

## ODONATOLOGICAL ABSTRACTS

**1973**

- (7878) PETROV, C. [in transliteration stated as "T."], 1973. V'rhu biologiyata i ekologiyata na pcheloyada (*Merops apiaster* L.) v Plovdivsko. — On the biology and ecology of the bee-eater (*Merops apiaster* L.) in the Plovdiv region. *Izv. prir. Muz. Plov* 11: 65-88. (Bulg., with Engl. & Germ. s's). — (Author's current address unknown).  
13 identified *Zygopt.* spp. are listed among the food items utilized.

**1975**

- (7879) MATONIČKIN, I. & Z. PAVLETIĆ, 1975. Influence des ruisseaux d'alimentation sur la composition et la structure du benthos dans les lacs accumulateurs du karst yougoslave. *Verh. int. Ver. Limnol.* 19: 1907-1920. — (Authors' current addresses unknown).  
*Calopteryx splendens* is reported from the Ličanka stream, Vinodol, NW Croatia.

**1979**

- (7880) GOMEZ PALLEROLA, J.E., 1979. Un ave y otras especies fósiles nuevas de la biofacies de Santa María de Meyá (Lérida). *Boln geol. minero* 90(4): 333-346. (With Fr. s.) — (Author's address not stated).  
*Palaeaeschna pallerolae* sp. n. is described and figured from strata tentatively identified as referable to the Upper Jurassic, Lerida prov., Spain (cf. also OA 5071). — (For this sp. a new generic name is proposed in the paper listed in OA 7906).

**1981**

- (7881) SIMEONOV, S.D. & J. SOFRONIEV, 1981. Prouchvane v'rhu poloviya dimorfiz'm i hranneneto na vodniya kos (*Cinclus cinclus* L.) v B'lgariya. — Investigation on the sex dimorphism and the feeding of the dipper (*Cinclus cinclus* L.) in Bulgaria. *God. sof. Univ. (Biol.)* 72/73: 80-87. (Bulg., with Engl. & Germ. s's) — (Dept Zool., Fac. Biol., Univ. Sofia "Kl. Ohridski", BG-1421 Sofia).  
Among the diet items, *Lestidae*, *Gomphidae* and *Libellulidae* are listed family-wise.

**1984**

- (7882) VAN SOEREN, J., 1984. Libellen — "lebende Fossilien". *Insektenkurier* 3: 19-22. — (Author's address not stated).  
A general article on dragonflies, in a philatelic journal, illustrated with various examples of dragonfly post stamps.

**1985**

- (7883) WOLF, M., 1985. *Tierökologische Untersuchungen an drei unterschiedlich genutzten Weihern in Oberschwaben unter besonderer Berücksichtigung der Libellen (Odonata)*. DiplomArb. Univ. Hohenheim (Inst. Zool.), Hohenheim. iv+65 pp. — (Author's current address unknown).  
3 fishponds in the Ravensburg distr., Swabia, FRG, with different fish-breeding status and harbouring 25 *odon.* spp., were studied during May-Oct., 1984. Emphasis is on the analysis of faunal composition as conditioned

by the microhabitat diversity in a particular pond.

## 1986

- (7884) ADAMOVIĆ, Ž. & L. ANDJUS, 1986. Ekološko odvajanje i koegzistencije nekih bliskih vrsta Odonata i Diptera. — [Ecological separation and coexistence in some allied Odonata and Diptera species]. *Zborn. Ref. 7. Kongr. Biol. Jugosl., Budva*, p. 180. [Abstract only]. (Serbian). — (First Author: Inst. Med. Res., P.O. Box 721, YU-11001 Beograd). The principles are summarised, but no spp. examples are given.
- (7885) BLUM-SPICKER, H. & E. WAGNER, 1986. *Zinn des Jugendstils*. I. Firma J.P. Kayser Sohn, Krefeld aus der Sammlung Giorgio Silzer: *Auswahlkatalog*. Kreismuseum Zons, Dormagen. 132 pp. — (Available from the publisher: Schlossstr. 1, D(W)-4047 Dormagen-5, FRG; — price: DM 12.- net). This is the catalogue of a part of the Art Nouveau pewter collection in the Zons District Museum, Dormagen. It contains descriptions and photographs of several decorative objects bearing dragonfly images, dated 1898-1906.
- (7886) GOMEZ PALLEROLA, J.E., 1986. Nuevos insectos fósiles de las calizas litográficas del Cretácico Inferior del Montsec (Lérida). *Boln geol. minero* 97(6): (With Engl. s.). — (Author's address not stated). *Palaeaeschna vidali* Meunier, P. pallerolae Gomez (cf. OA 7880) and *Condalia woottoni* Whalley & Jarzemb. (cf. OA 5071) are listed (Lerida prov., Spain).
- (7887) KARAMAN, B.S., 1986. Contribution à la connaissance de la faune des odonates du lac de Skadar et ses environs. *Poljopr. Šumar.* 33(2/3): 57-70. (With Serbian s.). — (Inst. Zool., Fac. Sci., Univ. Skopje, P.O. Box 162, YU-91001 Skopje, Macedonia). 17 spp. are recorded from the Skadar Lake, Montenegro, Yugoslavia. *Lestes virens*, *Ischnura pumilio* and *Orthetrum albistylum* are new for the lake and for Montenegro. The biogeographic composition of the fauna (24 spp.) is compared with that of the Doiran Lake, Macedonia (cf. OA 1289, 2898).
- (7888) KARAMAN, B.S., 1986. Prilog poznavanju faune Odonata Sjenice (Srbija). — Contribution à la connaissance de la faune des odonates de Sjenica. *Poljopr. Šumar.* 33(2/3): 83-87. (Serbian, with Fr. s.). — (Inst. Zool., Fac. Sci., Univ. Skopje, P.O. Box 162, YU-91001 Skopje, Macedonia). 7 spp. are recorded from Sjenica (alt. 1000-1033 m), SW Serbia, Yugoslavia. *Aeshna cyanea* has not been previously reported from Serbia.
- (7889) PEISSNER, T., 1986. *Die aquatile Fauna der Haidgauer Quellseen im Wurzacher Ried*. DiplomArb. Univ. Hohenheim (Inst. Zool.), Hohenheim. iv+119 pp. — (Author's current address unknown). The locality is situated nr Bad Wurzach, Swabia, FRG. Its odon. fauna consists of ca 11 odon. spp. Its composition is briefly discussed.
- (7890) ROHRBACH, C., 1986. *Einheimische Libellen*. Begleitkarte Diareihe 10-00648. Inst. Film & Bild, Grünwald. 4 pp. text + 12 slides. — (Available from the publisher: Bavaria-Film-Platz 3, D(W)-8022 Grünwald, FRG). The slide series shows 10 European odon. spp., incl. a ♀ *Coenagrion freyi* ("Frey's Schlangjungfer"), photographed by A. Bilek, incl. a the discoverer and author of this sp.
- (7891) VAN VREDEN, G. & A.L. AHMADZABIDI, 1986. *Pests of rice and their natural enemies in Peninsular Malaysia*. Pudoc, Wageningen. vii+230 pp. — ISBN 90-220-0890-8. — (Authors' addresses not stated). The book is aimed at providing a comprehensive source of information about insects and other organisms on rice which play a harmful or a beneficial role. It is based on work at Rice Research Station, Bumbong Lima, Malaysia. The odon. are dealt with on pp. 110-115 (9 col. phot. incl.); 11 spp. are listed.

— Cf. also OA 7733.

## 1987

- (7892) FRANKOVIĆ, M. & R. JUREČIĆ, 1987. Comparative cytogenetic analysis of karyotype morphology and organization in males of species *Libellula depressa* L. and *L. fulva* Müll. (Insecta; Odonata). *Proc. Abstr. Pap. 3rd Congr. Croatian Biol., Zagreb*, pp. 292-293. [Abstract only]. (Croatian & Engl.). — (Dept Anim. Physiol., Univ. Zagreb, P.O. Box 933, [YU]-41001 Zagreb, Croatia). Abridged version of the paper listed in OA 7118, without figs.
- (7893) FRANKOVIĆ, M. & R. JUREČIĆ, 1987. Uvjetnost inicijacije i trajanja spermatogeneze kod vrste *Brachytron hafniense* Müll. (Odonata, Aeschnidae) njezinom biologijom. — [The dependence of the initiation and duration of spermatogenesis in *Brachytron hafniense* Müll. (Odonata, Aeschnidae) on the biology of the species]. *Zborn. Saž XVII Skupa Ent. Jugosl., Dojran*, p. 41. [Abstract only]. (Croatian). — (Dept Anim. Physiol., Univ. Zagreb, P.O. Box 933, [YU]-41001 Zagreb, Croatia). Independently from A. Steinen (1982, *Notul. odonatol.* 1: 167-168) and in confirmation of her observations, the restriction of meiotic activity to a short post-emergence period in *B. "hafniense"* (= *pratense*) is evidenced and briefly discussed.
- (7894) MATONIČKIN, I., 1987. Građa za limno-faunu krških voda tekućica Hrvatske: Plitvička jezera. — Material for limnofauna of karst running waters of Croatia: the plitvice lakes. *Biosistematika* 12(1): 25-35. (Croatian, with Engl. s.). — (Dept Biol., Univ. Zagreb, P.O. Box 933, [YU]-41001 Zagreb, Croatia). 4 odon. spp. are listed from various localities in the Plitvice Lakes area, Croatia.

## 1988

- (7895) ADAMOVIĆ, Ž. & L. ANDJUS, 1988. Skupine Odonata u planinskim staništima

Jugoslavije. — [Odonate species groups in mountainous habitats in Yugoslavia]. *Zborn. Ref. 4. Kongr. Ekol. Jugosl., Ohrid*, pp. 360-361. [Abstract only]. (Serbian). — (Second Author: Nat. Hist. Mus. Serbia, Njegoševa 51, P.O. Box 401, YU-11001 Beograd). 26 spp., known from various mountainous regions of the former Yugoslavia, are listed in 3 ecologically defined groups.

- (7896) ERRENST, C., 1988. *Meganeura Riesen-Libelle*. Ruhrland Mus., Essen. 2 pp., 2 pls. — Price: DM 4.50, postage extra. — (Ruhrland Mus., Goethestr. 41, D-4300 Essen-1, FRG). This is a cut-out for construction of a model of *Meganeura monyi* (2 sheets, 21x30 cm, with additional information on the insect and instruction for construction). The model is based on the classical reconstruction (1925) by A. Handlirsch. — For the description of other recent models of *Meganeura* cf. OA 7135, 7136. See also OA 7921.
- (7897) MALKMUS, R., 1988. Drei für den Zentral-spassart bemerkenswerte Libellen. *Nachr. naturw. Mus. Aschaffenburg* 95: 19-22. — (Schulstr. 4, D(W)-8771 Wiesthal, FRG). *Gomphus pulchellus*, *Somatochlora arctica* and *Leucorrhinia dubia* are recorded from Spessart, Bavaria, FRG.
- (7898) MAUERSBERGER, R., 1988. Neue Libellenbeobachtungen im NSG "Ostufer der Müritz". *Zool. Rundbr. Neubrandenburg* 5: 43-47. — (Sekt. Biowiss. Univ. Leipzig, Talstr. 33, D(O)-7010 Leipzig, FRG). Annotated list of 25 spp. (Mecklenburg, eastern Germany).
- (7899) NOLTE, U., 1988. Small water colonization in pulse stable (várzea) and constant (terra firme) biotopes in the Neotropics. *Arch. Hydrobiol.* 113(4): 541-550. — (Von Ossietzky-Str. 16, D(W)-3400 Göttingen, FRG). Short-term succession of macrobenthic fauna was studied in fieldexperiments near Manaus /Amazonas, Brazil. During 3 months the colonization of 6 experimental pools (with a

capacity of 1000 l each) was recorded, once in the terra firme and twice in the várzea. In all cases Chironomidae were the most important benthic colonizers in terms of their abundance, biomass, and species richness. In the várzean small waters detritophagous mayflies (Polymitarcidae) were also numerous. The benthic biomass in the terra firmean pools became dominated by the Libellulidae. — Colonizer communities of both biotopes show distinct successional patterns in respect to their trophic organization and their abundance dynamics. These differences express synecological adaptations to the constant biotope terra firme and to the pulse stable várzean floodplains, respectively. — Various community attributes are compared with those suggested by E.P. Odum (1969, *Science* 164: 262-270).

- (7900) SCHLEUTER, A. & T. TITTIZER, 1988. Die Makroinvertebratenbesiedlung des Mains in Abhängigkeit von der Gewassertiefe und der Korngrösse des Substrates. *Arch. Hydrobiol.* 113(1): 133-151. (With Engl. s.). — (Bundesanst. Gewässerkr., Kaiserin-Augusta-Anlagen 15-17, Postfach 309, D(W)-5400 Koblenz-I, FRG).

A quantitative investigation of the macrobenthos was carried out at 7 dammed-up waters area along the central reaches of the Main R., FRG, in Apr., May, Aug. and Oct., 1985. Samples were collected from the river bed with the aid of an orange peel grab from 3 sections at each area. The distribution of individual spp. as well as the structure of the total coenosis in relation to river depth and particle size of the substrate are discussed on an ecological-causal basis. The odon. spp. considered are *Platycnemis pennipes*, *Calopteryx virgo* and *Gomphus vulgatissimus*.

- (7901) SCHWALLER, T., 1988. Lista commentata di alcune specie di libellule (Odonata-Insecta) osservate alle Bolle di Magadino. *Nostro Paese* [Ticino] 40(185): 225-229. — (Bahnhofstr. 26, CH-4708 Luterbach). Commented list of 13 spp., Ticino, Switzerland. — For *Calopteryx splendens caprai* of the Magadino Plain cf. *OA* 7841.

