

ODONATOLOGICAL ABSTRACTS

1984

- (7439) UNRUH, M., 1984. Libellenbeobachtungen (Odonata, Insecta) aus Deutschbaselitz und Umgebung in den Jahren 1983 und 1984. *Veröff. Mus. Westlausitz* 8: 69-72. — (Mus. "Schloss Moritzburg", Schlossstr. 6, D-04900 Zeitz, FRG).
Annotated list of 19 spp., Oberlausitz, eastern Germany.

1985

- (7440) BANSE, W. & G. BANSE, 1985. Untersuchungen zur Abhängigkeit der Libellen-Artenzahl von Biotopparametern bei Stillgewässern. *Ber. Akad. NatSchutz, Laufsen* 9: 33-36. (With Engl. s.). — (First Author: Friedensstr. 9, D-8406 Sünching, FRG).
By means of correlation analysis the factors are shown on which the species diversity seems to depend within a given stagnant water body. Some hints as to the pattern of the oviposition sites can be derived from regression analysis. Studies were carried out at 60 water bodies in the area of Freising, Upper Bavaria, FRG.

1986

- (7441) BÁNKUTI, K., 1986. A Mátra Múzeum szitakötő gyűjteménye (Odonata). — The adder-fly [sic!] (Odonata) collection of the Mátra Museum. *Fol. Hist.-nat. Mus. Matr.* 11: 15-20. (Hung., with Engl. s.). — (József Attila u. 4, HU-2651 Rétság).
Checklist of the odon. collection (919 spe-

cimens) of the Mátra Museum. Most of the material is of Hungarian provenience; some specimens are from Czechoslovakia, Germany, Sweden and Yugoslavia.

- (7442) BÁNKUTI, K., 1986. Rétság környékének szitakötő (Odonata) faunája. — The adder-fly [sic!] (Odonata) fauna of the vicinity of Rétság. *Fol. Hist.-nat. Mus. Matr.* 11: 21-30. (Hung., with Engl. s.). — (József Attila u. 4, HU-2651 Rétság).
A detailed list of records (32 spp.) from the Rétság area, Hungary. *Pyrrhosoma nymphula interposita*, *Coenagrion hastulatum*, *Anax parthenope*, *Somatochlora metallica* and *Epithea bimaculata* are considered of regional interest.

- (7443) ENDERSBY, I., 1986. Norfolk Island dragonflies. *Norfolk Nature Notes* 2(2): 110-111. — 56 Looker Rd, Montmorency, Vic. 3094, AU).
3 of the known spp. are reported from 3 localities, and the status of *Agriocnemis vitiensis* is briefly discussed. Also included is a reference to the sightings of 2 spp.; these may be referable to taxa not hitherto recorded from this southwestern Pacific island.

- (7444) JELL, P.A. & P.M. DUNCAN, 1986. Invertebrates, mainly insects, from the freshwater, Lower Cretaceous, Koonwarra Fossil Bed. (Korumburra Group), South Gippsland, Victoria. *Mem. Ass. australas. Palaeontols* 3: 111-205. — (First Author: Queensland Mus., P.O. Box 300, South Brisbane, Quid 4101, AU).

The assemblage of this Australian locality includes more than 80 invertebrate spp., of which more than 70 are insects, but only some unidentified coenagrionid larvae and *Peraphlebia tetrastichia* gen. n., sp. n. (Mesophlebiidae) are referable to the Odon. Adult and larva of the new sp. are described and figured.

- (7445) SUÁREZ, M.L., R. VIDAL-ABARCA, A.G. SOLER & C. MONTES, 1986. Composición y estructura de una comunidad de larvas de odonatos (Zygoptera & Anisoptera) en un río del se de España: cuenca del Río Mula (Río Segura). *An. Biol., Murcia* (II) 8: 53-63. (With Engl. s.). — (Depto Zool., Fac. Biol., Univ. Murcia, Murcia, Spain).
Odon. larvae were studied in a first order stream, in the semiarid part of the Segura R. basin, SE Spain. Analysis of habitat and seasonal segregation, combined with physicochemical environmental parameters help in the assessment of the odon. larval community, coexisting in a small stretch of a water course.

