# ODONATOLOGICAL ABSTRACTS

## 1972

(7731) YOUSUF, M., 1972. *Taxonomic studies of Anisoptera (Odonata) of West Pakistan.* PhD diss. Univ. Agric., Faisalabad. viii+125 pp., 13 pls, 1 map excl. — (Dept Ent., Univ. Agric., Faisalabad, Pakistan.
46 spp. from Pakistan (formerly "West Pakistan") are described and keyed, among which the following are introduced as new: Cordulegastridae: Kuldanagaster pakistanica gen. n., sp. n.; — Gomphidae: Anormogomphus exilocorpus sp. n., Anisogomphus vulvalis sp. n., Ophiogomphus caudoforcipus sp. n., Ictinogomphus aloquopterus sp. n., I. pugnovittatus sp. n.; — Libellulidae: Trithemis parviaurora sp. n., T. trimaculata sp. n., Sympetrum aurigineum sp. n., S. robustum sp. n., S. jamrudensis sp. n., and Orthetrum flavum sp. n. — The first of these was published in the paper listed in *OA* 1496, all the other names remain unaivailable (ICZN, Art. 9/11).

## 1979

(7732) LANG, G., G. REICH & M. REICH, 1979. Red area "Kiesgrube" im Kreis Ulm. *Naturk. Beitr. DJN* 1979(4): 24-29. — (Third Author: FB Biol./Naturschutz, Univ. Marburg, Lahnberge, D-3550 Marburg/Lahn, FRG).
15 odon. spp. are listed from a Nature Conservancy gravel pit, which is said to represent the best wetland habitat in the city of Ulm area, FRG.

(7733) [LIPPOLD, P.C.], 1979. *Guidelines for integrated control of rice insect pests.* FAO, Rome. viii+115 pp. — [FAO Plant Production & Protection Pap. 14]. — (Available from : Sales Sect., FAO, Via delle Terme di Caracalla, I-00100 Roma).
The odon. are mentioned as predators on rice leafhoppers, rice gall midge, rice stem borers and on rice defoliators. The spp. listed are: Agriocnemis pygmaea, A. dabreui, Ceriagrion olivaceum, Ischnura senegalensis and Aciagrion occidentale.

## 1981

(7734) MATTHEY, R., 1981. Quelques souvenirs. [Fascicule-jubilé pour le 80e anniversaire du Prof. Dr. Jacques de Beaumont]. *Mitt. schweiz. ent. Ges.* 54(4): 313-315. — (Inst. Zool., Univ. Neuchâtel, CH-2000 Neuchâtel).
Contains a portrait. For the obituary cf. *OA* 7740.

## 1982

(7735) RAWAT, S.N. & M.C. DIWAKAR, 1982. Survey of natural enemies of paddy insect pests in Chhatisgarh (Madhya Pradesh), India. *Int. Rice Res. Newsl.* 7(1): 13-14. — (First Author: Central Surveillance Stn, Bilaspur, Madhya Pradesh, India).
"Heigh prevalence" of Zyg. and Anis. predators is stated for 1975-1980, but no spp. are mentioned.

## 1983

(7736) ADAMOVIĆ, Ž. & L. ANDJUS, 1983. Odonata na području Obedske Bare. — [Odonates in the area of the Obedska Bara]. *In:* Zaštita, uredivanje i unaoredjenje Obedske bare, pp. 47-50. Pokrajinsi zavod za zaštitu prirode, Novi Sad. (Serbian). — (First Author: Inst. Med. Res., P.O. Box 721, YU-11001 Beograd).
From the Obedska Bara marsh, Serbia, 34 spp. are recorded and the fauna is briefly discussed.

(7737) ALI, M.A., 1983. *Studies on population and feeding habits of dragonflies on insect pests of cotton.* M. Sc. thesis, Univ. Agric., Faisalabad. x+29 pp. — (Dept Ent., Univ. Agric., Faisalabad, Pakistan).
3 experimental cotton plots at the Univ. Campus of Faisalabad, Pakistan, are frequented by Brachythemis contaminata, Orthetrum sabina, Crocothemis servilia and Pantala flavescens. Fed by hand in the laboratory, the adults of these consumed on average, within 12 h, the following numbers of resp. cotton jassids, whiteflies, aphids and thrips: B. contaminata (162.00, 221.99, 204.66, 264.83), O. sabina (178.16, 235.83, 231.33, 326.83), C. servilia (168.83, 226.33, 201.83, 275.50) and P. flavescens(91.49, 131.16, 109.33, 142.00). The females of all spp. consumed much higher numbers of prey than the males.

(7738) JELENKOVIĆ, V., 1983. *Fauna Odonata Lonskog polja.* — [*Odonate fauna of the Lonsko Polje*]. M. Sc. thesis, Univ. Zagreb. iv+52 pp. (Croatian). — (c/o Dr M. Franković, Dept Anim. Physiol., Univ. Zagreb, P.O. Box 933, YU-41001 Zagreb, Croatia).
21 spp. are listed from the Lonja R. lowlands, E of the city of Sisak, central Croatia, and the biogeographic composition of the fauna is discussed. — For Leucorrhinia caudalis from this area (and which is not mentioned in the present work) cf. *OA* 7420.

(7739) SIMEONOV, S.D., 1983. Novi materiali v'rhu hranata na kukumyavkata (Athene noctua [Scop.]) v B'lgariya. — New data on the diet of the little Owl (Athene noctua [Scop.] in Bulgaria. *Ekologiya, Sofia* 11: 53-60. (Bulg., with Russ. & Engl. s's). — (Biol. Fac., Univ. Sofia "Kl. Ohridski", BG-1421 Sofia).
Data on the diet were collected during 1968-1980, from 24 localities in Bulgaria. 62 animals spp. or groups were identified, incl. the "odon.".

## 1985

(7740) BESUCHET, C., 1985. [Nécrologie]. Jacques de Beaumont (1901-1985). *Bull. romand Ent.* 3(2): 161-163. — (Author's address not stated).
A brief biography, appreciation of work and a portrait are given of this Swiss entomologist (born: Sept. 26, 1901, Geneva; deceased Sept. 29, 1985; Professor at the Univ. of Lausanne, Director of the Nat. Hist. Mus. Lausanne). Most of his work is in the field of Hymenoptera, but his 1941 odon. fauna of western Switzerland remains of national importance (*Bull. Soc. vaud. Sci. nat.* 61: 441-450). The bibliography is not included. For a better portrait cf. *OA* 7734.

(7741) RÖSEL VON ROSENHOF, A., 1975-1985 [reprint]. *Insecten-Belustigung.* Vols 1-4 (in 7), ca. 3000 pp., 300 col. pls. With an introductory vol. (80 pp., 20 figs, incl. 7 col. pls) by E.Bauer. Müller & Schindler, Stuttgart. — Price: DM 1960. — incl. the introductory vol., the latter separate: DM 85.-; the other vols are not available separately. — (Available from the SIO, Bilthoven).
This is a facsimile reprint (17.3x21.5 cm) of the work published originally 1746-1761. The Odon. are dealt with in Vol. 2. — For the spp. inventory cf. the paper listed in *OA* 7851.

(7742) ZETTELMEYER, W., 1985. *Faunistisch-ökologische Bestandsaufnahme des geplanten NSG Schwarzes Bruch, unter besonderer Berücksichtigung der Libellen (Odonata).* Diplomarbeit Gesamthochschule Paderborn, Höxter. vi+114 pp. — (c/o Prof. Dr B. Gerken, Abt. Tierökol., Univ. Paderborn, An-der-Wilhelmshöhe 44, D-3470 Höxter-1, FRG).
Autecology and population dynamics were

studied, to a different extent, in 17 spp., Paderborn Distr., Eggegebirge, FRG. An abstract is listed in *OA* 5767. Papers listed in *OA* 5827 and 6424 are based on this work.

## 1987

(7743) FRANKOVIČ, M., 1987. *Citogenetička i citotaksonomska istraživanja vrste Libellula depressa L. (Insecta: Odonata).* — [*Studies on cytogenetics and cytotaxonomy of Libellula depressa L. (Insecta: Odonata)*]. M. Sc. thesis, Univ. Zagreb. vi+40 pp. (Croatian, with Engl. s.). — (Dept Anim. Physiol., Univ. Zagreb, P.O. Box 933, YU-41001 Zagreb, Croatia).
Summaries were published in the papers listed in *OA* 5653 and 7118. C-banding revealed the presence of 2 distinct bands, in terminal position, on each chromosome.

(7744) UBUKATA, H., M. KIMURA & N. KIMURA, 1987. [Some dragonflies collected at Yayeyama-Shoto (June, 1986)]. *Sylvicola* 5: 48. (Jap.) — (First Author: Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).
Annotated list of 8 spp., collected at the Ishigaki-Jima and Iriomote-Jima, Japan.

## 1988

(7745) COMPTE SART, A., 1988. Biogeografía de las especias españolas del género Ischnura Charp. 1840 (Odonata). *Actas 3 Congr. iber. Ent.*, pp. 149-155. (With Engl. s.). — (Secc. Ent., Mus. Nac. Cien. Nat., J.-Gutiérrez--Abascal 2, ES-28006 Madrid).
The exclusion principle seems to be governing the Iberian distribution of I. graellsii, I. elegans and I. pumilio, but its nature still remains obscure. For each sp. an alphabetic & referenced list is also given of all its known Iberian localities.

(7746) DUNKLE, S.W., 1988. A list of the Odonata of Honduras. *Ceiba* 29(1): 41-49. (With Span. s.). — (Int. Odonata Res. Inst., P.O. Box 1269, Gainesville, FL 32602-1269, USA).
The 147 spp. known from Honduras are listed, along with their distribution by political departments. Of these, 54 are new for Honduras, incl. 9, whose records extend their known ranges northward or southward.

(7747) GAEDIKE, R., 1988. Bibliographie der Bestimmungstabellen europäischer Insekten (1984-1985). *Beitr. Ent.* 38(1): 239-276. (With Engl. & Russ. s's). — (Abt. Taxon. Insekten, Inst. Pflanzenschutzf., Schicklerstr. 5, D-O 1300 Eberswalde-Finow-1, FRG).
Continuation of the work listed in *OA* 1621, 3729, 5805, containing 2 odonatol. titles (*OA* 3949 [ed. 1984], 5062).

(7748) MAES, J.-M., J.-P. DESMEDT & V. HELLEBUYCK, 1988. Catalogo de los Odonata de Nicaragua. *Revta nicaraguense Ent.* 4: 29-43. (With Engl. s.). — (First Author: Mus. Ent., Serv. Entomol. Auton., A.P. 527, León, Nicaragua).
A checklist is given of the 90 spp. hitherto known from Nicaragua, 37 of which are reported here for the first time. The work listed in *OA* 7244 is based on this publication, which is intended to serve as a reference work for further exploration of the odon. fauna of Nicaragua.

(7749) THÖRNER, V., 1988. *Ökologische Bewertung von Fliessgewässern unter besonderer Berücksichtigung der Odonaten.* Diplomarbeit Univ. Giessen, Giessen. iv+102 pp. — (c/o Inst. Pflanzenökol., Univ. Giessen, Giessen, FRG).
Habitat requirements of Calopteryx splendens, C. virgo, Cordulegaster bidentatus and C. boltonii were examined in the area N of Giessen, FRG. The work does not present any fresh evidence, but does contain detailed data on vegetation and physical and chemical features of the local habitats.

(7750) UBUKATA, H., 1988. [A distribution table of dragonflies in the Kushiro mire, with the related bibliography]. *Sylvicola* 6: 41-44. (Jap.). —(Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).

A tabular review of 44 spp., based on literature, and specified per localities in the mire, Kushiro, Hokkaido Japan. — Cf. also *OA* 7751.

(7751) UBUKATA, H., 1988. [Some new dragonfly records from the Kushiro mire]. *Sylvicola* 6: 39-40. (Jap.) — (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).
Records for 17 spp., Kushiro, Hokkaido, Japan. — Cf. also *OA* 7750.

(7752) ZURWERRA, A., 1988. Inventaire des insectes aquatiques de la réserve naturelle de Pouta Fontana et propositions d'aménagement (communes de Grône et de Sierre). *Bull. Murithienne* 106: 51-73. (With Germ. s.). — (Büro für Umweltfragen, CH-3186 Düdingen).
18 odon. spp. are listed from this nature reserve, canton Valais, Switzerland, incl. Sympecma braueri (with S. fusca), Cercion lindenii, Anaciaeschna isosceles and Somatochlora flavomaculata that are of some local interest.

