome size in the genus.
- (11909) WILLIAMSONIA, Michigan Odonata Survey Newsletter, Vol. 1, No. 3 (July 1997), No. 4 (Nov. 1997). — (c/o M. O'Brien, Insect Div., Mus. Zool., Univ. Michigan, 1109 Geddes Ave., Ann Arbor, MI 48109-1079, USA).
[Signed articles:] No. 3: O'Brien, M.: Acetone treatment of Odonata specimens (pp. 1-2); — Tennesen, K. & P. Hudson: More records of *Gomphaeschna furcillata* in the U[pper] P[eninsula] of Michigan (p. 2); — O'Brien, M.: "Clubtail": database software for Odonata observations and censusing (p. 3); — Pratt, P.: Notes from across the border (p. 4; Ontario, Canada); — O'Brien, M.: Alcohol storage of adult Odonata: get 'em out! (p. 4); — Brown, R.: Winged marvels (p. 4; poem); — O'Brien, M.: DSA meeting a success (pp. 5-6); — *Stylurus spiniceps* verified for Michigan (p. 6). The issue also contains a book review of "MOS Odonata handbook", available at US\$ 5.— from the Ed. — No. 4: O'Brien, M.: Thumbing around (pp. 1-2); — Pratt, P.: Dragons on holiday (p. 2; Ontario records); — Shappiro, E.: Late-season records along the Huron (p. 2); — O'Brien, M.: *Ischnura correcta* (p. 2); — Bright, M.: New regional records for Michigan (p. 3); — O'Brien, M.: *Somatochlora tenebrosa* not in Michigan (p. 3); — Bright, E.: Web-based key to the larvae of Michigan Odonata (pp. 3-4); — O'Brien, M.: October records (p. 4); — Tennesen, K.J.: The battle of Hudsonwatha (p. 5; poem).
- (11910) WILSON, K.D.P., 1997. An annotated checklist of the Hong Kong dragonflies with recommendations for their conservation. *Mem. Hong Kong nat. Hist. Soc.* 21: 1-68, 1 col. pl. excl. — (6F, 25 Borrett Rd, Mid Levels, Hong Kong).
107 spp., with synonymic notes, and published and previously unpublished records, are listed. The origins and distribution pattern of the Hong Kong spp. are discussed. 23 wetland areas are identified for their odon. conservation importance and recommendations are made for the protection of key sites and spp. vulnerable to collection.
- (11911) ZESSIN, W., 1997. Die Libellenfauna des NSG "Warnowtal bei Karnin" in Mecklenburg-Vorpommern. *Virgo* 1(1): 19-24. — (Lange Str. 9, D-19230 Jasinitz).
A commented list of 20 spp.
- (11912) ZIMMERMANN, P., 1997. Die Naturschutzgebiete im Landkreis Calw (Nordschwarzwald): Beitrag zur Herpeto-, Heuschrecken- und Libellenfauna. *Veröff. NatSchutz LandschaftsPfl. Bad.-Württ.* 71/72(1): 327-377. — (Bezirksstelle Naturschutz, Kriegsstr. 5a, D-76137 Karlsruhe).
Detailed descriptions and maps of 25 nature reserves in the northern Schwarzwald, Germany, incl. a list of 29 recorded odon. spp.
- (11913) ŻURAWSKA, J., 1997. Zmiany strukturalne fauny bentosowej w wodach rzeki Rurzyca. — [Structural changes in benthic fauna of the Rurzyca river]. *In: Fauna denna małych zbiorników słdkowodnych i małych rzek*, pp. 44-45, Wyższa szko a Rolniczo-Pedagogiczna, Siedlce. (Polish). — (Inst. Marine Ecol. & Environ. Conserv., Szczecin, Poland).
Includes quantitative data on *Coenagrion pulchellum* larvae; — Stettin region, W. Poland.

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- (11914) AGRION, PURLEY. Newsletter of the Worldwide Dragonfly Association, Vol. 1, No. 2 (not pub-

- lished), Vol. 2, No. 1 (Jan. 1998). – (c/o Mrs J. Silsby, 1 Haydn Ave, Purley, Surrey, CR8 4AG, UK).
 For Vol. 1, No. 1 see OA 11671. – The present issue mainly contains various management statements, and instructions and appeals to the WDA membership. – Signed articles: *Trueman, J.*: “What is a name?” revisiting the Agrion-Coenagrion nomenclatural confusion of some decades ago (pp. 7-8); – *Elkins, N.*: Odonates in Menorca, October 1997 (pp. 8-10); – *Silsby, J.*: [book review of the work listed in OA 11681] (pp. 10-11). – To the issue are appended the abstracts, as listed in OA 11926.