1987

- (7446) BEEK, G. & R. VAN GEEL, 1987. Mobiliteit van de libel *Ischnura elegans*. — Mobiliteit bei *Ischnura elegans*. *Natuur Landschap Achterhoek* 1987 (1): 40-43. (Dutch, with Germ. s.). — (Authors' current addresses unknown).
On the basis of the mark-recapture method it is shown that the mobility of *I. elegans* does not exceed 50 m (Winterswijk, The Netherlands).
- (7447) CALVER, M.C., D.A. SAUNDERS & B.D. PORTER, 1987. The diet of nestling rainbow bee-eaters, *Merops ornatus*, on Rottnest Island, Western Australia, and observations on a non-destructive method of diet analysis. *Austral. Wildlife Res.* 14(4): 541-550. — (First Author: Agric. Prot. Bd. of W. Austral., Bougainville Ave., Forestfield, W.A. 6058, AU).
The diet was determined by analysis of droppings and regurgitated pellets. In total, 2187 spp. of 6 orders were identified, incl. 4 not further identified odon.

- (7448) KATATANI, N., 1987. [On the chromosomes

of dragonflies]. 1. [Synopsis on the chromosome studies in some Japanese dragonflies]. *Aeschna* 20: 21-31. (Jap.). — (2-1833-38 Shoyodai, Nara-shi, 631, JA).

After an introductory outline of the history of odon. chromosome research, and the description of the basic methods and/or procedures, observations on *Aeshna nigroflava* (=14), *Macromia daimoji* (n=13), *Crocothemis s. servilia* (Ishigaki Isl., Okinawa, n=13) and *C. s. mariannae* (Osaka & Aichi pref., n=12, neo-XY) are described in considerable detail. In addition to the usual (and excellent) micrographs, mitotic karyograms are also provided for all 3 spp.

- (7449) MURAKI, A., 1987. [Considerations on *Macromia urania*]. *Gekkan Mushi* 201: 20-23. (Jap.). — (476-2-4-1312 Kano, Higashi-Osaka, 578, JA).
[Abstract not available]. For pt 2 cf. *OA* 7542.
- (7450) RAHMANN, H., M. HOLLNAICHER & M. WOLF, 1987. Faunistische Untersuchungen zur landschaftsökologischen Bewertung von Kleingewässern in Oberschwaben. *Ökol. & NatSchutz* 1987(1): 81-93. — (Zool. Inst., Univ. Hohenheim, Garbenstr. 30, D-7000 Stuttgart-70, FRG).
Odon. progress report on the subject dealt with in more detail in the monograph listed in *OA* 7455.
- (7451) FÓTH, S., 1987. A Mátra-hegység szitakőto (Odonata) faunája. — The Odonata fauna of Mountain Mátra. *Fol. Hist.-nat. Mus. Matr.* 12: 23-42. (Hung., with Engl. s.). — (Bakonyi Termézet-Tudományi Múzeum, Postafiók 36, HU-8420 Zirc.).
Comprehensive review and analysis of the Mátra Mt fauna (47 spp.), Hungary. The work is based on 15 yrs of systematic recording.
- (7452) WOLFF-STRAUB, R., 1987. Rote Liste — Fieberthermometer für die Gesundheit der Natur: Neuauflage der ökologischen Bilanz für Nordrhein-Westfalen. *Mitt. Landesanst. Ökol. Nordrhein-Westf.* 1987(1): 36-37. — (Landesanstalt Ökol. & Forstplanung, Leibnitzstr. 10, D-4350 (Recklinghausen, FRG).

Out of the 61% odon. spp. known to occur in Rhineland-Westfalia, FRG, 38 spp. (62%) were considered threatened in 1979, and 42 (69%) in 1986.

1988

- (7453) KOLBE, W. & A. BRUNS, 1988. *Insekten und Spinnen in Land- und Gartenbau. Ergebnisse der faunistischen Arten-Bestandsuntersuchungen in Höfchen (Burscheid) und Laacherhof (Monheim) 1984-1987*. Rheinischer Landwirtschafts-Verlag, Bonn. 162 pp. — ISBN 3-924683-86-7. — (Publishers: Rochusstr. 18, D-5300 Bonn-1, FRG).