## 1989

(7753) AFONSO, O., 1989. Contribution to the knowledge of the macroinvertebrate communities of Tejo River (Portugal). *Publiçoes Inst. Zool. "Dr Augusto Nobre"* 211: 1-17. — (Inst. Zool. "Dr Augusto Nobre", Fac. Cien., PT-4000 Porto).
The abundance and dominance are stated for 7 higher odon.taxa.

(7754) CARVALHO, A.L. & N. FERREIRA, 1989. Descrição da larva de Gynacantha mexicana Selys, 1869, e notas sobre sua biologia (Odonata, Aeshnidae). *Revta brasil. Ent.* 33(3/4): 413-419. (Port., with Engl. s.). — (Depto Zool., Inst. Biol., Univ. Fed. Rio de Janeiro, Bloco A, Ciudade Universitaria, Ilha do Fundao, BR-21941 Rio de Janeiro, RJ).
The description and figs are based on a reared ♀ from Brazilian "restinga". Notes on the habitat and a record of laboratory observation are provided, and the hitherto known neotropical larvae of the genus are keyed.

(7755) CHOWDHURY, S.H. & M.I. MIAH, 1989. Notes on some damselflies (Odonata: Zygoptera) of Chittagong University Campus. *Chittagong Univ. Stud.* (II) 13(1): 65-70. (With Bengali s.). — (Dept Zool., Univ. Chittagong, Chittagong, Bangladesh).
16 spp., with annotations on habitats and local phenology; Bangladesh.

(7756) EVERS, A.M.J., 1989. Gedanken zur Gründung eines Instituts für entomologische Taxonomie und Systematik. *Mitt. dt. Ges. allg. angew. Ent.* 7(1/3): 41-48. — (Dürerstr. 13, D-4150 Krefeld, FRG).
Contains no reference to the Odon., but gives an excellent picture of the current "catastrophic" situation in systematic entomology in Germany (and elsewhere in the "western world"), where high-quality taxonomic research in the museums largely continues solely due to volunteer work by retired and unpaid (often non-professional) workers. These were also the first to draw attention to the recent decline in the fauna, and gladly collaborated in preparation of so called "Red Lists". The latter, however, were "taken over" by the politicians, who misuse them for the promulgation of collecting prohibits, in consequence of which the proper monitoring to the status of the fauna became virtually impossible or illegal. The Author is of the opinion that the latter is the ultimate political objective behind the unbiological species conservation legislation, and the Abstracter continues to be astonished by the numbers of young naturalists who are still unable to see the damage caused by refraining from voucher documentation, and by publication of erroneous, doubtful and undocumented records. — (The Author is a senior coleopterologist, and for the past 4 decades one of the foremost entomological publishers and antiquarians in Germany).

(7757) FEILER, M., 1989. Über Nachweise der Helm-Azurjunfer (Coenagrion mercuriale) im Süden des Bezirkes Potsdam (Odonata, Zygoptera). *Veröff. Potsdam-Mus.* 30: 5-8. — (Abt. Natur & Umwelt, Potsdam-Mus., Wilhelm-Külz-Str. 13, Postfach 239, D-O 1563 Potsdam, FRG).

The occurrence of C. mercuriale in the Potsdam area, eastern Germany, is outlined, and the synecology of the sp. is discussed.

(7758) FEILER, M. & W. GOTTSCHALK, 1989. Funde der Asiatischen Keiljungfer (Gomphus flavipes) im Havelgebiet (Insecta, Odonata). *Veröff. Potsdam-Mus.* 30: 120-122. — (Abt. Natur & Umwelt, Potsdam-Mus., Wilhelm-Külz-Str. 13, Postfach 239, D-O 1563 Potsdam, FRG).
The 1968-1987 records of G. flavipes in the area W of Potsdam, eastern Germany, are stated and discussed.

(7759) FEILER, M., W. GOTTSCHALK & D. HONSU, 1989. Wiederentdeckung der Zierlichen Moorjunfer (Leucorrhinia caudalis) in der DDR (Insecta, Odonata). *Veröff. Potsdam-Mus.* 30: 9-14. — (First Author: Abt. Natur & Umwelt, Potsdam-Mus., Wilhelm-Külz-Str. 13, Postfach 239, D-O 1563 Potsdam, FRG).
New records of L. caudalis in eastern Germany are stated, its status in Central Europe is outlined, and the ecology and synecology of the sp. are described.

(7760) FUCHS, K. & SCHRICKER, 1989. Untersuchungen zur Habitatpräferenz dreier Kleinlibellenarten (Odonata: Zygoptera) im Landkreis Wunsiedel/Fichtelgebirge. *Schr.-Reihe bayer. Landesamt NatSchutz* 92: 93-94. — (First Author: Carl-Burger-Str. 22, D-8580 Bayreuth, FRG).
Coenagrion hastulatum, C. puella and Enallagma cyathigerum are considered from the point of view of their occurrence in 5 types of habitat in Bavaria, FRG).

(7761) GÉREND, R., 1989. Odonatologische Beobachtungen an Fliessgewässern in der Provence. *Paiperlek* 11(2): 99-117. (With Engl. s.). — (35 rue de Hellange, L-3487 Dudelange).
28 spp. are recorded from 6 watercourses in the Provence, France (July, 1989). A brief classification of lotic odon. habitats is given, and notes on the human impact on these are provided.

(7762) GÜNTHER, A. & F. RANDOW, 1989. Zur Kenntnis der Libellenfauna der Unteren Havelniederung (Insecta, Odonata). *Veröff. Potsdam-Mus.* 30: 15-21. — (First Author: Kellermannstr. 5, D-O 9200 Freiberg, FRG).
The odon. fauna (37 spp.) of the lowlands of western Mark Brandenburg, eastern Germany, is outlined, and the occurrence of some spp. is discussed.

(7763) MEIER, C. & W. SAUTER, 1989. Zur Kenntnis der Insektenfauna eines Auenwaldreservates an der Aare bei Villnachern AG. *Mitt. aarg. naturf. Ges.* 32: 217-258. — (Reprints from the second Author: Ent. Inst., ETH, ETH-Zentrum, Clausiusstr. 21, CH-8092 Zürich).
Calopteryx splendens and Gomphus vulgatissimus are recorded from the Aare R., Switzerland.

(7764) PLAYOUST, C., J.J. MUSSO & G. PRÉVOT, 1989. Étude comparée des communautés benthiques et ripicoles endogènes d'un réseau méditerranéen perturbé: l'Arc (Bouches-du-Rhône, France). *Revue Sci. Eau* 2: 587-605. (With Engl. s.). — (Lab. Biol. Anim., Fac. Sci. & Techn. Saint-Jérôme, av. Escadrille Normandie-Niemen, F-13397 Marseille-13).
Ca. 18 odon. spp. (with some errors) are listed from the Arc R. system, southern France.

(7765) *SAMMELBERICHT (1988) ÜBER LIBELLENVORKOMMEN (ODONATA) IN BADEN-WÜRTTEMBERG*, No. 5 (1989). Published by the Schutzgemeinschaft Libellen Baden-Württemberg, Freiburg i. Br.; compiled by C. Obenauer & A. Schanowski. ii+37 pp. — (c/o Dr R. Buchwald, Sautierstr. 75, D-7800 Freiburg, FRG).
This is the continuation of a series the earlier parts of which are listed under the compilers' names in *OA* 2928, 4562, 6201 and 6247. For each sp. the breeding habitat is briefly characterised, the regional status is stated, and a grid distribution map is given.

(7766) STROMMER, J.L. & L.A. SMOCK, 1989.

Vertical distribution and abundance of invertebrates within the sandy substrate of a low-gradient headwater system. *Freshw. Biol.* 22: 263-274. — (Dept Biol., Virginia Commonwealth Univ., Richmond, VA 23284, USA).
The study was conducted at a first-order blackwater stream in Surry Co., Virginia, USA, and contains also the information on 4 odon. spp. (Cordulegaster fasciata, Gomphus cavillaris, Ophiogomphus sp., Progomphus obscurus).

(7767) *SYMPETRUM.* Revue d'odonatologie. No. 3 (1989) [published 1991]. — (c/o C. Deliry, 2 rue Lieutenant Chanaron, F-38000 Grenoble).
*Deliry, C.:* Editorial (pp. 3-5); — *Crochet, P.-A.:* Observations odonatologiques dans le nord de l'Espagne (pp. 7-15); — *Grand, D.:* Les odonates du département de la Saône et Loire et plus particulièrement du Brionnais (pp. 16-21); — Notes complémentaires sur la présence d'Ophiogomphus cecilia (Fourcroy, 1785) dans le département de la Saône et Loire (pp. 23-26); — *Zannoni, C.:* Aspect particulier d'une activité de ponte chez Lestes sponsa (pp. 27-29); —*Juliand, C. & P. Juliand:* Notes sur l'observation d'Hemianax ephippiger (Burmeister, 1839) (Odonata, Anisoptera: Aeshnidae) (pp. 31-33): *Zannoni, C.:* Enigmatique Hemianax (pp. 35-38); — *Deliry, C.:* Comportement reproductif d'Hemianax ephippiger (Burmeister, 1839) (Odonata, Anisoptera: Aeshnidae) lors de l'invasion de 1989 (Gresivaudan-Isère) (pp. 39-43). — *Publications* du G.R. P.L.S. depuis le Sympetrum No. 2 (p. 44).

(7768) TITTIZER, T., F. SCHÖLL & M. SCHLEUTER, 1989. Zur Bestandssituation von Gomphus vulgatissimus (Linné, 1758) (Insecta, Odonata) an den Bundeswasserstrassen. *Hessische faun. Br.* 9(4): 63-68. (With Engl. s.). — (Bundesanst. Gewässerk. Kaiserin-Augusta-Anlage 15-7, Postfach 309, D-5400 Koblenz, FRG).
G. vulgatissimus was studied in the rivers Main, Rhine and in the Dortmund-Ems-Kanal (1985-1988). The Main R. harbours a particularly significant population, which is attributed to the appreciable improvement of water quality in the past decade.

(7769) TYAGI, B.K., 1989. *Control of mosquito larval population by monomolecular surface films and their impact on nontarget organisms including dragonfly naiads.* Handout of a review paper resume, circulated at 10th Int. Symp. Odonatol., Johnson City, TN, Aug. 6-12, 1989. — (Reg. Med. Res. Cent., ICMR, P.O. Box 122, New Pali Rd, Jodhpur-342005, India).
[Verbatim]: In view of the development of resistance in the larvae of the target mosquito spp. against the conventional larvicides, the recent use of monomolecular surface active and biologically degradable agents, such as the Arosurf MSF ISA 20E, has been highly encouraging particularly due to their nonhazardous nature towards the nontarget organisms including Zyg. and Anis. larvae, ostracods and diving beetle adults. These surface agents bring about the mortality in the target mosquito species by a "physical factor" rather than the chemical one as common with the conventional larvicides. These surface active films form a monolayer on the treated water surface and thus provide a physical barrier for the mosquito immatures to breathe air from the free atmosphere. The lowering of the surface tension (25-29 dynes/cm$^2$) causes water to enter into the tracheal system of the preimaginal forms and render suffocation or anoxia to larvae which later on succumb to low oxygen supply. It is also due to the lowered surface tension that the newly emerging adults are unable to take to their wings and eventually fall on one side of their body over the water surface and die. At the constant rate of 11.2 l/h, Arosurf has been found to control three major vector species (Culex quinquefasciatus, Anopheles stephensi and Aedes aeypti in different types of breeding habitats like drains, wells, cesspits and cesspools etc. in India. This film has also been found to control C. tarsalis and C. peus for over two weeks at the rate of 5.5-7.8 l/h in America. Due to the self-spreading property of the surface active agents, these films are usable in combination with certain conventional larvicides to provide the latter a better coverage in relatively larger water bodies. In such conditions the rate of application of the film is about half the original requirement. It is suggested that the Arosurf, as one of the several surface active agents tested so far, can be used

in controlling effectively immatures of many vector mosquito species in certain breeding habitats, provided strict vigilance is excercised about the doses and efficacy of the surface active films when used alone or in combination with conventional mosquito larvicides.

(7770) UBUKATA, H., 1989. Odonate fauna of Kushiro-cho, Hokkaido. *Sylvicola* 7: 43-46. (Jap., with Engl. title). — (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).
List of 36 spp.