## 1989

- (7902) FRANKOVIĆ, M., 1989. Istraženost faune vretenaca (Insecta: Odonata) Jugoslavije. — [Current status of the dragonfly fauna (Insecta: Odonata) of Yugoslavia]. *Izvl. Poroč. 2. Kongr. Biosist. Jugosl., Gozd Martuljek*, p. 16. [Abstract only]. (Croatian). — (Dept. Anim. Physiol., Univ. Zagreb, P.O. Box 933, [YU]-41001 Zagreb, Croatia). To-date, 77 spp. were recorded from the territory of the former Yugoslavia, viz. Croatia 65, Macedonia 61, Slovenia 60, Serbia 55, Bosnia & Hercegovina 47, and from Montenegro 26 spp.
- (7903) FRANKOVIĆ, M. & R. HALAPIR, 1989. Istraženost faune vretenaca (Odonata) Hrvatske u razdoblju od II. svjetskog rata do danas. — [The odonate faunistics in Croatia from World War II to present]. *Zborn. Ref. ent. Kolok. Hrvat., Zagreb*, p. 13. [Abstract only]. (Croatian). — (First Author: Dept. Anim. Physiol., Univ. Zagreb, P.O. Box 933, [YU]-41001 Zagreb, Croatia). After World War II, odon. faunistics in Croatia received very little attention. Consequently, Croatia is considered among the odonatologically least explored Balkan countries. Bibliographic references are not given.
- (7904) FRANKOVIĆ, M. & R. HALAPIR, 1989. Prilog poznavanju faune vretenaca (Insecta: Odonata) nacionalnog parka "Krka". — [Contribution to the knowledge of the dragonfly fauna (Insecta: Odonata) of the "Krka" National Park]. *Zborn. Saž. Simp. nac. Park "Krka", Šibenik*, p. 39. [Abstract only]. (Croatian). — (First Author: Dept. Anim. Physiol., Univ. Zagreb, P.O. Box 933 [YU]-41001 Zagreb, Croatia). For the full paper cf. *OA* 7788.
- (7905) KÖNIG, A., 1989. *Vergleichende ökologische Untersuchungen der Libellenfauna von sechs oberschwäbischen Kiesgruben unterschiedlicher Sukzessionsstadien*. DiplomArb. Univ. Hohenheim (Zool. Inst.), Hohenheim. vi+104 pp. figs & tabs excl. — (Pfaffenwaldring 76 C 3, D(W)-7000 Stuttgart-80, FRG). The odon. fauna of 6 gravel pit habitats in the

area of Bad Wurzach, Swabia, FRG, is described and analysed. It is feared the regional odon. fauna could acquire an "insular" character, therefore the maintenance of a network of habitats at different succession levels is advocated. The refuge importance of secondary (man-made) habitats is emphasised.

Zool. & Biol. Gén., Fac. Sci., B.P. 1014, Rabat, Maroc).

The ultimate instar from Morocco is described and figured, and its size variation, conditioned by the annual seasons, is stated. Also analysed are the adult colour patterns and their variation in the 4 annual generations.

- (7906) MARTINEZ-DELCLOS, X., 1989. *Ilerdaegomphus* nom. nov. para el odonato adulto *Palaeaeschna pallerolae* del Cretácico inferior del Montsec (Catalunya, España). *Boln geol. minero* 100(2): 187-192. (With Engl. s.). — (Depto Geol. Dinámica Geofis. Paleontol., Fac. Geol., Univ. Barcelona, Barcelona, Spain).  
*Ilerdaegomphus* gen. n. is proposed for *Palaeaeschna pallerolae* Gomez, 1979 (cf. OA 7880). The sp. is redescribed, figured, and compared with the allied taxa.

- (7910) BLATTNER, S., 1990. *Feld- und Laborstudien zum Einfluss hoher Säure- und Aluminiumkonzentration auf Libellen im Nordschwarzwald*. Diplom Arb. Univ. Hohenheim (Inst. Zool.), Hohenheim. vi+92 pp. + Appendix 12 pp. — (Author's address not stated).

In the field (Black Forest, Germany) odon. species diversity decreases and abundance of some spp. increases in acidified lakes. The emergence success of *Ischnura elegans* amounts to 60% in a lake with pH 4.5 but it is 90% in a pH 7.9 lake. In the laboratory, the pH and Al impact was experimentally assessed for a few spp., and light and electron microscopy were used in evidencing the structural and ultrastructural changes in various tissues of *Pyrrhosoma nymphula* larvae exposed to different pH values and Al concentrations.

- (7907) PATZELT, E., 1989. *Fauna del Ecuador*. Banco Central del Ecuador, Quito. 433 pp. — ISBN 9978-72-005-7. — Price: DM 55,- net. — (Orders to the Author: Liliencronstr. 23, D(W)-2440 Oldenburg/Holstein, FRG). Pp. 328-330 contain a brief chapter on the Odon., *Aeshna marchali* is the only sp. mentioned.

- (7911) CHAO, H.-f., 1990. *The gomphid dragonflies of China (Odonata: Gomphidae)*. Sci. & Technol. Publ. House, Fuzhou. xiv+486 pp. (over 1400 texfigs incl.) — ISBN 7-535-0371-6/Q.3. (Chin., with 31 pp. Engl. s.). Hardcover, 19.5x26.5 cm. — (Available from the SIO, Bilthoven, at Hfl. 275.- net).

This, finally, is the long awaited authoritative monograph on the Gomphidae of China, covering 146 spp. & sspp., and the larvae of 31 spp. The following taxa are described as new: Gomphinae: *Asiagomphus motuoensis* sp. n., *Stylurus erectocornis* sp. n., *S. nobilis* sp. n., *S. placidus* sp. n., *Davidius fruhstorferi guizhouensis* ssp. n.; — Onychogomphinae: *Nihonogomphus cultratus* sp. n., *N. zhejiangensis* sp. n., *Lamelligomphus tutulus* sp. n., *Melligomphus cataractus* gen. n., sp. n. [type sp.: *Onychogomphus ardens* Needham], *Scalmogomphus falcatus* gen. n., sp. n. [monotypic]; and — Hageniinae: *Sieboldius maai* sp. n. — The book is organized into 2

## 1990

- (7908) ANDOH, T., Y. YAMAMOTO, Y. TAKASAKI & M. AITA 1990. [Dragonfly fauna of Aichi Prefecture]. *Insect Fauna Aichi Pref.* 1: 1-78. (Jap.). — (5-24, Otowa 1-chome, Ichinomiya, Aichi, 491, JA).  
Monographic treatment of the odon. fauna (93 spp.) of the prefecture. An outline of the history of odonatol. research in Aichi (central Honshu, Japan) is also included. Since 1950, 200 papers were published on regional dragonflies.
- (7909) BEN AZZOUZ, B. & P. AGUESSE, 1990. Morphologie externe du dernier stade larvaire et analyse du polychromatisme imaginal chez *Ischnura graellsii* (Rambur, 1842) au Maroc (Odonata, Coenagriidae). *Nouv. Revue Ent.* (N.S.) 7(4): 389-398. (With Engl. s.). — (Lab.

sections. The general part (pp. 1-74 includes chapters on the history of the Gomphidae studies in China, on external morphology and taxonomic characters, on biogeography, and on classification of the Chinese Gomphidae. The systematic part (pp. 75-431) represents the monographic treatment of all the taxa (incl. the known larval stages), with synonymies, descriptions, keys, etc. The Bibliography (pp. 432-446) is followed by an excellently styled Engl. summary (pp. 447-478, which also contains the (descriptive) keys, rendering the book absolutely accessible to readers not familiar with the Chin. language. In the keys, the geographic distribution of all the spp. is also stated, but the holotype data on the new taxa are omitted. — The latter is one of the very few minor short-comings of this monumental work. Another disadvantage is the confusion re the spelling of the author's name. Since 1946 Professor Hsiu-fu Chao published several dozens of papers and many more new taxa, all but the paper listed in OA 6261 under "Chao". It is rather confusing, therefore, that on the Engl. title page of the present book his name is spelled as "Zhao Xiufu", while in the title of the Engl. summary (p. 447) the correct version, "Chao Hsiu-fu" appears. It is under the latter name that Professor Chao has been known to the world scientific community for almost half a century, and it is this name that is forever associated with dozens of his taxonomic names, therefore any other spelling, for whatever reasons, is confusing and, in the case of the doyen of Chinese odonatology, should be considered unacceptable in technical publications.

- (7912) CONESA GARCIA, M.A., 1990. Descripción morfológica de los estados larvarios en *Coenagrion caerulescens* (Fonscolombe, 1838) (Zygoptera: Coenagrionidae). *Boln. Asoc. esp. Ent.* 14: 127-135. (With Engl. s.). — (Depto Biol. Anim., Fac. Cien., Univ. Málaga, Campus de Teatinos, ES-29071 Málaga). All larval instars, bred under laboratory conditions, are described and illustrated. Various individuals had 10, 11, 12 or 13 instars, but the 12 instar life history is considered "normal". (*Abstracter's Note*: The correct spelling of the

specific name is *coerulescens*. The error is due to the unclear typography of the diphthong in the original publication, *Annls Soc. ent. Fr.* 8: 568-570, pl. 15 fig. 4).

- (7913) DE MARMELS, J., 1990 [1991]. Hallazgo de Odonata nuevos para Venezuela o poco conocidos. 6. *Boln Ent. venezol.* (N.S.) 5(20): 193-195. (With Engl. s.). — (Depto & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Aptdo 4579, Maracay 2101-A, Venezuela). 12 spp. are listed, of which *Erythrodiplax parvimaculata*, *Oligoclada walkeri*, *Aeolagrion dorsale*, *Argia jocosca*, *Inpabasis eliasi* and *Mecistogaster modesta* are new for Venezuela.
- (7914) ENGELHARDT, E. & J. RUDDEK, 1990. Motivkatalog Libellen. *Insektenkurier* 27: 27-34. — (Second Author: Am Rüten 48, D(W)-2800 Bremen-33, FRG). Introductory chapter of a dragonfly stamp catalogue, in a philatelic journal. For continuation cf. OA 7960. — (*Abstracter's Note*: The best odon. stamp catalogue is probably that by N. Prendergast, listed in OA 6449. Annual reports on odon. philatelistics are published by S. Eda [cf. e.g. OA 7501], and quarterly novelties by P. Machet, in *Martinia*. For an older catalogue cf. OA 2316, and for a statistical account on insect stamps OA 7794).
- (7915) FRANKOVIĆ, M. & R. HALAPIR, 1990. Fauna vretenaca (Odonata) Istre i Kvarnera. — [Dragonfly (Odonata) fauna of Istria and the Kvarner]. *Zborn. Saž. 20. Skupa Ent. Jugosl., Pula*, p. 19. [Abstract only]. (Croatian). — (First Author: Dept. Anim. Physiol., Univ. Zagreb, P.O. Box 933, [YU]-41001 Zagreb, Croatia). 14 papers (1896-1977) containing information on the odon. fauna of this region in Croatia are listed, and 5 out of the 46 hitherto known regional spp. are mentioned.
- (7916) GREGORI, J., 1990. Redke in ogrožene živalske vrste v Sloveniji — pogled nazaj. — [Rare and threatened animal species in Slovenia — revisited]. *Proteus, Ljubljana* 52(5): 163-168. (Slovene). — (Slovene Mus. Nat. Hist.,

P.O. Box 290, 61001 Ljubljana, Slovenia).

With reference to the monograph listed in OA 3593, *Calopteryx virgo* is given as an example of spp. threatened by corrective stream embankments in Slovenia.

- (7917) HAGEMEIERS, D.S. & J.V. ROBINSON, 1990. Oxygen induced vertical migration of damselfly larvae and the influence of caudal lamellae. *Bull. ecol. Soc. Am.* 71(2/Suppl.): 177. [Abstract only]. — (Dept Biol., Univ. Texas, Arlington, TX 76019, USA).  
[Verbatim]: Field collections reveal a significant number of zygopt.larvae with regenerating or missing caudal lamellae. Several functions have been ascribed to these caudal lamellae. One of the more important may be as respiratory organs or caudal "gills". Typical larval habitats in Texas have diurnal dissolved oxygen cycles ranging from near saturation in late afternoon to low or near zero saturation just before dawn. Damselfly larvae have been reported to aggregate near the surface in response to low oxygen (hypoxic) conditions. Our study examines whether the PO<sub>2</sub> levels (and duration of these levels) observed in the field are sufficient to induce vertical migration in damselfly larvae. *Enallagma*, *Ischnura* and *Telebasis* were studied under 4 different oxygen saturation regimes at 27°C both with and without (autotomized) caudal lamellae. All spp. were shown to move higher up in the water column in response to increasing hypoxic stress. While the average height in the water column was usually higher for larvae without lamellae than for those with lamellae, this pattern could only be demonstrated to be statistically significant in *Enallagma*. Analysis of larval absolute movement indicates that movement is lowest in the lowest oxygen level treatments where most larvae reach the surface and cease movement, even though no oxygen was contained in the above surface atmosphere (in lab situations). Field studies measuring odon. vertical distribution patterns in pre-dawn and pre-sunset samples were performed in support of laboratory trials.

thic invertebrates: evaluation of two methods. In: Kauppi et al., [Eds], *Acidification in Finland*, pp. 1051-1070, Springer, Berlin-Heidelberg. — (Dept Biol., Univ. Joensuu, P.O. Box 111, SF-80101 Joensuu).

The distribution of benthic invertebrates was studied in relation to stream acidity. The objective was to evaluate the use of invertebrates in assessing stream acidity. Of 2 methods applied, the first is the lower pH tolerance limit (TL) method, based on presence/absence of indicator spp. The second method is the weighted averaging based on sp. optima and tolerances, which were estimated by maximum likelihood (ML) and weighted averaging (WA) methods, assuming unimodal relationship between relative abundance of invertebrate taxa and the pH. — The total number of taxa increased with increasing stream pH. Within the same pH range, the number of taxa appeared to be higher in humic versus clearwater streams. At the species level, the distribution of *Baetis* mayflies indicated that humic substances may ameliorate the harmful effects of low pH. According to the tolerance limits, few highly acid sensitive taxa were found, but differences in stream acidity could be demonstrated by observing the appearance of species with different sensitivity. The predicted minimum pH with both ML and WA estimates showed a highly significant relationship to the observed stream pH. The results suggest that also the pH in lake surface water during the spring snowmelt period can be assessed by use of outlet invertebrate assemblages. The results do not reveal the order of superiority of the two methods in detecting acidity level. The method of weighted averaging was, however, considered more informative in monitoring acidification. — For 3 odon. spp. the estimated indicator pH values by the 3 different methods, resp. TL, WA and ML, are stated as follows: *Somatochlora metallica* (TL = 5.1; WA = 5.7 ± 0.58; ML = 5.8 ± 0.44), *Calopteryx virgo* (5.1; 5.4 ± 0.24; ML not measured), and *Cordulegaster boltonii* (5.6; 6.1 ± 0.42; 6.1 ± 0.32). — Cf. also OA 7923.