- (11915) *ATROPOS* [“the UK’s premier journal for active Lepidoptera and Odonata enthusiasts”], No. 4 (Jan. 1998). – (36 Tinker Lane, Meltham, Huddersfield, W Yorks, HD7 3EX, UK).
 [Odon. articles:] *Butler, A. & E. Butler*: Scarlet Darter *Crocothemis erythraea* (Brullé) on the Isle of Wight, the second British record (pp. 13-14, pl. 3); – *Parr, A.*: Potential new dragonflies for the British list, 1: The possible occurrence of nearctic species in Western Europe (pp. 18-21); – *Martin, G.*: My London garden (pp. 24-25; record of *Aeshna mixta*); – *Dudley, S.*: My best day (pp. 33-34; Scotland records); – *Winsland, D.*: White-faced Darter *Leucorrhinia dubia* hanging on at Thursley (p. 36); – *Thomas, R. & S. Thomas*: Late Northern Emerald *Somatochlora arctica* (pp. 36-37); – *Dudley, S.*: Large numbers of Common Darter *Sympetrum striolatum* in Great Yarmouth Cemetery, Norfolk (p. 37); – *Hill, P.M.*: Migrant Hawker *Aeshna mixta* in Cheshire (p. 37); – *Macklin, R.*: Numbers of Yellow-winged Darter *Sympetrum flaveolum* at North Warren and Aldringham Walks RSPB reserve, Suffolk in 1995-1997 (pp. 37-38); – *Tunmore, M.*: [Report from] The Lizard peninsula, Cornwall (pp. 47-48); – *Clancy, S. & D. Walker*: [Report from] Dungeness area, Kent (pp. 52-53); – *Solly, F.*: [Report from] Isle of Thanet, Kent (pp. 54-55); – *Anderson, C. & R. Wilson*: [Report from] Minsmere RSPB reserve, Suffolk (pp. 59-60); – *Wilson, K.*: [Report from] Gibraltar Point NNR, Lincolnshire (pp. 61-62); – *Spence, B.*: [Report from] Spurn Bird Observatory, East Yorkshire (pp. 62-63); – *Parr, A.*: Migrant dragonflies in 1997 (pp. 69-72); – *Book reviews* (pp. 74-76; 3 odon. titles).
- (11916) *BEDJANIČ, M.*, 1998. Kačji pastirji (Odonata). – [Dragonflies (Odonata)]. *Gea, Ljubljana* 8(2): 28-29. (Slovene). – (Fram 117/A, SI-2313 Fram).
 A “poster”: portraits of 13 spp., incl. *Cordulegaster heros* and *Epitheca bimaculata*, with informative captions, and taxonomic and vernacular nomenclature.
- (11917) *BEDJANIČ, M.*, 1998. Pisani svet kačjih pastirjev. – [The colourful dragonfly world]. *Gea, Ljubljana* 8(2): 42-45. (Slovene). – (Fram 117/A, SI-2313 Fram).
 General, based on the Slovene fauna.
- (11918) [*BISCHOF, A.*] *MÜLLER, J.P.*, 1998. Bündner Natur-Museum: Musealbericht 1994 und 1995. *Jber. naturf. Ges. Graubünden* 108: 25-35. – (A. Bischof: Heckenweg 4, CH-7000 Chur).
 In June 1994 the well-known Swiss odonatologist, Albin Bischof, was appointed Hon. Curator of the Ent. Dept of the Nat. Hist. Museum of Grisons, Chur, Switzerland. On p. 33, his work and performances in this office are briefly outlined. – For another biographic note see OA 11679; for some of his odonatol. publications cf. OA 17, 629, 1393, 8394, 8685, 9252, 11810.
- (11919) *BULLETIN OF AMERICAN ODONATOLOGY*, Vol. 5, No. 2 (20 Jan. 1998). – (c/o Dr & Mrs N. Donnelly, 2091 Partridge Lane, Binghamton, NY 13906, USA).
Askew, R.R., R. Prosser & P.S. Corbet: Odonata of the Cayman Islands: a review (pp. 27-32; 27 spp.; cf. also OA 2922); – *Peters, G.*: Taxonomic and population studies of British Columbia *Aeshna* species (pp. 33-42, incl. a key based on wing characters).