## 1990

(7771) ADAMOVIĆ, Ž., 1990. Odonata of Daićsko jezero, Serbia. *Bull. Acad. serbe Sci. Arts* (Sci. math.nat. 102(32): 15-20. — (Inst. Med. Res., P.O. Box 721, YU-11001 Beograd).
The fauna (10 spp.) and habitat are described of a small sphagnum moor pond (Daićsko jezero), at Mt Golija, Serbia (alt. 1556 m). Coenagrion hastulatum is for the first time properly documented from Serbia, while C. scitulum and Leucorrhinia dubia are new for the Serbian fauna, Yugoslavia.

(7772) ANHOLT, B.R., 1990. An experimental separation of interference and exploitative competition in a larval damselfly. *Ecology* 71(4): 1483-1493. — (Dept Biol., Queen's Univ., Kingston, K7L, 3N6, CA).
Density-dependent reduction in survival, growth, and development rates of larval Zygoptera can be the result of depletion of food resources or increased interference costs (energy or time) associated with behavioural interactions. While interference has been implicated in several studies, no direct test of this hypothesis by manipulating interaction frequency or intensity has been attempted. To separate these mechanisms, habitat complexity (number of perches), was simultaneously manipulated in Enallagma boreale to alter frequency of behavioural interactions, larval density, and food supply. Larvae became more evenly distributed among available perches as the density per perch increased, demonstrating that there were behavioural responses to the manipulation of habitat complexity. Food supply and larval density strongly affected survival, timing of emergence, and mass at emergence. However, the proportion of the variation in these performance variables attributable to the habitat complexity manipulation was tiny. In spite of the overt nature of the interactions among individuals, the costs appear to be very low. Future work that implicates behavioral mechanisms in population processes will have to attempt more direct manipulations of the behaviour itself to test the hypothesis before concluding that behavior is the cause of an observed pattern.

(7773) ARAI, Y., 1990. Hibernal ecology of two species of dragonflies. *Insectarium, Tokyo* 27(10): 334-338. (Jap., with Engl. title.). — (1233-2, Oaza Suezo, Yorii-machi, Osato-gun, Saitama, 369-12, JA).
[Abstract not available].

(7774) ARNOLD, A., 1990. *Wir beobachten Libellen.* Urania, Leipzig-Jena-Berlin. 152 pp., numerous textfigs (partly in 2 col.), 68 col. phot. (40 pls) incl. Hardcover (13x22 cm). — ISBN 3-332-00259-7. — (Available from the SIO, Bilthoven, at Hfl. 38.- net).
A refreshing little work that differs markedly from all other books on Europ. Odon. currently on the market. It is not concerned with species descriptions and "species monographs" (though it does contain good keys for the adults and larvae, illustrated with line drawings in 2 colours), but rather deals with various aspects of biology, organised in the style of a "handbook" on all kinds of field observations and research that can be easily conducted without sophisticated equipment, and most of which are popular among non-professional dragonfly students in Europe.

(7775) BACCETTI, B., G. CALLAINI, R. ARGANO, M. BIONDI, M. COBOLLI SBORDONI V. COTTARELLI, M. MEI, C. UTZERI, A. VIGNA TAGLIANTI, R. POGGI, A. MINELLI, M. BOLOGNA, G.

OSELLA, C. MANICASTRI, B. LANZA & N. BACCETTI, 1990. Zoogeographical expeditions of the C.N.R. ship "Minerva" around the small circumsardinian islands: a synthesis. *Atti Convegni lincei* 85 (Biogeographical aspects of insularity): 521-532. — (Odon. by C. Utzeri: Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Universitá 32, I-00185 Roma).
7 Zyg. and 13 Anis. spp. were collected in 23 of the 63 islets visited, representing 50% of the Sardinian odon. fauna. Coenagrion lindenii, C. scitulum, Aeshna affinis, A. isosceles and Hemianax ephippiger are of some interest. Lestes macrostigma, usually reported from brackish water, was found breeding in a freshwater pond.

(7776) BELFIORE, C. & C. UTZERI, 1990. Gestire la bibliografia zoologica con il personal computer: il programma "Biblion". *Atti 53 Congr. Un. zool. ital.*, Palermo, 1 p. [sep.] — (First Author: Dipto Zool., Univ. Napoli, Via Mezzocannone 8, I-80134 Napoli).
Abstract only; for the full paper cf. *OA* 7484.

(7777) BLOIS-HEULIN, C., 1990. Familiarization and spatial distribution in Anax imperator Leach larvae (Aeshnidae Odonata). *Ethol. Ecol. & Evol.* 2: 335-344. — (Lab. Ethol. & Psychophysiol., Univ. Tours, Parc de Grandmont, F-37200 Tours).
The influence of the presence of a conspecific and familiarization with the site, on the spatial distribution of A. imperator larvae has been investigated experimentally. These larvae modified their patterns of spatial occupation in relation to the number of larvae present in the container. Larvae reared alone exploited their container more than did larvae reared in pairs. Familiarization with the site also influenced their spatial occupation. Residents moved less than intruders.

(7778) BONET BETORET, C., 1990. *Contribucion al estudio de los odonatos adultos de la provincia de Valencia.* viii+467 pp. Tesis doctoral, Univ. Valencia, Valencia. — (Author: C. Linterna 28, ES-46001 Valencia).
A "classical style" regional monograph on the odon. fauna of Valencia, Spain (43 spp.), based on very substantial material from 20 areas in the province. Emphasis is on species-wise treatment and on the affinity analysis of odon. communities of the habitats studied.

(7779) BREENE, R.G., M.H. SWEET & J.K. OLSON, 1990. Analysis of the gut contents of naiads of Enallagma civile (Odonata: Coenagrionidae) from a Texas pond. *J. Am. Mosq. Control Ass.* 6(3): 547-548. — (First Author: Dept Ent., Texas A & M Univ., College Station, TX 77843, USA).
Foregut contents of the larvae, collected from a permanent pond, were analyzed to determine the natural prey for immatures of this sp. The analyses revealed the odon. larvae had fed predominantly on chironomid larvae. Corixid, cladoceran, ostracod and aquatic mite remains were found in some of the specimens examined. However, no remains of mosquito larvae were detected in any of the specimens, even though mosquito larvae were observed as being continuously present in the pond sites where the odon. larvae specimens were collected.

(7780) BROWNETT, A., 1990. *The dragonflies of the Banbury area.* 40 pp. Brookside Books, Banbury, Oxfordshire. — ISBN 0-951547-0-6. — Price: £ 3.-, postage excl. — (Publisher: 28 Colesborne Rd, Bloxham, Banbury, Oxfordshire, OX15 4TB). — Not available from the SIO.
This is an attractive and excellently executed up-to-date mini-monograph-cum-atlas on the dragonflies of a 1200 km² area around Banbury, Oxfordshire, including parts of Northamptonshire and Warwickshire, UK. It covers 22 regional spp. (out of the 51 known in the British Isles). In addition to the usual distribution maps, the records are discussed in detail and the earliest and latest dates for the adults of all spp. are given (stating also the duration of flight period in days).

(7781) BUB, H., 1990. Gebänderte Heidelibelle in Wit-

tenberg. *Milvus* 9: 85. — (Postfach 3306, D-2940 Wilhelmshafen-31, FRG).
Sympetrum pedemontanum is recorded from a locality in the region of Cottbus, Sachsen--Anhalt, eastern Germany.

(7782) *BULLETIN OF THE HOKKAIDO ODONATOLOGICAL SOCIETY.* Vol. 4 (March 31, 1990). — (c/o Dr H. Ubukata, Dept. Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).
*Ubukata, H. & M. Tachibana:* Coenagrion hylas collected in Kamikawa District (pp. 1-2); — *Sato, M.:* Oviposition of Aeshna nigroflava into plant tissues (p. 3); — Behaviour of teneral individuals of Macromia amphigena masaco (p. 4); — *Hiratsuka, K.:* Dragonflies collected in Soya District (pp. 5-6); — Dragonflies collected in Sakhalin and Khabarowsk USSR (pp. 7-8; — *Sato, M.:* A record of Macromia amphigena masaco from Hidaka District (p. 8); — [*Hiratsuka, K.*]: Records of Sympetrum uniforme in Siberia (pp. 9-10); — *Hiratsuka, K.:* Prospect of the future dragonfly survey in northern Hokkaido (pp. 11-14); — [*Hiratsuka, K.*]: District-wise dragonfly distribution table of Hokkaido (pp. 15-17); — Distribution table of dragonflies of the islets adjacent to Hokkaido (pp. 18-20); — *Letters from the H.O.S. members* (pp. 21-23); — *Ubukata, H.:* Review of recent odonatological literature (pp. 24-25); — On the PC program, "Dragonfly distribution in Hokkaido", developed by Dr S. Tsuda (p. 26); — Dragonfly library of the Kansai Research Group of Odonatology (p. 26); — *Errata* (pp. 27-28). — A report of the Secretary--General, the list of new members, and an editorial postscript conclude the issue (of 30 pp.).

(7783) CARFÌ, S. & M. D'ANDREA, 1990. Il margine alare negli odonati. *Atti 53 Congr. Un. zool. ital., Palermo,* p. 253. — (Dipto Biol. Anim. & Gen., Univ. Firenze, Via Romana 17, I-50125 Firenze).
Abstract only; for the references to 3 full papers on the subject cf. *Odonatologica* 19(1990): 173--179.

(7784) DELL'ANNA, L. & C. UTZERI, 1990. Comportamento di termoregulazione in Trithemis annulata (Odonata). *Atti 14 Congr. Soc. ital. Etol., Lerici,* p. P26. — (Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
Systematic observations in the field indicate a correlation between the sun orientation and body posture (incl. the obelisk position), suggesting the thermoregulatory function of the phenomenon. It is argued that it is unlikely that the obelisk position would ever be adopted as a threat display, since T. annulata is usually non--territorial and this position is exhibited by ♀ as well.

(7785) DELL'ANNA, L. & C. UTZERI, 1990. Variazioni posturali e termoregulazione in Trithemis annulata (Odonata, Libellulidae). *Atti 53 Congr. Un. zool. ital., Palermo,* pp. 119-120. — (Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza, Viale dell'Università 32, I-00185 Roma).
Cf. *OA* 7784.

(7786) DIONNE, M., M. BEUTLER & C. FOLT, 1990. Plant-specific expression of antipredator behaviour by larval damselflies. *Oecologia* 83(3): 371-377. — (Biol. Dept, Virginia Polytech. Inst. & St. Univ., Blacksburg, VA 24061--0406, USA).
This study of interactions between unidentified coenagrionid larvae and pumpkinseed sunfish (Leptomis gibbosus) in a New Hampshire, USA, pond is focused on the behaviour of the zygopt. prey. First, a prey behaviour is documented in which the zygopt. use plant stems or leaves to hide from pumpkinseeds. Subsequently, 2 hypotheses are tested: (1) that damselfly "hiding" is a specific antipredator behaviour, and (2) that "hiding" occurs more frequently in plant habitats where the zygopt. experience greater risk of predation. Since plant spp. growth forms can influence predation risk, the second hypothesis implies that hiding behaviour is conditional upon the type of vegetation providing habitat structure. Conditional expression of antipredator behaviour according to vegetation type may be important

in littoral environments, since predator-prey interactions can occur in habitats with a wide range of macrophyte growth forms. The first hypothesis is supported by the evidence that damselfly hiding increased in frequency in the presence of pumpkinseeds, that it was related to the frequency of predator approaches, and that its use reduced damselfly predation risk in high risk habitats. The second hypothesis is supported by the circumstance that zygopt. hiding rates were greater in the high risk Scirpus habitats than in the lower risk Potamogeton habitats. These observations indicate that prey behaviour can influence predator-prey interactions, and that variation in plant growth form can influence prey behaviour, thus contributing to the impact of habitat structure on predator--prey dynamics.

(7787) DUMONT, H.J. & O. FOSSATI, 1990. On some dragonflies from the Nile valley in Egypt. *Bull. Annls. Soc. r. belge Ent.* 126: 184-187. —(First Author: Inst. Animal Ecol., Univ. Ghent, Ledeganckstr. 35, B-9000 Ghent).
11 afrotropical spp. are reported. Mesocnemis robusta is a nilotic endemic, for the first time recorded from the Nile delta, and represents an addition to the palearctic fauna. A certain lack of homogeneity seems apparent in certain spp. across the valley. This phenomenon would require a further study.