- (7918) HÄMÄLÄINEN, H. & P. HUTTUNEN, 1990. Estimation of acidity by means of ben-

- (7919) HARPER, D.M., 1990. The ecology of a lowland sandstone river: the river Perry, Shrop-

shire. *Field Stud.* 7(3): 451-468. — (Dept Zool., Univ. Leicester, Leicester, LE1 7RH, UK).

*Coenagrion puella*, *Ischnura elegans* and *Calopteryx splendens* are listed, UK.

- (7920) IUCN Conservation Monitoring Centre, 1990. *1990 IUCN Red List of threatened animals*. IUCN, Gland/CH-Cambridge/UK. xxvi+192 pp. — ISBN 2-8317-0031-0.

On pp. 136-142, 141 odon. spp. and ssp. are listed. — For the earlier editions cf. *OA* 5736, 6598.

- (7921) KRAINITZKI, H., 1990. Die Besiedlung eines Karbondioramas — plastischer Rekonstruktionsversuch einer neuen Grosslibellenart. *Präparator* 36(4): 157-162. (With Eng. & Fr. s's). — (Ruhrlandmuseum, Goethestr. 42, D(W)-4300 Essen-1, FRG).

The diorama of a Carboniferous landscape in the Ruhrland Mus., Essen, has been completed recently with some animal reconstructions. These include the meganeurid *Namurotypus sippeli* (cf. *OA* 6850), the reconstruction of which is here described and illustrated in great detail. Cf. also *OA* 7896.

- (7922) KUMAR, Anil, 1990. Odonata of Vedanthangal Waterbird Sanctuary, Tamil Nadu, with notes on their field ecology. *J. Bombay nat. Hist. Soc.* 87: 320-323. — (Authors' address not stated).  
Comment list of 21 spp., 80 km S of Madras, India.

- (7923) MERILÄINEN, J.J. & J. HYNYNEN, 1990. Benthic invertebrates in relation to acidity in Finnish forest lakes. In: Kauppi et al., [Eds], *Acidification in Finland*, pp. 1029-1049, Springer, Berlin-Heidelberg. — (Inst. Environ. Res., Univ. Jyväskylä, SF-40100 Jyväskylä).

In order to examine the effects of acidity on abundance and community structure of the benthic invertebrates in forest lakes and to evaluate the applicability of certain benthic animals as early warning indicators of lake acidification, 140 lakes, situated mainly in southern Finland, were studied by quantitative and qualitative sampling methods. — The

biomass and number of animals showed no significant correlation with lake acidity, although the number of spp. decreased markedly with increasing acidity in the littoral zone of the lakes. The fauna in the deeper zones was often reduced as a result of poor oxygen conditions, and it was not possible here to separate the effects possibly attributable to acidity from those of other factors. — There are certain acid-sensitive species, especially among the snails, mayflies and small mussels, by means of which it would be possible to evaluate the stages of acidification of a lake. The presence of these key spp. is closely related to minimum pH, the acid peak in a lake usually occurring as the snow is melting. This means that the acid periods can be detected also afterwards, which is a considerable advance compared with physico-chemical monitoring of water quality. The comparison of the sampling methods indicated that the qualitative hand net offers a superior method for sampling the littoral invertebrates, making it much easier to obtain samples containing a high number of individuals and spp. than with the Ekman grab. — 13 identified odon. spp. are listed, but the minimum pH values given only for *Epithea bimaculata* (pH 4.3) and *Cordulia aenea* (pH 4.5). — Cf. also *OA* 7918.

- (7924) MIELEWCZYK, S., 1990. Evaluation quantitative des larves d'odonates dans de petits réservoirs champêtres des environs de Turew (région de Poznań). *Acta hydrobiol.* 32(1/2): 187-193. (With Pol. s.). — (Dept Agrobiol., Pol. Acad. Sci., Swierczewskiego 19, PO-60-809 Poznań).

The results are presented of the inquiry into the quantitative communities (18 spp.) of 3 swamps in the agricultural countryside nr Turew, 40-50 km S of Poznań, Poland.

- (7925) MIELEWCZYK, S., 1990. Odonata — Ważki. In: J. Razowski, [Ed.], *Checklist of animals of Poland*, Vol. 1, pp. 39-42, Pol. Akad. Nauk, Wrocław-Warszawa-Kraków (Pol. & Engl.). — (Dept Agrobiol., Pol. Akad. Sci., Swierczewskiego 19, PO-60-809 Poznań).  
Commented checklist of 70 spp.



- (7926) MOORE, N.W., 1990. Dragonflies and damselflies. In: J. Andrews & D. Kinsman, [Eds], Gravel pit restoration for wildlife: a practical manual, pp. 53-54, R. Soc. Prot. Birds, Sandy. — (Farm House, Swavesey, Cambridge, CB4, 5RA, UK).  
Based on British odon. fauna, the article is mainly concerned with habitat creation and management.
- (7927) MOORE, N.W., 1990. From arable farm to new town: changes in flora and fauna during the development of Bar Hill, Cambridgeshire, from 1966 to 1988. *Nature in Cambridgeshire* 32: 27-58. — (Farm House, Swavesey, Cambridge, CB4 5RA, UK).  
The development of the odon. fauna is traced from 1966 to 1983. When Bar Hill was an arable farm, there were no waters suitable for dragonflies, therefore during 1966-1972 all spp. seen were incidental visitors. After a pond was dug (1973) and an originally too fast stream was altered, Bar Hill became colonised by dragonflies. Although only a quarter of a ha is involved, the man-made alterations resulted in the area at present supporting over a quarter of the British spp. The evolution of the fauna is shown in a table.
- (7928) POI DE NEIFF, A., 1990. Categorización funcional de los invertebrados en ríos de llanura del Chaco oriental (Argentina). *Revta brasil. Biol.* 50(4): 875-882. (With Engl. s.). — (Cent. Ecol. Aplic. d. Litoral, C.C. 291, AR-3400 Corrientes).  
An outline is presented of the functional invertebrate classification in the eastern Chaco lowland streams, listing Oxyagrion basale and not further identified Aeshna and Libellulidae spp.
- (7929) POLCYN, D.M., 1990. Paradoxical modulation of flight velocity as a means of thoracic temperature regulation in Mojave desert dragonflies. *Bull. ecol. Soc. Am.* 71(2/Suppl.): 286-287. [Abstract only]. — (Dept Biol., California St. Univ., San Bernardino, CA 92407, USA).  
[Verbatim]: Previous studies (cf. OA 7341) have documented an elevated thoracic temperature (Tth) maintenance and tolerance in 8 spp. of Mojave desert dragonflies, which exhibit Tth between 29 and 48 °C at air temperatures ranging from 18 to 45 °C. Several spp., including both "perchers" and "fliers", display vigorous flight activity during the hottest portions of the summer day, when the operative environmental temperature (Te) may exceed 55 °C for considerable periods of time. Wind tunnel studies and field flight metabolism analyses were used to model the thermal effects of flight. The results suggest that: (1) under many conditions, flying yields a lower Tth than perching, and (2) Tth can be further reduced by increasing flight velocity. Hence, as Te increases, so should flight activity and velocity. Field data gathered to date support the predictions of the model.
- (7930) PRITYKINA, L.N., 1990. Strekozy, Libellulida. — Dragonflies, Libellulida. In: A.P. Rasnitsyn, [Ed.], Late Mesozoic insects of eastern Transbaikalia, pp. 205-207, Nauka, Moscow. — ISBN 5-02-004697-3. Trudy paleontol. Inst. Akad. Nauk SSSR 239. (Russ., with Engl. title). — (Inst. Palaeontol., USSR, Acad. Sci., Profsoyuznaya 123, USSR-117868 Moscow).  
"Khoutinia olovica Pritykina, 1991", "Sinitisia sophiae Pritykina, 1991", "S. unda Pritykina, 1991" and "Dahurium draco Pritykina, 1991" are listed. These are all nomina nuda. A specimen of Sinaeshnidia sp. is illustrated and briefly compared with S. heishankowensis Hong.
- (7931) RAHMANN, H., A. KÖNIG & K. ZINTZ, 1990. *Faunistische Pilotstudie 1989 zum Projekt "Renaturierung des Wurzacher Riedes"*. Vorläufiger Abschlussbericht. Inst. Zool., Univ. Hohenheim, Stuttgart-Hohenheim. ii+100 pp. — (Second Author: Pfaffenwaldring 76 C 3, D(W)-7000 Stuttgart-80, FRG).  
The odon. fauna of the Wurzacher Ried area, Bad Wurzach, Swabia, FRG, is dealt with by A. König (pp. 31-44). Out of 50 spp. recorded, 40 were evidenced recently. Of these, 62.5% are considered threatened. Some suggestions for further research and management are made. — Cf. also OA 7890, 7905.
- (7932) ROBINSON, J.V., L.R. SHAFFER & J.

CLAY, 1990. Invertebrate predation on damselfly larvae and its influence on caudal lamellae loss. *Bull. ecol. Soc. Am.* 71(2/Suppl.): 305. [Abstract only]. — (Dept Biol., Univ. Texas, Arlington, TX 76019, USA).

[Verbatim]: In nature, damselfly larvae are often missing or regenerating some of their 3 caudal lamellae. These lamellae are usually removed by other organisms and their loss may allow larvae to avoid being eaten. This research evaluates the differential impact of conspecifics, a large "sit-and-wait" invertebrate predator (*Ranatra fusca*), and a large "hunting" invertebrate predator (*Anax junius*) on lamellae loss and predation on larvae of the damselfly, *Enallagma civile*. Ten trials were each conducted with 16 damselfly larvae (8 with lamellae, 8 without) under each of 3 conditions i.e. no additional predators, 1 *Ranatra* or 1 *Anax*. Among survivors lamellae loss was highest in conspecifics-only treatments, intermediate in *Ranatra* treatments and did not occur in *Anax* treatments. More lamellae-less larvae were eaten in each treatment than larvae with lamellae. *Ranatra* ate equal numbers of larvae with and without lamellae (as evidenced by carcass remains), therefore conspecifics were responsible for the differential predation in both the *Ranatra* and conspecifics-only treatments. Since conspecific damselfly interactions were greatly reduced in *Anax* treatments, all differential predation was attributed to *Anax*. Survivors in *Anax* trials did not evade *Anax* by sacrificing their lamellae, therefore some attribute of lamellae-less larvae must make them more susceptible to *Anax* predation. Differential levels of generalized locomotion between larvae with and without lamellae has been experimentally ruled out as an explanation.

- (7933) RODRIGUES CAPITULO, A. & J. MUZON, 1990. Sobre el material de *Erythrodiplax paraguayensis* (Odonata, Libellulidae) de la colección del Museo de La Plata (Argentina). *Revta Soc. ent. argent.* 48(1/4): 106. — (Inst. Limnol. Dr R.A. Ringuelet", Univ. Nac. La Plata, C.C. 712, AR-1900 La Plata). The "E. minuscula" listed hitherto from Argentina is referable to *E. paraguayensis*.

- (7934) SCHNEIDER-JACOBY, M. & H. ERN, 1990. *Save-Auen. Vielfalt durch Überschwemmung*. Resch, Radolfzell. 135 pp. — ISBN 3-9801641-5-2. — Price: DM 20.- net. — (Publisher: Jürgen Resch Verlag, Güttinger Str. 19, D(W)-7760 Radolfzell-I, FRG).

This is a fieldguide to the Lonjsko Polje Nature Reserve (surface 500 km<sup>2</sup>) and the adjacent Sava backwaters, in the Posavina region, Croatia. The odon. are dealt with on pp. 51, 59-60, 63, 81. Among the spp. listed, *Leucorrhinia caudalis* is of particular interest (cf. OA 7420).

- (7935) SCOTT, D.E., 1990. Invertebrate predation on larval salamanders. *Bull. ecol. Soc. Am.* 71(2/Suppl.): 319. [Abstract only]. — (Savannah River Ecol. Lab., Aiken, SC 29801, USA). [Verbatim]: Ephemeral ponds (Carolina bays) on the coastal plain of the southeastern United States serve as important breeding sites for many amphibian species. Fish are absent from most bays, and invertebrates may be a primary cause of mortality in amphibian larvae. The importance of invertebrate predation on salamander (*Ambystoma opacum*) larvae was examined in laboratory, artificial-pond, small-pen, and large-enclosure experiments during two years. Predation by odonate nymphs and dytiscid beetle larvae significantly reduced the number of metamorphosing salamanders in field experiments. Predation risk depended on the predator-prey size ratio. Invertebrate predation was a greater source of mortality than predation by adult red-spotted newts or cannibalism by larger conspecifics. The timing of pond filling and drying apparently influenced predator presence (and size), the timing of egg hatching in *A. opacum*, and the predator-prey size ratio. Larval survival of salamanders was 70-90% in bays when predation intensity was relatively low; survival was 0-20% when odonate nymphs were present early in the salamander larval period.

- (7936) SILSBY, J., 1990. Let's watch dragonflies. *African Wildlife* 44(2): 104-106, (3): 156-158, (4): 281, 283-284. — (1 Haydn Ave., Purley, Surrey, CR8 4AG, UK).

A series of 3 articles, mainly based on expe-

rience gained during a Dec.-Jan. visit to Transvaal and Natal. The first article gives a general introduction to the order, the second deals with the riverine taxa and includes a very nicely styled section on mating behaviour. The concluding article is mainly concerned with the stagnicolous fauna. Along with the taxonomic names, the author gives self-constructed vernacular names for all taxa mentioned. The style, presentation and the (original) photographic material are excellent. — (*Abstracter's Note*: According to information received from the Author, the series has triggered numerous responses from the readership and most certainly greatly increased the local interest in dragonflies).