- (11920) *HELLMUND, M. & W. HELLMUND*, 1998. Eilegen von Zygoteren (Insecta, Odonata, Coenagrionidae) in unteroligozänen Maarsedimenten von Hammerunterwiesenthal (Freistaat Sachsen). *Abh. staat. Mus. Mineral. Geol. Dresden* 43/44: 281-292. (With Engl. s.). – (First Author: Inst. Geol. Wiss., Univ. Halle-Wittenberg, Domstr. 5, D-06108 Halle/Saale).
 Somewhat disordered coenagrionid-type egg-sets are described and illustrated from a phonolithic quarry (Lower Oligocene) in Saxony, Germany. The absence of adults and larvae is ascribed to the taphonomic conditions and to the non-laminated texture of the sediment.
- (11921) *HILL, P. & C. TWIST*, 1998. *Butterflies & dragonflies: a site guide*. [2nd, revised & updated edn]. Arlequin Press, Chelmsford. 162 pp. ISBN 1-900159-05-8. – Price in Holland: NLG 53.75. – (Publishers: 26 Broomfield Rd, Chelmsford, Essex, CM1 1SW, UK).

- The aim of the book is to enable the reader to see all the breeding butterflies and dragonflies in Great Britain. 125 sites are listed and the following information is provided: map, grid ref., access, habitat description, status of the site, target spp., timing, other spp., other flora and fauna, other information. – This is the first work of this kind on a national scale ever published.
- (11922) INOUE, M., 1998. [The Rokko Hills is abundant with the blue type female of *Aeshna nigroflava*]. *Insectarium, Tokyo* 35(1): 31. (Jap.). – (Author's address not stated).
Various localities are reported from the W part of Rokko Hills where the brown and the blue females co-occur. The androchromous individuals prevail.
- (11923) JURZITZA, G., 1998. *Ein Beitrag zur Kenntnis der Boyeria irene (Fonscolombe) (Odonata, Aeshnidae)*. – *Contribución al conocimiento de Boyeria irene (Fonscolombe) (Odonata, Aeshnidae)*. SIO Iberian Regional Office, Córdoba. 12 pp. (Bilingual: Germ./Span.). – (Available from Prof. Dr M. Ferreras-Romero, Depto Biol. Animal/Zool., Fac. Cienc., Univ. Córdoba, Avda San Alberto Magno s/n, ES-14004 Córdoba).
A bilingual edn. of the work, published originally (1967) in *Beitr. naturk. Forsch. SüdwDtl.* 26(2): 149-154; with an updating Postscript.
- (11924) *La LETTRE DES SOCIÉTAIRES Société française d'odonatologie*, No. 13 (15 Feb. 1998). – (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois-d'Arcy).
Various management and Society news, an address list of the SFO regional representatives (in France), and an exhaustive outline is presented of the set-up of the SFO website. Address: <http://perso.wanadoo.fr/sfo.jean-louis.dommanget/>.
- (11925) *NVL NIEUWSBRIEF*. Mededelingenorgaan van de Nederlandse Vereniging voor Libellenstudie, Vol. 1, No. 4 (Jan. 1998), Vol. 2, No. 1 (Feb. 1998). (Dutch). – (c/o W.J. Hoeffnagel, Krekmeent 72, NL-1218 ED Hilversum).
No. 1(4) presents the Society's 1998 calendar, No. 2(1) minutes of the Society's Charter Meeting (1 March 1997) and the 1997 Report and Balance Account.
- (11926) *ODONATOLOGICAL ABSTRACT SERVICE*, No. 1 (Jan. 1998). Published by the International Dragonfly Fund (IDF) in cooperation with the Worldwide Dragonfly Association (WDA), as a supplement to the newsletter, *Agrión*. Compiled by Dr M. Lindeboom (Wolfstr. 6, D-72119 Ammerbuch) and M. Schorr (Waldfrieden 25, D-54314 Zerf). ISSN none. – Publication frequency, order modalities and subscription price not stated.