(7788) FRANKOVIĆ, M. & R. HALAPIR, 1990. Prilog poznavanju faune vretenaca (Insecta: Odonata) Nacionalnog parka "Krka". — Contribution to faunistic knowledge of Odonata (Insecta) of Krka National Park. *Ekol. Monogr., Zagreb* 2: 501-504. (Croatian, with Engl. s.). — (Dept Animal Physiol., Univ. Zagreb, P.O. Box 933, YU-41001 Zagreb, Croatia).
List of 13 spp., with preliminary annotations on infraspecific status of the local populations of Calopteryx splendens and C. virgo. Dalmatia, Croatia.

(7789) GÉREND, R., 1990. Die Odonatenfauna der "Laach" bei Monnerich, eines anthropogen belasteten Feuchtgebietes im Süden Luxemburgs (Odonata). *Paiperlek* 12(2): 25-46. (With Engl. s.). — (35 rue de Hellange, L-3487 Dudelange).
The odon. fauna (13 spp., incl. Ischnura pumilio, Aeshna mixta and Orthetrum brunneum, which are of considerable national interest) of this highly eutrophic wetland area in southern Luxembourg is described and discussed with reference to the status, abundance and distribution of each sp. The general structure of the different breeding sites is described and some aspects of the limnic and terrestrial fauna are stated. Some management measures are tentatively suggested.

(7790) *GOMPHUS.* Mededelingsblad van belgische libellenonderzoekers — Bulletin de liaison des odonatologues belges, Vol. 6, No. 4 (dec., 1990). (Dutch & Fr.) — (c/o A. Anselin & P. Goffart, Inst. Roy. Sci. Nat. Belg., 29 rue Vautier, B-1040 Bruxelles).
Contains the report of the Dec. 1990 Brussels meeting of Belgian odonatologists (*A. Anselin;* pp. 5-6), faunistic notes by *G. Jannis* (p. 7) and *A. Anselin* (pp. 7-8), an article on the early seasonal occurrence of Sympetrum depressiusculum (*G. Jannis;* pp. 8-9), several book reviews (*A. Anselin, P. Goffart*), and several announcements, incl. on the mapping of the fauna of the prov. of Limburg.

(7791) GRIGELIS, A., 1990. Struktura i fauna donnyh biocenozov v vodoemah Litvy. 3. Ekologo-sistematichesky sostav zoobentosa vodoemov Litvy i sopredel'nyh territoriy. — Structure and fauna of bottom biocenoses in Lithuania's reservoirs. 3. Ecologico-systematic structure of water bodies zoobenthos in Lithuania and adjacent territories. *Ekologija, Vilnius* 1990 (2): 53-62. (Russ., with Lithuan. & Engl. s's). —(Inst. Ecol., Lithuan. Acad. Sci., Vilnius, Lithuania).
Contains a bibliography on the Odon. of Lithuania.

(7792) HAACKS, M., J. HORSTKOTTE, D. LEOPOLD, W. WAGNER & N. WEL-

LINGHAUSEN, 1990. Altmühltal. Kanu--Wanderlager vom 13.07 bis 27.07.1986. *Naturk. Beitr. DJN* 21: 3-40. — (First Author: Diekwisch 4, D-2000 Hamburg-62, FRG).
Odon. spp. lists are given for 12 localities along the Altmühl R., and Calopteryx splendens is recorded from the Danube (between Bad Abbach and Regensburg), all Bavaria, FRG.

(7793) HAHN, D., 1989. Zur Libellenfauna des Truppenübungsplatzes Sennelager. *Mitt. ArbGem. ostwestfäl.-lipp. Entomol.* 5(4): 109--131. — (Mömmenweg 42a, D-4790 Paderborn-Sennelager, FRG).
34 spp. are listed from 9 ponds in the Sennelager area, Westfalia, BRG. The habitats are described, and the local status of each sp. is discussed.

(7794) HAMEL, D.R., 1990. Insects on stamps. *Am. Entomologist* 36(4): 273-281. — (Author deceased).
General summary and statistical review. Since 1891, 4971 postal stamps with an insect motif were issued. The figures for the major orders are: Lepidoptera 3173, Coleoptera 452, Diptera 421, Hymenoptera 281, Orthoptera 116, Hemiptera 85, and Odon. 109 (incl. 15 Zygoptera and 94 Anisoptera).

(7795) HAMMER, U.T., J.S. SHEARD & J. KRANABETTER, 1990. Distribution and abundance of littoral benthic fauna in Canadian prairie saline lakes. *Hydrobiologia* 197: 173--192. — (Biol. Dept, Univ. Saskatchewan, Saskatoon, Sask., S7N 0W0, CA).
Enallagma clausum is reported (along with the data on salinity and general abundance) from 8 lakes in Saskatchewan and Alberta, Canada.

(7796) HOGRAEFE, T., 1990. Erfassung gefährdeter Tierarten in der Hansestadt Lübeck (Amphibien, Reptilien, Tagfalter, Libellen, Heuschrecken). *Heimat, Neumünster* 97(617): 170-178. — (Author's address not stated).
All 50 odon. spp. known from Lübeck, FRG, are put on the local Red List, without any specification or comments on single taxa. Cf. *OA* 7361.

(7797) HONG, R.T., 1990. Species composition of Odonata in and around Mt Paekdu. *Choson Kwahakwon T'ongbo P'yonjib Wiwanho* [=*Bull. Acad. Sci. Democr. Rep. Korea*] 1990 (3): 46-47. (Korean, with Engl. s.). — (Author's address not stated).
30 spp. from the Mt Paekdu area are listed. It is stated that the following are new for North Korea: Lestes dryas, Ischnura senegalensis, Aeshna mixta, Somatochlora viridiaenea, S. clavata, and Sympetrum depressiusculum.

(7798) IMAMORI, M., 1990. *Le jour des insectes.* Gallimard, Paris. 175 pp. — (ISBN 2-07--056534-3. — Price in France: fFr. 235.- net. —(Available from the SIO, Bilthoven).
This is the French ed. of a Jap. work, published originally (1988) by Fukuinkan Shoten, Tokyo. Heavily illustrated, 32x25 cm size, it deals with insect life of the Biwa Lake area, Shiga Pref., Japan, with a reasonably good odon. coverage (incl. ca. 45 col. species portraits) and taxonomic nomenclature.

(7799) ITOU, M., 1990. [Dragonfly hunting by Aeshna nigroflava]. *Sylvicola* 8: 78. (Jap.). — (Musa 2-6-1, Kushiro, 085, JA).
A female Sympetrum striolatum imitoides was preyed upon in flight by A. nigroflava.

(7800) ITOU, M. & H. UBUKATA, 1990. An observation on emergence of Pantala flavescens (Fabricius) in Kushiro, Japan. *Sylvicola* 8: 77. (Jap., with Engl. s.). — (Second Author: Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).
A teneral ♂ and the exuviae were collected in Kushiro, Hokkaido, Japan, on Oct. 3, 1989.

(7801) KORYSZKO, J., 1990. A note on the Southern Hawker in Staffordshire. *Bull. amat. Ent. Soc.* 49(371): 138. — (Dudley Place, Meir, Stoke--on-Trent, Staffs., ST3 7AY, UK).
A note on Aeshna cyanea; cf. also *OA* 5937.

(7802) LARSON, D.J. & N.L. HOUSE, 1990. Insect communities of Newfoundland bog pools with emphasis on the Odonata. *Can. Ent.* 122(5/6):

469-501. (With Fr. s.). — (Dept Biol., Memorial Univ. Newfoundland, St John's, Newfoundland, A1B 3X9, CA).
The arthropod and annelid fauna of a series of small, acidic pools in a domed, ombrotrophic bog on the Avalon Peninsula, Canada, was studied over the ice-free season of 1986. Pools were assigned to 4 classes on the basis of their surface area (< 1; 1.1-10; 10.1-100; > 100 $m^2$) and at least two 1-$m^2$ (entire pool if area < 1 $m^2$) substrate samples, plankton samples, and moss samples were taken from pools of each size class biweekly. 131 taxa (incl. 13 Odon.), most identified to the sp. level, were collected. Taxa varied in abundance between pools of various size classes and, using Cluster Analysis and TWINSPAN, two principal communities were identified. Oligochaetes, beetles, and mosquitoes dominated small, astatic pools and odon., chironomids, and several other taxa predominated in large, stable, vegetated pools. Water level stability is postulated to be the principal factor determining this community structure. Within large pools, odonate larvae were the dominant predators and comprised the majority of the standing crop. Odon. larvae have life cycles of 2 or more years, their slow growth is probably due to prey limitation. Odon. larvae potentially exert a powerful predation pressure within the large pool community, and may be the principal biotic factor determining abundance and distribution of prey taxa within the bog pool system.

(7803) LARSSON, J.I.R., 1990. On the cytology and taxonomic position of Nudispora biformis n.g., n. sp. (Microspora, Thelohaniidae), a microsporidian parasite of the dragonfly Coenagrion hastulatum in Sweden. *J. Protozool.* 37(4): 310-318. — (Div. Syst., Dept Zool., Univ. Lund, Helgonavägen 3, S-22362 Lund).
The new sp., parasitic in larval C. hastulatum, is described based on light microscope and ultrastructural evidence. Its systematic position is discussed. The 10 microsporidian spp. so far known from the Odon. are listed, and their biological features are briefly outlined.

(7804) MAUERSBERGER, R. & S. WAGNER, 1990. Zur Libellenfauna dreier Naturschutzgebiete im Bezirk Rostock. *NatSchutzArb. Mecklenb.* 32(1): 23-29. — (First Author: Am Birkenwerder 37, D-O 1144 Berlin, FRG).
List of 32 spp., with habitat descriptions and a brief discussion.

(7805) MITRA, T.R., 1990. Ecological reconnaissance of Odonata fauna of Calcutta. *J. Bengal nat. Hist. Soc.* (N.S.) 9(2): 25-31. — (60 Shyan Nagar Rd, Calcutta-700055, India).
Habitat selection, activity in different meteorological conditions, seasonal abundance, proportional abundance of different spp., thermo-regulation, food and cannibalism, predators and cause of death, reaction towards moving objects, territorial defence, breeding, migration, and effects of urbanisation in the odon. of Calcutta, India, recorded during 1966-1986, are reported.

(7806) MIURA, T., R.M. TAKAHASHI & R.J. STEWART, 1990. Estimation of absolute numbers of damselfly nymphs (Odonata: Coenagrionidae) by dipper sampling in California rice fields with seasonal, spatial distributions and vegetation association. *J. Am. Mosquito Contr. Ass.* 6(3): 490-495. — (Mosquito Contr. Res. Lab., Univ. California, 9240 S. Riverbend Ave., Parlier, CA 93648 USA).
Estimates of relative and absolute density in rice field populations of larval Zygopt. (predominantly Enallagma civile with few Ischnura denticollis) were compared using the regression method. An equation, $X = Y + 0.0016$, allows estimation of absolute density (X) from a relative density index (Y, dipper count). In the rice growing area of Fresno, California, larval population peaks appeared during June and August approaching 3-5 million per 0.405 ha (1 acre). Spatial distribution was theoretically represented fairly well by a negative-binomial distribution. The degree of clumping is one of overdispersed types; it is especially classified as a model of randomly distributed colonies with mean colony size fixed. Presence or absence of submerged vegetation markedly affected zygopt. larval density but the biomass of submerged or emerged vegetation was not a

significant factor.

(7807) MOCHIZUKI, M. [text] & K. SAKATA [illustr.], 1990. *Tombo-no-kuni o mamoru — [Preservation of a dragonfly paradise]*. 120 pp. Komine-shoten, Tokyo. — ISBN 4-338-09201--7. (Jap.). — (Not available from the SIO). Beautiful hardcover book (15x22 cm), with monochrome water paintings. The nonfiction text is directed at young people. The Okegaya--numa pond, at Iwaki-shi, Shizuoka-ken, Japan, is the stage of the story, in which some 60 spp., incl. Libellula angelina, are cherished. The book is the record of dragonfly conservation activities of the neighbouring residents.