- (7937) TOVORNIK, D., 1990. O ekologiji larvalnih komarjev (Diptera: Culicidae) v manjši mirujoči mlaki na Ljubljanskem barju. — On the ecology of larval mosquitoes (Diptera: Culicidae) in a small stagnant pool in the Ljubljansko Barje. *Biol. Vest., Ljubljana* 38(4): 47-68: (Slovene, with Engl. s.). — (Univ. zavod za zdravstveno & socialno varstvo, Bohoričeva 15, 61000 Ljubljana, Slovenia).

Contains references on seasonal occurrence of odon. larvae (Ljubljana Moor, Slovenia), identified by Dr J. Lavoie-Dornik, Quebec, Canada, mostly to the family level. — Cf. also OA 4550.

- (7938) TROCKUR, B., 1990. [Gewässergütekarte der Nahe]. *Naturschutz Saarland* 1990(1): 2 pp. [reprint]. — (Schulstr. 4, D(W)-6695 Tholey-Scheuren, FRG).

Contains a reference to the local occurrence of *Calopteryx splendens*, *C. virgo* and *Cordulegaster boltonii*; Nahe R., Saarland, FRG.

- (7939) VAN BUSKIRK, J., 1990. Interactions in size-structured populations: competition and cannibalism in a dragonfly. *Bull. ecol. Soc. Am.* 71(2/Suppl.): 352-353. [Abstract only]. — (Dept Zool., Duke Univ., Durham, NC 27706, USA).

[Verbatim]: I studied the role of interactions among size classes in population regulation of the dragonfly *Aeshna juncea* inhabiting splash pools on the shores of Isle Royale, in Lake

Superior. There was a broad size range of individuals present in the pools, due to the 3-year life cycle of this dragonfly and inequalities among individuals in growth rate. Experiments in the laboratory and in natural pools demonstrated that small dragonflies became secretive and experienced higher mortality in the presence of large larvae. Small larvae in the natural population avoid encountering larger larvae by feeding more often in the day and by reducing their activity. The lower activity levels of small larvae may have entailed a cost of feeding success. There was some indication that these interactions had density-dependent effects on larval performance. Both survival and body size in the natural pools showed significant declines with density during some sampling periods. Observations of dragonfly behavior and samples of fecal contents both suggested that interference or cannibalism was the predominant form of size-related interaction. These results indicate that interference contributes to the regulation of the *Aeshna juncea* population at Isle Royale.

- (7940) WHITT, L.S., 1990. Predation efficiency and behavioral impact of dragonfly larvae (Odonata: Anisoptera) on hatchling minnows (Cypriniformes). *Bull. ecol. Soc. Am.* 71(2/Suppl.): 367. [Abstract only]. — (Dept Biol., Univ. Kentucky, Lexington, KY 40506, USA).

[Verbatim]: I studied the predation efficiency of *Anax junius* and *Plathemis lydia* on 2 size-classes of fathead minnows (*Pimephales promelas*), and evaluated the potential impact of invertebrate predators on the spatial distribution and survival of minnow hatchlings. I quantified predation efficiency by feeding individual larvae one of 2 size-classes of fish and calculating the consumption time per fish. *Anax* and *Plathemis* larvae consumed the small size-class more efficiently than the large, and *Anax* was more efficient than *Plathemis* on both classes. I conducted an indoor experiment using tubs containing minnows, artificial vegetation, and (1) one sp., (2) both spp., or (3) no species of dragonfly larvae. I recorded the positions of all organisms daily for 26 days. The presence of one or both odon. spp. decreased fish survival, but the effect was greatest

when *Anax* alone was present. The same pattern occurred in the analysis of open-water habitat use by the fish. Behavioral interactions between 2 odon. spp. clearly influenced the responses by the minnows.

## 1991

- (7941) (Anonymous), 1991. Maared liliaassib. — [Dragonfly exhibit]. *El Aneb*, issue of July 3-9, p. 15. (Arabic). — (c/o Dr B. Samraoui, 4 rue Hassi-Beida, Annaba, Algeria).  
Local weekly's report on the exhibit at Annaba, Algeria, as described in OA 8002.
- (7942) *ABSTRACTS OF PAPERS [read at] the Eleventh International Symposium of Odonatology, Trevi (Perugia), 1991*. Edited by S. Carfi. Issued by the Societas Internationalis Odonatologica (S.I.O.), Roma, Italy. vi+36 pp. — Price: Hfl. 45.- (incl. the "Program & Generalities" and the Field Trip Handbook; cf. OA 7961, 7997) — (Orders to: SIO Central Office, P.O. Box 256, NL-3720 AG Bithoven).  
*Battin, T.*: Biogeographical patterns among populations: *Platynemis pennipes* Pallas, 1771 in the Aegean (Zygoptera, Platyne-mididae) (p. 1); — *Bauerfeind, R. & H. Kornick*: Lipid-loading and unloading of lipophorin in the intercellular spaces of the midgut epithelium of *Aeshna cyanea* larvae (pp. 1-2); — *Carchini, G., M.J. Samways & M. Di Domenico*: Description of the nymph of *Orthetrum robustum* Balinsky, 1965 (p. 2); — *Carchini, G., M. Cobolli, E. De Matthaes & C. Utzeri*: Genetic differentiation and phyletic relationships in the mediterranean *Ischnura* (Zygoptera: Coenagrionidae) (p. 3); — *Cordero, A.*: Colour polymorphism and reproductive strategies in females of *Ischnura graellsii* (pp. 3-4); — *Cordero, A. & P.L. Miller*: Sperm transfer, displacement and precedence in *Ischnura graellsii* (pp. 4-5); — *Costa, J.M. & T.C. Santos*: Description of a new species of *Heliogaris* Selys, 1853 and remarks on the other Dictyrididae species [*H. paraensis* sp. n.] (p. 5); — *D'Andrea, M. & S. Carfi*: Spines on wing veins in Odonata: a morphological, systematical and functional review (p. 6); — *Etcheverry, M.*: Chile y sus matapijos (pp. 6-7); — *Ferreras-Romero, M.*: Life history of the species that make up the odonate association characteristic of permanent streams in the western Mediterranean Basin: preliminary results (pp. 7-8); — *Fincke, O.M.*: Colonization of treeholes: consequences for co-existence among neotropical pseudostigmatid damselflies (pp. 8-9); — *Giesa, U. & H. Kornick*: Absorption of cholesterol, its transport by the hemolymph and incorporation into fat-body and renal lipid-storing cells of *Aeshna cyanea* larvae (pp. 9-10); — Effects of dietary fatty alcohol and cholesterol on the bio-chemistry of stearic acid absorption of *Aeshna cyanea* larvae (pp. 10-11); — Intestinal absorption of radioactive stearic acid by *Aeshna cyanea* larvae (pp. 11-12); — *Hoffmann, J.*: The distribution of the aeshnids (Anisoptera) in the Peruvian Andes (pp. 12-13); — *House, N.L.*: Oviposition of dragonflies and its influence on the distribution of larvae (pp. 13-14); — Emergence of dragonflies in a Nova Scotia farmpond (p. 14); — *Inoue, K.*: Conservation of dragonflies in Japan, part 2 (pp. 14-15); *Johansson, E.*: Cannibalism and intraguild predation in odonate larvae — effects of foraging behaviour and prey density (p. 15); — *MacKinnon, B.I. & M.L. May*: Mating habitat choice and reproductive success in *Phaenocarpa longipennis* (Anisoptera: Libellulidae) (p. 16); — *Mahato, M.*: Resource partitioning among six coexisting odonate larvae of Kali Gandaki and Narayani Rivers in central Nepal (pp. 16-17); — *Martens, A.*: Field experiments on aggregation behaviour and oviposition in *Coenagrion puella* (L.) (Zygoptera: Coenagrionidae) (pp. 17-18); — *McGeoch, M.A. & M.J. Samways*: Dragonflies (Odonata: Anisoptera) and the thermal landscape: implications for their conservation (p. 18); — *Michiels, N.K.*: Consequences and adaptive significance of variance in copulation duration in the dragonfly *Symptetrum danae* (pp. 18-19); — *Miller, P.L.*: Hatching triggers in libellulid eggs (p. 19); — Oviposition in *Libellula depressa* L. (Anisoptera: Libellulidae) (p. 20); — *Novelo, R.*: New larvae of *Phyllogomphoides* in Mexico (Anisoptera: Gomphidae) (pp. 20-21); — *Rodriguez Capitulo, A.*: Description of the larvae of *Tau-*

riphila risi Martin (Anisoptera: Libellulidae) (p. 21); — Rossi, A., P. Passacantilli, F. Biffi, L. Dell'Anna & C. Utzeri: Emergence, sex ratio and dispersal in a temporary pond population of *Sympetrum meridionale* (Selys) (Libellulidae) (p. 22); — Ruppell, G. & R. Rudolph: Variability in the reproductive behaviour of the reddish Japanese Calopterygidae (p. 23, title only); — Samways, M.J.: Dragonfly (Odonata) conservation in South Africa: a biogeographical perspective (p. 23); — Samways, M.J., G. Carchini & M. Di Domenico: Notes on the nymphal morphology of *Aeshna subpupillata* McLachlan, 1896 and *Aeshna minuscula* McLachlan, 1896 (p. 24); — Santos, T.C. & J.M. Costa: A phylogenetic proposal to the Macrothemini tribe (Byers, 1920) (Libellulidae: Trithemistinae) (p. 24); — Schmidt, E.G.: Dragonflies and ecosystem theory — a practical approach (p. 25); — Schneider, W. & E. Krupp: The Odonata of the Arabian peninsula: taxonomy and zoogeography (p. 26); — Schridde, P. & E. Suhling: Larval dragonfly communities in different habitats of a Mediterranean running water system (p. 26); — Srivastava, V.K.: Taxonomic significance of the posterior frame of the secondary genitalia in male zygopteran odonates (p. 27); — Suhling, E.: Distribution of the larvae of *Gomphus pulchellus* Selys (Anisoptera: Gomphidae) pp. 27-28; — Suzuki, K.: Some new approaches to comparative morphology of odonate wings (p. 28); — Trueman, J.: Morphology of the dragonfly egg (p. 29); Cladistic analysis of odonate wing venation (p. 29); — Tyagi, A. & B.K. Tyagi: Synonymy in Indian Odonata (pp. 29-30); — Tyagi, B.K.: Control of vector mosquitoes by dragonflies — a myth or fact? (p. 30); — Role of non-target organisms in determining the safe dose-limits of chemical agents for vector mosquito larval control (p. 31); — Utzeri, C. & C. Ercoli: Post-copulatory guarding duration variation in Zygoptera: a preliminary investigation in Lestes (pp. 31-32); — Wasscher, M.: Ecological notes on the genus *Epipleoneura* in Surinam (pp. 32-33); — Wildermuth, H.: Habitat selection in Anisoptera — an experimental approach (p. 33); — Zhu, H.-Q. & G.-Q. Liang: *Phaenandrogomphus chaoi* spec. nov.,

a new dragonfly from Guangdong, P.R. China (Anisoptera: Gomphidae) (p. 34); — Zloty, J. & G. Pritchard: Cellulose acetate gel electrophoresis: a tool in evolutionary ecology of tropical damselflies (p. 34). — Informal presentations (titles only; p. 35): Belfiore, C. & C. Utzeri: BIBLION, a personal computer database program to store and retrieve entomological literature; — Bonet Betoret, C.: A record of *Zygonyx torrida* in the province of Valencia; — Carpenter, V.: Behavioral observations on the Barrens Bluet Damselfly (*Enallagma recurvatum*); — Cordero, A.: Cannibalism in adult *Ischnura graellsii*; — Dumont, H.: Hybrid zones in *Calopteryx splendens*; — Inoue, K.: Natural environment proved by dragonflies; — Silsby, J. & C. Utzeri: Dragonflies photographed in some North American states, August 1989; — Van Tol, J.: ODO-WORLD, a computerized database for species names, references and collections. — For hand-out abstracts, not included in the present booklet cf. OA 7944, 7945, 7946, 7947, 7948, 8013.

- (7943) *AESCHNA*. Published by the Tombo Kenkyukai [= Dragonfly Research Group], Osaka, No. 24 (May 15, 1991). (Jap., some papers with Engl. titles & s's). — (c/o A. Muraki, 476-24-1312, Kano, Higashi-Osaka, 578, JA). The journal commenced publication in 1974 (cf. OA 6638). The issues are consecutively numbered, with a separate pagination per issue. Until 1986 vol. numbers were also indicated, the last was Vol. 13, No. 19. The typography and lay-out had undergone various modifications and improvements, from No. 17 onwards the typography is a standard book-print, with good reproduction of photographs. From No. 21 onwards (some of) the titles of the larger papers are given in Engl., and from No. 22 onwards Engl. abstracts are also provided. — Contents of No. 24 (20 pp.): 11 titles are listed in contents table, the following are given in Engl.: Ugai, S.: Migration records of *Tramea basilaris burmeisteri* new to Japan (pp. 2-7); — Hashimoto, S. & N. Oseko: New record of *Tramea basilaris burmeisteri* Kirby from Japan (pp. 8-9); — Matsuki, M.: On the moulting line in some lestinoid larvae (p. 10).