Basically, this is a checklist of the taxa recorded at the 2 experimental farms of the Bayer industries (incl. 11 odon. spp.). The work gives neither a description of the habitats, nor an ecological, or biotic community assessment of the fauna; therefore its objective remains unclear.

- (7454) O'CONNOR, J.P. & D. MURPHY, 1988. Some records of Irish Odonata (Insecta). *Bull. Ir. biogeogr. Soc.* 11: 35-40. — (Natn. Mus. Ireland, Kildare St., Dublin-2, Ireland).
Locality data on 20 spp.

- (7455) RAHMANN, H., K. ZINTZ & M. HOLLNAICHER, 1988. Oberschwäbische Kleingewässer: limnologisch-faunistische Aspekte zur ökologischen Beurteilung. *Beih. Veröff. Nat-Schutz LandschPfl. Bad.-Württ.* 56: 1-212. — (Available from: Inst. Ökol. & Naturschutz, Postfach 210752, Bannwaldallee 32, D-7500 Karlsruhe-21, FRG).

On pp. 142-151, the odon. communities are described of fish- and non-fish ponds, small pools and gravel pits, Baden-Württemberg, Germany. The faunal evidence is mainly based on literature.

- (7456) TÓTH, S. & K. BÁNKUTI, 1988. Adatok a Sár-hegy szitakötő faunájához (Insecta: Odonata). — Data to the Odonata fauna of Sár-hegy. *Fol. Hist.-nat. Mus. Matr.* (Suppl.) 2: 1-6. (Hung., with Engl. s.). — (First Author: Bakonyi Természet-Tudományi Múzeum, Postafiók 36, HU-8420 Zirc).

Annotated list of 19 spp. from the Sár-hegy Nature Reserve, nr Gyöngyös, Hungary. The occurrence of *Pyrrhosoma nymphula* interposita, *Sympetrum fonscolombei* and *Leucorrhinia pectoralis* is considered of interest.

1989

- (7457) ASAHINA, S., 1989. A list of the dragonfly specimens checked in 1935 in the collection of the Entomological Laboratory of Hokkaido University. *Trans. Essa ent. Soc. Niigata* 68: 3-25. (Jap., with Engl. title). — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
Annotated list of 209 spp. mostly from Japan, some from China, Korea and Taiwan.

- (7458) BEUTLER, H., 1989. Notiz zur Lebensweise von Zangenlibellenlarven, *Onychogomphus forcipatus* (L.), in ostbrandenburgischen Seen (Insecta, Odonata, Gomphidae). *Beeskow. naturw. Abh.* 3: 93-94. — (Biol. Mus. Beeskow, Frankfurter Str. 23, Postfach 64-05, DDR-1230 Beeskow, FRG).

While in southern Europe *O. forcipatus* is a riverine sp., in Brandenburg and Mecklenburg it occurs almost exclusively on lakes. A few notes on larval behaviour are provided.

- (7459) D'ANTONIO, C. & C. UTZERI, 1989. [Reperti]. Odonata: Aeshnidae, Gomphidae, Cordulegastriidae. *Boll. Ass. romana Ent.* 43: 71-72. — (Second Author: Dipto Biol. Anim. Uomo, Univ. Roma "La Sapienza, Viale dell'Università 32, I-00185 Roma).
New Italian records of *Aeshna affinis*, *Onychogomphus forcipatus* unguiculatus and *Cordulegaster bidentatus*.

- (7460) GALLETTI, P.A. & M. PAVESI, 1989. Studi sulla Palude del Busatello (Veneto-Lombardia). 6. Gli Odonati. *Mem. Mus. civ. Stor. nat. Verona* (Biol.) 7: 47-54. (With Engl. s.). — (Mus. Civ. Stor. Nat., Corso Venezia 55, I-20155 Milano).