(7808) NEMJO, J., 1990. The impact of colonization history and fish predation on larval odonates (Odonata: Anisoptera) in a central New Jersey farm pond. *J. Freshw. Ecol.* 5(3): 297-305. — (2918 Claire Lane, Jacksonville, FL 32223, USA).
Larval odon. were manipulated in a small farm pond to study the effects of colonization history and fish predation on species composition. Spp. exhibited a wide range of breeding phenologies. Temporal separation may have an effect on the larval assemblage by reducing interactions between spp. Abundances of metamorphs were negatively correlated with species-specific final instar body length suggesting that other, size dependent interactions such as vertebrate predation may also affect the dragonfly guild. Experiments with screen enclosures which differed in (1) time of placement and (2) presence or absence of fish predators studied the effects of breeding phenology and predation on larval odon. — Timing of pen placement did not significantly affect the abundance of larvae. 2 spp. with extremely different life histories were able to coexist in large numbers in the natural community. The abundance of a late fall breeding spp. in early treatment pens implied that identifying priority effects may involve more than simply equating them with spp. which breed early in the year. — Fish predation had a significant impact on production and species composition. While fish reduced the abundance of larger spp. they enhanced the abundance of small odon. in the experimental enclosures. — The dragonfly assemblage in this study appears to be controlled more by the actions of vertebrate predators than by the seasonal segregation of species-specific life histories.

(7809) NINBURG, E.A., 1990. Dolgaya guba: izolyaciya estestvennaya i iskusstvennaya. — Dogaya Guba: natural and artificial isolation. *Priroda, Mosk.* 1990(7): 44-49. (Russ., with Engl. s.). —(Author's address not stated).
On p. 48 the fauna is described of a small lake (Mertvoe Lake; surface 1 ha, max. depth 7 m) in the Dolgaya Guba area, Vajgach Isl., Barents Sea, USSR (70°25 N, 58°46'E approx.), which includes larvae of Aeshna grandis. After K.J. Valle (1952, *Acta ent. fenn.* 10: 1-87), this is the northernmost locality yet known for this sp.

(7810) REISS, T., 1990 [1991]. Libellen des Kantons Baselland. *Mitt. ent. Ges. Basel* 40(1/2): 2-7. (With Engl. s.). — (Schillerstr. 23, CH-4053 Basel).
Updated version of the paper listed in *OA* 7415, enumerating 24 autochthonous spp., without locality data. — (*Abstracter's Note:* The record of Coenagrion armatum from Basel, Switzerland, is unlikely and would need confirmation).

(7811) RUDDEK, J., 1990. Zur Erfassung der Libellen in Bremen und Umgebung. *Abh. naturw. Ver. Bremen* 41(2): 153-160. (With Engl. s.). — (Am Rüten 48, D-2800 Bremen-33, FRG).
First odon. records from the Bremen area originated from 1836. So far 52 spp. were recorded and are here listed. It is emphasized that since the past century the number of spp. did not significantly decrease.

(7812) SAMMELBERICHT (1989) ÜBER LIBELLENVORKOMMEN (ODONATA) IN BADEN-WÜRTTEMBERG, No. 6 (1990. Published by the Schutzgemeinschaft Libellen Baden-Württemberg, Freiburg i. Br.; compiled by R. Buchwald, H.P. Döler, B. Höppner, U. Reinhard & A. Schanowski. 36 pp. — (c/o Dr R. Buchwald, Sautierstr. 75, D-7800 Freiburg,

FRG).
Updated ed. (cf. *OA* 7765).

(7813) SCHWEIGER-CHWALA, E., 1990. Hemianax ephippiger (Burmeister 1839) und Crocothemis erythraea (Brullé 1832) (Odonata) in der Oberen Lobau in Wien, Österreich. *Lauterbornia* 4: 31-34. (With Engl. title). — (Kreuzbrunn 6/7, A-3001 Mauerbach).
The adults of H. ephippiger were recorded between Apr. 16 and May 26, 1989. Some notes on the behaviour are given, and it is stated that the sp. was for the last time evidenced from the surroundings of Vienna, Austria, in 1924 (and from Lower Austria in 1967). — In the same general area, adult C. erythraea was on wing in Aug. 1988, a larva emerged in the laboratory in June, 1989.

(7814) STARCK-ROMBACH, M., 1990. Limnologische Untersuchungen der Erft und des Erftmühlenbaches im Raum Kuchenheim (Kreis Euskirchen). *Decheniana* 143: 392-399. (With Engl. s.). — (Hohenzollernstr. 15, D-5200 Siegburg, FRG).
Calopteryx splendens is recorded from the Erftmühlenbach, distr. Euskirchen, FRG.

(7815) THOMPSON, D.J., 1990. The effects of survival and weather on lifetime egg production in a model damselfly. *Ecol. Ent.* 15(4): 455-462. — (Dept Envir. & Evol. Biol., Univ. Liverpool, P.O. Box 147, Liverpool, L69 3BX, UK).
A simulation model is presented which describes, from field-estimated parameters, the effects of daily survival rate and proportion of sunny days on the lifetime egg production of females of Coenagrion puella. — Lifetime egg production increases with daily survival rate and proportion of sunny days. — Estimates of mean lifetime egg production per female in bad and good summers in northern England ranged from 333 to 740. — The distribution, as well as the proportion, of sunny days influences lifetime egg production. For a given combination of daily survival and proportion of sunny days, lifetime egg production decreases as the distribution of sunny days becomes more clumped. — Lifetime egg production is largely determined by chance; females who begin their mature adult life during a period of sunny weather can produce many times more eggs than those whose mature adult life coincides with cloudy days.

(7816) UBUKATA, H. & M. ITOU, 1990. The Odonata collected at Mt Taisetsu in July, 1987, and July and September, 1989. *Sylvicola* 8: 71-74. (Jap., with Engl. title). — (First Author: Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro. 085, JA).
List of 16 spp., with detailed locality data, and a brief discussion on the vertical distribution of Odon. on Mt Taisetsu, Hokkaido, Japan.

(7817) UTZERI, C., 1990. [Recensioni]. J.D.'Aguilar [et al.], Guida delle libellule d'Europe e del Nordafrica [...]. *Fragm. entomol.* 22(2): 529-530. — (Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
A detailed book review of the work listed in *OA* 7496.

(7818) UTZERI, C. & C. BELFIORE, 1990. Tandem anomali fra odonati (Odonata). *Fragm. entomol.* 22(2): 271-287. (With Engl. s.). — (Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
A review of all hitherto published cases of homosexual (iso- and heterospecific) and of the heterosexual interspecific, intergeneric and interfamilial, as well as triple tandems is presented and supplemented with additioanl records and detailed circumstantial evidence. General considerations on the phenomenon of abnormal tandem formation constitutes the second part of the paper. The bibliography contains 82 titles.

(7819) UTZERI, C. & C. ERCOLI, 1990. Durata variabile della guardia post-copulatoria in Lestes virens (Odonata, Lestidae): effetto della densità di popolazione. *Atti 53 Congr. Un. zool. ital., Palermo*, pp. 141-142. — (Dipto

Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
In L. virens, at high ♂ density, a correlation exists between the population density and the post-copulatory tandem duration, but it is lacking at low ♂ densities. This is attributed to the even distribution of ♂♂ in the habitat in the latter case.

(7820) UTZERI, C. & C. ERCOLI, 1990. Sanno valutare i maschi degli odonati la densità di popolazione? *Atti 14 Conv. Soc. ital. Etol., Lerici*, p. C17. — (Dipto Biol. Anim. & Uomo. Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
Cf. *OA* 7819.

(7821) WILLIAMS, W.D., A.J. BOULTON & R.G. TAAFFE, 1990. Salinity as a determinant of salt lake fauna: a question of scale. *Hydrobiologia* 197: 257-266. — (Dept Zool., Univ. Adelaide, North Terrace, Adelaide, S.A. 5000, AU).
An investigation of the macroinvertebrate fauna was conducted in 79 lakes (salinities 0.3--343.0 g/l) in the Western Distr. of Victoria, Australia. 9 odon. spp. are listed, recovered from the 0.6-20.0 g/l salinity habitats; the range of the salinity is stated for each sp.

## 1991

(7822) (Anonymous), 1991. Recensement d'insectes dans le canton de Genève. *Bull. romand Ent.* 9(1): 48.
Outline of the schedule. E. Pongratz (174 A, route de Veyrier, CH-1234 Vessy) is the coordinator of the odon. mapping scheme of canton Geneva, Switzerland.

(7823) ÅBRO, Å., 1991. The incipient stylostome of parasitic water mite larvae (Arrenurus spp.). *J. Parasitol.* 77(2): 313-314. — (Inst. Anat., Univ. Bergen, Årstadveien 19, N-5009 Bergen).
As evidenced in Pyrrhosoma nymphula, the stylostome of larval water mites parasitic on adult Zygoptera is produced by the mite and does not appear as a host reaction triggered by the influx of foreign substances. A primary deposition of material constitutes the base for developing the stylostome proper.

(7824) *ARGIA*. The news journal of the Dragonfly Society of America. Vol. 3, No. 1 (March 15, 1991). — (c/o Dr C. Cook, 469 Crailhope Rd, Center, KY 42214, USA).
*Bick, G.H.:* Oklahoma revisited: unpublished records (pp. 1-4); — *Donnelly, T.:* Prospectus for a new journal for Odonata faunal studies (pp. 5-7); — Request for information on computerized data retrieval systems (p. 8); — *Cook, C.:* Editorial response [on the 2 preceding articles by Donnelly] (pp. 8-9); — *Jennings, S.:* Nature Conservancy acquires wetlands site in Warren County, KY (p. 9); — *Dunkle, S.W.:* Hollywood dragonflies (pp. 10-11); — *Kaukas, R.:* The Kentucky Nature Conservancy dedicated to ecological conservation (11-14; with additional information by *C. Cook*, pp. 14-15); — *Cook, C.:* Landfill requests permit to expand onto protected wetlands (pp. 15-17); —*Michalski, J.:* Collecting Odonata in Trinidad, West Indies (pp. 17-19); — *Cook, C.:* Across the Editor's desk (pp. 20-21); — *(Anonymous):* News from the British SIO Office (p. 22); —News from Mrs Gloyd and Mrs Klots [and Mrs Cook, the Editor's mother, with their current addresses] (p. 23); — Robert Moyland Gambles, 1910-1990 (p. 23). — The issue also contains the list of the DSA officers elected for 1991-1992 (p. 19); — various news items of interest; — 4 research requests (by *G.H. Bick, A.E. Barlow, C. Cook* and *M.L. May*); — 2 topics for discussion (by *A.E. Barlow* and *J. Michalski*); — 6 exchange requests; — 1 data request; — and 3 book reviews.

(7825) BEUTLER, H., 1991. *Die Flussjungfer.* ii+24 pp., frontispiece + 21 col. phot. incl. Kinderbuch Verlag, Berlin. — ISBN 3-358-01694-3. —(Available from the SIO, Bilthoven).
A slim, hardcover picture book (17.7x18.5 cm), devoted entirely to the biology of Gomphus vulgatissimus in Germany, by one of the leading east German odonatologists.

(7826) CARON, D., 1991. Dragonflies. *Glean. Bee Cult.* 119(6): 336-337. — (Author's address not stated).
The article is concerned with odon. predation on honey bees, and it is mainly based on the evidence contained in 2 (unnamed) papers in *J. Tenn. Acad. Sci.* by M. Wright [19(1944): 295--301; 21(1946): 60-71]. The information on a statement by the Root Company, Florida, reporting a US $ 1000.- damage, inflicted on some 300-400 colonies along the Apalachicola R., in the Florida panhandle, seems not to have been previously published. The predation took place during 4-5 days in the spring, before the bees could be moved to a different location.

(7827) CLASTRIER, J. & J. LEGRAND, 1991. Nouvelles captures de Forcipomyia (Pterobosca) mollipes, parasite des ailes de libellules en Côte d'Ivoire (Diptera, Ceratopogonidae; Odonata). *Revue fr. Ent.* (NS) 13(1): 48. — (Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris).
F. mollipes is reported from the wings of Orthetrum abbotti and O. chrysostigma, from the resp. regions of Touba and Booro Borotu, Ivory Coast. Cf. also *OA* 7625.

(7828) CORDERO, A., 1991. Drought-induced dispersal in Calopteryx haemorrhoidalis (Vander Linden) (Odonata: Calopterygidae). *Opusc. zool. flumin.* 64: 1-6. — (Area Ecol., Fac. Biol., Univ. Santiago de Compostela, ES--15071 Santiago de Compostela, Galicia).
C. haemorrhoidalis is the dominant sp. of this genus in coastal streams and irrigation channels in NW Spain. It was confirmed that the adults disperse when the streams dry during summer. A male and a female of one population dispersed from a stream and were recaptured within another population at a distance of 1200 m, in Sept., 1985. This involved crossing an area with high human density and a motorway. The behaviour that allows the sp. to subsist in temporal environments is discussed.