- (7944) AMBRUS, A., 1991. *Capture-recapture studies on Aeshna cyanea (Müller)*. Handout 11th Int. Symp. Odonatol., Trevi, 1 p. — (Jurisich u. 16, HU-9495 Kópháza). Notes on population structure, and on territorial and reproductive behaviour.
- (7945) AMBRUS, A., 1991. *Cordulegaster heros Theischinger in Hungary (existence & status)*. Handout 11th Int. Symp. Odonatol., Trevi, 1 p. — (Jurisich u. 16, HU-9495 Kópháza). The sp. is recorded from Sopron. In addition, all available Hungarian specimens of "boltonii" were checked, and it appears that all are referable to heros. Consequently, *C. boltonii* does not occur in Hungary.
- (7946) AMBRUS, A., 1991. *Dragonfly fauna of a small artificial fishing-pond (lake Kacsá at Tatabánya, Hungary)*. Handout 11th Int. Symp. Odonatol., Trevi, 1 p. — (Jurisich u. 16, HU-9495 Kópháza). 10 out of 34 spp. are mentioned from a recultivated sand pit, used at present as a recreation site.
- (7947) AMBRUS, A., 1991. *Give Stylurus flavipes (Charp.) back to Europe*. Handout 11th Int. Symp. Odonatol., Trevi, 1 p. — (Jurisich u. 16, HU-9495 Kópháza). The recolonisation from Hungarian populations is suggested.
- (7948) AMBRUS, A., 1991. *Stylurus flavipes (Charp.) in Hungary*. Handout 11th Int. Symp. Odonatol., Trevi, 2 pp. — (Jurisich u. 16, HU-9495 Kópháza). The current populations are restricted to the Tisza R. and its tributaries. The sp. seems to prefer calm rivers, with deep muddy bed, where it coexists with *Gomphus vulgatissimus* (which sp. prefers the upper sections of the rivers). The largest Hungarian *S. flavipes* populations are in the lower reaches of the Körös R. system. — In a postscript (p. 2), the sp. is reported also from various localities in western Hungary (Szigetköz, Hanság, Kapuvár).
- (7949) ARAI, Y., 1991. [A record of *Aeshna nigroflava* Martin from Yorii-machi, Saitama, Japan]. *Nature & Insects* 26(3): 29. (Jap.). — (1233-2 Sueno, Yorii-machi, Osato-gun, Saitama, 369-12, JA). 1 ♂, 6-IX-1990. This is the second record from Saitama Pref., Japan.
- (7950) [ARAI, Y., S. YABU & M. OSADA], 1991. [Report on the construction of dragonfly habitats in Yokohama]. *Rep. Antipoll. Inst., Yokohama* 98: 1-210. (Jap.). — (No addresses stated). This is a collection of 7 papers by the said authors (pp. 4-146), with an Appendix (pp. 147-210) in which 10 papers, related to the construction of dragonfly ponds and published in various other Japanese periodicals are reproduced.
- (7951) ARGIA. The News journal of the Dragonfly Society of America. Vol. 3, No. 2 (June 15, 1991). — (c/o Dr C. Cook, 469 Crailhope Rd, Center, KY 42214, USA). Contains a sole paper, *Garrison, R.W.*: A synonymic list of the New World Odonata (pp. 1-30). — For a brief abstract cf. *OA* 7963.
- (7952) BIEDERMANN, J., 1991. Das Naturschutzgebiet Rügeller Riet. *Bergheimat, Liechtenstein* 1991: 29-66. — (In der Blacha 78, FL-9494 Planken). On pp. 43-44 is given a brief characterisation of the odon. fauna of this nature reserve in Liechtenstein. — For the original paper cf. *OA* 7487.
- (7953) BRIDGES, C.A., 1991. *Catalogue of the family-group, genus-group and species-group names of the Odonata of the world*. Charles A. Bridges, Urbana, IL, L+708 pp. (hardcover, 22x28.5 cm). — ISBN none. — Price: US \$ 110.- net. — Orders to the author/publisher: 502 W. Main St., No 308, Urbana, IL 61801, USA). This is a monumental work that surpasses all hitherto published catalogues of the order in both the taxonomic coverage (5667 spp. & ca 548 spp.) and in the scope, precision and wealth of information presented, based on 5407 primary publications. — Notes on the

names of the Odonata, including the related fossil forms, are arranged in a twelve-part catalogue. Part I is an alphabetic list of the Type-Genera of the Family-Group names. Part II is a synonymic list of the Family-Group names. Part III is an alphabetic list of the Genus-Group names, including data on authorship, place of publication, type-species, method of type-species designation and position in the classification. Part IV is a synonymic list of the Genus-Group names. Part V is an index to the authors and bibliography of the Genus-Group names. Part VI is an alphabetic index to the Type-Species of the Genus-Group names. Part VII is an alphabetic list of the Species-Group-names, including data on authorship, place of publication, type locality, location of type specimens and classification. Part VIII is a synonymic list of the Species-Group names. Part IX is an index to the authors and bibliography of the Species-Group names. Part X is the bibliography, including information on the author's place and date of birth and death, and on the whereabouts of their collections. Part XI is an index to the bibliography by journal title, including the full titles of the journals and serials, and information on their places and dates of publication. Part XII is an index to the bibliography by year of publication. Appendix I is a list of Genus-Group names that need work. Appendix II is a list of Species-Group names that need work. Appendix III is a list of Bibliography citations that need work. — The arrangement of the names is based entirely on bibliographic references. No specimens have been examined, and no new names are introduced. — The camera-ready copy was produced on an Apple Laser Writer ® II NT Page Printer connected to a Sun ® 3/180 computer running the Unix ® operating system. The text was prepared using the PTROFF text processing program and the ME macro package. — The text is continuously updated and new prints are produced (and bound by the Lincoln Bindery, Urbana, IL) as required. — The above described edition is dated June 15, 1991, and the main coverage goes up to about mid 1990, but includes also a few 1991 titles. — The Catalogue represents a definite milestone in the history of odonato-

logy!

- (7954) BROGGI, M.F., G. GRABHERR, R. ALGE & G. GRABHERR, 1991. *Biotope in Vorarlberg. Endbericht zum Biotopinventar Vorarlberg*. 224 pp. Vorarlberger Landschaftspflegfonds, Bregenz. — ISBN 3-85430-155-3. — Price in Austria: öS 240.- net. — Available from the SIO. — (First Author: Heiligkreuz 52, FL-9490 Vaduz, Liechtenstein). Contains several references to the odon., and advocates (p. 209) a short-term inventarisaton of the odon. fauna of the Vorarlberg prov., western Austria.
- (7955) CARPENTER, V., 1991. *Dragonflies and damselflies of Cape Cod*. Cape Cod Mus. Nat. Hist., Brewster, MA. 78 pp. — ISBN 0-916275-00-2 (paperback). Price in the US: US \$ 9.50 net. — (Available from the SIO, Bilt-hoven). After S. Dunkle's Florida volumes, this is another commercial book on the Odon. of a US region. There are about 95 spp. in the Cape Cod area, Massachusetts. Over 60 of these are here described, their flight periods and ranges stated, and notes on their biology and behaviour provided. 39 spp. are illustrated in water-painting plates. The general chapters on odon. biology, collecting, conservation etc. give the book the character of a nice rounded of handbook for study and identification of the regional fauna.
- (7956) CORBET, P. [S.], 1991. [Obituary]. Cynthia Longfield. *Independent*, issue of July 5, p. 27. — (Dept. Zool., Univ. Edinburgh, West Mains Rd, Edinburgh, EH9 3JT, UK). Brief evaluation of her odonatol. work (born: 16-VIII-1896, London; deceased: 27-VI-1991, Cloyne; Hon. Ass. BMNH), with a portrait. For biography and bibliography cf. *Odonatologica* 4(1975): 55-59. Her contribution to odon. taxonomy is significant, and during the first 2 decades after World War II she provided the focus for work on British dragonflies.
- (7957) D'ANTONIO, C., 1991. Segnalazioni faunistiche italiane. 163. *Boyeria irene* (Fonsco-

- lombe, 1838) (Odonata: Aeshnidae). *Boll. Soc. ent. ital.* 123(1): 67. — (Via A. Falcone 386/B, I-80127 Napoli).  
Third record for Campania. Cf. also *OA* 7829.
- (7958) DIONNE, M. & C.L. FOLT, 1991. An experimental analysis of macrophyte growth forms as fish foraging habitat. *Can. J. Fish. Aquat. Sci.* 48(1): 123-131. (With Fr. s.). — (Dept Biol., Virginia Polytechn. Inst. & St. Univ., Blacksburg, VA 24061-0406, USA).  
It is demonstrated that macrophyte growth forms are not all similar in their effects on fish foraging. In the case of coenagrionid larvae, prey capture rates on pumpkinseeds foraging among *Scirpus validus* were 356% times greater than for *Potamogeton amplifolius*.
- (7959) DUNKLE, S.W., 1991. Florida's dragonflies. *Fla Wildlife* 45(4): 38-40. — (Int. Odon. Res. Inst., P.O. Box 1269, Gainesville, FL 32602-1269, USA).  
A nice, belletristic-style general article, with col. phot. and author's portrait. The author is Manager of the Int. Odon. Res. Inst. and one of the most prolific New World odon. students and writers.
- (7960) ENGELHARDT, E. & J. RUDDEK, 1991. Motivkatalog Libellen. *Insektenkurier* 28: 25-30; 29: 31-38. — (Second Author: Am Rüten 48, D(W)-2800 Bremen-33, FRG).  
Continuation of the work listed in *OA* 7914. It contains a checklist of all dragonfly post-stamps issued prior to Sept. 30, 1989 and to the extent they show dragonflies as the main motif and in a "natural" presentation. Stamps with stylized dragonfly motifs are not included. Taxonomic names, issue dates and some other technical details are provided. The checklist is followed by a systematic treatment (Zygoptera, Aeshnidae), giving facsimile reproductions of all the stamps. The work is to be continued.
- (7961) *FIELD TRIP HANDBOOK [of] the Eleventh International Symposium of Odonatology, Trevi (Perugia)*, 1991. Compiled by G. Carchini. Issued by the Societas Internationalis Odonatologica (S.I.O.), Roma. ii+6 pp., map incl. — (c/o SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven).  
Introduction (p. 1); — Mid-Symposium trips (pp. 1-2; Trasimeno and Alviano lakes); — Post-Symposium tour (pp. 2-4; Vico lake, Mignone R., etc.); — List of Odonata species from Latium and Umbria (p. 5); — Topographic map of Latium and Umbria (p. 6).
- (7962) FRANKOVIĆ, M., 1991. Novi nalazi vrste *Hemianax ephippiger* Burm. (Odonata: Aeshnidae) u Jugoslaviji. — New findings of *Hemianax ephippiger* Burm. (Odonata: Aeshnidae) in Yugoslavia. *Glasn. prir. Muz. Beograd* (B)46: 131-134. (Croatian, with Engl. s.). — (Dept. Anim. Physiol., Univ. Zagreb, P.O. Box 933, [YU]-41001 Zagreb, Croatia).  
The hitherto known records of *H. ephippiger* from the territory of the former Yugoslavia are reviewed, and 2 new records from Croatia are added. In view of the very teneral condition of a ♂ from Osijek it is tentatively suggested that the sp. may occasionally breed in the area.
- (7963) GARRISON, R.W., 1991. A synonymic list of the New World Odonata. *Argia* 3(2): 1-30. — (1030 Fondale St., Azusa, CA 91702-0821, USA).  
All the described New World taxa, as published prior to May 31, 1991, are listed along with annotations and comments on some of them including several taxonomic decisions. The listing of the *Argia* taxa is essentially different from what has been offered in the past, and in various other taxa attention is drawn to the respective work in progress by various workers. Generic synonyms and species misidentifications are not included in the present work.
- (7964) GOFFART, P. & F. DE KEULENEER, 1991. La fauna des libellules du domaine Solvay à La Hulpe. *Natur. Belges* 72(1) 31-39. — (First Author: Unité Ecol. & Biogéogr., Univ. Catholique Louvain, 4-5 pl. Croix-du-Sud, B-1348 Louvain-la-Neuve).  
The fauna of the Solvay area, Brabant Prov., S of Brussels, is described, with data on abundance, phenology and microdistribution of each of the 25 spp.



- (7965) *GOMPHUS*. Mededelingsblad van belgische libellenonderzoekers — Bulletin de liaison des odonatologues belges, Vol. 7, No. 1 (June, 1991) (Dutch & Fr.). — (c/o A. Anselin, KRIN, 29 rue Vautier, B-1040 Bruxelles; — P. Goffart, Lab. Ecol. & Biogeogr., UCLL, B-1348 Louvain-la-Neuve).  
Contains a Dutch (A. Anselin, p. 2) and a French (P. Goffart, pp.3-5) Editorial, several communications to the membership, and 2 scientific notes, viz. *De Knijf*, G.: [Dragonfly observations at Gerhagen] (pp. 9-11; Dutch); — Perscy, C.: Colonisation d'une mare artificielle par les odonates (pp. 13-15).
- (7966) GREINER-SCHUSTER, E., 1991. Auf der Suche nach der verlorenen Zeit. *Ökotest Mag.* 7: 16-18. — (Publisher: Mainzer Landstr. 147, D-6000 Frankfurt/Main-11, FRG).  
Deals mainly with H. Lohmann's political activities, but contains also references to the odonatol. work of this well-known German odon. taxonomist.
- (7967) *HAGENIA*. Mitteilungsblatt des Nationalen Büros der Internationalen odonatologischen Gesellschaft in der Bundesrepublik Deutschland und der Gesellschaft deutschsprachiger Odonatologen, No. 2 (Sept. 1, 1991). Edited by M. Schorr & U. Krüner. Distribution in Austria, Germany, Liechtenstein, Luxembourg and Switzerland by Mrs U. Krüner (Gelderner Str. 39, D(W)-4050 Mönchengladbach-4), all others by the SIO Central Office (P.O. Box 256, NL-3720 AG Bilt-hoven).  
With the current issue, the newsletter became a joint bulletin of the SIO National Office in Germany and of the German Odonatological Society. — In addition to various administrative communications, announcements, collaboration requests, etc., the issue (15 pp.) contains detailed book reviews of 4 German dragonfly books for children, a list of ca 30 available dragonfly films and slide collections, comprehensive bibliographies of M. Sc. and Ph. D works of various German universities, and a draft of the Constitution of the German Odonatological Society (GdO).
- (7968) HAMADA, K., 1991. *Tosa no Tombo*. — [*Dragonflies of Kochi Prefecture*]. Kochi Shimbunsha. 184 pp. — ISBN none. (Jap.). — (Distributor: Koshin-kigyo, 2-15, Hommachi 3-chome, Kochi, 780, JA; — Author: 16-21-4, Shin'yashiki 2-chome, Kochi, 780, JA).  
Excellent organized and superbly reproduced commercial book (softcover, 15-21 cm, price: Y 1600.-) on the 83 spp. of Kochi. The treatment of each sp. is presented on 2 opposite pp.: a brief text is supplemented with a field photograph, distr. map in Japan, phenology graph, ♂ and ♀ specimen photographs (in the style of the work listed in OA 5245) and with a drawing of the terminalia. Taxonomic and vernacular nomenclatures are used.
- (7969) HAYTER-HAMES, J., 1991. *Madam Dragonfly. The life and times of Cynthia Longfield*. Pentland Press, Edinburgh-Cambridge-Durham. xii+208 pp., frontispiece, endpiece + 62 photos excl., portrait on jacket. — ISBN 1-872795-20-X. — Price in the UK: £ 15.95 net. — (Available from the SIO, Bilt-hoven).  
A splendid monograph on Cynthia Longfield (1896-1991), one of the most remarkable British odonatologists of our times. She comes from an Anglo-Irish family who once held extensive lands in Co. Cork, Eire, and taught herself natural history, both from nature and from books — but never went to school. After the family home was burnt in the Irish Troubles, CL sailed for the Pacific in 1924, with a party of scientists researching the South Sea Islands. From then on she worked at the BMNH (London), or set off on long journeys throughout the 5 continents, collecting dragonflies, on which order she became a world authority. The "grand old lady of dragonflies" passed away on June 27, 1991. — Her (somewhat incomplete) odonatol. bibliography is appended (1929-1964, missing some of her papers and all of her important book reviews; her very last odonatol. papers were published in 1976 and 1979 in resp. *Odonatologica* 5: 35-36 and *Notul. odonatol.* 1: 75). Also no reference is made to the 3rd Int. Symp. Odonatol. (Lancaster, 1975), where she was on the Committee of Honour, and which was the last large international odonatol. meet-

