# ODONATOLOGICAL ABSTRACTS

## 1984

(11171) LURATI, G., 1984. Odonata-fauna del biotopo di Lumino-S. Vittore. *Jb. schweiz. Jugend forscht* 1984: 41-46. – (Author's current address unknown).
The odon. assemblage (14 spp.), as encountered in 1982 at a pond in Lumino-S. Vittore, canton Ticino, Switzerland, is briefly described and compared with the 1977 situation, as recorded in the work listed in *OA* 2352.

## 1985

(11172) MACHADO, A.B.M., 1985. Sobre alguns tipos de Protoneura da coleçao Selys-Longchamps (Odonata-Protoneuridae). *Resum. 12 Congr. brasil. Zool.*, p. 74, Univ. Estad. Campinas, Campinas/SP. – (Depto Zool./Ent., Inst. Cien. Biol., Univ. Fed. Minas Gerais, Caixa Postal 486, BR-31.270-901 Belo Horizonte, MG).
Brief annotations on protoneurid material in the Selys coll., IRSN, Brussels, studied during Author's visit in 1981.

(11173) SHARMA, R.C. & R.K. VARSHNEY, 1985. Amphibians and reptiles predaceous on insects and rodents in Rajasthan. *In*: R.K. Bhanotar et al., [Eds], Non-insect pest and predators, pp. 104-108, 264 (References), All India Scient. Writers' Soc., New Delhi. – (Second Author: Zool. Survey India, Prani Vigyan Bhavan, M-Block, New Alipore, Calcutta-700053, India).
8 amphibian and 20 reptile spp. are listed. Rana cyanophlyctis, R. tigerina and R. limnocharis, and Calotes versicolor are marked as predators on adult and/or larval dragonflies.

## 1990

(11174) HULL, M., 1990. [Odonata taken on the Isle of Lesbos, Greece, in June]. *Annu. Rep. Proc. Lancas. Ches. ent. Soc.* 113 [1989/1990]: 164. – (Author's address not stated).
Lestes macrostigma and Sympetrum meridionale are reported "along the marsh area of a dried up river".

## 1991

(11175) CHARLES, the PRINCE OF WALES, 1991. – Cf. *OA* 11177.

(11176) DANKS, H.V. & D.D. WILLIAMS, 1991. Arthropods of springs, with particular reference to Canada: synthesis and needs for research. *Mem. ent. Soc. Can.* 155: 203-217. (With Fr. s.). – (Biol. Survey Canada, Can. Mus. Nature, P.O. Box 3443, Stn D, Ottawa, ON K1P 6P4, CA).
The available information shows that springs contain a limited number of spp. of diverse origins. Passing references are made to the odon., and some needs for the inventory and protection of (Canadian) springs, and for more extensive sampling are summarized.

(11177) FRY, R., [Compiler], 1991. *Habitat conservation for insects – a neglected green issue.* Amateur Entomologists' Soc., Middlesex. xvi+262 pp., ISBN 0-900054-52-2.
The book is directed at the general conservationist, and provides a basic outline of the principles and practices of habitat management as applicable to various insect orders. The odon. chapter appears on pp. 37-39, but numerous references to the order are scattered throughout the text. – The book contains a Foreword by CHARLES, the PRINCE OF WALES (p. ix), where a reference to dragonflies is also made.

(11178) HELLMUND, W., 1991-1996. Unsere Libellen: Versuch einer Bestandsaufnahme, 1-4. *Troisdorf. Jh.* 21[1991]: 95-102, 22[1992]: 91--100, 24[1994]: 22-30, 26[1996]: 70-79. – (Von--Loe-Str. 31, D-53840 Troisdorf).
Technically, this is a small "homestead monograph" on dragonfly life in the city of Troisdorf (Germany) and its neighbourhood; 4 instalments have so far appeared in the city annual, and more are scheduled. The very personal style of presentation is rendering to the work an almost "literary" character. – The narrative opens with a brief chapter on the dragonfly fossil history (a col. phot. of Celithemis cellulosa from Author's collection is included). The treatment of dragonfly morphology, biology, ecology, behaviour, etc. is largely based on the fauna of Author's city-garden pond and on that of the regional habitats. In these 4 instalments, most Zygoptera (minus the Calopterygidae) and some Anisoptera families are dealt with; the remaining taxa are to follow. The text and illustrations are perfectly balanced, the latter carefully selected to enhance the particular features or phenomena dealt with in the text. – The work is a little "masterpiece" of narrative odonatology, and would certainly merit a republication in the form of a commercially available booklet of its own.

## 1992

(11179) ANDRIKOVICS, A. & G. GERE, 1992. The abundance and food consumption of dragonfly (Odonata) imagos on the Kis-Balaton, Hungary. *Opusc. zool., Budapest* 25: 37-43. – (Dept Zoosyst. & Ecol., Eötvös Loránd Univ., Puskin u. 3, HU--1088 Budapest).
Odon. larvae feed in aquatic habitats, their adults live on land. They remove a lot of eutrophicating nutrients with their body from the water, and play an important role in the nutrient cycle both in the water and on land. The adult abundance was estimated in characteristic plant communities, and the daily consumption of common spp. was measured. It is estimated, during a summer day the adult dragonflies consume an insect quantity, equal to ca 2-3 times of their gut contents. Consequently, the biomass consumed daily by an odon. population in a characteristic helophyte community along the Zala R. bank amounts to ca 1 kg/ha.

(11180) POLHEMUS, D.A., J. MACIOLEK & J. FORD, 1992. An ecosystem classification of inland waters for the tropical Pacific islands. *Micronesica* 25(2): 155-173. – (First Author: Dept Ent., MRC 105, Smithsonian Instn, Washington, D.C. 20560, USA).
Selected physical and chemical factors provide a method of classifying insular tropical Pacific inland waters into 18 classes and subclasses that are arranged graphically to show hierarchical interrelationships and utility in preliminary (e.g., map--based) inventories. Characteristic and distinguishing biota, primarily faunal groups, are added to the environmental scheme to complete the descriptions as ecosystems. Because on-site sampling is essential for biological and hydrochemical information, ecosystem examples are drawn principally from the Hawaiian Archipelago and New Guinea, areas which have had extensive ecological surveys, contain most island and ecosystem types, and represent the opposite extremes of geographical isolation and biotic composition in the region under consideration. Interfaces with marine and terrestrial systems are discussed, and conservation aspects are considered. To lessen ambiguity, relevant terminology is defined or qualified. Where appropriate, references to the odon. are included.

## 1993

(11181) DE PAUW, N. & R. VANNEVEL, [Eds], 1993. *Macro-invertebraten en waterkwaliteit. Determineersleutels voor zoetwatermacro-invertebraten en methoden ter bepaling van de waterkwaliteit.* – *[Macroinvertebrates and water quality. Identification keys for freshwater macroin-vertebrates and methods for water quality assessment]*. Stichting Leefmilieu, Antwerpen, xii+316 pp. (Dutch). – Price: NLG 50.10 net.
A workable and well-illustrated generic key to the odon. larvae of the Belgian fauna appears on pp. 111-122 (bibl. references p. 295). The book is directed at the secondary school Biology teachers and at non-professionals interested in aquatic biology.

(11182) POLHEMUS, D.A., 1993. Conservation of aquatic insects: worldwide crisis or localized threats? *Am. Zool.* 33: 588-598. – (Dept Ent., MRC 105, Smithsonian Instn, Washington, D.C. 20560, USA).
An overview is presented on the current worldwide status of aquatic insect conservation. Despite extensive habitat destruction or modification, aquatic insects as a whole do not appear to have suffered as great a proportional loss of spp. over the last

century as members of other groups. In N America, for example, only 204 spp. are considered at risk out of a total fauna of over 10,000 spp., and no sp. has been documented as having gone extinct. Even so, aquatic insect diversity is subject to a broad spectrum of threats, including chemical pollution of waters from industry and agriculture, physical destruction of habitat from impoundments or drainage, and introduction of alien aquatic biota, primarily sport or aquarium fishes. – References to the Odon. appear throughout the paper, various aspects are documented on the basis of the situation in the Hawaiian Megalagrion. Thus, the appearance of this genus appears to be inversely correlated with the presence of introduced fishes. This seems to be particularly true for lowland spp., whose larvae breed in lentic habitats. For example, M. xanthomelas expanded its range widely in the early 1900s, at a time when the construction of plantation reservoirs and cattle ponds provided many new and suitable habitats, and at one point it was probably the most abundant damselfly in the islands. Populations declined precipitously, however, following the introduction of Gambusia mosquito fish into these waters, and recent surveys indicate that M. xanthomelas is now the rarest and most endangered of all Megalagrion spp. – In some cases, environmental disturbances can apparently be beneficial to aquatic insect spp. considered to be at risk. This is illustrated by M. amaurodytum peles, which occurs in the Puna distr. of Hawaii island, breeding in the phytotelmata of arboreal Astelia plants, and is currently held as a Category 2 listing candidate on the Federal Register. This sp. is in fact relatively abundant, but occurs in dense forest areas where it is rarely collected. Even more ironically, its densities were found to be increased in areas of rain forest heavily disturbed by introduced pigs, which opened up the understory and provided a habitat more favorable for its host plant. – Listing of a sp. as threatened, provides it with legal protection and restricts its collecting. This, however, also brings along certain disadvantages. One of these involves the reliability of the distributional studies. Another one, in some cases, may concern inadequate taxonomic knowledge, which has lead to the proposed listing of named taxa that are in fact synonyms of more widely distributed spp. An example of this may be seen in M. amaurodytum fallax, which is held as a Category 2 candidate on the Federal Register, even though the name was synonymized under M. amaurodytum peles (also a Category 2 candidate) by Schmidt in 1938. Taxonomic errors in listing petitions are common and, as in this case, can create the impression that more taxa are at risk than is actually the fact. The current shortage of adequately trained taxonomists, capable of detecting such errors only serves to compound problems of this type. – It is recommended that future listing efforts be conducted in the context of national biological surveys, and that an ecosystem rather than single species approach be applied to aquatic conservation efforts.

## 1994

(11183) DREYER, U., 1994. Untersuchungen zum Makrozoobenthos in der Mittelelbe. *Erweit. Zusammenfass. Jtag. dt. Ges. Limnol. Hamburg* 2: 607-611. – (GKSS-Inst. Gewässerforschung, Am Biederitzer Busch 12, D-39114 Magdeburg).
Ischnura elegans is listed from the Elbe R. at Breitenhagen, S of Magdeburg, Germany.

(11184) GNASPINI, P. & E. TRAJANO, 1994. Brazilian cave invertebrates, with a checklist of triglomorphic taxa. *Revta bras. Ent.* 38(3/4): 549--584. – (Depto Zool., Inst. Biocien., Univ. Sao Paulo, Caixa Postal 11294, BR-05422-970 Sao Paulo, SP).
The results of a 4-yr survey in the caves of Mato Grosso do Sol, Bahia, Goiás, Minas Gerais and Sao Paulo states are presented. The odon. are (suborder- or family-wise) mentioned from several caves.

(11185) MADLER, K., 1994. Die Entwicklung des Makrozoobenthon im sächsischen Elbeabschnitt in den Jahren 1985 bis 1994. *Erweit. Zusammenfass. Jtag. dt. Ges. Limnol. Hamburg* 2: 618-621. (Inst. Hydrobiol., Techn. Univ. Dresden).
Calopteryx splendens and Ischnura elegans are listed from the Pirna-Dresen-Meissen section of the Elbe R., Saxony, Germany.

(11186) MAIBACH, A. & C. MEIER, 1994. Rote Liste der gefährdeten Libellen der Schweiz. – Liste rouge des espèces menacées de Suisse. – Lista rossa delle Libellule minacciate in Svizzera. *In*: P. Duelli, [Ed.], Rote Liste der Gefährdeten Tierarten in der Schweiz – Listes rouges des espèces animales menacées de Suisse – Lista rossa degli animali minacciati della Svizzera, pp. 69-71, Bundesamt für Umwelt, Wald und Landschaft, BUWAL, Bern. (Separate Ger., Fr. & Ital. edn). – Orders to: Eidgenössische Drucksachen- und Materialzentrale, EDMZ, CH-3003 Bern; – Order No.

310.704, indicate the desired language edn by adding to the order No. the resp. letter, "d", "f" or "i". – (First Author: La Croix, Rte de Moudon, CH-11610 Oron-la-Ville).
Since the end of the 19th cent., 81 spp. were recorded in Switzerland (cf. *OA* 6134, 6135). Of these, 5 spp. are considered at present extinct, 47 are threatened (listed here in 4 categories), 25 are not threatened, and 4 spp are occasional immigrants, breeding temporarily and sporadically.

(11187) NEUMANN, P., B. GRAHMANN & M. SCHIRMER, 1994. Die Wasserinsektenzönose unterschiedlicher Uferstrukturen der Ochtum (ein Flachfluss bei Bremen). *Erweit. Zusammenfass. Jtag. dt. Ges. Limnol. Hamburg* 2: 557-561. – (Inst. Okol. & Evolutionsbiol., Univ. Bremen).
Calopteryx splendens, Ischnura elegans, Brachytron pratense and Orthetrum cancellatum are listed from the Ochtum R. nr Bremen, Germany.

(11188) SCHWARZ, U., 1994. Untersuchung des Makrozoobenthon im Unteren Odertal. *Erweit. Zusammenfass. Jtag. dt. Ges. Limnol. Hamburg* 2: 627-631. – (Inst. Zool., Freie Univ. Berlin, Königin-Luise-Str. 1-3, D-14195 Berlin).
2 identified odon. spp. are listed from the Lower Oder R. Valley, NE Brandenburg, Germany. Various assessment parameters of a biol./ecol. analysis are briefly discussed.

(11189) SMIT, J.T., 1994. Odonata (libellen). *In*: A. Alberts & J. Smit, [Eds], Inventarisatieverslag van de "Stikke Trui" 1990-1993, Insekten-werkgroep KNNV, Arnhem. (Dutch). – (Author's address not stated).
The "Stikke Trui" is a large sand pit (diameter ca 300×400 m, depth ca 8-30 m), in the Veluwezoom National Park, Rheden, the Netherlands. Its insect fauna has been surveyed since 1990 (for the earlier reports cf. *OA* 8590 and 9171). After the 4th yr, the odon. list comprises 13 spp., which are listed here.

## 1995

(11190) ADOMSSENT, M., 1995. Zur Libellenfauna des Lüneburger Raumes: eine Übersicht aktueller und historischer Odonatenfunde. *Jb. naturw. Ver. Lüneburg* 40: 171-182. – (Abt. Ökol., Inst. Umweltwiss., Univ. Lüneburg, Roten-bleicher Weg 42, D-21335 Lüneburg).
The status of the 58 regional spp. is stated, and some of these are discussed in detail. – Lüneburger Heide, Lower Saxony, Germany.

(11191) ARIKAWA, K., K. OZAKI, T. TSUDA, J. KITAMOTO & Y. MISHINA, 1995. Two visual pigment opsins, one expressed in the dorsal region and another in the dorsal and ventral regions, of the compound eye of a dragonfly, Sympetrum frequens. *Invert. Neurosci.* 1(1): 33-39. – (First Author: Dept Biol., Yokohama City Univ., 22-2 Seto, Kanazawa-ku, Yokohama, 236, JA).
The primary structure of 2 visual pigment opsins (DfRh1 and DfRh2) is described. The amino acid sequences were deduced from the nucleotide sequences of cDNAs isolated from a cDNA library of the dragonfly retina. The 2 opsins consist of 379 amino acids with 81.3% identity. Analysis of hydropathy indicated that the sequences have 7 transmembrane domains like those of previously described opsins. Expression analysis using RT-PCR revealed that DfRh1 was present only in the dorsal region whereas DfRh2 was detected in both the dorsal and the ventral regions of the eye.