The Busatello marsh (Verona-Mantova, Italy) odon. fauna consists of 24 spp. It is discussed in terms of the assemblage recorded at the end of the last century. The present alterations are considered to be the result of the remarkably

- degraded current ecological conditions in the area.
- (7461) GRAÇA, M.A.S., D.M. FONSECA & S.T. CASTRO, 1989. The distribution of macroinvertebrate communities in two Portuguese rivers. *Freshw. Biol.* 22: 297-308. — (Dept Zool., Univ. Coimbra, PT-3049 Coimbra). Contains a list of 11 odon. spp. collected in the Soure and Alva rivers, Portugal.
- (7462) HESSELBARTH, G., 1989. In memoriam Anthony Valletta (1908-1988). *Nota lepid.* 12(1): 4-7, portrait incl. (Germ.). — (Author's address not stated).
Brief biography (born: Dec. 21, 1908, Birkirkara, Malta; deceased Dec. 8, 1988; Chief Inspector in the Educ. Department, Malta), evaluation of entomol. work and his selected entomol. bibliography. Valletta's work on the odon. of Malta was published in 2 papers in *Entomologist*, viz. Vol. 82(1949): 85-87, Vol. 90(1957): 306-307.
- (7463) HIEKEL, I., 1989. Ziegeleiteich Muckwar — ein wertvolles Sekundärbiotop. *Natur Landsch. Bez. Cottbus* 11: 59-63. — (Anne-Frank-Str. 26, D-7513 O Cottbus, FRG).
The habitat and the odon. fauna (15 spp.) of a clay pit in the Cottbus area, eastern FRG, are described and discussed. The fauna is not spp. rich, and the high percentage of moor taxa is due to the acidity of the environment.
- (7464) HIRASHIMA, Y., [Supervisor], 1989. *A check list of Japanese insects*, Vols 1-3, 1767 pp. [+ Suppl., 37 pp., published in 1990]. Ent. Lab. Fac. Agric. Kyushu Univ. & Japan Wildlife Res. Center. (Jap., with taxonomic nomenclature). — (Ent. Lab., Fac. Agric., Kyushu Univ., Fukuoka, 812, JA).
The odon. are dealt with in Vol. 1, pp. 24-33. The taxonomic and the Japanese vernacular names are listed, and the distribution is stated for all spp. and ssp. — (*Abstracter's Note*: The traditional taxonomic concept, as introduced by Dr S. Asahina, is adopted. Some critical remarks on the understanding of some species and subspecies taxa in various genera, such as e.g. *Mnais* and *Somatochlora*, were published in the paper listed in OA 7425, the abstract/translation of which was not available at the time of its listing).
- (7465) KOUL, A.K., I.A. HAMAL & S.K. GUPTA, 1989. Pollination mechanism in *Coriandrum sativum* Linn. (Apiaceae). *Proc. Ind. Acad. Sci. (Plant Sci.)* 99(5): 509-515. — (Dept Bio-Sci., Univ. Jammu, Jammu-180001, India).
Exposed nectar, high pollen production, zygomorphic flowers and compact umbels are the contrivances which attract large numbers of a wide variety of insect spp. to coriander flowers. 9 orders are listed, incl. the incidental visitors, among which there is 1 not further identified odon. sp.
- (7466) KOZLOV, M.A., 1989. Otryad strekozy — Odonata. — [Order dragonflies — Odonata]. In: R.L. Potapov, [Ed.], *Redkie zhivotnye nashei strany*, pp. 212-215, Nauka, Leningrad. (Russ.). — (No addresses stated).
Calopteryx mingrelica, *Onychogomphus assimilis*, *Anormogomphus kiritschenkoi*, *Coenagrion mercuriale*, *C. lindeni*, *Ischnura aralensis*, *Anotogaster sieboldi*, *Cordulegaster insignis*, *Epallage fatime*, *Caliaeschna microstigma*, and *Libellula pontica* are briefly described (in this sequence) and their USSR distribution is stated.
- (7467) MÜLLER, O., 1989. Aktuelle Daten zur Verbreitung der Flussjungfern (Insecta, Odonata, Gomphidae) an der Unteren Oder (Bezirk Frankfurt/Oder). *Beeskow. naturw. Abh.* 3: 61-63. (With Engl. s.). — (Grosse Müllroser Str. 8, DDR-1200 Frankfurt/Oder, FRG).
Gomphus vulgatissimus, *Ophiogomphus serpentinus* and *Stylurus flavipes* were recorded during the 1988 survey from the lower Oder R., on the German/Polish border. The river is unpolluted and the latter sp. is particularly abundant. It is suggested that the Oder would be a good place for systematic inquiries into the biology of this sp., which is so far still largely unknown.
- (7468) MÜLLER, O., 1989. Faszinierende Insektenwelt. 3. Die Flussjungfern/Libellen (Gomphidae). *Beeskow. naturw. Abh.* 3: 83-86. —