- ing she attended and presented a paper to. — The Author is Cynthia's great-niece, herself an experienced writer.
- (7970) HOFFMANN, A., J. DRESSEL, G. BOCK-WINKEL & M. ELBERTZ, 1991. Bewertung stehender Oberflächengewässer unter Berücksichtigung der Amphibien- und Libellenfauna am Beispiel des Beckendorfer-Mühlenbachtals in Bielefeld. *Natur & Heimat, Münster* 51(2): 45-59. — (Naturschutz-Zentrum Ostwestfalen, Milserstr. 37, D-4800 Bielefeld-16, FRG). 17 odon. spp. are listed, Bielefeld, Westfalia, FRG.
- (7971) HOFFMANN, P., 1991. Libellen, fliegende Edelsteine an unseren Tümpeln! *Aquarium heute* 9(1): 39-41. — (Author's address not stated). General, with some photographs.
- (7972) ISHIZAWA, N., 1991. Characteristics and their significance of dimorphism in a dragonfly, *Sympetrum frequens*, (Odonata: Anisoptera). *Nature & Insects* 26(6): 26-33. (Jap., with Engl. title). — (1644-15, Yamaguchi, Tokorozawa, Saitama pref., 359, JA). [Abstract not available].
- (7973) ISHIZAWA, N., 1991. [The body color change in thermoregulation of *Sympetrum*]. *Insectarium, Tokyo* 28(4): 118-119. (Jap.; Author's Engl. translation is available from the Eds of *Odonatologica*). — (1644-15, Yamaguchi, Tokorozawa, Saitama Pref., 359, JA). Reversible, temperature-dependent colour change is experimentally evidenced in *Sympetrum darwinianum*, *S. frequens* and *S. parvulum*.
- (7974) KANO, K., 1991. [A note on the oviposition behaviour in *Somatochlora uchidai* in a temporarily dried-up pond]. *Gekkan-Mushi* 242: 38-39 (Jap.). — (5-19-17-601 Koishikawa, Bunkyo-ku, Tokyo, 112, JA). Field observations (during 3 min) on a single ♀ (Hayama-machi, Miura Peninsula, Kanagawa Pref., Honshu, Japan).
- (7975) KANO, K., 1991. [An observation on mating in *Epophthalmia elegans*, Ishigaki-jima, Okinawa, SW Japan]. *Gekkan-Mushi* 240: 36-37. (Jap.). — (5-19-17-601 Koishikawa, Bunkyo-ku, Tokyo, 112, JA). A note on the mating process.
- (7976) KANO, K. & F. KOBAYASHI, 1991. [A note on an accident during oviposition in *Aeshna nigroflava*]. *Gekkan-Mushi* 243: 37. (Jap.). — (Second Author: 1624-20 Hirakata, Koshigaya, Saitama, 343, JA). An ovipositing ♀ was grasped by the 8th abd. segm. by larval *Cybister japonicus* (Coleoptera), and consumed within 10 min. A phot. is provided.
- (7977) KLAUSNITZER, B., 1991. Entomologische Nachrichten und Berichte — quo vadis? *Ent. Nachr. Ber.* 35(1): 1-4. — (Sekt. Biowiss., Univ. Leipzig, Talstr. 33, D-7010 Leipzig, FRG). During 1957-1990, 80 odon. papers were published in *Ent. Nachr. Ber.*, representing 3% of the papers in this periodical and its forerunners, *Ent. Nachr.* and *Ent. Ber.*, Berlin. The figures for different journals and periods are as follows: *Ent. Nachr.*, 1957-1981: 15 (1.6%), *Ent. Ber.*, Berlin, 1957-1981: 20 (2.4%), *Ent. Nachr. Ber.*, 1982-1990: 45 (5.1%). Henceforth the journal will mainly concentrate on the fauna of Germany, Austria and Switzerland.
- (7978) [KUNZ], 1991. Keiljungfern an der Jagst entdeckt. *Naturschutz heute* 91(3): 41. — (Veinauerstr. 25, D(W)-7170 Schwäbisch Hall, FRG). *Gomphus vulgatissimus* and *Onychogomphus forcipatus* are recorded breeding in the Jagst valley, distr. Schwäbisch Hall, FRG. It is said these are the remains of an earlier fauna rather than fresh immigrant populations.
- (7979) LANDI, F., 1991. Segnalazioni faunistiche italiane. 164. *Sympetrum meridionale* (Selys, 1841) (Odonata: Libellulidae). *Boll. Soc. ent. ital.* 123(1): 67. — (Via G. Mameli 14, I-62100 Macerata). A good series is reported from Laghetto della Pieve, nr Macerata (1986, 1987), representing

the first record from the Marche, Italy.

- (7980) ***LIBELLULA***. Mitteilungsblatt der Gesellschaft deutschsprachiger Odonatologen (GdO), Vol. 9, Nos 3/4 (July 1991). — (c/o Mrs U. Krüner, Gelderner Str. 39, D(W)-4050 Mönchengladbach-4, FRG).  
*Buck, K.*: Nachweis von *Sympetrum pedemontanum* (Allioni, 1766) und *Sympetrum striolatum* (Charpentier, 1840) in einer Kreidegrube bei Itzehoe (Anisoptera: Libellulidae) (pp. 75-92); — *Trockur, B.*: Aktuelles, bodenständiges Vorkommen von *Epithea bimaculata* (Charpentier, 1825) im Saarland (Anisoptera: Corduliidae) (pp. 93-103); — *Soeffing, K.*: Die Aktivitätshöhe von *Leucorhina rubicunda* (L., 1758) und *Libellula quadrimaculata* L., 1758, als Mechanismus der Artentrennung am Gewässer (Anisoptera: Libellulidae) (pp. 105-112); — *Mauersberger, G.*: *Hemianax ephippiger* (Burmeister, 1839) und *Diplacodes lefebvrei* (Rambur, 1842) neu für die turkmenische Odonatenfauna (UdSSR) (Anisoptera: Aeshnidae, Libellulidae) (pp. 113-119); *Tiefenbrunner, W.*: *Sympetma fusca* (Vander Linden, 1820): Korrelation zwischen Flügelstellung und Lichteinfallswinkel in Abhängigkeit von der Temperatur (Zygoptera: Lestidae) (pp. 121-132); — *Jödicke, R.*: Die Bestandentwicklung von *Sympetrum pedemontanum* (Allioni, 1766) in Nordrhein-Westfalen während der 80er Jahre (Anisoptera: Libellulidae) (pp. 133-137); — *von Hagen, H.*: Biometrische Untersuchungen an Exuvien von *Orthetrum cancellatum* (L., 1758) (Odonata: Libellulidae) (pp. 139-144); — *Krüner, U.*: Eine Wasserfalle für Kleinlibellenlarven (pp. 145-149); — *Kappes, E., W. Kappes & G. Ihssen*: Jahreszeitlich frühes Auftreten von Odonaten 1989 am Neusiedler See (Burgenland/Österreich) mit einem Fund von *Hemianax ephippiger* (Burmeister, 1839) (Anisoptera: Aeshnidae) (pp. 151-155).
- (7981) ***LINDENIA***. Notiziario dell'Ufficio Nazionale Italiano della Società Odonatologica Internazionale, Roma, No. 16 (July 1, 1991). — (c/o Prof. Dr C. Utzeri, Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).  
 Contains some considerations on the (then forthcoming) 11th Int. Symp. Odonatol. (Trevi, Aug. 1991), a note on the SIO Library Xerox Service, a brief outline of the work of 2 Italian workers that have recently joined the SIO, a note on the work of Dr A. Cordero in Rome, and a brief obituary for the late R. Gambles. As decided at the Trevi Symposium, the 12th Int. Symp. Odonatol. (1993) will be convened in Osaka, Japan, while the location of the 13th (1995) meeting still remains open. This was not known at the time of publication of the current issue, therefore the relative information should be corrected accordingly.
- (7982) **LUGO, M.E. & A. FERNANDEZ B.**, 1991. Cambios en composicion y diversidad de la entomofauna del Rio Guey, Parque Nacional Henri Pittier, estado Arague, Venezuela. *Resum. Congr. venezol. Ent., Merida*, p. 69. — (Fac. Agron., Univ. Central Venezuela, Aptdo 4579, Maracay 2101-A, Venezuela). Human impact on the composition and diversity of the fauna of 7 insect orders in the Rio Guey is briefly reported. The majority of the spp. cited are referable to the odon.
- (7983) **MADRID DOLANDE, F.**, 1991. *Anax amazili* (Odonata: Aeshnidae) un poderoso depredador de alevines. *Resum. Congr. venezol. Ent., Merida*, p. 70. — (Estac. Piscicult., Univ. Centroccidental "Lisandro Alvarado", Aptdo 400, Barquisimeto, Est. Lara, Venezuela). The predatory propensities of larval *A. amazili* on young fish are described.
- (7984) **MAHATO, M. & D.M. JOHNSON**, 1991. Invasion of the Bays Mountain Lake dragonfly assemblage by *Dromogomphus spinosus* (Odonata: Gomphidae). *Jl. N. Am. benthol. Soc.* 10(2): 165-176. — (Second Author: Dept Biol. Sci., East Tenn. St. Univ., Johnson City, TN 37614, USA).  
*D. spinosus* larvae are "burrowing" dragonflies, which usually inhabit sand deposits in lotic systems. This sp. has recently invaded Bays Mountain Lake (Sullivan County, Tennessee, USA), where larvae now occupy widespread submersed macrophyte and allochthonous detritus habitats. It is now one of the more

abundant species in a relatively stable odon. assemblage. During the *Dromogomphus* invasion, there was a gradual decline in abundance of *Epitheca* (*Tetragoneuria*) *cynosura* (*Corduliidae*), the dominant anisopteran in that assemblage. Analyses of *Dromogomphus* and *Epitheca* numbers from 12 yr (1977-1989) of monthly sweep-net samples at fixed stations within each of 5 types of littoral zone habitat document trends in population size, suggest that both spp. have partially semivoltine life-histories with comparable phenology, and show overlap in habitat use between spp. as well as negative correlations of within-sample abundances for some habitats. — Gut contents of *Dromogomphus* collected in these sweep-net samples showed no change in diet over the 12-yr period. Predominant prey were midge larvae (56%), especially "burrowing" midges, and oligochaetes (34%). Analyses of fecal pellets produced by specimens of both *Dromogomphus* and *Epitheca* collected during 1988-1989 show that diets differed for both "small" and "large" instars. For both size categories, *Epitheca* tended to eat more microcrustaceans, but small larvae also ate more "miscellaneous arthropods" (including odon. larvae). — Comparing 1988-1989 *Epitheca* diets with those reported previously from 1978-1979 suggests that large *Epitheca* exhibited a dietary niche shift during the *Dromogomphus* invasion. Contemporary large *Epitheca* eat fewer "burrowing" midges and more oligochaetes and microcrustaceans than they did previously.

- (7985) *MARTINIA*. Bulletin de liaison des odonatologues de France. Vol. 7, No. 2 (June, 1991). — (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois d'Arcy).  
*Heidemann, H.*: Notes sur le comportement de quelques odonates (pp. 29-35); — *Lande-main, D.*: Observation d'*Oxygastra curtisi* (Dale) dans le département de la Mayenne (Odonata: *Corduliidae*) (p. 36); — *Coffin, J.*: Réductions alaires et malformations diverses affectant des odonates zygoptères (pp. 37-39); — *Grand, D.*: Les odonates de la Dombes et des régions voisines (Ain) (pp. 41-46); — *Papazian, M & P. Bence*: Sortie odonatologi-

que dans les Marais du Vigiérat (Bouches-du-Rhône) (pp. 47-48).

- (7986) *MAY, M.L.*, 1991. Dragonfly flight: power requirements at high speed and acceleration. *J. exp. Biol.* 158: 325-342. — (Dept Ent., New Jersey Agric. Exp.Stn, Cook Coll., Rutgers Univ., New Brunswick, NJ 08903, USA).  
 Most studies of insect flight deal primarily with hovering or with forward flight at constant, moderate speed. This paper reports investigations of flight characteristics that are especially relevant to the performance of dragonflies at high and/or changing velocity. Dragonflies were filmed in free flight in the field to determine velocity and acceleration. The power required for repeated acceleration is shown to be large, in some circumstances, relative to the estimated maximum available power and probable top power requirements for steady flight. Distributions of velocity and acceleration, and concomitant power requirements, differ markedly among spp., however. In addition, parasite drag was measured in winds of 2-7 ms<sup>-1</sup> and drag coefficients determined to be about 0.40 at Reynolds numbers greater than 10<sup>3</sup>. This result implies substantially lower power requirements at high speeds, compared to previous estimates. Other aspects of power output, including the probable magnitude of inertial power, are considered in relation to published data.
- (7987) *MONNERAT, C.*, 1991. Etude faunistique des odonates du canton du Jura et des zones limitrophes. *In*: 25. Wettbewerb "Schweizer Jugend forscht", p. 8. Schweizer Buchzentrum, Olten. [Abstract only]. — (Chemin des Noisetiers 2, CH-2824 Vicques).  
 Indicative description of the work (without species list), in which 51 spp. are listed for canton Jura, Switzerland, incl. *Epitheca bimaculata* (numerous exuviae), *Orthetrum albistylum*, etc. — The work had received the highest national award in the "Schweizer Jugend forscht" contest.
- (7988) [*MOORE, N.W.*], 1991. [Obituary]. Cynthia Longfield. *Times*, issue of July 9. — (Farm House, Swavesey, Cambridge, CB4, 5RA,

UK).