(11192) BRACKENBURY, J., 1995. *Insects in flight*. Casell, London. 192 pp., incl. 100 col. phots. ISBN 0-7137-2594-X. – Price: £ 14.99 net.
An easy-to-read, excellently illustrated work, organised into the following chapters: "Costs and benefits of flight", "The machinery of flying", "Into flight", "Wing strength and flexibility", "Speed, power and flight control", "Forces out of 'thin' air", "Galleons of the breeze", "Flight without wings", and "Coping with a new challenge". A brief section on "The flight of dragonflies" appears on pp. 140-142, and some spectacular dragonfly photographs are included at the appropriate places.

(11193) DORFLER, G. & G. HARMANN, 1995. Zur Kenntnis der Libellenfauna des Harzes und seines näheren nördlichen Vorlandes: Fundortliste. *Mitt. naturw. Ver. Goslar* 4: 159-174. – (First Author: Zool. Inst. & Mus., Martin-Luther-King-Platz 3, D-20146 Hamburg).
This is a bibliographically crossreferenced checklist, supplemented with numerous, previously unpublished data on the 46 spp., hitherto recorded from the Harz and the northern adjacent territories, Germany.

(11194) FORBES, M.R.L., J.M.L. RICHAR[D]SON & R.L. BAKER, 1995. Frequency of female morphs is related to an index of male density in the damselfly, Nehalennia irene (Hagen). *Ecoscience*

2(1): 28-33. (With Fr. s.). – (First Author: Dept Biol., Carleton Univ., 1125 Colonel By Drive, Ottawa, K1S 5B6, CA).
Researchers have questioned whether variation in population density influences the maintenance of 2 or more morphs within and between insect populations. 2 distinct morphs of ♀N. irene occurred at each of 8 sites in E Ontario, Canada: one morph (i.e. andromorph) was coloured and patterned like the conspecific ♂. Significant differences in relative frequencies of andromorphs and in ♂ density between sites were found; frequency of andromorphs ranged from 2-28% and was positively correlated with ♂ density. Sites with high densities of ♂♂ were located closer to low-density sites than to other high-density sites, indicating that high-density sites were somewhat independent of one another. Spatial variation in density of ♂♂ within sites was also found; ♂♂ were present almost exclusively at edges of ponds or marshes. Proportionally more andromorphs than heteromorphs were found at the edges of sites, where ♂-♀ interactions were likely frequent. Sex ratios at the edges of sites were most strongly ♂-biased at 2 of 3 high-density sites, indicating that ♂♂ may force non-receptive ♀♀ away from the edge of high-density sites. Spatial and temporal variation in ♂ density of N. irene may be an important factor influencing morph coexistence.

(11195) GRONENBERG, W. & B. EHMER, 1995. Tubular muscle fibers in ants and other insects. *Zoology* 99: 68-80. – (Zoologie II, Theodor-Boveri-Inst., Univ. Würzburg, Am Hubland, D-97074 Würzburg).
Some insect muscles are composed of tubular fibers. Their walls contain the contractile apparatus while their central cores comprise nuclei and mitochondria. Tubular fibers probably arose early in arthropod evolution as suggested by their presence in some primitive insect and other arthropod taxa. No tubular muscle fibers seem to be present in lepidopterans while muscles of beetles and of hemimetabolous insects feature various proportions of tubular and non-tubular fibres. The odon. are an old order in evolutionary terms, yet they are certainly among the fastest and most elaborate fliers. Their highly specialized and fast acting flight muscles are composed of tubular fibers with wide central cores. Contrasting to this, dragonflies do not perform rapid movements with their legs which are controled by non-tubular muscle fibers.

(11196) HOLUŠA, O., 1995. Výskyt vážek rodu Somatochlora na území bývalého Československa (Odonata: Corduliidae). – The occurrence of dragonflies of the genus Somatochlora on the territory of the former Czechoslovakia (Odonata: Corduliidae). *Klapalekiana* 31: 101-110. (Czech, with Engl. s.). – (Jungmannova 444, CZ-73802 Frýdek-Mistek).
S. alpestris, S. arctica, S. flavomaculata and S. metallica are keyed, their habitats characterised, new and literature records listed, and their regional distribution is mapped.

(11197) KUMAR, Arun, 1995. Odonata. *In*: A.K. Ghosh, [Ed.], Himalayan Ecosystem Series: Fauna of western Himalaya, Pt 1, Uttar Pradesh, pp. 25-33, Zool. Surv. India, Calcutta. – (Northern Regional Stn, Zool. Surv. India, Dehra Dun-248195, India).
A checklist of the regional spp., with chapters on altitudinal distribution and biogeography. The main part of the paper is a distribution (?) tab., in which the omission of column captions makes it almost useless. The synonymies published since the late 1980s are disregarded and the bibliography is incomplete.

(11198) LAISTER, G., 1995. Bestand, Gefährdung und Ökologie der Libellenfauna der Grossstadt Linz. *Naturk. Jb. Linz* 40/41: 9-305, 29 graphs excl. (With Engl. s.). – (Naturk. Station Linz, Rosegger-str. 22, A-4020 Linz).
[Not available for abstracting.] – 53 spp., city area of Linz, Austria.

(11199) POLHEMUS, D.A., 1995. New Heteroptera and Odonata (Insecta) records and range extensions in the Hawaiian Islands. *Bishop Mus. occ. Paps* 42: 42-43. – (Dept Ent., MRC 105, Smithsonian Instn, Washington, D.C. 20560, USA).
Megalagrion nesiotes is reported from East Wailua Iki, and it is suggested that additional colonies of this sp. may be scattered throughout the intermediate elevations of windward Maui. The sp. has not been recorded for over 70 yr. – Crocothemis servilia from Waiahole Valley represents a new state record.

(11200) SAITOU, Y. & S. OGATA, 1995. Hong Kong no tombo rui no kiroku (1994 nen 6 gatsu – 1995 nen 10 gatsu). – [Records of Hong Kong dragonflies, collected from June 1994 to October 1995]. *Bohso no Konchu* 15: 25-47. (Jap., with taxonomic nomenclature). – (First Author: 5-26-12, Hirai,

Edogawa-ku, Tokyo, 132, JA; – Second Author: BLK B-4, 18/FL, Ventris Place, Ventris Rd, Hong Kong).
Detailed collection data are presented for 70 spp., 7 of which were not previously recorded from Hong Kong. The larvae are described and illustrated of Philoganga vetusta, Protosticta taipokauensis, Tetracanthagyna waterhousei, Heliogomphus scorpio, Melligomphus moluani, Ophiogomphus sinicus and Zygonyx iris insignis. – (*Abstracter's Note*: The journal is published by, and it is available from: Y. Matsui, 3-102 Kita-Kashiwa No. 2 Jutaku, 427-5, Neto, Kashiwa, 277, JA).

(11201) SOKOLOFF, P., 1995. Migrant insects in 1995. *Ent. Rec. J. Var.* 107(11/12): 304-305. – (4 Steep Close, Green St. Green, Orpington, Kent, BP6 6DS, UK).
70 Sympetrum flaveolum individuals are reported from 2 localities in Kent and Norfolk, UK. – For a more detailed account cf. *OA* 10761.

(11202) UBUKATA, H., 1995. A record of Cercion hieroglyphicum by Lake Akan. *Sylvicola* 13: 55. (Jap., with Engl. title). – (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1-15-55, Kushiro, 085, JA).
Annotated records of 6 spp., 2-VIII-1994; – Hokkaido, Japan.

(11203) UBUKATA, H., 1995. Present state of a habitat of Oligoaeschna pryeri by Lake Kussharo. *Sylvicola* 13: 44. (Jap., with Engl. title). – (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1-15-55, Kushiro, 085, JA).
A brief description of the locality, with an annotated list of 5 spp.; – Hokkaido, Japan.

(11204) WAKKIE, B., 1995. *Insekten uit Botshol*, 2. – [*Insects from Botshol*, 2]. Wakkie, Amsterdam. 10 pp. (Dutch). – (Transvaalstraat 65-D, NL-1092 HD Amsterdam).
Lists 9 odon. spp. from a locality SW of Abcoude, Utrecht prov., the Netherlands.

## 1996

(11205) ABANG, F., S. HANAPI & M. SERIT, 1996. Systematic entomology in Sarawak: a preview. *Serangga* 1(2): 63-73. (With Malay s.). – (Fac. Resource Sci. & Technol., Univ. Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia).
Contains a fairly good bibliography of the main odonatol. works on Sarawak (Kimmins, Laidlaw, Lieftinck).

(11206) [ABSTRACTS OF PAPERS OF THE] 1996 ANNUAL COMBINED MEETING OF THE ECOLOGICAL SOCIETY OF AMERICA, on Ecologists/Biologists as Problem Solvers, Providence, RI, Aug. 10-14, 1996. *Bull. ecol. Soc. Am.* 77 (3, Suppl., pt 2).
Contains abstracts of the following odonatol. presentations: *Azevedo-Ramos, C. & W.E. Magnusson*: Factors influencing tadpole distribution in an Amazonian savanna (p. 19); – *Eklov, P. & E.E. Werner*: Multi-predator effects on size-dependent behavior and mortality in two anuran larvae (p. 126); – *Hamilton, M.*: Ecological correlates of protein polymorphism in desert and non-desert populations of Belonia saturata (p. 180); – *Lattin, J.D.*: Relictual insects associated with old-growth forests of the Pacific Northwest (p. 253); – *McCollum, S.A.*: Predator diet-specific cues trigger antipredator behaviors in larval anurans (p. 292); – *McPeek, M.A.*: Tradeoffs and the coexistence of habitat specialists and generalists in freshwater lakes (p. 298); – *Mierzwa, A. & K. Weber-Chappuis*: A preliminary assessment of metapopulation structure in an endangered dragonfly, Somatochlora hineana, in Illinois (p. 306); – *Peacor, S.D. & E.E. Werner*: Trait-mediated indirect interactions in a simple aquatic community (p. 345); – *Relyea, R.A.*: Morphological plasticity of larval anurans in response to different predators (p. 371); – *Van Buskirk, J., A. McCollum & E.E. Werner*: Natural selection by dragonflies for a predator-induced defense in tadpoles (p. 454); – *Yurewicz, K.L. & J. Van Buskirk*: Effects of predators on prey growth rates: relative contributions of thinning and activity suppression (p. 499); – *Zercher, D.S., B.J. Swisher & D.A. Soluk*: Roadside mortality of adult dragonflies near wetlands (p. 500).

(11207) ADAMOVIĆ, Ž.R., 1996. Odonata taken and observed in Donji Ceklin, Montenegro. *Acta ent. serb.* 1(1/2): 39-48. (With Serb. s.). – (Inst. Med. Res., P.O. Box 721, YU-11001 Beograd, Serbia).
21 spp. are recorded from this locality at Skadar Lake (July 1994), of which 6 spp. are first records for the region. Brief biogeographic comments are added on Platycnemis p. pennipes and P. p. nitidula, Chalcolestes viridis and C. parvidens in the SE Adriatic coastal zone.

(11208) ADOMSSENT, M., 1996. Die Libellen der Stadt Kaltenkirchen, Kreis Segeberg. *Heimat, Hussum* 103(11/12): 251-256. – (Abt. Okol., Inst. Umweltwiss., Univ. Lüneburg, Rotenbleicher Weg 42, D-21335 Lüneburg).
A commented review of 23 spp.; – Schleswig Holstein, Germany.

(11209) *AESCHNA*. Published by the Odonato-logical Society of Osaka. No. 32 (11 Sept. 1996). (Jap., with Engl. titles & s's). – (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA). *Yagi, T.*: a dark coloured immature adult of Nannophya pygmaea (Rambur) (cover phot.); – *Muraki, A., N. Masaki, A. Sugitani & K. Kitagawa*: Records of the Odonata of Hong Kong, 3 (pp. 1--8); – *Fukui, M.*: Notes on the larval stages of Oligoaeschna pryeri Martin (pp. 9-13); – *Kishi, K.*: A record of Oligoaeschna pyanan Asahina in Nantoh prefecture, Taiwan (p. 14); – *Yoshida, M.*: Reports of the larvae of Somatochlora clavata Oguma and S. uchidai Förster (pp. 15-20); – *Futahashi, R.*: A supposed record of migration of Sympetrum cordulegaster (Selys) (pp. 21-22); – *Yoshida, M.*: On the yellow winged Somatochlora uchidai Förster (pp. 23-24); – *Matsuhira, K.*: Discovery of Orthetrum glaucum Brauer from the mainland of Kyusyu (p. 25); – *Fujimoto, K.*: Discovery of Deielia phaon (Selys) from Amamiohshima Island (p. 26).

(11210) *ARGIA*. The news journal of the Dragonfly Society of the Americas, Vol. 8, No. 4 (31 Dec. 1996). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA).
[Signed articles:] *O'Brien, M.F.*: Newsletter from the Michigan Odonata Survey (MOS) (p. 5); – *Donnelly, N. & R. Beckemeyer*: The pattern of discovery of the species of New World Odonata (pp. 6-9); – *Michalski, J.*: Trinidad thens and nows (pp. 9-13); – *Beckemeyer, R. & R. Todd*: Additions to Kansas Odonata records for 1996 (pp. 13-14); – *Abbott, J.C.*: New and interesting records from Texas and Oklahoma (pp. 14-15); – *Paulson, D.*: Notes from Washington and North Carolina (p. 15); – *Cannings, S.*: News from British Columbia (p. 16); – [*Muller, B.*]: Enallagma basidens new for Connecticut (p. 16); – *Walter, S.*: 1996 Migration notes from Fort Tilden (pp. 16-17); – *McLain, D.*: Odonates in western Massachusetts (p. 17); – *Holder, M.*: Seeking Ontario data (p. 17); – *Roble, S.*: News from Virginia (p. 18); – *Orr, R.*: Maryland county records (p. 18); – *Daigle, J.J., S. Dunkle, B. Mauffray & K. Tennessen*: More on the rat pack in Ecuador (p. 18); – [*Anonymous*]: Common names: changes and additions (p. 19); – *Daigle, J.J.*: [Book review]: Hawaiian damselflies, by D.A. Polhemus & A. Asquith (pp. 19-20); – *Mauffray, B.*: I.O.R.I. technology update (pp. 21-22); – *Walter, S.*: Unexpected results! (pp. 23-24; Westchester Co, NY); – How high do dragonflies migrate? (p. 24); – This is what you call bass fishing? (p. 24); – *McLure, J.W.*: The red tramea (p. 26; poem). – The issue also contains various meeting announcements, personal requests, sale offers, information on various web sites, etc. Mailing lists of the DSA members is appended (pp. 27-32).

(11211) ARTMANN-GRAF, G., 1996. Erfassung der Wirbellosenfauna in der Region Gäu-Olten--Gösgen. *Nouvelles Cent. suisse Cartogr. Faune* 12: 14-16. – (Hasenweid 10, CH-4600 Olten).
The odon. fauna in this area, canton Solothurn, Switzerland, is considered well explored. A checklist is not included, but a report on the odon. of distr. Dulliken (1995) is said to be deposited with the municipal authorities of that town.

(11212) AVERILL, M., 1996. *The dragonflies of Worcestershire*. Averill, Kidderminster, iv+81 pp. (spring-binding, 15×21 cm). ISBN 0-9528288-0--4. – Price: £ 10.— net, postage extra. – (Orders to the author/publisher: 25 Oakhill Ave., Kidderminster, Worcs, DY10 1LZ, UK).
Worcestershire is one of the British counties for which the available early records are too incomplete and too patchy to make detailed comparisons with the current regional dragonfly distribution feasible. Even so, in 1981 Dr R.G. Kemp produced an almost complete list (cf. *OA* 3734), to which only 2 spp. could be added (while 1 was not encountered) during the present (1986-1995) survey, bringing the county status up to the 23 spp. mark, of which 20 spp. have been proven to breed. The book is based on 8742 records. At variance with many of the similar works, and in addition to the usual brief descriptions, habitat and field notes, information on the status and flight periods, coupled with good col. phot. and distribution maps for all spp., the book also contains an easy-to-use adult identification key. To most of those interested in further exploration of the county dragonfly world, this feature will make the book an adequate, all-round tool for their work. Spring binding is a nuisance to the librarians, but it will certainly facilitate the use of this attractive book in the field. –

Cf. also *OA* 11239.