(7829) D'ANTONIO, C. & G. DE FILIPPO, 1991. Gli odonati del bacino idrografico del fiume Sele, Campania, Italia meridionale (Odonata). *Opusc. zool. flumin.* 66: 1-7. (With Engl. s.). —(Dipto Zool., Univ. Napoli, Via Mezzocannone 8, I-80134 Napoli).
A checklist is given of 33 spp. from 27 localities. Boyeria irene represents the third record from southern Italy, and it has not been reported from there since 1939. The Cordulegaster specimens appear structurally close to C. trinacriae Waterston.

(7830) DELIRY, C., 1991. Les libellules dans le nord des Alpes francaises. *Nouvelles Cent. suisse Cartogr. Faune* 1: 21-22. — (2 rue Lieutenant Chanaron, F-38000 Grenoble).
A commented checklist is given of the odon. spp. known from the French departments of Savoie, Haute Savoie and Isère, and the status of each sp. in Switzerland is stated.

(7831) DUNKLE, S.W., 1991. Head damage from mating attempts in dragonflies (Odonata: Anisoptera). *Ent. News* 102(1) 37-41. — (Int. Odonata Res. Inst., P.O. Box 1269, Gainesville, FL 32602-1269, USA).
Damage to the ♀ head occurs during mating in some spp., most prominently in Gomphidae. In 12 Nearctic spp. of this family, 88-100% of mature ♀♀ had 2-6 holes in their heads resulting from the grip of ♂ abd. app. Similar injuries are inflicted during homosexual mating attempts in some ♂ Anisoptera.

(7832) DUNN, R., 1991. 1990 dragonfly (Odonata) report. *J. Derbyshire ent. Soc.* 1991 (Spring): 7-9. — (4 Peakland View, Darley Dale, Matlock, Derby., DE4 2GF, UK).
The 1990 dragonfly season in Derbyshire, England, lasted until early Nov., but fewer records were received from the local recorders than in any other year. A map of the county records received is included, and annotations on several spp. are given.

(7833) EDA, S., 1991. Annual review of entomology for 1990 in particular insect groups. Dragonflies. *Gekkan-Mushi* 241: 2-7. (Jap., with Engl. title). — (3-4-25 Sawamura, Matsumoto,

Nagano, 390, JA).
Deals with the Japanese achievements in domestic and foreign fauna; in part identic with the paper listed in *OA* 7834, but with different illustrations.

(7834) EDA, S., 1991. Chronicle of Japanese odonatology in 1990, with supplemental notes of 1989. *Nature & Insects* 26(3): 11-19. (Jap., with Engl. title). (3-4-25 Sawamura, Matsumoto, Nagano, 390, JA).
Continuation of the series as listed in *OA* 6747.

(7835) FORBES, M.R.L. & R.L. BAKER, 1991. Condition and fecundity of the damselfly Enallagma ebrium (Hagen): the importance of ectoparasites. *Oecologia* 86: 335-341. — (First Author: Dept Zool. Erindale Coll., Univ. Toronto, Mississauga, Ont., L5L 1C6, CA).
The extent, magnitude, and cause of natural covaration between degree of parasitism and other variables known or suspected of influencing host fitness (such as host age or body size) has been understudied. It is demonstrated here that degree of parasitism by larval Arrenurus mites was associated with reduced condition of males and with lowered fecundity of young females of E. ebrium. It is also evidenced that the degree of parasitism can covary with both age and size of host Zygoptera. The putative causes of such natural covariation are explained, and it is suggested that the degree of parasitism, host age, and host size can all interact to determine damselfly fitness. The authors expect that natural covariation between the host's phenotype and the degree of parasitism will be frequently observed. Studies of such natural covariation will help to assess better the importance of several variables on host reproductive success and to understand better the dynamics of host-parasite interactions. — Cf. also *OA* 7398.

(7836) GARDINER, B., 1991. [Print review]. British dragonflies, by Roderick Dunn *Bull. amat. Ent. Soc.* 50(375): 93-94.
The col. prints (34x29 cm), representing Calopteryx virgo, Coenagrion hastulatum, Aeshna juncea and Libellula depressa, were printed in 100 copies, and are available (at £ 32.-, postfree) directly from the author: Mr R. Dunn, 4 Peakland View, Darley Dale, Matlock, Derbyshire, DE4 2GF, UK. — (For an earlier collection, by the same author, cf. *OA* 5046).

(7837) GONZALEZ SORIANO, E., 1991. The Odonata of the State of Veracruz, Mexico. *In:* handout circulated at Symp. Aquat. Biol. Latinam., Santa Fe, NM (May 21-25), 1 p., N. Am. Benthol. Soc., abstract only. — (Depto Zool., Inst. Biol., Univ. Nac. Auton. Mexico, Apdo postal 70-153, MX-04510 Mexico, D.F.).
[Verbatim]: The State of Veracruz, due to its diversity of ecological zones, supports one of the greatest numbers of spp. in Mexico. Although the Odon. of the area have not been studied in detail, there are however some papers dealing with this group of insects. This is the first comprehensive list of the Odon. of the state and is based mainly on collections done by the author at 100 localities of the state during several years. However it also incorporates records of specimens deposited in several private and institutional collections, as well as records from the literature. The list comprises a total of 200 spp. representing 13 fam. as follows: Pseudostigmatidae (5), Platystictidae (4), Protoneuridae (7), Coenagrionidae (46), Aeshnidae (20), Gomphidae (9), Cordulegastridae (2), Libellulidae (72). There are also ten undescribed species which raise the actual number of spp. to around 211. The genera Chrysobasis and Nephepeltia, and Triacanthagyna dentata and Erythrodiplax andagoya are recorded for the first time for Mexico. Notes on the habitat and natural history of some groups are given.

(7838) GORB, S., 1991. Strekozy Goloseevskih ozer (Kiev). — The dragonflies of Goloseevskie lakes (Kiev). *Latv. Ent.* 34: 96-102. (Russ., with Latvian & Engl. s's). — (Lab. Insect Physiol., Schmalhausen Inst. Zool., Lenin St. 15, USSR--252601 Kiev, Ukraine).
The odon. fauna (26 spp.) of 4 lakes within the city boundaries of Kiev, Ukraine, USSR, is described, along with brief annotations on each sp.

(7839) *GRACILE* [Newsletter of Odonatology]. Published by the Kansai Research Group of Odonatology, Osaka, No. 45 (Apr. 1, 1991). —(Jap., with Engl. titles). — (Distribution outside Japan: K. Inoue, 5-9, Fuminosato 4--chome, Abeno-ku, Osaka, 545, JA).
*Kukui, M. & Y. Terado:* Interspecific hybrid progenies bred from the eggs of cross mated Libellula angelina male and L. quadrimaculata asahinai female (pp. 1-6); — *Inoue, K.:* Memories of the late Mr Yutaka Terado and a note on his collection (pp. 7-9); — *Arai, Y.:* On the drought and cold resistance of Pantala flavescens larvae (pp. 10-12); — *Inoue K.:* A new identification point of the supposed hybrid between Anax parthenope julius and A. n. nigrofasciatus (pp. 12-15); — *Matsuki, K.:* On the moulting line of some megapodagrionid larvae (pp. 15-16); — *Yamamoto, T. & S. Kondoh:* A case of oviposition of Polycanthagyna melanictera into decayed wood (p. 17); —*Aoki, T.:* Oviposition behaviour of Lestes sponsa observed in June (pp. 18-19); — *Inoue, K. & M. Ogawa:* Ictinogomphus pertinax found in Nashinomiya City (pp. 20-22); —*Muraki, A.:* A small knowledge on 4 species of dragonflies in Kinki district (pp. 23-26); —*Aoki, T.:* Additional survey records to the odonate fauna of Kobe City, Hyogo prefecture (pp. 27-32); — *Hisakawa, T.:* Collection records of dragonflies in Gojo City, Nara prefecture (pp. 32-35); — Report of the survey trip to Gojo City, Nara prefecture (pp. 35-37); — *Nishu, S.:* Report of the additional survey to the 1st trip on the odonate fauna of North Hyogo (pp. 38-42); —Report of the survey trip on the odonate fauna of North Hyogo (2) in late summer, 1990 (pp. 43-48); — Report of the survey trip on the odonate fauna of North Hyogo (3) in the autumn 1990 (pp. 49-51); —*Tani, K.:* Report of the survey trip to Tonomine-Kogen, Hyogo prefecture (pp. 52-54); — *Shimura, S.:* Report of the field survey on the odonate fauna of Yodo River (7) (pp. 54-55); — *Tsuda, S., S. Nishu & T. Takeuchi:* Mesh code of "Dragonflies of Kinki district", 1984: Part 3, Anisoptera (2) (pp. 56-61).

(7840) HÄMÄLÄINEN, M., 1991. Zwei neue Gynacantha-Arten von den Philippinen (Odonata: Aeshnidae). *Ent. Z., Essen* 101(11): 193--198. (With Engl. s.). — (Tullilaboratorio, Tekniikantie 13, SF-02150 Espoo, Finland).
G. rolandmuelleri sp. n. (holotype ♂: Sibuyan Isl., Magdiwang, Barrio Tampayan, alt. 50-200 m, Pawala, R., 19/31-VII-1986; paratype ♂: same general area, 18/31-III-1987 and G. constricta sp. n. (holotype ♂: Luzon, Laguna Prov., Batu-Bato; 30-I-1988) are described and illustrated. The 2 new spp. resemble G. alcanthoe Lieft. The holotypes are deposited in the R. Müller coll., St Gallen, Switzerland.

(7841) HOESS, R., 1991. Eine neue Population von Calopteryx splendens caprai Conci im Tessin, Schweiz (Odonata: Calopterygidae). *Opusc. zool. flumin.* 65: 1-7. (With Engl. s.). — (Normannenstr. 35, CH-3018 Bern).
During 1988-1990, the sp. was annually monitored at 2 stream systems in the Magadino Plain, and its excuviae were colleted in Switzerland for the first time. A detailed description of the habitat is given along with a list of 14 locally recorded odon. spp., and notes on reproductive behaviour are provided. Structural distinctions between the nominate ssp. and the Swiss C. s. caprai are briefly discussed.

(7842) HOLLAND, S., 1991. *Distribution of dragonflies in Gloucestershire.* ii+74 pp. Published by & available from the author, Cheltenham, Glos. ISBN none. Price: £ 4.- net + postage. —(64 All Saints' Rd, Cheltenham, Glos., GL52 2HA, UK).
An attractive, slim volume on all what is known on the 27 spp. of this W Midland county of England, UK, with emphasis on regional distribution (incl. dot maps for all spp.), and details on the occurrence in different areas. A statement on phenology and a comprehensive section on field characters and habitat for each make the work particularly valuable also to a general reader. Chapters on 2 particularly interesting localities were contributed by A.D. FOX and I.D. PROCTOR resp. Also included are an outline of the history of the odon. recording in the county (with some hints for future needs) and a regional bibliography.

(7843) HOLMEN, M., 1991. Dvaergvandnymfe, Nehalennia speciosa (Charpentier), ny for Danmark (Odonata, Coenagrionidae). — The damselfly Nehalennia speciosa (Charpentier, 1840) new to Denmark. *Ent. Meddr* 59(1): 1-3 (Danish, with Engl. s.). — (Høbjergvej 11, Høbjerg, DK-3200 Helsinge).
The sp. is recorded from a locality nr Elsinore, NW Zealand prov., June 1990. It was found along the edges of an oligotrophic pond in a small bog, surrounded by coniferous forest.