The author is one of her close associates, therefore the obituary is particularly valuable for a number of first-hand anecdotes it contains. Unfortunately, there is also a small error: though having published extensively on the odon. of Angola, Miss Longfield did never visit that country in person. — Cf. also *OA* 1956, 1969.

- (7989) MOORE, N.W., 1991. Observe extinction or conserve diversity? *In*: N.M. Collins & J.A. Thomas, [Eds], *The conservation of insects in their habitats*, pp. 1-8, Academic Press, London, ISBN 0-12-181370-3. — (Farm House, Swavesey, Cambridge, CB4 5RA, UK).

It deals largely with odon. conservation problems in the world and in Britain. It is urged that entomologists should not delay in giving total support to measures designed to set up large reserves of self-perpetuating habitats, particularly so in tropical rain forest, whose wealth in insect spp. is well known. It is emphasised that the risk of doing the wrong thing through lack of scientific knowledge is much smaller than the risk of delaying.

- (7990) MORRIS, R.G., P.S. JOHNSON, J.H. KENNEDY & F.E. HAMBLETON, 1991. The impact of juvenile bluegill sunfish predation on macroinvertebrates in 1.95 m<sup>3</sup> microcosms. *Bull. N. Am. benthol. Soc.* 8(1): 104-105. [Abstract only]. — (Dept Biol., Univ. North Texas, Denton, TX 76203, USA).

[Verbatim]: The predation impacts of young-of-the-year *Lepomis macrochirus* on macroinvertebrates were studied in 1.95 m<sup>3</sup> outdoor microcosms from June to November, 1989. Microcosms with and without bluegill were established in order to partition predation impacts. Epibenthic colonization was evaluated using artificial substrates. Emergence was studied using semi-submerged emergence traps and insect exuviae collection. Refugia which excluded bluegill were present in all microcosms. Bluegill were shown to impact insect emergence and epibenthic colonization. Groups directly affected included Odon. (Libellulidae, Zygoptera), Ephemeroptera (Caenis, Callibaetis) and Diptera (Chaoborus,

Tanypodinae, Chironominae). Indirect fish predation effects were observed on epibenthic colonizing oligochaetes and Hydracarina populations. Larger sample size and better taxa richness numbers were gained by exuviae collection than emergence traps.

- (7991) MOSSAKOWSKI, D., 1991. Bremer Landschaft — Refugium vieler Tierarten. Evolutionsökologische Untersuchungen an Tieren des Feuchtgrünlandes. *Impulse Forsch.* 1991(11): 51-53. — (Fachber. Biol./Chem., Univ. Bremen, Bremen, FRG).

The note deals mainly with Carabidae (Coleoptera). With reference to *Calopteryx splendens* it is stated that in consequence of the Unterweser R. regulation the difference between the high and low tide increased also in the Wümme R. to the extent of precluding dragonfly life there (Bremen area, FRG).

- (7992) MULLIÉ, W.C., P.J. VERWEY, A.G. BERENDS, F. SÈNE, J.H. KOEMAN & J.W. EVERTS, 1991. The impact of Furadan 3G (carbofuran) applications on aquatic macroinvertebrates in irrigated rice in Senegal. *Arch. environ. Contam. Toxicol.* 20(2): 177-182. — (Dept Toxicol., Agric. Univ., P.O. Box 8129, NL-6700 EV Wageningen).

The results from both bioassay and population sampling indicate that even such moderately sensitive taxa as larval odon. are declining in abundance under field conditions. The reduction in odon. may have resulted from predation of affected individuals by (unaffected) predators.

- (7993) NOVELO GUTIERREZ, R., Los odonatos de la reserva de la biosfera de Sian Ka'an, Quintana Roo, México (Insecta: Odonata). *In*: *Diversidad biológica en la reserva de la biosfera de Sian Ka'an Quintana Roo, México*, pp. 257-274. [Publisher's name & address not stated]. — (Inst. Ecol., A.C., Apartado postal 63, MX-9100 Xalpa, Veracruz). Annotated list & key of 60 spp.

- (7994) OGAWA, M., 1991. *Tombo to nakayoshi*. 33 pp. (book), 16 pp. (notebook). Municipal Authority, Nishinomiya City. (Jap.). — (Envi-

- ron. Div., Nishinomiya City Office, 10-3, Rokutanji-cho, Nishinomiya, Hyogo Pref., 662, JA).  
Revised (2nd) ed. of the work listed in OA, listing also spp. recorded not until 1990, such as e.g. *Ictinogomphus pertinax*, etc.
- (7995) OTT, J., 1991. *Populationsökologische Untersuchungen an Grosslibellen (Anisoptera) unter besonderer Berücksichtigung der Edellibellen (Aeshnidae)*. Diss. Univ. Kaiserslautern. xii+164 pp. — (Available from the S.I.O., Bilkthoven, at Hfl. 45.- net).  
The work is mainly (but not entirely) concerned with *Anaciaeschna isosceles*, *Anax imperator*, *Aeshna mixta*, *Brachytron pratense*, *Caliaeschna microstigma* and *Cordulegaster boltonii*, which were studied at various localities in Germany and Macedonia (Yugoslavia). Among the aspects considered in considerable detail are autecology, comparative ethology, interspecific competition, population biology and some conservation & management aspects.
- (7996) PETERS, G., 1991. Die Schattenlibelle auf Kreta (*Boyeria cretensis* spec. nov.) und die Monophylie der "Gattung" *Boyeria* McLachlan, 1896. (Odonata Anisoptera, Aeshnidae). *Dr. ent. Z.* (N.F.) 38(1/3): 161-196. (With Engl. s.). — (Zool. Mus., Mus. Naturk., Humboldt Univ., Invalidenstr. 43, D(O)-1040 Berlin, FRG).  
Phenetic analysis and biostatistic comparison of *B. irene* adult and larval specimens from the westmediterranean area with those from Crete (Greece) led to the conclusion that the Cretan population represents a distinct sp., described here as *B. cretensis* sp. n. (holotype ♂: Crete/Megalopot/Preveli; allotype ♀: no locality; 6 paratypes). A phylogenetic interpretation of the differences between the 2 spp. (apomorphic trends in *B. irene*) does not indicate that the Cretan population originates from the West-mediterranean. The 6 extant spp. of the genus (3 pairs of sister spp.) constitute a morphyletic taxon, the affinities of which to the other aeshnids are still unknown.
- (7997) PROGRAM AND GENERALITIES [of] the
- Eleventh International Symposium of Odonatology, Trevi (Perugia)*, 1991. Compiled by C. Utzeri. Issued by the Societas Internationalis Odonatologica (S.I.O.), Roma. ii+22 pp. — (c/o SIO Central Office, P.O. Box 256, NL-3720 AG Bilkthoven).  
Preface (p. 1); — Acknowledgements (p. 1); — Committee of Honour (p. 1); — Members of Honour of the S.I.O. attending the Symposium (p. 1); — Symposium Officers (p. 2); — Financial support (p. 3); — Patronage (p. 3); — General information (pp. 4-5); — Program (pp. 6-11); — List of participants (pp. 12-21).
- (7998) REHFELDT, G.E., 1991. Site-specific mate-finding strategies and oviposition behavior in *Crocothemis erythraea* (Brullé) (Odonata: Libellulidae). *J. Insect Behav.* 4(3): 293-303. — (Zool. Inst., Techn. Univ., Pockelsstr. 10a, D(W)-3300 Braunschweig, FRG).  
Mate-finding strategies and adaptations in pre- and postcopulatory behaviors to avoid male disturbance were studied at 2 different sites. At ponds without perch sites males patrolled with temporal partitioning of the limited oviposition site and male-male disputes were rare. The arrival rate of females was high. At temporary marshes with dense emergent vegetation the oviposition sites were widely distributed. Males mainly perched and interacted with longer disputes. At both types of habitats with high male densities females showed a similar number of copulations per visit and oviposition durations. Postcopulatory behavior to avoid male disturbance and to decrease remating of the female differed in both sexes. At the ponds with patrolling males the probability of remating in guarded and unguarded ovipositions was similar and higher than at the marshes. At the marshes 78% of rematings occurred when the guarding male was still involved in disputes with the previously disturbing male. At the ponds females hovered before escaping successfully from approaching males and they changed to another oviposition site where they continued oviposition. Females at the marshes remated after surprise attacks by neighboring males.
- (7999) REHFELDT, G., P. SCHRIDDE & F.

- SUHLING, 1991. Inventaire et protection des odonates du Canal de Vergières (B.D.R.). *Faune Provence* 12: 4-9. (With Engl. s.). — (Zool. Inst., Techn. Univ., Pockelsstr. 10a, D(W)-3300 Braunschweig, FRG). 39 spp. (23 autochthonous), recording during 1986-1990 at the Canal de Vergières, Provence, France are listed, the adult phenology of 22 spp. is stated, and data are presented on larval colonisation. Larval *Ophiogomphus cecilia* is for the first time recorded from southern France.
- (8000) ROBINSON, J.V., L.R. SHAFFER, D.D. HAGEMER & N.J. SMATRESK, 1991. The ecological role of caudal lamellae loss in the larval damselfly, *Ischnura posita* (Hagen) (Odonata: Zygoptera). *Oecologia* 87(1): 1-7. — (Dept Biol., Univ. Texas, Arlington, TX 76019, USA). Damselfly larvae may autotomize and regenerate any of their 3 caudal lamellae. At least one missing or regenerating lamella was evident in 50.1% of field collected *I. posita* larvae. Lamellae loss during molting is very infrequent (1 out of 117 recorded molts). Laboratory trials indicate that conspecifics remove lamellae and that this process is density dependent. The percentage of larvae losing lamellae during 24 h trials ranged from 73.5 at the highest density tested to 17.3 at the lowest density. *I. posita* larvae are cannibalistic. The presence of lamellae reduces an individual's chance of being cannibalized. More than twice as many final instar lamellae-less larvae were cannibalized during 24 h trials than analogous individuals having 3 lamellae at experimental initiation. Costs are also associated with lamellae autotomy: (1) Although individuals without lamellae can swim they are more reluctant to release from a wooden stalk and swim when threatened (9% release) than are larvae with lamellae (29% release). Since swimming is part of their repertoire of anti-predator behaviors this behavioral shift should be detrimental. (2) Caudal lamellae function in O<sub>2</sub> uptake. Trials were conducted with larvae having and not having lamellae in an experimental horizontal oxygen gradient system. Relative to larvae without lamellae, those with lamellae preferred deeper depths at PO<sub>2</sub> values greater than 70 torr. Many lamellae-less larvae distributed themselves at the water surface throughout the range of PO<sub>2</sub> values tested. Differential depth distribution between larvae with and without lamellae is highly significant ( $P < 0.01$ ).
- (8001) ROWE, R.J., 1991. Larval development and emergence in *Hemianax papuensis* (Burmeister) (Odonata: Aeshnidae). *J. Aust. ent. Soc.* 30: 209-215. — (Dept Zool., James Cook Univ., Townsville, Qld 4811, AU). *H. papuensis* was raised in the laboratory from oviposition to pharate adult in 240 days. Changes in external morphology during development are described and illustrated. Seasonality and emergence data indicate that in New Zealand development in the field is much slower than in the laboratory.
- (8002) SAMRAOUI, B., 1991. *Chouatanes ou la poursuite des damoiselles*. Cent. Cult. Franc. & Lab. Ecol. Anim., Univ. Annaba, Annaba. 4 pp. — (4 rue Hassi-Beida, Annaba, Algeria). This is the programme brochure of a Dragonfly Exhibit (June 24 - July 10, 1991), organised by Dr B. Samraoui, in collaboration with the Centre Culturel Français and the Laboratoire d'Ecologie Animale, Univ. d'Annaba, in Annaba, Algeria. Specimens and photographs were shown of local spp., with emphasis on the fauna of the Sahara and the North African endemic taxa. Also shown was the odon. life history, and documentation on the Annaba odon. habitats and their conservation. In the framework of the exhibit, there was a slide program, by S. Benyacoub & B. Samraoui, titled "Les libellules et leurs biotopes", and a field trip was organised to some odon. habitats in the Annaba area. -- This was the first odonatological "event" ever organised in Africa and/or in the Arab world.
- (8003) SCHMID, R., 1991. Vorkommen der Westlichen Keiljungfer (*Gomphus pulchellus*) in einem Kieskühlengewässer am Rande des Wittmunder Waldes. *Beitr. Vogel- Insektenwelt Ostfrieslands* 51: 12. — (Weserstr. 1, D(W)-2960 Aurich, FRG). A small population (ca 15 ♂ & ♀; June 1991) is

briefly described (Ostfriesland, FRG).

- (8004) [SCHWEIZERISCHER BUNDESRAT], 1991. *Verordnung über den Natur- u. Heimatschutz (NHV), vom 16. Januar 1991*. Eidg. Drucksachen u. Materialienzentrale, Bern. 20 pp. — (Available from the publisher: CH-3000 Bern).

The Act is operative since Feb. 1, 1991. Under Art. 20(2) and App. 3, all odon. spp. in Switzerland are placed under legal protection. — The list of protected taxa has also appeared in *Ent. Ber. Luzern* 25(1991): 123-124.