(11213) BERNARD, R., 1996. Ważki (Odonata) rezerwatu "Meteoryt Morasko" w Poznaniu. – Dragonflies (Odonata) of the "Meteoryt Morasko" nature reserve in Poznań. *Rocz. nauk. pol. Tow. Ochr. Przyr. "Salamandra"* 1: 157-166. (Pol., with Engl. s.). – (Dept Gen. Zool., Mickiewicz Univ., Ul. Fredry 10, PO-61-701 Poznań).
The composition and phenology of the odon. community (32 spp.) of this Poznań nature reserve, Poland, are outlined and discussed.

(11214) BEYAERT, J., 1996. *Inventaire du patrimoine odonatologique des dunes flamandes.* Conseil Général (Dép. du Nord), Lille. iv+47 pp., pls & 8 app. excl. – (Author: 260 rte du Rattekot, F-59380 West-Cappel).
This is a comprehensive review of the odon. fauna (17 spp.), in the Bray dune area, E of Dunkerque, Dép. du Nord, France. Brief field notes, adult phenology graphs, and information on the regional status are provided for each sp.

(11215) [BEYAERT, J.], 1996. Libellules rares dans le Nord. *Le Nord* 101(Jan.): 10. – (260 rte du Rattekot, F-59380 West-Cappel).
In the journal of the Conseil Général du Nord, Lestes barbarus, Crocothemis erythraea and Sympetrum flaveolum (Fr. vernacular names only) are reported for the first time from the dép. Nord-Pas-de-Calais, France.

(11216) BONN, A., M. GASSE, J ROLFF & A. MARTENS, 1996. Increased fluctuating asymmetry in the damselfly Coenagrion puella is correlated with ectoparasitic water mites: implications for fluctuating asymmetry theory. *Oecologia* 108: 596-598. – (Fourth Author: Zool. Inst., Techn. Univ., Fasanenstr. 3, D-38092 Braunschweig).
The influence of Arrenurus larvae on the fluctuating asymmetry (FA) of forewing length and cell number in the forewings of this sp. has been investigated. There exists a significant correlation between the FA of forewing length and the mite load. Usually it is argued, the FA increase is triggered by environmental stress, combined with the ability of the genome to stabilize the phenotype. In contrast, the evidence presented here demonstrates that FA could be the result of a very brief impact during ontogenesis, due to chance parasitism.

(11217) BOUDJEMAÂ, S., 1996. Anges ou démons: les libellules. *El Watan*, issue of 29 Sept. – (c/o Dr B. Samraoui, 4 rue Hassi Beïda, Annaba, Algeria).
A general article on dragonflies, in an Algerian daily, with emphasis on the Algerian fauna, listing also some dragonfly folk appellations as used in Algeria, viz. *"coptère"* (NE Algeria, from "helicopter"), *"chouatane"* (NE Algeria, "devil"), *"semsoumia"* (N Sahara, in Biskru distr., meaning a "needle", "snake"), *"Djrad el Maghreb"* (N Sahara, in Touggourt distr., meaning "evening locust", possibly because of the aeshnid crepuscular flight, which is a common sight in the Sahara), *"zinzin"* (S Sahara, perhaps an onomatopoeia), and *"tataloulaghet"* (central Sahara, used by Berber speaking Tuaregs).

(11218) BOWLES, D., 1996. Mexican collecting permits. *Neuropt. Newsl.* 7: 1-2. – (Texas Park & Wildlife Dept; – mailing address not stated).
[Verbatim:] At the recent International Trilateral commission (USA, Mexico and Canada Fish and Wildlife Agencies) annual meeting held in Oaxaca, Mexico, I participated in discussions on collecting permits for Mexico and Canada. The following are some important items addressed during these discussions: (1) Jesus Bustamante, Special Agent, US Fish and Wildlife Service, emphasized that, in addition to a valid collecting permit issued by the host country, the collector also must possess a valid export permit issued by the host country, and for importation into the US, an import permit issued by the US (USFWS Form 3-177, Declaration for Importation or Exportation of Fish or Wildlife). The latter form also must be used when obtaining or returning any borrowed specimens loaned from foreign countries. Agent Bustamante informed the audience that a collecting permit only allows for specimens to be collected and not exported. For US citizens, failure to obtain the necessary permits is a violation of the US Lacey Act. Collectors are advised to coordinate foreign collecting activities with the US Fish and Wildlife Service before actually doing the collecting. – (2) For US collectors, requests for collecting permits should be coordinated with the US Embassy in the host country. Such coordination will expedite the permit process. For Mexico, the US Embassy contact is William Gibbons-Fly, Fisheries Attache, American Embassy, Reforma 305, 06500 Mexico City, Mexico. – (3) Rodrigo Medellin, Instituto Nacional de Ecologia, Secretaria del Media Ambiente, Recursos Naturales y Pesca, informed the audience that Mexico is in the process of refining its collecting

permit acquisition process. They currently are developing a "collecting visa" program for scientists that will be easier and faster to obtain, and can be used by associates of a given project as long as Mexican authorities are aware of the associates' participation in the project. The "collecting visa" program should be operational in about five to six months. Mr Medellin also stated that as long as representatives of a Mexican agency or university actively participate in a project (i.e., permitted individuals accompany you in the field), you need not obtain a collecting permit yourself. However, you still will need an export permit (and for entry into the USA, a US import permit). Theoretically, permits obtained for work on collaborative projects with Mexico are free of administrative fees.

(11219) BRANKOVIĆ, G., 1996. Odonata collected at Petnica near Valjevo, Serbia. *Acta ent. serb.* 1(1/2): 59-62. (With Serb. s.). – (Riste Marjanovića 5, YU-11132 Žarkovo, Beograd, Serbia).
17 spp., collected July 1994, are listed. Cordulegaster heros and 11 other spp. are new for the area.

(11220) BROWN, T., 1996. *A survey of the dragonflies of eastern Norfolk for the season 1996.* Gt Yarmouth Naturalists' Soc., Gt Yarmouth. 26 pp. – (Author: 16 Mariners Park Close, Hopton, Gt Yarmouth, Norfolk, NR31 9DQ, UK).
For the 1995 report see *OA* 11052. – Here, annotations are presented for 20 spp., and a chapter on observations, considered particularly interesting or unusual, is added. The latter includes notes on the 1996 migrations. With reference to the paper listed in *OA* 11320, it is interesting that in Norfolk, too, the frequency of the Libellula quadrimaculata immigrations significantly decreased in recent years. Also included are field observations on the emergence of Gomphus vulgatissimus on the Thames R. nr Reading, Berks.

(11221) *BULLETIN OF AMERICAN ODONATOLOGY*, Vol. 4, No. 3 (31 Dec. 1996). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13906, USA).
*Donnelly, T.W.*: The status of Lestes apollinaris Navás and L. henshawi Calvert (pp. 69-74) [The 2 taxa are considered distinct, they are distinguishable by the shape of the epiproct and paraprocts, and by the hind lobe of the prothorax. L. apollinaris occurs from Ecuador to Venezuela, L. henshawi is restricted to Costa Rica].

(11222) *BULLETIN OF THE HOKKAIDO ODONATOLOGICAL SOCIETY*, Vol. 8 (June 1996). (Jap., with Engl. titles). – (c/o Prof. Dr H. Ubukata, Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1-15-55, Kushiro, 085, JA).
*Ubukata, H.*: Corroboration of the distribution record of a gomphid dragonfly Stylurus nagoyanus in Sapporo (pp. 1-8); – *Wataji, M., T. Kawaguchi, A. Sasaki, M. Tsubota, N. Takahashi, N. Nakamura & F. Maruyama*: Change of dragonfly assemblage at Tonneusu pond (pp. 9-20); – *Wataji, M., A. Sasaki, M. Tsubota, N. Takahashi, N. Nakamura & F. Maruyama*: A collection of Sympetrum depressiusculum in Ishikari district (pp. 21-22); – *Iwasa, M., T. Kimura & T. Izumi*: Observations on the predation of odonate larvae on odonate adults (pp. 22-23); – *Hiratsuka, K.*: Aeschnophlebia longistigma collected in Sapporo (p. 24); – *Komatsu, T.*: Some records of Lyrio-themis pachygastra (p. 25); – *Fukumoto, A., M. Kunikane & T. Komatsu*: Records of Trapezostig-ma virginia in Oshima district (p. 26); – [*Fuku-moto, A.*:] Distribution table of dragonflies in each district of Hokkaido, 10 (pp. 27-29); – Distribution table of dragonflies in the neighbouring islets of Hokkaido, 8 (pp. 30-32); – *Ubukata, H. & A. Fukumoto*: Review of odonatological literature (articles) (pp. 33--35); – *Ubukata, H.*: Review of odonatological literature (books and journals) (p. 36); – *List* of new members and address changes (p. 37); – *Regulations* of the Hokkaido Odonatological Society (pp. 38-39); – *Miscellaneous* (pp. 40-41).

(11223) CHEN, W., Z. ZHANG & Q. FU, 1996. The wingbeat patterns and frequencies of some insects. *Acta ent. sin.* 39(3): 246-252. (Chin., with Engl. s.). – (China Natn. Rice Res. Inst., Hangzhou--310006, PR China).
The wingbeat patterns and frequencies were studied by means of PFS-1 strobotac and computer system, in 50 spp., referable to 8 orders, incl. "Agrion" atratum, Polycanthagina melanictera and Tramea chinensis. 3 main patterns and 7 types could be discerned. The wingbeat frequency is closely related to the wing load and to the development level of the thoracic musculature.

(11224) CONCI, C. & R. POGGI, 1996. Iconography of Italian entomologists, with essential biographical data. *Memorie Soc. ent. ital.* 75: 159-382. – (First Author: Mus. Civ. Stor. Nat., Corso Venezia 55, I-20121 Milano).
Brief biographies and portraits are presented of 401

deceased workers, incl. most of the important Italian odonatologists. – Cf. also *OA* 2761.

(11225) COOPER, G., P.L. MILLER & P.H.W. HOLLAND, 1996. Molecular genetic analysis of sperm competition in the damselfly Ischnura elegans (Vander Linden). *Proc. R. Soc. Lond.* (B) 263: 1343-1349. – (First Author: Dept Zool., Univ. Cambridge, Downing St., Cambridge, CB2 3EJ, UK).
Sperm competition can be a powerful selective force in the evolution of mating systems. Several odon. spp. have attracted study to assess the extent and mechanism of last-♂ sperm precedence. Members of the genus Ischnura display a particularly interesting range of mating systems, and I. elegans was selected for study. Polymorphic microsatellites were cloned, sequenced and used to determine paternity of larvae, to reveal patterns of sperm precedence. More than 3000 larvae, collected from both wild and captively bred ♀♀, were typed for 1 or 2 microsatellite loci and paternity was determined by comparison with parental genotypes. Microsatellite typing showed that most wild-caught ♀♀ had mated with several ♂♂. Analysis of offspring from ♀♀ which mated in captivity showed that multiple-matings result in a large proportion of last-♂ sperm precedence (mean value for immediate last-♂ precedence is 0.79±0.2 (±s.d.; n=11, range=0.44–1)). There is appreciable variation in the extent and patterns of immediate and longer-term precedence, which could reflect differences in ♂ sperm removal ability or selective use of sperm by ♀♀.

(11226) DANIELS, J. & A. HALLEN, 1996. Errichtung und Sicherung schutzwürdiger Teile von Natur und Landschaft mit gesamtstaatlich repräsentativer Bedeutung. Projekt: Neustädter Moor, Landkreis Diepholz, Niedersachsen. *Natur Landschaft* 71(7/8): 311-317. (With Engl. s.). – (Amt Naturschutz & Regionalplanung, Niedersachsenstr. 2, D-49356 Diepholz).
Contains a checklist of 28 odon. spp. from the Neustädter Moor, distr. Diepholz, Lower Saxony, Germany.

(11227) DANIELS, J. & A. HALLEN, 1996. Errichtung und Sicherung schutzwürdiger Teile von Natur und Landschaft mit gesamtstaatlich repräsentativer Bedeutung. Projekt: Ochsenmoor, Niedersachsen. *Natur Landschaft* 71(7/8): 304-310. (With Engl. s.). – (Amt Naturschutz & Regionalplanung, Niedersachsenstr. 2, D-49356 Diepholz).
Contains a checklist of 29 odon. spp., evidenced 1987-1992 in Ochsenmoor and the adjacent streams, distr. Diepholz, Lower Saxony, Germany.

(11228) DASGUPTA, R., 1996. Feeding ecology of the adult Himalayan Salamander Tylototriton verrucosus Anderson, 1871 (Caudata: Salamandridae). *Herpetozoa* 9(1/2): 19-29. (With Germ. s.) – (Postgrad. Dept Zool., Darjeeling Govt Coll., Darjeeling-734101, W. Bengal, India).
In Darjeeling, during the monsoon months (June--Sept.) this sp. is mainly aquatic. Its diet consists of aquatic and terrestrial elements. Here, quantitative data are presented on food consumption in ♂♂ and ♀♀ separately, since the latter stay longer in the water. The odon. are represented by larval Coenagrionidae, Gomphidae, Aeshnidae and Libellulidae.

(11229) DAVIES, D.A.L. & B. YANG, 1996. New species of Bayadera Selys and Schmidtiphaea Asahina from China (Odonata, Euphaeidae). *Tijdschr. Ent.* 139(2): 145-155. – (First Author: 23 Cedar Court, Hills Rd, Cambridge, CB2 2QJ, UK).
B. serrata sp. n. (holotype ♂: Dali, Yunnan, 4--VII-1991), B. strigata sp. n. (holotype ♂, allotype ♀: Dali, Yunnan, 4-VII-1991), B. nephelopennis sp. n. (holotype ♂, allotype ♀: Omeishan, Sichuan, 8-VI-1992) and S. yunnanensis sp. n. (holotype ♂, allotype ♀, Jingcheng, S Yunnan, 26-V-1993) are described and illustrated, and first description of the ♀ S. schmidti Asah. (Doi Suthep, NW Thailand, 28-VI-1990) is presented. A key and a literature guide are provided for all the known Bayadera taxa.

(11230) DE KNIJF, G. & A. ANSELIN, 1996. *Een gedocumenteerde Rode Lijst van de libellen van Vlaanderen. – A documented Red List of the dragonflies of Flanders (N-Belgium).* Inst. Natuurbehoud, Brussel. xvi+90 pp. ISBN 90-403--0061-5. (Dutch, with Engl., Fr. & Germ. s's). – Price: BFR 450.- net. – (Orders to: Instituut v. Natuurbehoud, t.a.v. Bibliotheek, Kliniekstraat 25, B-1070 Brussel).
The book is largely based on the Gomphus database (Assoc. Belgian Odonatologists) where, for Flanders, over 25.000 records are available, ca 50% of these gathered during the last 5 yr, covering 65 of the 68 known Belgian spp., 58 of which are autochthonous. – In the introductory chapters, the collecting methods are outlined and the data are analysed. For each sp., the current (1990-1995) status is compared with that of 1940-1965. 9 spp. are

considered "extinct" in Flanders, 6 are "critically endangered", 9 "endangered", 5 "vulnerable", 6 "susceptible", and 2 spp. are assigned the "data deficient" status, leaving 21 spp. in the "safe/low risk" category. – The major part of the book consists of detailed species accounts, giving the information on the past and current distribution in Flanders, on important habitats, phenology, colonisation possibilities, and on the main threats, supplemented with some management guidelines. The relevant bibl. references are included. – The concluding chapters are devoted to the habitats, presenting a review of the most threatened dragonfly habitats in Flanders. The positive effects of "nature friendly" private garden ponds, and of the amelioration of intensively used angling waters by small-scale zonal management are briefly discussed. The conservation status of the sites important for the redlisted spp. in Flanders is critically assessed, and a systematic monitoring program is proposed. – The regional bibliography is fairly exhaustive, and the regional species list (incl. the Dutch/Flemish vernacular names) will be useful. An impressive list of close to 200 collaborators, and a brief outline of the Gomphus society objectives and activities conclude the work. – The book is adequately, but not excessively, illustrated (captions also in Engl.). The typographic execution is very good. This certainly is among the most exhaustive and well balanced works of this kind yet published.