[Not supplied for abstracting] – Claimed as a copyrighted periodical, this is essentially an ad hoc selection of some odonatol. titles, as stored in one or more (unnamed) and freely available general database(s). Apparently, the respective primary publications were mostly not examined by the compilers. This is supplemented with a few papers, mostly from some European national odonatol. periodicals, which were actually consulted, but the principle of the title selection is unclear. The coverage is poor, the SIO publications are systematically omitted. – On 8 pp., the first issue lists well over 100 titles, published in 1996 and 1997; some with a brief abstract, some with key words only, some without any annotations. Authors' addresses are not stated. Non-Engl. titles of the non-consulted papers are given in Engl. translation/adaptation only, as appearing in the original database. The abstracts of such papers are reproduced either verbatim from the database text, or they are abridged. Consequently, if the odon. do not represent the main subject of a paper, the odonatol. information (presented in the text rather than in author's abstract) is not adequately emphasized. Where there is no abstract in the database used, there is none here either. For most of the non-database papers, some key words are given only. The entries are not numbered, hence not readily available for citation. – There is no Editorial, therefore the objectives and policies of this service are formally unclear.
- (11927) *SYMPETRUM, HYOGO*, Vol. 5 (15 Feb. 1998). – (Jap., with Engl. s.'s). – (c/o S. Nishu, 247, Gunge Shonomoto, Mikage-cho, Higashinada-ku, Kobe, Hyogo, 658-0057, JA).
Muraki, A.: Record of dragonflies of Kohama Island, Yaeyama, Okinawa pref., made by the late Mr Hiroshi Itoh (p. 4); – *Nishu, S.*: A survey report of *Libellula angelina* Selys in Hyogo pref., 1997 (pp. 5-8); – A survey report of *Moronagrion hirosei* Asahina in Hyogo pref., 1997 (pp. 9-11); – First discovery of the locality of *Stylurus nagoyanus* (Asahina) in Hyogo prefecture (pp. 12-15); – *Aoki, T. & S. Nishu*: A survey for discovery of new breeding sites colonized by *Ichnogomphus pertinax* (Selys) in southwestern Hyogo prefecture (pp. 16-20); – *Aoki, T.*: *Odonata* fauna of Kobe city, 7 (Platycnemididae, Epiophlebi-

- dae, Petaluridae) (pp. 21-22); – *Sogame, S.*: Odonate fauna of Takarazuka city, Hyogo prefecture (pp. 23-27); – Dragonflies inhabiting Hatsuka River in Sanda city, Hyogo prefecture (pp. 28-29); – A malformed exuviae of *Onychogomphus viridicostus* (Oguma) (p. 30); – *Nishu, S.*: a supposed hybrid between *Anax parthenope julius* and *A. n. nigrofasciatus* emerged from a bred larva (pp. 31-33); – *Sasamoto, A.*: A female *Davidius nanus* (Selys) having aberrant wings (pp. 34-35).
- (11928) *TSUBAKI, Y.*, 1998. Life history differences in wing-colour [in] dimorphic males of a damselfly. *Nature & Insects* 33(2): 20-25. (Jap., with Engl. title). – (Lab. Wildl. Conserv., Natn. Inst. Environ. Stud., Onogawa, Tsukuba, 305, JA). [Abstract not available.]
- (11929) *WILLIAMSONIA*, Vol. 2, No. 1 (Febr. 1998), No. 2 (May 1998). Published by the Michigan Odonata Survey. – (c/o M.F. O'Brien, Insect Div., Mus. Zool., Univ. Michigan, Ann Arbor, MI 48109-1079, USA). [No. 1]: In addition to various meeting and field trip announcements, the issue contains a list of over 50 spp., prepared by *M. O'Brien*, that need confirmation or re-collecting in Michigan. It is prepared very carefully, presenting the known records, habitat requirements, notes on behaviour, etc. for each sp., hence it is of considerable extralimital interest as well. – [No. 2]: Presents the "1998 schedule of the Michigan Odonata Survey events" (p. 1), various MOS news, and the following signed articles: *O'Brien, M.*: Virtual collecting (p. 4); – Early spring sightings (pp. 5-6); – *Bright, E.*: Sampling protocol for odonates in aquatic habitats (pp. 6-9); – *Freeman, C.*: Northern Michigan 1998 1st sightings (p. 9).
- (11930) *YAMASAKI, T.*, 1998. [Size of dragonflies and butterflies]. *Insectarium, Tokyo* 35(2): 46. (Jap.). – (Dept Sci., Tokyo Metropolitan Univ.). In Japanese, the expression "tombo" (= dragonfly) is derived from "tobu bo", meaning a flying pole. The article gives total body lengths (abd.+thorax+head) for both sexes of 19 spp., from the campus of the Tokyo Metropolitan Univ.