- (8005) SEKIZAWA, N., 1991. [Sympetrum e. eroticum eggs hatched in autumn]. *Nature & Insects* 26(2): 28. (Jap.). — (1644-15 Yamaguchi, Tokorozawa, Saitama, 359, JA). Eggs deposited by a ♀ in a triangle on Aug. 26, hatched at room temperature on Oct. 27.

- (8006) SELYSIA. Newsletter of the Societas Internationalis Odonatologica and of the U.S. National Office, Vol. 20, No. 2 (Sept. 1, 1991). — (c/o Dr D.M. Johnson, Dept Biol. Sci., East Tennessee St. Univ., Box 23580 A, Johnson City, TN 37614-0002, USA).

Careful readers of *OA* had probably noticed abstracts of the "primary" articles on which many of the 17 notes in the current issue are based. The following are the original notes: *Corbet, P.S.*: Further comments on suppression of the yellow fever mosquito by augmentative release of dragonfly larvae (p. 7); — *Kiauta, B. & M. Kiauta*: Swiss radio broadcast on F. Ris (p. 9); — and *S.W. Dunkle*: Dragonfly classes (p. 9). — In addition to a list of 6 recent odonatol. PhD dissertations and various notifications, there are 2 announcements of important odonatol. meetings, viz. (1) Second Neotropical Odonatologist Meeting (Los Tuxlas Field Station, Mexico, 13-18 July 1992; contact E. Gonzalez-S., Dept Zool., Inst. Biol., UNAM, Apto Postal 70-153, MX-04510 Mexico, D.F.), and (2) Annual Meeting of the North American Benthological Society, with a special session on "Odon. Ecol." (Louisville, K.Y. USA, 26-29 May 1992; contact the Ed. of *Selysia*).

- (8007) SHIMIZU, N., 1991. [Two examples of dragonflies eaten by fish]. *Nature & Insects* 26(2): 34. (Jap.). — (2-15 Sanmei, Tokohama, Oigun, Fukui, 919-22, JA). *Nihonogomphus viridis* and *Orthetrum albistylum speciosum*; the fish spp. not identified with certainty.

- (8008) SMITH, B.P. & W.J. COOK, 1991. Negative covariance between larval *Arrenurus* sp. and *Limnochares americana* (Acari: Hydrachnidia) on male *Leucorrhinia frigida* (Odonata: Libellulidae). *Can. J. Zool.* 69(1): 226-231. (With Fr. s.) — (Biol. Dept, Ithaca Coll., Ithaca, NY 14850, USA).

Numbers of larval *Arrenurus* sp. and *L. americana* mites, parasitic on adult males in a population of *L. frigida*, were found to be negatively correlated. The 2 mite spp. did differ in their seasonality, but a strong negative covariance remained even when analyses were run separately on data grouped by day. When dragonflies were separated into teneral and sexually mature males, almost all newly emerged males were heavily parasitized by *Arrenurus* sp. and rarely parasitized by *L. americana*, whereas males holding reproductive territories were almost always heavily parasitized by *L. americana* but carried reduced loads of *Arrenurus* sp. When territorial males were subdivided dependent on presence or absence of *Arrenurus* sp., the dragonflies with *Arrenurus* were significantly less heavily parasitized than those without *Arrenurus* sp. Through the above partitioning of data, plus recapture of previously marked dragonflies, it was established that the negative covariance between mite taxa reflects the differences in host discovery: *Arrenurus* sp. attaches to dragonflies during the host's emergence from the water, whereas *L. americana* attaches to males while they defend reproductive territories at the water's margin. The age-correlated differences in infestation of dragonfly by mites could be a valuable method for determining relative age within odon. populations.

- (8009) STAGNOLI, P., M. MAIER & M. KAUFMANN, 1991. Oekologische Untersuchungen an Libellen im Zürcher Oberland. *In*: 25.



Wettbewerb "Schweizer Jugend forscht", p. 48, Schweizer Buchzentrum, Olten. — (First Author: Talweg 120, CH-8610 Uster; — Third Author: Bruggächerstr. 20, CH-8617 Mönchaltorf).

Comprehensive summary of the work listed in OA 7846, but the authors' sequence is here different.

- (8010) SUNDARAM, K.M.S., S.B. HOLMES, D.P. KREUTZWEISER, A. SUNDARAM & P.D. KINGSBURY, 1991. Environmental persistence and impact of diflubenzuron in a forest aquatic environment following aerial application. *Arch. environ. Contam. Toxicol.* 20(3): 213-221. — (Forest Pest Manag. Inst., 1219 Queen St. E, Sault Ste. Marie, Ont., P6A 5M7, CA).

Dimilin® WP25 (diflubenzuron) was applied at a rate of 70 g active ingredient (AI) in 10.5 and 2.5 l/ha to 3 spray blocks in a mixed boreal forest near Kaladar, Ontario, Canada. Water sediment, and aquatic plants were collected from 2 ponds and a stream at intervals up to 30 days post-treatment for analysis of diflubenzuron (DFB) residues. The duration of detectable residues was different for each substrate, but in all cases was less than 2 weeks. Zooplankton and benthic invertebrate populations were monitored for up to 110 days post-spray in two ponds in the high volume rate block and in control ponds. Significant mortality occurred in 2 groups of caged macroinvertebrates (amphipoda and immature corixidae) 1-6 days after the ponds were treated with Dimilin. 3 taxa of littoral insects (Caenis, Celithemis and Coenagrion) were significantly reduced in abundance in the treated ponds 21 to 34 d post-treatment, but recovered to pre-treatment levels by the end of the season. Of the 6 remaining groups studied, only immature corixidae may have been slightly affected by treatment. Zooplankton (cladocera and copepoda) populations were reduced 3 days after treatment and remained suppressed for 2-3 months.

- (8011) TERZANI, F., 1991. Segnalazioni faunistiche italiane. 165. Trithemis annulata (Palisot de Beauvois, 1805) (Odonata: Libellulidae) *Boll.*

*Soc. ent. ital.* 123(1): 67-68. — (Mus. Zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).

1 ♂, Lago Boraficero nr Monterotondo Maritimo, 14-IX-1990, representing the first record of this African sp. so far N in Italy (Toscana).

- (8012) TSUDA, S., 1991. *A distributional list of world Odonata*. 2nd ed. Privately published, Osaka. x+362 pp. — Price in Japan: Y 5800.- net. Available from the Author (7-17-9, Habikigaoka, Habikino-shi, Osaka Pref., 583, JA); outside Japan distributed by the SIO, Bilthoven, at Hfl. 85.- net (price subject to variations in exchange rate).

This is a revised, updated and greatly enlarged edition of the work listed in OA 5447, containing over 200 spp. & sspp., as published up to and incl. June 1, 1991, and which could not be listed in the previous edition. Among the various novelties and improvements, the indices to genus-/species-group names and of the synonyms will be particularly useful. This remains the sole work presenting regional and country faunal lists, and is as such absolutely indispensable. The long list of collaborating experts, such as e.g. Dr R.W. Garrison (New World), Dr M. Hämäläinen (SE Asia), Dr J. Legrand (Africa) Dr J.A.L. Watson (Australia), etc. lends an additional authority to this excellent book.

- (8013) VAN TOL, J., 1991. *EUPHAEA, a program for the management of data in relation to taxonomic names in zoology illustrated with a database of the Odonata of the world*. Handout 11th Int. Symp. Odonatol., Trevi, 2 pp. — (Postbus 24, NL-2250 AA Voorschoten). Description of the database operation at RMNH, Leiden, the Netherlands.

- (8014) VELTMAN, A., 1991. Aas-etende libellen. — [Carion-eating dragonflies]. *Ent. Ber., Amst.* 51(7): 98-99. (Dutch). — (Schimmelpenninckstraat 23, NL-6904 BN Zevenaar).

The behaviour is described of an "Aeshna-like" dragonfly, seen on 2 different days tearing at and feeding on a dead slug on a metalised road.

- (8015) VOLKMANN, T., 1991. Libellen (Odonata) aus der Ural-Emba-Niederung (NW-Kasachstan). *Ent. Nachr. Ber.* 35(2): 109-116. (With Engl. & Fr. s's). — (Specker Str. 61) D(O)-2060 Waren/Müritz, FRG). 19 spp. collected during Aug.-Sept., 1989 in the Aksai area, Kazakhstan, USSR, are listed along with notes on the habitats, and brief discussion of biogeographical, bionomical and ecological aspects of the fauna.
- (8016) VON ROSEN, G., 1991. *Agrian splendens* pfeifferi Götz, ein Synonym von *Calopteryx xanthostoma* (Charpentier). *NachrBl. bayer. Ent.* 40(2): 61-62. — (Schäussburgerstr. 20, D(W)-8000 München-82, FRG). The specimen, labelled "Faro 1884", Portugal, and described by W.H.J. Götz (1923, *Mitt. münch. ent. Ges.* 13: 37) as *Agrian splendens* pfeifferi, deposited in the Zool. Staatssamml. München, has been re-examined and the synonymy with *Calopteryx xanthostoma* established.
- (8017) WATSON, J.A.L., 1991. The Australian Gomphidae (Odonata). *Invertebr. Taxon.* 5: 289-441. — (Div. Ent., C.S.I.R.O., P.O. Box 1700, Canberra, A.C.T., 2601, AU). The Australian Gomphidae belong in the subfam. Ictinogomphinae and Gomphinae. The Ictinogomphine spp. are placed in the widespread genus *Ictinogomphus* Cowley: *I. australis* (Sel.), *I. dobsoni* (Watson), and *I. paulini* sp. n. The gomphine genera are endemic, and fall into 2 groups, the Hemigomphus and Austrogomphus groups. The first contains Hemigomphus Sel. [*H. comitatus* (Tillyard), *H. gouldii* (Sel.), *H. heteroclytus* Sel. (type sp.), plus 4 new spp., *H. atratus*, *H. cooloola*, *H. magela*, *H. theischingeri*], *Armagomphus* Carle [type- and only sp. *A. armiger* (Tillyard)] and the new gen. *Odontogomphus*, comprising 2 new spp., *O. donnellyi* (type sp.) and *O. longipositor*. The second includes Antipodogomphus Fraser [*A. acolythus* (Martin), *A. hodgkini* Watson, *A. neophytus* Fraser, *A. proselythus* (Martin) (type sp.) plus 2 new spp.: *A. dentosus*, *A. edentulus*], and Austrogomphus Sel., divided into 5 subgen., Austrogomphus Sel. [*A. angeli* Tillyard, *A. arbustorum* Tillyard, *A. australis* Dale, *A. collaris* Hag. *A. cornutus*, sp. n., *A. doddi* Tillyard, *A. guerini* (Rambur) (type sp.), *A. mjobergi* Sjöstedt, *A. ochraceus* (Sel.) and *A. pusillus* Sjöstedt], Austroepigomphus Fraser, stat. nov. [*A. melaleuca* Tillyard, *A. praeruptus* (Sel.) (type sp.)], plus 3 new subgen., Pleiogomphus [*A. amphiclitus* (Sel.) (type sp.), *A. bifurcatus* Tillyard, *A. prasinus* Tillyard, plus *A. divaricatus* sp. n.], Xerogomphus [*A. gordonii* Watson, *A. turneri* Martin (type sp.)], and Zephyrogomphus [type- and only sp. *A. lateralis* (Sel.)], Lectotypes are designated for Hemigomphus heteroclytus Sel. and Antipodogomphus neophytus Fraser, and neotypes for Austrogomphus gouldii Sel. and Austrogomphus collaris Hag. Data are provided on the larvae of endemic genera, and on the distributions and habitats of spp., all of which are keyed.
- (8018) WENDLER, A. & J.-H. NÜSS, 1991. *Libellen: Bestimmung, Verbreitung, Lebensräume und Gefährdung aller Arten Nord- und Mitteleuropas sowie Frankreichs unter besonderer Berücksichtigung Deutschlands und der Schweiz*. Dt. JugendBd Naturbeob., Hamburg. vii+129 pp. — ISBN 3-923376-15-4. — Price in Germany: DM 10.- net. — Available from the S.I.O., Biltoven. — (Publishers: Deutscher Jugendbund für Naturbeobachtungen, Mühlendamm 84a, D(W)-2000 Hamburg-76, FRG). The first dragonfly identification key was published by the German Youth Federation for Nature Observation in 1965. It had been prepared by F. Ringe and H. Lohmann, and appeared in *Jb. dt. JugendBd. Naturbeob.* 1964/65: 169-212. The 250 reprints were provided with an attractive cover and distributed commercially among the membership. Since then, D. Glitz (1970), H. Stobbe (1976, 1979), B. Diehl & P. Boye (1981) and P. Boye, G. Ihssen & H. Stobbe (1982) prepared numerous revised editions (cf. *OA* 3949). — The present book is not merely a revised and updated version of the classical work, but rather a completely new publication (as apparent also from the very informative title!). The authors have departed from the original scope of an (adult)

key for the German fauna, and have produced a modern, rounded off monograph, covering the taxa from France to northern and north-eastern Europe, with emphasis on the Central European fauna. Almost all figs are new, European distribution maps are added for each sp., the status of all spp. is specified for the West German states and for Switzerland, and a badly needed, authoritative checklist is provided for the regional fauna. The brief general chapters on biology, threat, conservation, collecting, observation techniques and on nomenclature, and a good regional (selected) bibliography make the book an adequate, all-round tool for young workers. The authors were assisted by numerous well known German workers, and by a number of outstanding foreign specialists, such as e.g. Dr G. Lehmann

(Austria), Drs A. Maibach and H. Wildermuth (Switzerland) and G. Sahlen (Sweden). — Considering the wealth of the presented information, the price appears truly "symbolical!"

- (8019) ZESSIN, W., 1991. Bemerkenswerte Strukturen im Flügelgeäder von Libellen (Insecta, Odonata) aus palaeontologischer Sicht. *Ent. Nachr. Ber.* 35(1): 55-59. (With Engl. & Fr. s's). — (Lübecker Str. 30, D-2754 Schwerin, FRG).

The atavistic structures in the median cell of *Aeshna crenata* and a "second pterostigma area" in *Libellula quadrimaculata* are reported and interpreted in terms of structures occurring in the Palaeozoic and Mesozoic odon. taxa.