(11231) DE MARMELS, J., J.A. CLAVIJO & M.E. CHACIN, 1996. A new subspecies of Xylophanes tersa (Sphingidae) from Venezuela. *J. Lepidopterists' Soc.* 50(4): 303-308. – (First Author: Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Aptdo 4579, Maracay, 2101-A, Venezuela).
[Verbatim from Discussion:] In apparent contrast to birds and butterflies, the Pantepuyan (Venezuela) Zygoptera contain extant taxa that are true relicts of ancient (Mesozoic) origin. The monobasic genus Rimanella (Amphipterygidae), endemic to Pantepui, lacks S American relatives, being closely related only to Pentaphlebia of the highlands on the Nigeria/Cameroon border, not to the only other American amphipterygid genus, Amphipteryx, of Central America and Mexico. Amphipteryx has obvious affinities, through a "transpacific track", with the SE Asian genus Devadatta. Similarly, the endemic pantepuyan calopterygine genus Iridictyon is not closely related to the N American Calopteryginae (a subfamily otherwise absent from Central and S America), but to African Phaon and Umma and, probably, to the S Asian Vestalis. Such evidence is inconsistent with origin by dispersal. More probably, a common ancestor of Rimanella + Pentaphlebia was already distributed over parts of the African and Guiana shields when Africa and South America and, consequently, the two ancient shields were still linked together in the Jurassic. In the early Cretaceous the ancestral population became split by the opening of the Atlantic Ocean. The ancient dispersal of the common ancestor is manifested by the "transatlantic track", which is not a migration route but a line still tying together the fragments of the once compact area of ancestral distribution.

(11232) DIEHL, U. & H.-R. GUTTINGER, 1996. Der Einfluss der Gewässerbelastung auf die Lebensgemeinschaft der Insekten. Libellen und Käferarten in den Stillgewässern des Eselsbachtals bei Kaiserslautern. *Pfälzer Heimat* 47(4): 146-148. – (FB Biol., Univ. Kaiserslautern, D-67653 Kaiserslautern).
While odon. larvae were the dominant organisms in most of the ponds examined, these were completely lacking in the pond closest to the waste deposit locality, where the electric conductivity was up to 10 times higher than in the other ponds (2000 us, as to 200-300 us). Surprisingly, the same highly polluted pond supported the largest population of larval Coleoptera. It seems, the latter are not affected by pollution, while their population is strengthened by the disappearance of dragonflies from the biotic community.

(11233) DONATH, H., 1996. Die Zierliche Moosjungfer (Leucorrhinia caudalis [Charpentier, 1840]) neu für die Libellenfauna der nordwestlichen Niederlausitz. *Biol. Stud. Luckau* 25: 37-40. – (Hauptstr. 36, D-15926 Luckau).
In July 1995, an appreciable population of L. caudalis (incl. exuviae) was discovered at the "Neue Grube Bornsdorf", NW Lower Lusatia, E Germany. L. albifrons is among the 22 at this locality evidenced spp.

(11234) DONATH, H., 1996. Einflug der Schabrackenlibelle (Hemianax ephippiger [Burmeister, 1893]) auch in der Niederlausitz. *Biol. Stud. Luckau* 25: 77. – (Hauptstr. 36, D-15926 Luckau).
In June 1995, H. ephippiger was (presumably) sighted at 4 localities in Lower Lusatia, E Germany.

(11235) DUNN, G.A., 1996. *Insects of the Great Lakes Region*. Univ. Michigan Press, Ann Arbor, viii+324 pp. ISBN 0-472-06515-7 (pbk). – Price US $ 21.— net.
A family-wise account on the odon. appears on pp. 68-75. Ophiogomphus anomalus and O. howei are the only spp. threatened. The book is useful for its general chapters on, e.g. entomological history and insect distributional patterns in the Great Lakes Region, USA, and for its various Appendixes, giving information on the regional entomol. organisations, periodicals, institutional collections, and on the legal collecting regulations.

(11236) EDELAAR, P., K.D. DIJKSTRA & N.J. DINGEMANSE, 1996. Hemianax ephippiger: a new dragonfly for the Netherlands (Odonata: Aeshnidae). *Ent. Ber., Amst.* 56(12): 192-195. – (First Author: Rijksstraatweg 132-A, NL-9752 BL Haren).
2 ♂, Budel-Dorplein, Noord Brabant prov., 15--VII-1995. A sight record; the ♀, listed in a previous publication (*OA* 10415), is here changed into a ♂.

(11237) EGGERS, T.O., K. GRABOW, C. SCHUTTE & F. SUHLING, 1996. Die Fluss-jungfern (Odonata: Gomphidae) der südlichen Allerzuflüsse, Niedersachsen. *Braunschweig. naturk. Schr.* 5(1): 21-34. (With Engl. s.). – (Zool. Inst., Techn. Univ., Fasanenstr. 3, D-38102 Braunschweig).
In 1995, Gomphus pulchellus, G. vulgatissimus and Ophiogomphus cecilia were studied in the S tributaries of the Aller R., N Germany. For G. vulgatissimus and O. cecilia 4 new reproduction sites are described. The number of autochthonous populations of these 2 spp. in Lower Saxony has increased by ca 40%. The possible reasons for this increase, such as e.g. climatic change, etc., are discussed.

(11238) EWERS, M., 1996. Zum Vorkommen der Sumpf-Heidelibelle (Sympetrum depressiusculum) und anderer Libellenarten an den Ahlhorner Fischteichen. *Oldenburg. Jb.* 96: 297-312. – (Im Orthbruch 6, D-26203 Wardenburg).
A journal paper, based on the work listed in *OA* 10973.

(11239) FINCHER, F., 1996. Foreword. *In*: M. Averill, The dragonflies of Worcestershire, p. 3, Averill, Kidderminster, ISBN 0-9528288-0-4. – (Author deceased on 30 July 1995).
In the 1940s, through to the 1960s, Fred Fincher made the first detailed records on the Worcestershire dragonflies, and his work helps a great deal in the understanding of the county's dragonfly distribution during that period. He is considered one of the greatest Worcestershire naturalists. This Foreword was written in June 1995, but sadly, the Author has not lived to see the book (as listed in *OA* 11212) published.

(11240) [FLORIN, J.] [MALICKY, H.], 1996 [Obituary]. Dr Janett Florin. *Braueria* 23: 9, with portrait. (Engl.). – (Sonnengasse 13, A-3293 Lunz am See).
The Swiss hydrobiologist and trichopterologist died on 27 Jan. 1996, at the age of 78. He never published on the odon., but had a small odon. collection from E Switzerland and N Africa, which is to be deposited at the ETH, Zürich.

(11241) *FRASERIA* (New Series). South Asian Bulletin of Odonatology, Vol. 2, No. 1/2 (1 Dec. 1996). – (Orders outside SEAsia: c/o Odonato-logica, P.O. Box 256, NL-3720 AG Bilthoven).
*Yousuf, M., A. Khaliq & M. Asghar Ali*: Population and feeding habits of some dragonflies on insect pests of cotton (pp. 1-3); – *Kurhade, S.M., S.K. Aher, R.S. Bandelu, A.K. Pandarkar & N.R. Jadhav*: Odonates of Ahmednagar city, Maha-rashtra, India (pp. 5-6); – *Prasad, M.*: On a collection of Odonata from Goa, India (pp. 7-8); – *Suri Babu, B., B.K. Srivastava & V.K. Srivastava*: Description of last instar larva of Ictinogomphus angulosus (Selys) with notes on biology (Aniso-ptera: Gomphidae) (pp. 9-11); – *Mitra, A.*: A note on the seasonal ecology of Pantala flavescens (Fabricius) (Anisoptera: Libel-lulidae) in Dehra-dun Valley, India (pp. 13-15); – *Andrew, R.J.*: The 13th International Symposium of Odonato-logy: a report (pp. 17-20).

(11242) GÖCKING, C., 1996. *Bioökologische Untersuchungen zur Libellenfauna im Naturpark Barnim (Brandenburg)*. DiplArb. Inst. Landschaftsökol., Univ. Münster. vi+140 pp., 7 app. excl. – (Zum Hiltruper See 9, D-48165 Münster).
39 spp. (incl. 29 breeding) were evidenced (Apr.--Sept. 1995) in the projected Barnim Nature Park, Brandenburg, Germany. At 10 representative water bodies the assemblage has been studied in detail, with emphasis on emergence phenology of Pyrrhosoma nymphula and Aeshna cyanea, and on autecology of Platycnemis pennipes. Brachytron pratense and Libellula fulva. The specific habitat

requirements are outlined for all the encountered spp., and comprehensive and well-balanced management suggestions are proposed. The bibl. reference list contains close to 350 titles.

(11243) *GOMPHUS*. Mededelingsblad van de belgische libellenonderzoekers. – Bulletin de liaison des odonatologues belges, Vol. 12, No. 4 (Dec. 1996; received 28 Feb. 1997). (Dutch & Fr.). – (c/o G. De Knijf, Hofstraat 58, B-9000 Gent).
*Goffart, P./Tailly, M.*: Editorial (pp. 113-114); – *Goffart, P.*: Le programme "Inventaire et surveillance de la biodiversité en Wallonie" (I.S.B.): brève présentation (pp. 115-119); – Compte-rendu de l'excursion sur les étangs ardennais de la région de Saint-Vith à Bastogne, 19 août 1995 (pp. 131--133); – *Bertrand-Devillers, C. & S. Bertrand-Devillers*: Compte-rendu de l'excursion dans les Fagnes spadoises, le 10 septembre 1995 (pp. 133--135). – The issue also contains several announcements and 5 publication reviews.

(11244) GORB, S.N., 1996. Design of insect unguitractor apparatus. *J. Morphol.* 230: 219--230. – (Dept Insect Physiol., Schmalhausen Inst. Zool., Ukrain. Acad. Sci., B. Chmelnickogo 15, UKR-252601 Kiev).
The structure of the unguitractor system of insect legs was studied in freshly emerged Platycnemis pennipes, using scanning and transmission electron microscopy. Its features and functions are compared with those in some other odon. spp. and in the Coleoptera, Diptera, Hemiptera and Hymenoptera.

(11245) *GRACILE*. [Newsletter of Odonatology]. Published by the Kansai Research Group of Odonatology, Osaka, No. 56 (8 Dec. 1996). (Jap., with Engl. titles). – (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
*Matsuki, K.*: On the dorsal spines of Anisogomphus melaenops in Osaka and Hyogo prefectures (pp. 1-4); – *Inoue, K. & T. Tani*: Report of the survey trip on the odonate fauna of South Kyoto, 3: Uji City, Ujitawara-cho and Yawata City (pp. 5-11); – *Tabata, O.*: Report of the survey trip on the odonate fauna of North Kyoto, 5: Yakuno-cho (pp. 12-14); – Report on the survey trip on the odonate fauna of North Kyoto, 6: Mt Oe area (pp. 15-16); – *Matsuda, I.*: "Ptombo-turi" (catching dragonflies by threads and stones) meeting held in Osaka prefecture, (6), 1996 (pp. 17-19); – *Tani, T.*: Report of the survey trip on the odonate fauna of South Kyoto, 4: Yawata City (pp. 20-24); – *Matsuda, I. & S. Tsuda*: Report on the odonate fauna of Bandai pond, Osaka City (pp. 25-26); – *Miyatake, Y.*: Report of the field survey on the odonate fauna of Izumi City, Osaka prefecture, in 1996 (pp. 26-28); – *Inoue, K. & T. Tani*: Record of an old survey trip to the mountainous areas of Okayama prefecture (pp. 29-36); – *Inoue, K.*: Small records of dragonflies of Doki River, Kagawa prefecture (p. 37).

(11246) GRETHER, G.F., 1996. Intersexual competition alone favors a sexually dimorphic ornament in the Rubyspot Damselfly Hetaerina americana. *Evolution* 50(5): 1949-1957. – (Dept Ecol., Evol. & Marine Biol., Univ. California, Santa Barbara, CA 93106, USA).
The sex-limited red spots on the wings of ♂ H. americana were studied in relation to territoriality and fitness in the field. Observational and experimental (wing spot manipulation) studies indicate that wing spots are selected through competition among ♂♂ for mating territories rather than through ♀ choice or direct competition for ♀♀. ♂♂ with naturally or artificially large wing spots were more successful at holding territories and consequently mated at higher rates than ♂♂ with relatively small wing spots. In contrast, sexual selection on ♂ body size appears to operate among nonterritorial ♂♂ at the clasping stage of the mating sequence, perhaps because larger ♂♂ are better at clasping ♀♀ forcibly. Of 4 models proposed to explain the evolution of ornaments through territory competition, only the agonistic handicap model makes predictions consistent with the results of this study.

(11247) GRETHER, G.F., 1996. Sexual selection and survival selection on wing coloration and body size in the Rubyspot Damselfly Hetaerina americana. *Evolution* 50(5): 1939-1948. – (Dept Ecol., Evol. & Marine Biol., Univ. California, Santa Barbara, CA 93106, USA).
Methodological problems that can lead to false evidence for selection on secondary sexual characters are reviewed, and a study of selection in H. americana that avoids these pitfalls is presented. The ♂♂ have a large red spot on each wing that grows to a terminal size after sexual maturity. Selection gradient analyses revealed evidence for positive sexual and survival selection on both terminal wing spot size and body size. Phenotype manipulations confirmed that wing spot size is subject to direct sexual selection, but showed that the

positive slope of survival on wing spot size is an indirect effect of selection on unmeasured traits. The study provides the strongest evidence yet for sexual selection on colouration in Odon., and renders clear examples of why phenotypic selection statistics must be calculated and interpreted cautiously.

(11248) HELLMUND, M. & W. HELLMUND, 1996. Fossile Zeugnisse zum Verhalten von Kleinlibellen aus Rott. *In*: W. von Koenigswald, [Ed.], Fossillagerstätte Rott bei Hennef im Siebengebirge, pp. 57-60, Rheinlandia, Siegburg. – (First Author: Geiseltalmus., Inst. Geowiss., Univ. Halle-Wittenberg, Domstr. 5, D-06108 Halle/Saale).
Deals with the same subject as e.g. *OA* 11090.

(11249) HELLMUND, M. & W. HELLMUND, 1996. Zur endophytischen Eiablage fossiler Kleinlibellen (Insecta, Odonata, Zygoptera), mit Beschreibung eines neuen Gelegetyps. *Mitt. bayer. Staatsslg Paläont. hist. Geol.* 36: 107-115. (With Engl. s.). – (First Author: Geiseltalmus., Inst. Geowiss., Univ. Halle-Wittenberg, Domstr. 5, D-06108 Halle/Saale).
2 angiosperm leafs, bearing Zygoptera egg-sets, are described and illustrated. One of these originates from the Upper Miocene of Randecker Maar, Baden-Württemberg, SW Germany; it is referable to the "coenagrionid type" sensu the authors (cf. *OA* 8495). The other one comes from the Middle Oligocene of Seifhennersdorf, Saxony, E Germany, and is not comparable to any of the hitherto known oviposition modes in fossil Zygoptera. The single linear egg row is identic with the arrangement in the extant Lestes sponsa, L. virens and Sympecma fusca, hence it is called here the "single row lestid type" (in contrast to the double row "lestid type", described in the said paper).

(11250) HOEFFNAGEL, W.J.A., 1996. *Odonata (libellen) van de randgebieden rondom het Naardermeer. – [Odonates (dragonflies) in the areas adjacent to Naarder Lake].* Hoeffnagel, Hilversum, ii+20 pp. (Dutch). – Krekelmeent 72, NL-1218 ED Hilversum).
A review of field observations on 18 spp., evidenced in the area in 1996; – Noord Holland prov., the Netherlands.

(11251) HOLUŠA, O., 1996. Dva případy atypických tandem u vážek (Odonata). – Two cases of unusual tandems of dragonflies (Odonata). *Čas. slezsk. Mus. Opave* (A) 45: 189. (Czech, with Engl. s.). – (Jungmannova 444, CZ-73802 Frýdek-Mistek).
The tandems are described of Orthetrum albistylum ♂ × O. cancellatum ♀, and Soma-tochlora flavomaculata ♂ × ♂.