(7844) JOHNSON, D.M., 1991. Egg density and predation effects on dragonfly survival, growth, and voltinism. *Bull. N. Am. benthol. Soc.* 8(1): 145 [abstract only]. — (Dept Biol. Sci., East Tennessee St. Univ., Johnson City, TN 37614, USA).
[Verbatim]: Epitheca (Tetragoneuria) cynosura dominates the larval dragonfly assemblage of Bays Mountain Lake (Sullivan County, Tennessee). Descriptive studies suggest the population exhibits cohort-splitting — some individuals having univoltine life histories, while most are semivoltine. Previous experiments suggest that the voltinism of individual larvae is flexible, responding to ecological interactions during early development. — In a complex experiment on direct and indirect effects of fish predation, relatively large (2.6 $m^2$) enclosures colonized by "natural" benthic communities were subjected to all combinations of the following treatments: 10 small sunfish or no sunfish: 40 senior year-class Epitheca or no dragonfly larvae: high density (2400 per enclosure) of Epitheca eggs or low density (240) of eggs. Experiments were conducted from May to October in six locations (blocks) during a two-year period (1987 & 1988). — Analysis of Epitheca larvae recovered both in monthly macrobenthos samples, and in a large collection of survivors in October of each year, supports the following conclusions: (1) sunfish predation reduced the density of junior year-class Epitheca hatching from eggs: — (2) a 10-fold difference in egg density caused only a 2-fold difference in larval density: and — (3) low-density junior year-class Epitheca (low egg and/or fish treatments) had a higher percentage of univoltine individuals in October (ca. 90% vs 76%).

(7845) *JOURNAL OF THE BRITISH DRAGONFLY SOCIETY*, Vol. 7, No. 1 (Apr., 1991) —(c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR2 4AG, UK).
*Jenkins, D.K.:* A population study of Coenagrion mercuriale (Charpentier) at a New Forest site. 4. A review of the years 1985 to 1989 (pp. 1-3); — *Winsland, D.C.:* The dragonflies of the Moors River (pp. 4-6); — *Moore, N.W.:* The last of Oxygastra curtisii (Dale) in England? (pp. 6-10); — *Drake, C.M.:* The condition of Lestes dryas Kirby larval populations in some Essex grazing marshes in May 1990 (pp. 10-17); — *Cham, S.A.:* The Scarce Blue-tailed damselfly, Ischnura pumilio (Charpentier): its habitat preferences in south-east England (pp. 18-25); — *Paine, A.:* Brief notes and observations (pp. 25-26; records by *E. Blood, R.M. Belringer* and *S. Knill-Jones*); — *Brooks, S.J.:* Book review (pp. 26-27; Brownet, A., 1990, The dragonflies of the Banbury area, Brookside Books; available from the author, at £ 3.70); — *Recent odonatological publications* (p. 28; list of 13 ad hoc titles of journal papers, 1989-1990).

(7846) KAUFMANN, M., M. MAIER & P. STAGNOLI, 1991. *Ökologische Untersuchungen an Libellen im Zürcher Oberland.* Kantonsschule Zürcher Oberland, Wetzikon. 92 pp. — (c/o Dr H. Wildermuth, Mythenweg 20, CH-8620 Wetzikon).
This is a report on a "Schweizer Jugend forscht" project, supervised by Dr H. Wildermuth. It deals with simple population biology aspects of the fauna of 5 man-made ponds, and of the Gigerbach and Mostbach streams, Wetzikon, Schwitzerland. The evidence on the emergence sites, and on the emergence and adult phenology of the 13 local spp. is of some interest. Conducted by secondary school students, the serious approach, documentation of the field evidence, and the general style of the report certainly are considerably above secondary school level.

(7847) *KIMMINSIA.* Newsletter of the United King-

dom National Office of the International Odonatological Society (SIO), Vol. 2, No. 1 (May 1, 1991). — (c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR8, 4AG, UK).
In addition to the traditional sections, "News from members" (pp. 2-3; *N. Averill, A. Davies, R. Mackenzie Dodds, I Endersby, T. Graves, P. Gravett, E. McCabe, I. Meskin, M. Samways, J. Silsby, G. Vick*), "Conservation" (pp. 3-4; *N. Moore, I. Endersby, M. Samways, J. Silsby, D. Thompson*), "News from Universities" (p. 4; *M. Samways, D. Thompson*), and "Odonata visitors to Natural History Museum in 1990/91" [= Brit. Mus. (Nat. Hist.)] (p. 5; *S. Brooks*), the issue brings 2 obituaries for the late R.M. Gambles (p. 1, by *P.S. Corbet;* pp. 1-2, by *G. Vick*), and the following signed articles: *Brooks, S.:* The Odonata collection of the Natural History Museum, London [= Brit. Mus. Nat. Hist.] (pp. 4-5); — *Butler, S.:* Petalurids by parcel post (pp. 5-6); — *Parr, M.:* A small pond for dragonflies in Summerset (pp. 6-7); — *Miller, P.:* Dragonflies in India (pp. 7-8); — *Silsby, J.:* Some observations on the dragonflies of the Okavanga delta (p. 8); — *Vick, G.:* In search of the Greek cordulegasters (pp. 9-10).

(7848) KURATA, M., 1991. *Life histories of high altitude dragonflies.* Seibundô-shinkôsha, Tokyo. iv+274 pp., 5 pls (4 col.) incl. —ISBN 4-416--29110-8. (Jap., with Engl. title). — (Available from the SIO, Bilthoven).
This is a basically unrevised 2nd ed. of the excellent book reviewed critically in *OA* 1228. The Engl. title does not appear in the 1st ed.

(7849) LAYTON, R.J. & J.R. VOSHELL, 1991. Colonization of new experimental ponds by benthic macroinvertebrates. *Environ. Ent.* 20(1): 110-117. — (Dept Ent., Virginia Polytech. Inst. & St. Univ., Blacksburg, VA 24061, USA).
Studies were conducted on experimental ponds in Virginia for 1 yr. The colonization sequence was Diptera, followed by Coleoptera, Ephemeroptera and Odon. Factors that influenced the structure and function of the new habitat are discussed.

(7850) LOTZING, K., 1991. Beiträge zur Faunakartierung des Kreises Stassfurt. 4. Grosslibellen (Anisoptera) — Familien Edellibellen (Aeshnidae) und Falkenlibellen (Corduliidae). *Abh. Ber. Naturk. Vorgesch., Magdeburg* 15: 73-82. — (Clara-Zetkin-Str. 4, D-O 3251 Unseburg, FRG).
Continuation of the series listed in *OA* 6561, 6763 (pt 1 deals with the Lepidoptera only!), presenting information on 7 spp.

(7851) LUQUET, G.C., D. BONORA & C. CAUSSANEL, 1991. A.J. Rösel von Rosenhof, miniaturiste et lépidoptériste du XVIIIe siècle, un précurseur de l'entomologie moderne. *Alexanor* 16(8): 451-507. — (Lab. Ent., Mus Natn. Hist. Nat., 45 rue de Buffon, F.75005 Paris).
Detailed evaluation of, and a complete inventory of spp. (incl. 14 odon. identified to the sp. level) contained in the monumental work as listed in *OA* 7741.

(7852) *MACROMIA.* Bulletin of Tombo Kenkyukai [= Dragonfly Research Group], Osaka: edited by A. Muraki. Nos 94 (Feb. 16, 1991) & 95 (March 29, 1991). (Jap.). — (c/o A. Muraki, 476-2-4-1312, Kano, Higashi-Osaka, 578, JA).
Cheaply produced, but highly interesting journal, strictly intended for circulation among the membership of the Group only (1991 annual membership fees: Y 3000.- net).

(7853) *MARTINIA.* Bulletin de liaison des odonatologues de France. Vol. 7, No. 1 (Apr. 1991) —(c/o J.-L. Dommanget, 7 rue Lamartine, F--78390 Bois d'Arcy).
*Dommanget, J.-L.:* Editorial (pp. 1-2; announcement of the foundation of the "Société française d'Odonatologie", on Apr. 6, 1991); —*d'Aguilar, J. & M. Yoshida:* Anax parthenope, souvenir d'une enfance japonaise (p. 3); —*Machet, P.:* Note complémentaire concernant l'article de J. d'Aguilar et M. Yoshida concernant l'article de J. d'Aguilar et M. Yoshida (pp. 4-5); — *José, P.:* Orthetrum brunneum (Fonscolombe) en altitude (Odonata: Libellulidae) (p. 6); — *Coppa, G.:* Notes sur l'émergence d'Epitheca bimaculata (Charpen-

tier) (Odonata: Corduliidae) (pp. 7-16); — *Coffin, J.:* A propos de Sympetrum pedemontanum (Allioni) dans le département du Vaucluse (Odonata: Libellulidae) (p. 17); — *Kerihuel, C.:* Migration de Sympetrum sanguineum (Müller) en Loire-Atlantique (Odonata: Libellulidae) (p. 18); — *Manach, A.:* Observation de Boyeria irene (Fonscolombe) dans le Finistère, ou de l'intérêt des sorties crépusculaires (Odonata: Aeshnidae (pp. 19-22); — *Dommanget, J.-L.:* Rubrique bibliographique (pp. 23-25); — *Heidemann, H., Dommanget, J.-L.:* Analyses d'ouvrages (pp. 25-27, 27-28).

(7854) MILLER, P.L., 1991. The structure and function of the genitalia in the Libellulidae (Odonata), *Zool. J. Linn. Soc.* 102: 43-73. — Dept Zool., Univ. Oxford, South Parks Rd, Oxford, OX1 3PS, UK).
An outline of the morphology of the secondary genitalia of libellulid dragonflies is given together with a more detailed treatment of the components of the fourth (distal) segment of the penis. The variations of penis structure in 70 species, representing ten of the 11 subfamilies, are surveyed and catalogued. There is remarkable diversity in the presence and form of penis structures, particularly those associated with the medial process, namely the flagellum, cornua and inner lobes. A comparable survey of females shows that they can be provisionally divided into ten types according to the number and size of their sperm-storage organs. Comparisons of penis structures with the sperm-storage organs of females suggests that in species whose females store large amounts of sperm, usually doing so in one or a pair of organs, males possess highly extensible, lobate and bristly penes, commonly equipped with cornua. By contrast, in those species in which the females store small volumes of sperm, usually doing so in three organs, the penes bear either flagella equipped with proximally directed spines or with large terminal barbs, or they have narrow, spiny inner-lobes which resemble flagella. Some functional interpretations are proposed in the light of sperm competition. The variability of genital structure can be interpreted adaptively and does not closely reflect phylogenetic relationships. Functionally convergent structures have evolved a number of times from different origins.

(7855) MITCHELL, B., 1991. Butterflies and dragonflies in North Warwickshire. *Bull. amt. Ent. Soc.* 50(375): 92. — (Author's address not stated).
Erythromma najas and Sympetrum sanguineum are recorded; Warwickshire, UK.

(7856) MOKRUSHOV, P.A., 1991. Zritel'nye stimuly v povredenii strekoz. 4. Raspoznavanie nepodvizhnyh osobey svoego vida u strekoz roda Lestes. — Visual stimuli in behaviour of dragonflies. 4. Recognition of immobile conspecific individuals in Lestes dragonflies. *Vest. Zool., Kiev* 1991(2): 39-43. (Russ., with Engl. s.). — (Schmalhausen Inst. Zool., Ukrain. Acad. Sci., Lenin St. 15, USSR-252000 Kiev-30, Ukraine).
Immobilized individuals and artificial models were posted in the field to males of 4 Lestes spp. The males displayed no ability to discriminate the sex and the sp. of a congeneric immobile dragonfly. The area and the wing arrangement are of significance for the recognition of an immobile target as a dragonfly.

(7857) MULHAUSER, B., 1991. Compte rendu du premier recensement des libellules et papillons diurnes de la "Grande Cariçaie" (rive sud-est du lac de Neuchâtel). Bull. romand Ent. 9(1): 31--39. — (Groupe Edute & Gestion, Grande Cariçaie, Champ-Pittet, CH-1400 Cheseaux--Noréaz).
List of 43 odon. spp., with comments on some of them. Canton Neuchâtel, Switzerland.

(7858) NEL, A., 1991. Un nouvel odonate fossile du miocène de Bellver de Cerdana (Espagne) (Odonata, Libellulidae). *Entomol. gall.* 2(3): 129-130. (With Engl. s.). — (8 av. Gassion, F-13600 La Ciotat).
Trithemis pseudodistanti sp. n. is described and figured from the Upper Miocene of Bellver de Cerdana, Spain. The basin probably had a very hot climate during the Neogene. The holotype is the sole known specimen, and it is deposited

in MNHN, Paris (No. IPM-R54382).

(7859) NEUVONEN, A., 1991. Saimaannorppa, lumpeenlehdet, ukkometso ja pihlajanmarjat ikuistettiin rahoihin. — [Saimaa ringed seal, water lily leaves, male capercaillie and rowan berries immortalized in coins]. *Helsingin Sonomat,* issue of Apr. 13, p. A7. (Finnish).
Description and col. phot. of a series of coins (FM 1.-, FM 5.-, FM 10.-), designed by Antti Neuvonen, dated 1993. The FM 5.- coin shows the image of a dragonfly on a water lily leaf and the endemic Phoca hispida saimensis, and is scheduled for advance circulation in 1992, relative to the 75th anniversary of Finnish independence.