(11252) HOLUŠA, O., 1996. Výskyt vzácných druh vážek (Odonata) na území České republiky. – Discoveries of rare species of dragonflies (Odonata) in Czech Republic. *Čas. slezsk. Mus. Opave* (A) 45: 81-85. (Czech, with Engl. s.). – Jungmannova 444, CZ-73802 Frýdek-Mistek).
Fresh records are presented and the earlier literature data, referable to Erythromma viridulum, Aeshna caerulea, Anaciaeschna isosceles, Anax parthenope, Leucorrhinia rubicunda, Orthetrum albistylum, O. brunneum and Sympetrum fonscolombei, are reviewed.

(11253) HOOPER, R.E. & M.T. SIVA-JOTHY, 1996. Last male sperm precedence in a damselfly demonstrated by RAPD profiling. *Molec. Ecol.* 5(3): 449-452. – (Dept Anim. & Plant Sci., Univ. Sheffield, Western Bank, Sheffield, S10 2UQ, UK).
The random amplified polymorphic DNA technique was used to determine last ♂ sperm precedence (P2) in Calopteryx splendens xanthostoma. DNA was amplified from mothers, putative fathers and from the embryos of individual offspring, and subsequently calculated band-matching coefficients between known first-order relatives (offspring within a clutch) and non-relatives (mothers and fathers) to estimate last-male paternity. The data indicate that, as in other Calopterygidae, P2 is high (0.98) in the bout of oviposition immediately following copulation, despite the fact that the males of this species do not completely remove the sperm of previous ♂♂ (cf. *OA* 10605).

(11254) IUCN, 1996. *1996 IUCN Red List of threatened animals.* – IUCN, Gland-Cambridge. lxxx+368 pp. – ISBN 2-8317-0335-2. (Available from: IUCN Publications Services Unit, 219 c Huntingdon Rd, Cambridge, CB3 0DL, UK; – *or* IUCN Communications and Corporate Relations Division, 28 rue Mauveney, CH-1169 Gland).
The 1994 Red List (cf. *OA* 10350) was a major advance on its predecessors (cf. *OA* 5736, 6598, 7920) in clarity of layout and amount of information presented. This is taken further in the 1996 edn, which is also the first global compilation to use the complete new IUCN Red List category system – The odon. (137 spp.) are listed on pp. 105-

-108, 171, 187, 208-209, 237-238, and 244, in the categories: "Extinct" (Megalagrion jugorum & Sympetrum dilatatum), "Critically endangered" (13 spp.), "Endangered" (55 spp.), "Vulnerable" (39 spp.), "Low Risk" (17 spp.) and "Data Deficient" (11 spp.). Erpetogomphus lampropeltis, Ophiogomphus cecilia, Leucor-rhinia albifrons and L. caudalis were removed from the List.

(11255) [JIGE, Y.], 1996. [Blue aka-tombo found in Okayama]. *Flash*, 1996 (10 Dec.): 45-46. (Jap.). – (Author's address unknown).
A large (26×26 cm) phot. of a Sympetrum gracile tandem, taken at Tenno-ike, Tamano, Okayama pref., Japan (22-IX-1996), published in a Japanese weekly. In the exhaustive editorial caption, this spectacular (blue) sp. is briefly described and its habitats and distribution are stated.

(11256) KÄHLERT, J., 1996. Auf Libellenjagd in Florida. *Fotografie draussen* 27(5): 19-23, 2 phots excl. – (Rotkehlchenweg 4, D-25712 Burg).
An illustrated article on a photographer's experience with the dragonfly world of Florida, USA, with some taxonomic names and locality data.

(11257) KEROVEC, M. et al. [Odon. by F. PEROVIĆ], 1996. *Turopolje*. Hrvatsko ekološko društvo (HED), Zagreb. 6 pp. (Croat.). – (Publisher: Roosveltov trg 6, CRO-10000 Zagreb).
A brief presentation of the fauna and flora of Turopolje, a region SE of Zagreb, Croatia. Sympecma fusca and Orthetrum cancellatum are mentioned, and a phot. of Libellula fulva (but mis-identified) is included.

(11258) KIELB, M.A., E. BRIGHT & M.F. O'BRIEN, 1996. Range extension of Stylogomphus albistylus (Odonata: Gomphidae) for the Upper Peninsula of Michigan. *Gt Lakes Ent.* 29(2): 87-88. – (Last Author: Insect Div., Mus. Zool., Univ. Michigan, Ann Arbor, MI 48109-1079, USA).
Larvae, exuviae and teneral adults were collected from Mountain Stream, Marquette Co. This represents the first published report of this sp. from the Upper Peninsula of Michgan, USA, and only the second recorded site for the state.

(11259) KOMNICK, H., B. WEIHER & D. WACHTMANN, 1996. Is monoacylglycerol as an intermediate of triacylglycerol digestion absorbed by Aeshna cyanea larvae? *Comp. Biochem. Physiol.* (B) 114(3): 233-243. – (Inst. Zellbiol., Univ. Bonn, Ulrich-Haberland-Str. 61a, D-53121 Bonn).
The isolated digestive juice of A. cyanea larvae hydrolysed trioleoylglycerol preferentially at the terminal 1 and 3 positions, yielding 1,2-dioleoylglycerol as first intermediate. Hydrolysis continued to 1- and 2-monooleoylglycerol as second intermediate. Separate incubation of monooleoylglycerol revealed that hydrolysis could proceed to completion. Inadequate inhibition of mono[1-$^{14}$C]oleoylglycerol hydrolysis in the cold and in the presence of the lipase inhibitor tetrahydrolipstatin provided no information on whether monooleoylglycerol was absorbed in addition to free oleic acid. On the other hand, the analogue oleylglyceryl ethers were resistant towards hydrolysis by the digestive juice. Both monoethers and both diethers were esterified with [1-$^{14}$C]palmitic acid by the homogenate of the midgut wall, whereas esterification in vivo occurred only with the monoethers. These were recovered from the hemolymph after saponification of the joint diacylglycerol and acyl-0-alkylglycerol fraction, indicating that the monoethers had been absorbed and transported into the hemolymph. Ingestion of mono-1-0-[$^{3}$H]octadecylglycerol showed that the ether was absorbed unchanged by the midgut epithelium, where the major part of the alkyl moiety was oxidized to free fatty acid and incorporated into phospholipids, acylglycerols and acyl-0-alkylglycerols. It is concluded from the absorption of the analogous monoalkylglyceryl ethers that monoacylglyceryl esters are also absorbed by Aeshna larvae.

(11260) LEMPERT, J., 1996. Zur Libellenfauna der ostfriesischen Insel Wangerooge. *Seevögel* 17(4): 82-87. (With Engl. s.). – (Vereinstr. 41, D-20357 Hamburg).
The odon. fauna of the East Friesian island of Wangerooge was studied during 1981-1994. 29 spp. were recorded, of which 23 spp. are probably autochthonous. Field observations on the biology of some of these are presented, and the status of Lestes barbarus is discussed. It is argued, the sp. is autochthonous on the Northsea islands "since many decades".

(11261) *La LETTRE DES SOCIÉTAIRES Société française d'odonatologie*, No. 9 (10 Dec. 1996). – (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois-d'Arcy).
The main (standard) sections are: "Le mot du

Président", "La vie de l'Association", "La SFO recherche", and "Annonces diverses". The 1997 membership fee amounts to FRF 170.— net. All back volumes of *Martinia* and all other SFO publications are still available. Xerox copies can be ordered at FRF 7.50 (first page), 1.25 (the subsequent pages). The non-membership prices and service charges are significantly higher.

(11262) *LIBELLENNIEUWSBRIEF*, Hilversum, Vol. 4, No. 5 (no date), 1996 [received 22 Jan. 1997] (Dutch). – (c/o Editor: S. Turnhout, Uilenstede 162, NL-1183 AN Amstelveen).
[Signed articles:] *Dijkstra, K.D.*: Dragonflies in 1996 (pp. 5-9); – *Kalkman, V.*: Terschelling revisited for the third time (pp. 11-12); – *Mostert, K.*: Dragonfly impressions from Zuid Holland prov., 1996 (pp. 13-16); – *Wouda, H.*: Dragonflies in the Hoge Veluwe, 1996 (pp. 16-18).

(11263) *LIBELLULA*. Mitteilungsblatt der Gesellschaft deutschsprachiger Odonatologen (GdO), Vol. 15, No. 3/4 (Dec. 1996). – (c/o Mrs U. Krüner, Gelderner Str. 39, D-41189 Mönchen-gladbach).
*Reinhardt, K. & S. Müller*: Libellen als Beute von Eidechsen: eine Übersicht (pp. 93-101); – *Ellwanger, G.*: Zur Ökologie von Somatochlora alpestris Sélys (Anisoptera: Corduliidae) am Brocken im Hochharz (Sachsen-Anhalt) (pp. 101--129); – *Burbach, K., I. Faltin, M. Königsdorfer, E. Krach & M. Winterholler*: Coenagrion ornatum (Selys) in Bayern (Zygoptera: Coenagrionidae) (pp. 131-168); – *Schnapauff, I., P. Schridde, F. Suhling & K. Ullmann*: Libellenbeobachtungen in Nordost--Griechenland (pp. 169-183); – *Börzsöny, L.*: Erstnachweis von Anormo-gomphus kiritshenkoi Bartenev für die Türkei (Anisoptera: Gomphidae) (pp. 185-190); – *Malkmus, R.*: Neue Funde von Macromia splendens (Pictet) in Portugal (Anisoptera: Corduliidae) (pp. 191-195); – *Martens, A. & W. Wimmer*: Schwärmende Ameisen (Hymenoptera: Formicidae) als Beute von Grosslibellen (Anisoptera: Aeshnidae) (pp. 197-202); – *Drees, C., T.O. Eggers, I. Jökel, B. Kühne & C. Zeiss*: Entwicklungserfolg von Aeshna affinis Vander Linden nach einem strengen Winter in Nord-deutschland (Anisoptera: Aeshnidae) (pp. 203-206); – *Zörner, M.*: Wiederfund von Gomphus flavipes (Charpentier) in Niedersachsen (Anisoptera: Gomphidae) (pp. 207-210); – *Lehmann, R.*: Nachweis der Südlichen Mosaikjungfer (Aeshna affinis) in Berlin (Anisoptera: Aeshnidae) (p. 211); – *Hartung, M.*: Gomphus (Stylurus) flavipes als Opfer von Vögeln nach dem Schlupf an der Oder (Anisoptera: Gomphidae) (pp. 211-212).

(11264) LOHMANN, H., 1996. Das phylogenetische System der Anisoptera (Odonata). Erster Nachtrag. *Ent. Z., Essen* 106(9): 360-367. (With Engl. s.). – (Basler Str. 11, D-79618 Rheinfelden).
This is the first suppl. to the paper listed in *OA* 11005. The Condaliidae fam. n., mentioned there as a nomen nudum only, is here defined (type genus: Condalia Whalley & Jarzembowski). Some earlier statements relative to the Author's paraphyletic Australo-petaliinae are corrected, the taxon is redefined as a monogeneric subfam., and the Austropetaliidae system, as proposed by G.H.P. Bechly (1996; cf. *OA* 10954) and F.L.Carle (1996, *Odonatologica* 25: 231-259), is adopted. Some new synonymies are also proposed. Based on Author's "research", the publication date of Bechly's paper is "fixed" as 31 July 1996.

(11265) LOHMEYER, M., 1996. New Austrian national park opens. *Danube Watch* 2(4): 12-13. – (Author's address not stated).
The Donauauen National Park comprises the Danube floodplains E of Vienna, Austria (surface 9500 ha). It was formally declared open on 27 Oct. 1996. The article contains a reference to the odon., but no sp. list.

(11266) MARTINEZ-DELCLÓS, X., 1996. El registro fósil de los insectos. *Boln Asoc. esp. Ent.* 20(1/2): 9-30. (With Engl. s.). – (Fac. Geol., Univ. Barcelona, ES-08071 Barcelona).
A brief review is presented of the conditions required for insect fossilization, of the petrographic nature of the rocks containing insect fossils, of some behavioural aspects documented in fossil material, etc. References to the odon. are made at the appropriate places.

(11267) *MARTINIA*. Bulletin des odonatologues de France, Vol. 12, No. 4 (Dec. 1996). – (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois--d'Arcy).
*Arnaboldi, F. & J.-L. Dommanget*: Les odonates du massif forestier de Rambouillet (département des Yvelines) (pp. 87-108); – *Mashaal, M.*: Internet d'odonatologie (pp. 109-111); – *Morelon, S.*: Epitheca bimaculata (Charpentier, 1825) dans le nord du département de la Creuse (p. 111); – *Votat, P.-P. & P. Machet*: Observation de Sympetrum danae (Sulzer, 1776) dans le département de la

Mayenne (p. 112); – *Heide-mann, H.*: Analyse d'ouvrage (pp. 113-116).

(11268) MATSUKI, K. & Y. SAITOU, 1996. Chibaken san Yamasanae zoku youchu no kubetsuten. – [Difference between the larvae of Anisogomphus melaenops (Sel.) and A. pryeri (Sel.)]. *Boso no Konchu* 17: 1-16. (Jap.). – (First Author: 1575-14, Hazama-cho 3-chome, Funabashi, Chibam, 274, JA).
The structural distinctions between the 2 spp. are tabulated and shown in very clear figs.

(11269) MATTHEY, W. & D. BORCARD, 1996. La vie animale dans les tourbières jurassiennes. *Bull. Soc. neuchâtel. Sci. nat.* 119: 3-18. – (Inst. Zool., Univ. Neuchâtel, 11 rue Emile-Argand, CH-2000 Neuchâtel).
General, with reference to the occurrence of Lestes dryas, Aeshna cyanea and Leucorrhinia dubia in the Jura peat bog habitats, Switzerland.

(11270) [MEIER, C.], 1996. Blaue Liste der gefährdeten Libellen im Testgebiet. *In*: A. Gigon, R. Langenauer, C. Meier & B. Nievergelt, "Blaue Listen" der erfolgreich erhaltenen oder geförderten Tier- und Pflanzenarten der Roten Listen, mit Hinweisen zur Förderung gefährdeter Arten, pp. 34--39, cumulative references pp. 89-95, Schweiz. Wissenschaftsrat [Programm TA], Bern. – (Publisher: Inselgasse 1, CH-3003 Bern).
As a counterweight to the Red Lists, with their alarming data on the decrease of spp. (cf. *OA* 11186), the Blue Lists are stressing the success in species conservation and are outlining the possibilities for further action. Their objective is the strengthening of the motivation for conservation. – In the present paper, the habitat conservation measures, as undertaken during the past decade in the cantons Aargau, Schaffhausen and Zürich (Switzerland), are described, and their positive effects for 34 red-listed spp. are stated.

(11271) MERMOD-FRICKER, F., 1996. Bibliographie concernant la faune entomologique suisse, 1994. *Bull. romand Ent.* 14: 161-173. – (Centre suisse Cartogr. Faune, Terreaux 14, CH-2000 Neuchâtel).
Contains 4 odonatol. titles.

(11272) [MILLER, P.L.] CORBET, P., 1996. [Obituary]. Peter Miller. *Independent*, issue of 6 May, with portrait. – (Crean Mill, Crean, St Buryan, Cornwall, TR19 6HA, UK).
Obituary, containing a brief biography and a concise review of his work. Born Edinburgh 20 May 1931; Fellow, Queen's College, Oxford 1964-1994; Dean of Graduates 1972-1994; Scientific Medallist, Zool. Soc. Lond. 1972; died Oxford 24 March 1996. – (Dr Miller was one of the greatest odon. behaviourists, Managing Ed. and during many years a corner stone of *Odonatologica*.)

(11273) [MILLER, P.L.] SIMPSON, S.J., 1996. [Obituary]. Peter Lamont Miller (1931-1996). *Physiol. Ent.* 31(3): 165-166, portrait incl. – (Author's address not stated).
Obituary, with reference to the Peter Miller Memorial Fund, managed by the Treasurer of the British Dragonfly Society, 1 Haydn Ave., Purley, Surrey, CR8 4AG, UK. – Cf. also *OA* 11272.