(7860) *NEWSLETTER [OF THE] BRITISH DRAGONFLY SOCIETY,* No. 19 (Spring, 1991). — (c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR2 4AG, UK).
On 10 pp., it contains 22 news items, incl. an article by *A. Parr,* "Recording migrant Odonata: an introduction" (pp. 4-5), with an appeal for systematic recording of the phenomenon in Britain. — The BDS now has 18 local groups (listed here). The issue also gives the reports on various indoor, outdoor and other meetings, and concludes with the statement of the 1989/1990 accounts.

(7861) *NOUVELLES CENTRE SUISSE DE CARTOGRAPHIE DE LA FAUNE,* No. 1 (March, 1991). — (Centre suisse de Cartographie de la Faune, Terreaux 14, CH-2000 Neuchâtel).
Semiannual bulletin of the Swiss Centre for Fauna Cartography. It contains a special section, titled *ANAX,* and edited by A. Maibach & C. Meier, functioning as the official publication medium of the Swiss Society of Odonatologists, mainly within the scope of a newsletter. In addition to various general notes relative to the publication program, the first issue contains an Editorial (*A. Maibach & C. Meier;* p. 17), the 1987-1989 Bibliography of publications related to the Swiss odon. fauna (Anonymous; pp. 18-19), and a technical article by *C. Deliry,* listed in *OA* 7830.

(7862) NOWAK, M., 1991. Can dragons teach us to fly? *Natn. Wildlife* 29(3): 14-17. — (Contact: Dr M.W. Luttges, Dept Aerospace Eng. Sci., Univ. Colorado, Boulder, CO 80309-0429, USA; — *or:* Dr S.W. Dunkle, Int. Odonata Res. Inst., P.O. Box 1269, Gainesville, FL 32602-1269, USA).
The article is based on interviews with the Aerospace Engineer Dr M.W. Luttges, his former graduate student, Dr M. Kliss, and with the Manager of the Int. Odonata Res. Inst. of the S.I.O., Dr S.W. Dunkle. For some of the technical papers on the subject, by Dr Luttges and his collaborators, cf. *OA* 5104, 5170, 6095, 6724, 6760, 6776, 6788, 6798, 6823.

(7863) *ODONATOLOGICAL LIBRARY NEWS.* Published by the Kansai Research Group of Odonatology, Osaka. No. 8 (March 31, 1991). (Jap., with Engl. title). — (Distribution outside Japan: K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
Lists 138 titles by Japanese, and 4 by foreign workers.

(7864) PARKER, M.S., 1991. Direct and indirect effects of larval salamander predation on a benthic invertebrate community. *Bull. N. Am. benthol. Soc.* 8(1): 81 [abstract only]. —(Group Ecol., Univ. California, Davis, CA 95616, USA).
[Abridged]: The effects of larval salamander on benthic community organisation in Fox Cr., a second order stream in NW California was examined. Although total invertebrate density did not differ between salamander removal and control sides, there were significant species specific density differences and differences in size distributions of some taxa. Densities of 2 of the most abundant invertebrate predators, Polycentropus and Octogomphus, and 2 mayfly taxa, Paraleptophlebia and heptegeniidae, were significantly higher in the absence of salamanders. In addition, mean body size (H.W.) of dominant invertebrate predators, Calineria, Polycentropus and Octogomphus,

was significantly larger in the absence of salamanders. In contrast, Baetis and Orthocladiinae densities were significantly higher in the presence of salamanders, suggesting a reduction in predation pressure possibly due to reduced invertebrate predator densities and sizes. These results indicate that Pacific Giant Salamander larvae play an important role as top predator having strong direct and indirect impacts on benthic invertebrate assemblages.

(7865) REDER, G., 1991. Bemerkungswerte Flügelmissbildung bei der Grossen Heidelibelle — Sympetrum striolatum Charp. (Insecta: Odonata). *Fauna Flora Rheinland-Pfalz* 6(2): 575-577. — (Am Pfortengarten 37, D-6523 Flörsheim/Dalsheim, FRG).
A teratologically developed fore wing pair in S. striolatum is described, photographed, and a tentative explanation of the phenomenon is offered.

(7866) RUNCK, C. & D.W. BLINN, 1991. Effect of vegetational refuges on invertebrate predation rate. *Bull. N. Am. benthol. Soc.* 8(1): 80 [abstract only]. — (Dept Biol. Sci., Northern Arizona Univ., Flagstaff, AZ 86011, USA).
[Verbatim]: We studied the importance of 3 levels of vegetation refuge for 3 levels of amphipod prey density during the day and night. The predator in all experiments was the damselfly nymph, Telebasis salna. Hyalella montezuma remains in the vegetation at night (27 animals/L) in Montezuma Well, AZ, but a significant portion of the population migrates into the pelagic zone during the day. Annual densities of Telebasis in the littoral vegetation average 4500 animals/m$^2$. At a constant vegetation density (15 g/L), Telebasis captured significantly more Hyalella in the light than in the dark at 10 and 25 prey/L, but this relationship was not significant at 50 prey/L. There were no significant differences in the number of Hyalella captured in light treatments with and without vegetation at either 10, 25 or 50 prey/L. However, in dark treatments there were significantly fewer prey taken at 10 and 25 prey/L in vegetation than in treatments without vegetation. As vegetation density increased, the number of prey captured decreased in both light and dark treatments at 10 prey/L, however at 50 prey/L vegetation density had no effect on the number of prey captured in either light or dark treatments. These experiments suggest that vegetation provides an important refuge for Hyalella at night, but the effectiveness of this refuge is limited by the density of prey. We propose the strong predation pressures by Telebasis in the littoral vegetation account for the horizontal migration of Hyalella into the pelagic region during the day.

(7867) *SAMMELBERICHT (1990) ÜBER LIBELLENVORKOMMEN (ODONATA) IN BADEN-WÜRTTEMBERG*, No. 7 (1991). Published by the Schutzgemeinschaft Libellen Baden-Württemberg, Freiburg i. Br.; compiled by R. Buchwald, B. Höppner, U. Reinhard, K. Sternberg & A. Schanowski. 36 pp. — (c/o Dr R. Buchwald, Sautierstr. 75, D-7800 Freiburg, FRG).
Updated ed. (cf. *OA* 7812).

(7868) SCHÄFER, U., 1991. Das Naturschutzgebiet Krickenbecker Seen ist eine Fundgrube für Libellenkundler. *Rheinische Post* 1991(108), 1 p. (issue of May 11). — (c/o B. Thomas, P.-Therstappen-Str. 92, D-4054 Nettetal-1, FRG).
Regional daily's article on the same subject as *OA* 7869, based on an interview with Dipl.-Biol. B. Thomas, odonatologist of the Biol. Station Krickenbecker Seen (address above).

(7869) SENNERT, G. & B. THOMAS, 1991. Die Libellen des Naturschutzgebietes Krickenbecker Seen. *Schr. Natur Gesch. Niederrheins* 10: 215-225. — (First Author: Johannes-Girmes-Str. 52, D-4155 Grefrath-2, FRG).
The odon. fauna (42 spp.) of Nature Reserve "Krickenbecker Seen", distr. Viersen, FRG, is outlined. At present, 23 spp. are considered autochthonous, and 5 possibly so. The development of the status of each sp. during 1963-1990 is stated in detail. Cf. also *OA* 7868.

(7870) SIBLEY, P.K., N.K. KAUSHIK & D.P.

KREUTZWEISER, 1991. Impact of a pulse application of permethrin on the macroinvertebrate community of a headwater stream. *Environ. Pollut.* 70: 35-55. — (Second Author: Dept Environ. Biol., Univ. Guelph, Guelph, Ont., N1G 2W1, CA).
The impact of a concentrated pulse of the insecticide permethrin on the macroinvertebrate community of a northern Ontario headwater stream (Icewater Creek, 50 km NE of Sault Ste Marie) was evaluated. Post-treatment drift increased by a factor of 2400 within minutes of the arrival of the insecticide. There was a significant reduction in the invertebrates of most groups as far as 260 m below the injection point. The greatest impact was recorded in Ephemeroptera, but the Aeshnidae were family-wise also considered.

(7871) SPURIS, Z., 1991. Kody semeystv krupneyshih otryadov vodnyh nasekomyh dlya primeneniya v EVM (Ephemeroptera, Odonata, Plecoptera, Trichoptera). — The codes of the families of the big orders of aquatic insects (Ephemeroptera, Odonata, Plecoptera, Trichoptera) for use in electronic computers. *Latv. Ent.* 34: 111-115. (Russ., with Latvian & Engl. s's). — (SIO Regional Office, Miera iela 19-6, USSR-229021 Salaspils, Latvia).
The PC codes are tentatively proposed for 29 extant odon. families.

(7872) SPURIS, Z., 1991. [Recenzii]. Advances in Odonatology, Vol. 4. *Latv. Ent.* 34: 120 (Russ.). — (SIO Regional Office, Miera iela 19-6, USSR-229021 Salaspils, Latvia).
Book review of the volume listed in *OA* 7096, in which the attention is drawn to the omission of a general statement on the location, date, and other details of the resp. Int. Symp. Odonatol., to the proceedings of which this series is devoted.

(7873) TEEUWEN, J., 1991. Zonaanbidders en koukleumen tegelijk. *Natuurbehoud* 22(2): 8-9, coverphot. excl. (Dutch). — (Author's address not stated).
A general note, with photographs of 8 Dutch spp.

(7874) UBUKATA, H., 1991. [The odonate fauna of Hokkaido and its components]. *Hokkaido Shizen Seibutsu* 4: 1-16. (Jap.). — (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).
The 73 spp. hitherto known from Hokkaido, Japan, are listed, and statements on their habitat requirements and distribution are provided for each sp. The odon. distribution patterns in Hokkaido are briefly discussed.

(7875) WISSINGER, S. & J. McGRADY, 1991. Direct and indirect effects of intraguild predation and interference competition between dragonflies and damselflies. *Bull. N. Am. benthol. Soc.* 8(1): 81 abstract only. — (Biol. Dept, Allegheny Coll., Meadville, PA 16635, USA).
[Verbatim]: Our previous work suggested that larvae of the migratory dragonfly, Tramea lacerata, will be important intraguild predators on resident odonates in fishless ponds. In field experiments, Tramea dramatically reduces damselfly densities and preys on larvae of other resident dragonflies that climb in the vegetation. One striking result of those experiments was that the combined predatory effects of Tramea and a resident dragonfly, Erythemis, on damselflies was lower than predicted from the results of single predator treatments. Here we present the results of experiments designed to isolate the direction of this apparent interference effects. We compared dragonfly foraging rates on damselflies in vegetated aquaria in the presence and absence of other larvae with the distal lobes of their menta removed ("demented larvae"). Demented larvae could elicit changes in the foraging rates of larvae with intact mentums, but could not themselves capture damselflies. We found that foraging rates of Erythemis were reduced by more that 50% in the presence of demented Tramea as compared to controls. In contrast, Erythemis had no effect on Tramea foraging. Demented Erythemis reduced Erythemis foraging, but to a lesser extent than when in combination with demented Tramea. Tramea foraging increased in the presence of demented conspecifics, suggesting facilitation. The opposing intraspecific results for the two species might reflect differences in

foraging mode. From these studies we conclude that Tramea interaction with resident dragonflies will include both intraguild predation and interference competition. The impact of Tramea immigration on damselflies will be complex and include both direct negative effects and indirect positive effects related to decreased predation by other dragonflies.

(7876) WITTMER, M., 1991. Moorlibellen im Nationalpark Bayerischer Wald. *Nationalpark* 70: 22-25. — (Habichtweg 18, D-6908 Wiesloch-2, FRG).

Directed at a general readership; mainly notes on Aeshna subarctica elisabethae, Somatochlora alpestris and S. arctica.

(7877) YOUNG, S., 1991. Dragonflies help to defeat dengue fever. *New Scientist* 130(1766): 26. — (c/o Prof. Dr P.S. Corbet, Dept Zool., Univ. Edinburgh, West Mains Rd, Edinburgh, EH3 9JT Scotland, UK).
Journalist's report, based on the paper listed in *OA* 7421 and on an interview with Prof. P.S. Corbet.