(11274) MITRA, T.R. & G. MUKHERJEE, 1996. Studies on the area of wings of female Palpopleura sexmaculata sexmaculata (Fabricius) (Odonata: Libellulidae) of Sikkim. *J. Bengal nat. Hist. Soc.* 15(1): 40-44. – (First Author: 18/1 Dakshin Para Rd, Calcutta-700028, India).
The fore- and hind wings, and the areas of discoidal cell, discoidal field, anal loop and the pterostigma were measured in 10 specimens.

(11275) [MOHAMEDSAID, M.S.], 1996. Pusat Sistematik Serangga, Universiti Kebangsaan Malaysia. – The Centre for Insect Systematics, Universiti Kebangsaan Malaysia. *Serangga* 1(1): 1-6. (Malay & Engl.). – (Cent. Ins. Syst., Univ. Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia).
A general outline of the activities, objectives and collections of the Centre, by its Director & Ed. of the new journal. The reference collection includes 50 odon. spp.

(11276) MULLER, J., 1996. Die Libellenfauna und deren Gefährdungsstatus im Land Sachsen-Anhalt (Odonata). *Verh. 14 Int. Symp. Ent-Faunistik Mitteleur.*, München, p. 434 [abstract only]. – (Frankefelde 3, D-39116 Magdeburg).
A brief biogeographical, ecological and status analysis of the odon. fauna of Sachsen-Anhalt (62 spp.), E Germany. 60 spp. are autochthonous, and the discovery of 4 additional spp. is still expected.

(11277) MÜLLER, J., 1996. Fortschreibung der Roten Listen, dargestellt am Beispiel der Kenntnis-

und Bestandsentwicklung der Libellenfauna Sachsen-Anhalts. *Ber. Landesamt. Umweltschutz Sachsen-Anhalt* 21: 66-70. – (Frankefelde 3, D-39116 Magdeburg).
On the basis of recent information, the current Sachsen-Anhalt odon. Red List (cf. *OA* 10057, 10230) is reassessed and it is argued, a Red List remains meaningful solely if continuously updated and modified in accordance with the latest evidence.

(11278) MULLER, J., 1996. Okofaunistische Ubersicht zum Vorkommen der Federlibelle Platycnemis pennipes (Odonata) in Sachsen-Anhalt. *Ent. Mitt. Sachsen-Anhalt* 4(1/2): 28-31. – (Frankefelde 3, D-39116 Magdeburg).
In Sachsen-Anhalt, E Germany, the sp. was evidenced (1968-1996) at 170 localities, representing 6 habitat types. Locally, its abundance might be as high as e.g. 60.000 individuals at a 600 m section of a stream. Adults occur between mid May and mid Sept., the last emerging or teneral individuals were recorded on 6 Aug.

(11279) MÜLLER, J., 1996. Südliche Mosaikjungfer (Aeshna affinis) – Invasionsart oder Neubürger? *NatSchutz Sachsen-Anhalt* 33(1): 2, col. phot. excl. – (Frankefelde 3, D-39116 Magdeburg).
Refers to the 1995 records, as outlined in the paper listed in *OA* 10818.

(11280) MULLER, J., 1996. Vorläufige Mitteilung zum indigenen Vorkommen der Asiatischen Keiljungfer Gomphus flavipes (Odonata) in Biosphären-reservat Mittlere Elbe/Flusslandschaft Elbe (Sachsen-Anhalt). *Ent. Mitt. Sachsen-Anhalt* 4(1/2): 44-46. – (Frankefelde 3, D-39116 Magdeburg).
16 mainly exuviae records are listed from the W bank of the Elbe R. (section km 264-382), 28 July-10 Aug. 1996; Sachsen-Anhalt, E Germany. They were located 0.5-4.0 m from the water.

(11281) MUNOZ-POZO, B. & M. FERRERAS-ROMERO, 1996. Fenología y voltinismo de Aeshna mixta Latreille, 1805 (Odonata, Aeshnidae) en Sierra Morena (sur de España). *Boln R. Soc. esp. Hist. nat.* 92(1/4): 239-244. (With Engl. s.). – (Depto Biol. Animal/Zool., Fac. Cienc., Univ. Cordoba, Avda San Alberto Magno s/n, ES-14004 Cordoba).
A. mixta is a very plastic sp., with vast distribution; its fenology shows adaptive differences according to climatic characteristics of the area where each population develops. Its life-history has been studied in several countries of central Europe, and recently in southern Spain. Duration of the life cycle is usually 1 yr and the overwintering diapause occurs in egg stage. In populations from central Europe, emergence (of adults) takes place in July and Aug., and oviposition in Aug. and Sept. In the population from southern Spain here studied, the smallest larvae (head capsule width = 1.1 mm) were collected in winter; penultimate instar larvae (F-1) were found from early Apr. to May, and final instar larvae (F) were collected between mid Apr. (1993) or May (1992 and 1994) and early June (1994) or July (1992); emergence takes place from late May to mid July, but the most early ovipositions occur every year in mid Oct.; there is pre-reproductive diapause of adults (4 months), and the egg diapause must be 2-4 months only. Most emergence occurs in June: 70.87% (N-24) and 95.97% (N-124) in 1992 and 1994, respectively; no exuviae was found in 1993. Synchronism of emergence is conditioned by level of water in the ponds.

(11282) MURAKI, A. & K. KITAGAWA, 1996. [A note on two species of the genus Idionyx from Chiangmai, Thailand]. *Gekkan-Mushi* 306: 29-31. (Jap.). – (Second author: 11-6, Imaichi 1-chome, Asahi-ku, Osaka, 535, JA).
Field observations (29 July-1 Aug.) on I. selysi and I. optata are presented. The former sp. prevails at lower elevations, the latter one at higher altitudes; they co-occur in the intervening zone. Their habitats and feeding and oviposition behaviour are described.

(11283) NARAOKA, H., 1996. Ecology and change of body colour of Nehalennia speciosa (Coenagrionidae, Odonata). *Gekkan-Mushi* 307: 7-13. (Jap., with Engl. title; unabridged Engl. translation available from the Author). – (36-71, Aza Motoizumi, Fukunoda, Itayanagi-machi, Kita-gun, Aomori Pref., 038-36, JA).
Ecology and body colour were examined at Hotokenuma marsh, Misawa, Aomori, Japan (1994, 1995). The adult season was from early June to late Aug., with the peak from late June to late July. The sp. emerged in great numbers from early June to early July, whereafter emergence continued until mid Aug. ♂♂ commenced searching for ♀♀ at 6:00. When both matured sexes met, peculiar flight of up and down facing each other arose, but usually no tandems were formed. Nevertheless, espe-

cially before noon, many tandem pairs were observed, probably so because the population density was very high. But most pairs did not copulate. Immature ♀♀ threatened ♂♂ by wing warning, with their abdomens bent up. Feeding behaviour was observed all day, but it was seen more frequently in the afternoon. Copulation was observed between 6:30-15:00, with the peak between 8:00-12:00. Genital touching occurred prior to copulation. The duration of sperm translocation was roughly 3 s. Copulation lasted 1-4 h before noon, but in the afternoon it lasted only 25-27 min. The difference in duration may depend on whether or not the ♀♀ are guarded. Copulation can be divided into 3 stages. Stage I was very long (12 min 58 s – 4 h 9 min, 50-90% of total duration; n=6), but stage II was very short (20-160 s; n=21). Stage III was a little longer (9 min 48 s – 34 min 38 s; n=21). Oviposition was observed during 10:00-15:00. With maturation, the body colour changed from metallic-green to brown in both sexes.

(11284) [PEÑA-G., L.] COSCARÓN, S., 1996. [Obituary]. Luis Peña Guzman (1921-1995). *Revta Soc. ent. argent.* 55(1/4): 130. (Span.). – (Div. Ent., Mus. La Plata, Univ. Nac. La Plata, Paseo del Bosque, AR-1900 La Plata).
The well-known Chilean odonatologist died on 27 Sept. 1995, at the age of 74. The obituary presents a concise assessment of his manyfold professional work, but does not contain the bibliography.

(11285) PIPER, W., E. HARTWIG & T. OLTHOFF, 1996. Zur Insektenfauna der Insel Nigehörn. *Seevögel* 17(4): 77-81. (With Engl. s.). – (First Author: Unnastr. 6, D-20253 Hamburg).
6 odon. spp. are listed from Nigehörn island, Hamburgisches Wattenmeer, Germany. This is a natural dune island, created by sediment spilling in 1989. The faunal succession is regularly monitored; for the time being no odon. sp. appears autochthonous.

(11286) PLAISTOW, S. & M.T. SIVA-JOTHY, 1996. Energetic constraints and male mate-securing tactics in the damselfly Calopteryx splendens xanthostoma (Charpentier). *Proc. R. Soc. Lond.* (B) 263: 1233-1238. – (Dept Anim. & Plant Sci., Univ. Sheffield, Sheffield, S10 2UQ, UK).
♂♂ C. s. xanthostoma demonstrate territorial and non-territorial mate securing tactics. Non-territorial ♂♂ obtain a territory in one of 2 ways: they either wait for a territory to become vacant, or they fight with and displace a territory holder. The estimated reproductive success of territorial ♂♂ was a 1000 times greater than that of non-territorial ♂♂, suggesting that ♂♂ should fight hard to become, and remain, territorial. The present results show that the ability to win fights, and therefore be territorial, is dependent on energy reserves (fat). Energy reserves were correlated with the age of the individual. Young, pre-territorial ♂♂ had excess fat; territorial ♂♂ that had gained their territory by fighting had intermediate fat reserves; older ♂♂ that had been displaced from a territory had very low levels of fat. Previous studies of calopterygid territoriality have suggested that resident-intruder or other uncorrelated asymmetries are important in determining the outcome of conflict. An alternative explanation centring around Grafen's "desperado" effect and the energy constraint on a ♂'s ability to obtain a territory is provided.

(11287) POGGI, R. & C. CONCI, 1996. Elenco delle collezioni entomologiche conservate nelle strutture pubbliche italiane. *Memorie Soc. ent. ital.* 75: 3--157. (With Engl. s.). – (First Author: Mus. Civ. Stor. Nat., Via Brigata Liguria 9, I-16121 Genova).
The following odon. collections are held in various Italian institutions: L. Bonometto and A.P. Ninni (Mus. Civ. Stor. Nat. Venezia), I. Bucciarelli, C. Conci, G. De Marchi and C. Nielsen (Mus. Civ. Stor. Nat. Milano), F. Capra (Mus. Civ. Stor. Nat. Genova), B. Finzi (Mus. Civ. Stor. Nat. Trieste), and P.R. Pirotta (Dipto Biol. Anim., Univ. Pavia).

(11288) PORTER, J., 1996. 1995 Annual Exhibition, Imperial College, London: Odonata. *Br. J. Ent. nat. Hist.* 9(4): 239. – (Author's address not stated).
The migratory Sympetrum flaveolum and S. vulgatum, both taken at Dungeness, Kent, UK, 9--VIII-1995, were exhibited.

(11289) RAUHUT, B., 1996. Errichtung und Sicherung schutzwürdiger Teile von Natur und Landschaft mit gesamtstaatlich repräsentativer Bedeutung. Projekt: Krähenbeer-Küstenheiden, Niedersachsen. *Natur Landschaft* 71(7/8): 295--303. (With Engl. s.). – (Umweltschutzamt, Grandauerstr. 3, D-27472 Cuxhaven).
21 odon. spp. were so far evidenced in the Cuxhaven coastal heathlands, Lower Saxony, Germany. 5 of these are mentioned, but a checklist is not provided.

(11290) REINHARDT, K., 1996. Negative effects of

Arrenurus water mites on the flight distances of the damselfly Nehalennia speciosa (Odonata: Coenagrionidae). *Aquatic Insects* 18(4): 233--240. – (Inst. Okol., Univ. Jena, Neugasse 23, D--07743 Jena).
Ectoparasitic water mites of the genus Arrenurus, which occur on N. speciosa, were used to assess the impact upon distances flown by the damselfly. The mite load was found to be independent of the host's sex. Mites were aggregated in the whole Nehalennia population, but were randomly distributed within its infested part. The effect of the parasite load on flight distances was independent of body size and ambient temperature.

(11291) RESH, V.H. & D.O. YAMAMOTO, 1996. International collaboration in the publication of entomological research. *Am. Ent.* 42(1): 49-55. – (First Author: Dept Envir. Sci., Univ. California, Berkeley, CA 94720, USA).
The subject was examined using authorship affiliations of the most recent 100 articles in 56 European and 31 US specialized journals, incl. *Odonatologica*, for which the figures are as follows: No. different countries 25, % single author papers 65, % multiple author papers, same country 26, % multiple author papers, international collaboration 9.

(11292) *[RESUMOS] 7 CONGRESO IBERICO DE ENTOMOLOGIA*, Santiago de Compostela, 19-23 Sept. 1996. Asoc. Españ. Ent., Madrid.
Contains abstracts of the following odonatol. presentations: *García-Avilés, J.*: Distribución y hábitats de los insectos acuáticos (Ephemeroptera, Odonata, Heteroptera y Coleoptera) de Fuerteventura (Islas Canarias) (p. 50); – *Ferreras-Romero, M. & V. Puchol-Caballero*: Boyeria irene: un odonato con historia vital mayoritariamente semivoltina en Sierra Morena (p. 67); – *Compte-Sart, A.*: Distribución en España y biologia de Oxygastra curtisii (Dale, 1834) (odonatos, Corduliidae) (p. 89); – *Pibernat, J. & L. Abós*: Contribución al conocimiento de los odonatos de la provincia de Girona (p. 90).

(11293) ROBINSON, J.V. & R. ALLGEYER, 1996. Covariation in life-history traits, demographics and behaviour in ischnuran damselflies: the evolution of monandry. *Biol. J. Linn. Soc.* 58(1): 85-98. – (Dept. Biol. & Psychol., Univ. Texas, Arlington, TX 76019, USA).
For an advance abstract, see *OA* 8585.

(11294) RYAZANOVA, G.I., 1996. Territorial'naya konkurenciya u lichinok strekoz. – Territorial competition in dragonfly larvae (Odonata). *Zool. Zh.* 75(10): 1463-1473. (Russ., with Engl. s.). – (Dept Ent., Fac. Biol., Moscow St. Univ., RUS-117234 Moscow).
For an advance abstract see *OA* 11134.

(11295) RYAZANOVA, G.I. & G.A. MAZOKHIN--PORSHNYAKOV, 1996. Territorial competition in the larval cycle of Calopteryx splendens (Odonata, Calopterygidae). *Ent. Review* 75(6): 145--151. – (Dept Ent., Fac. Biol., Moscow St. Univ., RUS-117234 Moscow).
The spatial distribution has been studied in the F--F3 instars, under laboratory conditions. The type of distribution that occurred among the larvae proved to be dependent on the number of potential perches, the age of the larvae, and their residence time in the aquarium. A shortage of perches produces a random distribution of larvae of F3-F1 instars. When the number of perches is excessive, the distribution of larvae becomes significantly different from random, with the number of solitary individuals increasing and the number of unoccupied perches decreasing. Larvae of instar F, as well as larvae of all other instars aggregate during the first 3 days of their residence in the aquarium. There were sexual differences in the distribution only among larvae of the last instar, which confirm our previous theory is about the connection between the spatial behavior of larvae of this instar and the imaginal behavior. All types of distribution of larvae are explained in terms of the existence of territorial competition among them, a competition which tends to protect smaller individuals from depredation by larger individuals. It is suggested that the territorial competition in larvae, being one mechanism for distribution of individuals, permits smaller individuals in the population to feed normally and controls the degree of cannibalism, the population dispersion, and thus its density.

(11296) SAITOU, Y. & S. OGATA, 1996. Hong Kong no tombo rui-1995 nen 10 gatsu – 1996 nen 10 gatsu no kiroku. – [Records of Hong Kong dragonflies, collected from October 1995 to October 1996.] *Boso no Konchu* 17: 25-41. (Jap., with taxonomic nomenclature). – (First Author: 5-26-12, Hirai, Edogawa-ku, Tokyo, 132, JA; – Second Author: BLK B-4, 18/FL, Ventris Place, Ventris Rd, Hong Kong).
This is a sequel of the survey work reported in *OA*

11200. Here, records are presented for 76 spp., mainly from the islands of Hong Kong, Lantau, Lamma and Kau-sai-chau.

(11297) SAMWAYS, M.J., 1996. Insects on the brink of a major discontinuity. *Biodivers. Conserv.* 5: 1047-1058. – (Zool. & Ent., Fac. Sci., Univ. Natal, Priv. Bag X01, Scottsville, Pietermaritzburg-3209, SA).
Population surges and local extinctions are not uncommon among insects. In response to climatic changes in the past, insects have often shifted their ranges. This long-term range shifting and the vagaries of short-term weather make reserve selection unrealistically rigid for many spp. Although some are surviving in reserves, others have disappeared from such small areas because of adverse weather. In contrast, many other spp. depend on localized disturbance for survival. In response to anthropogenic disturbance, some native spp. have become more abundant and widespread, such as some odon. in response to aquatic weeds and water impoundment. The effect of some exotic invasive insects on some native ecosystems is of major concern. Human-induced insect population crashes and sp. extinctions are becoming more common and widespread, and exacerbated by the synergistic effect of the various local impacts with global changes. A major insect population and sp. extinction discontinuity is beginning to take place. Yet, there is also an increase in range and abundance of some other insects. The world is becoming increasingly species-poorer and more homogenous in its insect fauna.

(11298) SANDHU, R. & G.K. WALIA, 1996. Karyological studies on five species of genus Ischnura (Coenagrionidae: Zygoptera: Odonata). *Progr. Abstr. 9th All-India Congr. Cytol. Genet.*, p. 58, Dept Zool., Panjab Univ., Chandigarh. – (Dept Zool., Punjabi Univ., Patiala-147002, India).
The following ♂ germ cell karyotypes are reported: 2n = 27, *m* (I. inarmata, I. senegalensis), 2n = 27 (I. rufostigma), 2n = 25 (I. a. aurora, I. forcipata). Sex determination is of the XO type in all spp. I. inarmata has not been studied previously. The provenience of the material is not stated.

(11299) SCHATTON, M. & D. WACHTMANN, 1996. Immunohistochemical demonstration of microtubules in midgut enterocytes of larval dragonflies (Aeshna cyanea). *Eur. J. Cell Biol.* 69(Suppl. 42): 54 [abstract only]. – (Inst. Cell Biol., Univ. Bonn, Ulrich-Haberland-Str. 61 a, D-53121 Bonn).
[Almost verbatim:] Intestinal absorptive cells (enterocytes) are polarized with functionally distinct membrane domains and a specialized cytoskeleton. Detailed knowledge exists on the enterocytic cytoskeleton in vertebrates, whereas there is still little information about this system in invertebrates. – The midgut epithelium was studied with the use of commercial antibodies against tubulin and the microtubule-associated motor proteins kinesin and cytoplasmic dynein, assuming that microtubules play a role in vectorial transports of insect enterocytes (e.g. apical transport of secretion granules and basal transport of lipid droplets). So far no positive results were obtained with the antibodies against the 2 motor proteins, which were raised against mammalian antigens, while 2 of the tested antibodies against tubulin showed specific cross-reactivity with the insect tubulin on cryosections and western blots. The molecular weight of Aeshna tubulin corresponds to that of pig brain. The microtubules exhibit a similar distributional pattern as in the enterocytes of mammals. They are oriented in the apico-basal direction, densely packed and extend from the terminal web down to the very base of the cell. The orientation of the microtubules is coincident with the 2 main transport directions. – Oral infusions with the anti-microtubular drugs colchicine and colcemid resulted in a partial fragmentation and shortening of microtubules especially in the basal part of the cytoplasm. This observation points to the apical region as a diffuse nucleation center of the microtubular system. Keeping larvae in the cold led to disintegration of the microtubules, but gave no further information about the localization of a putative MTOC.

(11300) SCHIESS-BUHLER, H. & C. SCHIESS-BÜHLER, 1996. Vorläufige Übersicht über einige Insektengruppen (Libellen, Heuschrecken, Tag-falter) und ihre Schutzbedürfnisse im östlichen Teil der Moorlandschaft Ibergeregg. *Ber. schwyz. naturf. Ges.* 11: 51-64. – (Homberg 325, CH-9125 Brunnadern).
From the Ibergeregg moorlands, canton Schwyz, Switzerland, 11 odon. spp. (incl. Ophiogomphus cecilia) are listed and briefly discussed. General considerations on economic exploitation, and landscape and habitat conservation are appended.

(11301) SCHMIDT, E., 1996. Naturschutz-konforme und ökologisch relevante Odonaten-Faunistik auf

der Grundlage von Sichterfassungen mit Fotodokumentation am Beispiel der Zygopteren Erythromma viridulum und Cercion lindenii im Flachland von Nordrhein-Westfalen (Odonata: Coenagrionidae). *Verh. 14 int. Symp. Entomofaunistik Mitteleur.*, München 1994, pp. 365-372. – (Biol. Didaktik, FB-9/S05, Univ. Essen, Postfach 103764, D-45117 Essen).
In addition to the increasing availability of the appropriate man-made habitats and (perhaps?) due to climatic changes, the improved techniques of sight recording are considered among the principal factors responsible for the recent, significant increase of records of the 2 spp. in North-rhine-Westfalia, Germany.

(11302) SCHMIDT, E., 1996. *Ökosystem See.* [5th, completely revised & enlarged edn, in 2 vols]. [Vol. 1]: *Der Uferbereich des Sees.* Quelle & Meyer, Wiesbaden. 333 pp. – ISBN 3-494-01152-4. – (Author: Biol. Didaktik, FB-9/S05, Univ. Essen, Postfach 103764, D-45117 Essen).
The first 2 edn of this standard handbook are listed in *OA* 616 and 1649, resp. The very much enlarged text of the 5th edn is organised into 2 vols, the first of these dealing with the litoral. The main odon. treatment appears on pp. 199-213, but brief paragraphs and text sections on the order are dispersed, at the appropriate places, throughout the book.

(11303) SCHNEIDER-JACOBY, M., 1996. *Drau und Mur. Leben durch Flussdynamik.* [Odon. pp. 94-97]. Naturerbe Verlag, Uberlingen, ISBN 3-9805550-3-8. – (Publisher: J. Resch, Stockacher Str. 11, D-88662 Überlingen).
19 odon. spp. are mentioned from Slovenia and Croatia, without locality data. – For a checklist of the 50 regional spp., etc., cf. *OA* 10937.

(11304) SHIYAKE, S. & Y. MIYATAKE, 1996. *Insect fossil* [sic!]. Osaka Mus. Nat. Hist., Osaka. 60 pp., 8 col. pls excl. ISBN none. (Jap., with Engl. title). – Price: ¥ 900.— net. – (Orders to: Osaka Mus. Nat. Hist., Nagai Park, Higashinagai-cho, Higashisu-miyoshi-ku, Osaka, 546, JA).
This is a concise general review of insect palaeontology, covering briefly all orders, and containing also the maps of most of the fossil insect sites in the world and (separately) in Japan. The odon. are very well treated and an account of the "living fossils" (Epiophlebiidae, Petaluridae) is also included. The well-balanced book is directed at the general reader; most of the names are in Japanese.

(11305) *SIOJA.* Information bulletin of the SIO Japan Branch Office, Osaka, 1996, No. 2 (8 Dec. 1996). (Jap.). – (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
In additon to a few pending management items, the issue contains information on the membership's response in support of the President SIO Japan Branch views re the future SIO policies.

(11306) SIVA-JOTHY, M.T. & R.E. HOOPER, 1996. Differential use of stored sperm during oviposition in the damselfly Calopteryx splendens xanthostoma (Charpentier). *Behav. Ecol. Sociobiol.* 39(6): 389-393. – (First Author: Dept Anim. & Plant Sci., Univ. Sheffield, Sheffield, S10 2UQ, UK).
♀ C. s. xanthostoma have 2 discrete sperm storage organs, the bursa copulatrix and the paired spermathecae. The Authors used the Random amplified Polymorphic DNA(RAPD) profiling technique to determine from which sperm storage organ spermatozoa were used to fertilise eggs during behaviourally distinct oviposition bouts. During oviposition bouts following remating sperm from the bursa copulatrix are largely used to fertilise eggs, but when ♀♀ avoid remating before an oviposition bout the sperm used to fertilise eggs are derived mainly from the paired spermathecae. The observations suggest that ♀ C. s. xanthostoma can avoid ♂ paternity assurance mechanisms by a combination of behavioural and anatomical adaptation: the reason(s) they do so is unclear.

(11307) STERNBERG, K., 1996. Colour, colour change, colour patterns and 'cuticular windows' as light traps: their thermoregulatoric and ecological significance in some Aeshna species (Odonata: Aeshnidae). *Zool. Anz.* 235: 77-88. – (Schillerstr. 15, D-76297 Stutensee).
♂ and ♀ A. caerulea, A. cyanea, A. juncea and A. mixta were illuminated with a halogen and an infrared lamp, and intraabdominal temperatures (Tabd), threshold temperatures of certain behaviours during warm-up (beginning eye-cleaning, wing-whirring and take off) and warm-up times were taken. Especially the 2 colour phases in ♂ A. caerulea, which are able to perform physiological colour change, have been taken into account. Depending on colours and colour patterns Tabd varied in spp. and conspecific sexes. Tabd was only little, if at all, affected by body mass. Abdominal heat gain was high in dull coloured abdominal segments (in ♀♀ and ♂ A. caerulea in dark colour phase) due to high light absorption, and low under

Tyndall-blue spots (e.g. ♂ A. caerulea in blue colour phase) due to high light reflection. The Tyndall-blue seems to effect as 'overheating-protector'. It is supposed that different diurnal activity patterns in ♀♀ and conspecific ♂♂ are mainly caused by body colours and colour patterns. In aeshnids pigments are situated in the epidermis and are visible only through translucent cuticular areas. Together with epidermal pigments, these 'cuticular windows' are conceived as light-traps maximizing the efficiency of incident light and limiting abdominal heat gain (heat protection) to certain spots only, e.g. to support the work of abdominal organs.

(11308) STETTMER, C., 1996. Colonisation and dispersal patterns of banded (Calopteryx splendens) and beautiful demoiselles (C. virgo) (Odonata: Calopterygidae) in south-east German streams. *Eur. J. Ent.* 93(4): 579-593. – (Akad. NatSchutz & Landschaftspfl., FB-2, Seethalerstr. 6, D-83410 Laufen/Salzach).
Dispersal behaviour, colonisation and population structure were studied using mark-recapture technique. The damselfly occurrence at streams was correlated with habitat quality, particularly with the stream flow characteristics, riparian vegetation structure and with the degree of isolation. The area specific average dispersal radius was 0.18-0.80 km. The maximum dispersal distance was 4 km over a 24 h period. Dispersal movements of more than 1 km occurred in 1-5% of the individuals. Dispersal distances depended on habitat quality and population density. The movements were not directed exclusively along the streams, and there was no significant sex-dependent difference in the dispersal behaviour, although ♂♂ were recaptured more frequently. In order to quantify the colonisation ability, an attempt is made to infer the approximate spatial extent of a damselfly metapopulation.

(11309) STOKKELAND, I., 1996. *A bibliography of Norwegian mayfly, damselfly, dragonfly and stonefly publications (Insecta: Ephemeroptera; Odonata; Plecoptera) 1882-1993.* Norsk Ent. Foren, Stavanger, 109 pp. [Insecta Norvegiae, Vol. 6; ISSN 0800-1790]. – (Author: Gneisvn. 64, N-9022 Kroken; – Publisher: Norweg. Ent. Soc., c/o J. Stensløkk, Box 386, N-4001 Stavanger).
The bibliography contains 619 entries, crossreferenced with a species- and a geographical index. According to a quick estimate, ca 150 titles are related to the odon.

(11310) SUGIYAMA, A., M. TAKAGI & K. MARUYAMA, 1996. A laboratory experiment of the predation by possible predators on Culex triaeniorhynchus larvae. *Trop. Med.* 38(1): 7-12. – (First Author: Dept Public Health, Fac. Domestic Sci., Nagoya Women's Univ., 3-40 Shioji-cho, Mizuho-ku, Nagoya, 467, JA).
Predation by natural predators, incl. larval Coenagrion sp. and Sympetrum frequens, was studied in the laboratory. The precise quantitative data are presented and discussed.

(11311) SUHLING, F. & O. MÜLLER, 1996. *Die Flussjungfern Europas (Gomphidae).* Westarp Wissenschaften, Magdeburg & Spektrum Akademischer Verlag, Heidelberg-Berlin-Oxford. 237 pp., 3 col. pls incl. ISBN 3-89432-459-7. [Neue Brehm Bücherei 628 / Libellen Europas 2]. – Price: DEM 46.— net (available from the Eds of Odonatologica, Bilthoven).
A superb monograph on biology and systematics of the European, Anatolian and Maghreb taxa, presenting an exhaustive and well-balanced account of life history, adult and larval behaviour, habitat ecology, conservation aspects, and systematics of all the regional spp., with concise descriptions, line drawings, distribution maps, and adult and larval keys. Much of the information on larval ecology and behaviour is based on Authors' original research and has not been published previously. This is certainly to become a standard work for a long time to come.

(11312) TANABA, H. & M. SUGIMURA, 1996. *Shimanto no konchu tachi. – [Insects along the Shimanto River].* Kochi Shimbunsha, Kochi. 216 pp. ISBN none. (Jap., with taxonomic nomenclature). – Price: ¥ 2300.— net. – (Publishers: Kochi Shimbunsha, 2-15, Hommachi 3-chome, Kochi, 780, JA).
A very attractive, at the general reader directed and beautifully illustrated book on the aquatic and terrestrial insect life of the Shimanto R. valley, Kochi, Japan. The treatment is habitat-wise organized, and the dragonflies are considered throughout.

(11313) TELFORD, S.R., M. BARNETT & D.A. POLAKOW, 1996. The functional significance of tibial displays in the damselfly Platycypha caligata (Selys) (Odonata: Chlorocyphidae). *J. Ins. Behav.* 9(5): 835-839. – (Last Author: Zool. Dept, Univ. Cape Town, Rondebosch-7700, SA).
The functional role of white waggle displays in

mate attraction, and red flash displays in territorial defense is experimentally demonstrated.

(11314) TERZANI, F. & A. SFORZI, 1996. Analisi della colorazione alare in alcune popolazioni della Toscana settentrionale di Calopteryx haemorrhoidalis (Vander Linden, 1825) (Odonata Calopterygidae). *Boll. Soc. ent. ital.* 128(2): 105-110. (With Engl. s.). – (Mus. Zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).
The patterns of wing coloration were analysed in the individuals from Tuscany and Liguria, referable to the nominate sp. and to the form occasi Capra. The intermediate individuals also occur in these populations.

(11315) *TOMBO. ACTA ODONATOLOGICA*. Published by the Society of Odonatology, Tokyo, Vol. 39, No. 1/4 (31 Dec. 1996). (Mostly Jap., with Engl. s's, all with Engl. titles). Personal annual subscription: ¥ 3000.—, plus entrance fee ¥ 500.— (not in US $, personal checks not acceptable), orders to: Prof. Dr S. Eda, Dept Oral Pathol., Matsumoto Dental Coll., 1780 Gobara Hirooka, Shiojiri, Nagano, 399-07, JA; – Institutional/library subscription: ¥ 5000.—, orders to: Japan Publication Trading, Central P.O. Box 722, Tokyo, JA). – (Editor: Dr S. Asahina, Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
*Eda, S.*: Pseudothemis zonata, flying (cover col. phot., p. 1); – *Suzuki, K. & K. Miyachi*: The ability of territorial males to recognize females in four Japanese Mnais species (Zygoptera, Calopterygidae) (pp. 2-12); – Simultaneous guarding of two females by ♂-f. nawai of the Chūbu group of Mnais nawai Yamamoto (Zygoptera, Calopterygidae) (pp. 12-14); – Observation on an interspecific male-male tandem in the Japanese Mnais damselflies (Zygoptera, Calopterygidae) (pp. 15-16); – Two aberrant forms of Mnais sp. (Calopterygidae) (pp. 16-17); – Observation of interspecific copulation of Mnais sp. and M. nawai Yamamoto (Calopterygidae) (p. 17); – *Eda, S.*: Dragonflies of Kamikochi and its vicinity in the Chūbu Mountains National Park, with a consideration of Japanese alpine dragonflies (pp. 18-25); – A male of Anotogaster sieboldii with a wasp's head bit on the abdomen (p. 25); – *Yeh, W.-c.*: New records of the Odonata taken in Taiwan (pp. 26-28); Planaeschna ishigakiana flavostria ssp. n.); – *Matsuki, K.*: Description of the larva of Leptogomphus elegans hong-kongensis (Gomphidae: Odonata) (pp. 29-32); – *Fukui, M.*: Record of dragonflies taken in Siberia, pt 3 (pp. 33-37); – *Sonehara, I.*: Life-history of Agrion terue Asahina, I (pp. 38-42); – Further observations on the larval growth period of Mortonagrion selenion (pp. 42-43); – *Watanabe, Y.*: Egg and first instar larva of Stylurus annulatum (pp. 44-45); – *Ugai, S.*: The first migrate record of Hemianax ephippiger from Japan (pp. 45-46); – *Nishida, A.*: New record of Zyxomma obtusum from Iriomote Island (p. 46); – *Nakaoka, Y.*: Many exuviae of Ictinogomphus pertinax (Selys) from Shizuoka pref. (p. 47); – *Fukui, M. & T. Katou*: Distribution records of Ictinogomphus pertinax (Selys) from Shizuoka pref. (p. 47); – *Yokoi, N.*: The oviposition behaviour of Lanthus fujiacus into the mud (pp. 48-49); – *Eda, S. & N. Hirukawa*: Contact flying-oviposition of Sympetrum frequens on the dry concrete surface and to the water surface of a pond at 2600 m above sea level (pp. 50-51); – *Ishizawa, N.*: An extremely small and melanized female of Sympetrum frequens collected from a spring pond (p. 52); – *Eda, S.*: An aberrant branched stripe appeared on the lateral thorax of Tri-gomphus melamps [sic.!] (p. 53); – Dragonflies on stamps of the world, 12th report (pp. 54-57); – *Inoue, K.*: Next symposium also welcomes participants out of the SIO (p. 58); – *Eda, S.*: Annual meeting of the Society of Odonatology in 1996 (p. 59).

(11316) UBUKATA, H. & K. WAKATSUKI, 1996. A case of death during emergence of Epiophlebia superstes (Selys) in Kushiro-cho, Hokkaido. *Sylvicola* 14: 48. (Jap., with Engl. title). – (First Author: Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1-15-55, Kushiro, 085, JA). [Abstract not available.]

(11317) [UJHÉLYI, S.] [MALICKY, H.], 1996. [Obituary]. Dr Sándor Ujhélyi. *Braueria* 23: 9, with portrait. (Engl.) – (Sonnengasse 13, A-3293 Lunz am See).
The well-known Hungarian odonatologist died on 19 May 1996, at the age of 95. His collections are in the Hungarian Nat. Hist. Mus., Budapest.

(11318) VAN PELT, G.J., 1996. Notes on Cordulegaster Leach and Neallogaster Cowley from China, and the identity of Anotogaster annandalei Fraser (Insecta; Odonata: Anisoptera: Cordulegastridae). *Zool. Meded. Leiden* 70(27): 399-410. – (Nationaal Natuurh. Mus., P.O. Box 9517, NL-2300 RA Leiden).
A translation of the Chin. description of a ♀ N.

annandalei (Fraser) is given (cf. *OA* 6837) and compared with the original description. It is concluded that the sp. should be included in Cordulegaster. A translation of the original Chin. descriptions of C. jinensis Zhu & Han, 1992 (cf. *OA* 8451) and N. choui Yang & Li, 1994 (cf. *OA* 10142) is presented, and it is suggested the 2 spp. are conspecific. Material of "Cordulegaster luniferous var. annandalei Klots, 1947" from Yunnan is identified as N. latifrons Sel., whereby the presence of Neallogaster in China is confirmed.

(11319) WARING, P., G. COLLINS & A. SPALDING, 1996. The BENHS Expedition to Belize, January-February 1996. *Br. J. Ent. nat. Hist.* 9(4): 197-203. – (Authors' addresses not stated).
The principle objective of the Expedition was an investigation of the Lepidoptera, but G. Collins brought together a small odon. collection as well. A list is not given.

(11320) WASSCHER, M., 1996. De Viervlek-libellentrek van mei 1925. – On the mass migration of Libellula quadrimaculata in May 1925. *Levende Nat.* 97(6): 251-255. (Dutch, with Engl. s.). – (Minstraat 15 bis, NL-3582 CA Utrecht).
The published evidence on the famous, large-scale 1925 migrations was re-examined and is here re-assessed. In 1924, the weather was rainy, in consequence of which the surface of dune lakes was increased in 1925. It is tentatively postulated that this could cause the emergence of an abnormally large number of individuals which, in its turn, could have triggered the migrations. – Since 1971, only 2 minor migrations of this sp. are on record in the Netherlands (1979, 1981). – (Cf. also *OA* 11220).

(11321) WEIHER, B. & H. KOMNICK, 1996. Digestion and utilization of phosphatidycholines by Aeshna cyanea larvae. *Eur. J. Cell Biol.* 69 (Suppl. 42): 144 [abstract only]. – (Dept Cell Biol., Univ. Bonn, Ulrich-Haberland-Str. 61 a, D-53121 Bonn).
[Almost verbatim:] Triacylclycerols (TG) and phosphatidylcholines (PC) represent the most frequent storage and structural lipids of the animal cell, respectively, and therefore are the predominant food lipids of the zoophagous Odon. In contrast to TG very little is known on the digestion and absorption of PC by insects. – Using a number of stable and radioactive probes as well as unhydrolysable ether analogues, PC digestion and absorption of the hydrolytic products in the midgut in vivo and in vitro were studied. Digestion of PC yielded lysophos-phatidylcholine (lyso-PC), phosphorylcholine, choline, 1,2-diacylglycerol (DG), 1- and 2-monoacylglycerols (MG), free fatty acid (FFA) and glycerol, indicating the involvement of a number of enzymes: phospholipases $A_2$, B and C, lipase and phosphatase. It was found that FFA, glycerol, choline and partly phosphoryl-choline were absorbed by the midgut epithelium. While no indications of DG absorption were found, the absorption of MG was deduced from the uptake of the corresponding radioactive ether analogue. – In vitro experiments with isolated midguts which were first perfused in order to wash out the digestive juice and then ligated at both ends after the infusion of radiolabelled lyso-PC and lyso-PC ether revealed that these were absorbed. – There are apparently 2 pathways for the digestion of PC into absorbable intermediates: phospholipase $A_2$ delivering lyso-PC and FFA and phospho-lipase C followed by lipase delivering phosphoryl-choline, MG, FFA and glycerol. All absorbable hydrolytic products of PC digestion were utilized by the enterocytes for the synthesis mainly of PC and acylglycerols and released into the haemolymph usually as DG. Parts of glycerol and choline remained unesterified and were directly transported into the haemolymph.

(11322) WELZ, A., 1996. *Gewässerökologische Studien zur Besiedlung eines neu angelegten Feuchtbiotops durch Libellen im Artland.* Haus Arb. Staatsprüf. Lehramt Sekundarstufe-II, Münster. iv+78 pp. – Price DEM 20.— net. – (Available from the Author: Wulfter Str. 7, D-49635 Badbergen).
The Artland is situated ca 40 km N of Osnabrück, Germany, and has a surface of ca 430 km². The odon. communities were studied (1996) at 9 old, and 2 recently created water bodies. The observations are presented species-wise (34 spp.) and the assemblages of various habitats are compared, with special reference to the new ponds and to the effects of the seasonal complete drying up of some habitats. Faunistically, the occurrence of Ceriagrion tenellum, Aeshna subarctica elisabethae and Orthetrum coerulescens are considered of extralimital interest.

(11323) WHITTEN, T., R.E. SOERIAATMADJA & S.A. AFFIFF, 1996. *The ecology of Java and Bali.* Periplus Editions, Hong Kong. xxiii+969 pp. ISBN 962-593-072-8. – (Orders to: Nilsson & Lamm, P.O. Box 195, NL-1380 AD Weesp).
A brief odon. chapter appears on pp. 277-279. It is

entirely based on M.A. Lieftinck's 1934 publications, and also contains a list of the endemic spp. from Java and Bali (Indonesia), with annotations on their occurrence and habitats.

(11324) WILHELMY, H. & B.W. SCHARF, 1996. Makrozoobenthos des Arendsees, Sachsen-Anhalt. *Braunschweig. naturk. Schr.* 5(1): 85-90. (With Engl. s.). – (First Author: Zool. Inst., Techn. Univ., Fasanenstr. 3, D-38102 Braun-schweig).
Platycnemis pennipes and Orthetrum cancellatum are listed from Arend Lake, N Sachsen-Anhalt, E Germany.

(11325) WINHARD, W., 1996. Konvergente Farbmusterentwicklungen bei Tagfaltern: Freiland-untersuchungen in Asien, Afrika und Südamerika. *Spixiana* (Suppl.) 21: 1-192. (With Engl. & Span. s's). – (Austr. 4, D-87666 Pforzen).
Dealing with the Lepidoptera, the monograph also contains various examples in the Odon., mainly from Thailand.

(11326) YOKOYAMA, T., 1996. A new locality of Aeschnophlebia longistigma Selys (Odonata, Aeshnidae) in Hokkaido, with ecological notes. *Gekkan-Mushi* 309: 24-27. (Jap., with Engl. s.). – (1-15-303, E-22, N-19, Higashi-ku, Sapporo-shi, Hokkaido, 065, JA).
The northern limit of the sp. range is in Hokkaido. In 1994, a new locality was discovered in Sapporo. The flight period there lasts from late June to mid Aug. (as to early May-late Aug. in Honshu). The life cycle requires 2 yr, while it is completed within a single yr in Honshu.

## 1997

(11327) *HAGENIA*. Mitteilungsblatt des deutschen Büros der SIO und der GdO, No. 13 (1 March 1997). – (c/o Mrs U. Krüner, Gelderner Strasse 39, D-41189 Mönchengladbach).
The notes and articles are organised under the standard headings: "GdO", "Termine", "Literatur", "Kooperation und Mitarbeit", "Verschiedenes" and "Reiseberichte", total 20 pp. The latter section includes a technical paper, *Peters, G.*: Beobachtungen an Aeshniden (Odonata: Anisoptera) im unbekannten Nordosten Europas (pp. 15-20).

(11328) HILFERT, D. & G. RÜPPELL, 1997. Early morning oviposition of dragonflies with low temperatures for male-avoidance (Odonata: Aeshnidae, Libellulidae). *Entomol. gen.* 21(3): 177-188. (With Germ. s.). – (Abt. Ökol., Zool. Inst., Techn. Univ., Spielmannstr. 7, D-38092 Braunschweig).
The relationship between oviposition and the beginning of ♂ flight activity, on one hand, and air temperature (T) and time of day, on the other, was investigated in N Germany, in S France and in Japan. Some Anisoptera ♀♀, e.g. Orthetrum cancellatum, Aeshna cyanea and A. mixta avoid further matings by appearing before the ♂♂ at oviposition sites, when T is still low. In contrast, Anax imperator ♀♀ are able to defend themselves against ♂♂ successfully. ♀ Aeshnidae in S France and in Japan fly to oviposition sites with higher T than those in N Germany. In the Zygoptera examined, there is no such ♂ avoidance strategy. Here the beginning of oviposition and ♂ flight activity is determined by the mating system.

(11329) IHSSEN, G., 1997. Florida vom 15.03 bis 05.04.1994. Ein naturkundliches Reise-tagebuch mit ausführlicher Behandlung der Li-bellenfunde (Odonata). *Naturk. Reiseber.* 6: 1-52, references pp. 106-107. – (Meisenstr. 13 B, D-22305 Hamburg).
A slightly modified, unabridged journal edn of the work listed in *OA* 9726. The odon. text (pp. 9-33) is largely in Engl.

(11330) IHSSEN, G., 1997. Libellenreise nach Florida im Herbst 1994: Ergebnisse und Erlebnisse. Mit Beobachtungen van Säugern, Vögeln, Amphibien und Reptilien sowie Schmetterlings- und Botaniknotizen. *Naturk. Reiseber.* 6: 55-107, col. pls excl. (Annotated odon. checklist, locality data, field notes & comments in Engl., pp. 66--87). – (Meisenstr. 13 B, D-22305 Hamburg).
Annotated review of records of 41 odon. spp., covering 19 Florida counties, USA, and gathered from 25 Oct. to 15 Nov. 1994. For 12 counties new records are presented, and for several spp. flight periods are extended. Also included are annotated county checklists of recorded spp.

(11331) IHSSEN, G., 1997. Naturkundliche Reisenotizen aus Florida vom 9. bis 23. März 1991. (Reisetagebuch, Libellenbericht, Tagfalter, Wirbeltiere). *Naturk. Reiseber.* 9: 31-61. – (Meisenstr. 13 B, D-22305 Hamburg).
35 odon. spp., recorded in Florida, USA, 9-23 March 1991, are listed, along with detailed locality data and field notes. For 7 counties, checklists of the encountered spp. are appended, and for 5 counties new records are presented.

(11332) IHSSEN, G., E. KAPPES & W. KAPPES, 1997. Florida: naturkundliche Reisenotizen 25. Dez. 1988 bis 6. Jan. 1989. (Reisetagebuch, Libellenbericht, Tagfalter, Amphibien, Reptilien, Vögel). *Naturk. Reiseber.* 9: 1-29. – (First Author: Meisenstr. 13 B, D-22305 Hamburg; – Other Authors: Eichenweg 27, D-22395 Hamburg).
The odon. text (pp. 3-17) is abridged from the work listed in *OA* 7126. A beautifully illustrated paper.

(11333) JÖDICKE, M., 1997. *An alle deutschen Abonnenten von Odonatologica.* Lay-in, circulated in Germany with Vol. 26, No. 1. 1 p. – (Grossenging 14, D-49699 Lindern).
Author's personal response to the current developments in SIO, as triggered by the circulation of various pamphlets and by the ventilation in *Selysia* of various tendentious statements. It was issued on the occasion of the publication of the 101st issue of *Odonatologica*, emphasising the proverbial punctuality and the appreciable role the journal and its abstracting service play in the international odonatological community.

(11334) JOHANNING, J., 1997. Einheimische Libellen, ihr Vorkommen und ihre Gefährdung. *Jb. Oldenburg Münsterland* 1997: 289-310. – (Langwege 1, Holdorferstr. 67, [sic!], D-49413 Dinklage).
A very detailed account on the occurrence of 38 spp. in the distr. of Vechta and the adjacent areas, Germany, covering the period 1954-1995, with numerous (but not all) locality data and comprehensive field notes and comments.

(11335) KOTARAC, M., 1997. *Inventarizacija flore, favne in vegetacije in izdelava poročila za potrebe Poročila o vplivih okolja na območju zadrževalnika Drtijščica na odseku AC Blagovica-Šentjakob. Kačji pastirji (Odonata). Vmesno poročilo. – [Dragonflies (Odonata) in the area of the projected retention lake on the Drtijščica River, Hwy Blagovica-Šentjakob].* Slovene Mus. Nat. Hist., Ljubljana. 8 pp. (Slovene). – (Antoličičeva 1, SI-2204 Miklavž-na-Dravskem-polju).
The locality is situated on the eastern outskirts of the Ljubljana Basin, central Slovenia. 16 spp. are recorded from the river, its tributaries, and from various adjacent wetland sites. In view of species composition and their population strength, the natural conditions of the habitats are considered currently well preserved. The exploitation modalities of the forthcoming man-made lake are unknown, but the impact of a variety of possible scenarios on the odon. communities is outlined.