- (Grosse Müllroser Str. 8, DDR-1200 Frankfurt/Oder, FRG).
A rather detailed account of the biology of *Gomphus vulgatissimus*, *Stylurus flavipes*, *Ophiogomphus serpentinus* and *Onychogomphus forcipatus*. Good figs of ultimate instars of the 4 spp. are provided as separate lay-in sheets.
- (7469) NAGEL, P., 1989. *Bildbestimmungsschlüssel der Saprobien. Makrozoobenthon. vit+* 183 pp., 167 pls incl. Fischer, Stuttgart-New York — ISBN 3-437-20438-6. Spiral binding. — Author: Inst. Biogeogr., Zentrum Umweltforschung, Univ. Saarland, D-6600 Saarbrücken, FRG).
The indicator value is stated for 8 odon. spp. (p. 17) and their larvae are keyed in a pictorial key (pls 1-7, pp. 92-99).
- (7470) NOLTE, U., 1989. Observations on neotropical rainpools (Bolivia) with emphasis on Chironomidae (Diptera). *Stud. neotrop. Fauna Environ.* 24(3): 105-120. — (Von Ossietzky-Str. 16, D-3400 Göttingen, FRG).
9 rainpools in the savanna of northern Bolivia were examined using a random, semi-quantitative method. Both the macrophyte and insect assemblages showed that the longevity of a pool represents the principal factor for its colonization in the tropics. 5 odon. families are mentioned, but no sp. names are stated.
- (7471) OTT, J., 1989. Die Odonatenfauna unterschiedlich strukturierter und genutzter Kiesgruben im Regierungsbezirk Rheinhessen-Pfalz. 1. Imagines. *Verh. westdt-EntTag, Düsseldorf*, pp. 89-103. (With Engl. s.). — (L.A.U.B., Ges. Landschaftsanal. & Umweltbewertung, Rudolf-Breischid-Str. 15, D-6750 Kaiserslautern, FRG).
Discussion on the odon. fauna of 12 sand and gravel pits in the Rhine-Hesse Palatinate, FRG.
- (7472) PAVLIUK, R.S. [in other publications usually spelled as "Pavlyuk" or "Pavljuk"], 1989. Redkie vidy strekoz fauny Ukrainy. — Rare dragonflies in the fauna of Ukraine. *Lav. Ent.* 32: 101-105. (Russ., with Engl. s.). — (Dept Invert. Zool., Lvov Univ., Shcherbakov St. 4, USSR-290005 Lvov, Ukraine).
Review of the regionally rare taxa, with notes on variations in their abundance and occurrence, and with some tentative suggestions as to the conservation of some of them.
- (7473) RÜHM, W. & W. PIPER, 1989. Simuliidenlarven und -puppen als Beute räuberisch lebender Tierarten in Alster, Bille und Seve (Diptera, Simuliidae). *Ent. Mitt. zool. Mus. Hamburg* 9(136/137): 283-293. (With Engl. s.). — (Second Author: Unnastr. 6, D-2000 Hamburg-20, FRG).
While no simuliid remnants were found in the gut of *Calopteryx splendens* larvae collected in the Alster and Bille rivers (tributaries of Elbe, Germany), these did occur in *Calopteryx* larvae kept in the laboratory.
- (7474) RUTT, G.P., N.S. WEATHERLEY & S.J. ORMEROD, 1989. Microhabitat availability in Welsh moorland and forest streams as a determinant of macroinvertebrate distribution. *Freshw. Biol.* 22: 247-261. — (First Author: Welsh Water Authority, Penyfai House, Furnace, Llanelly, Dyfed, SA15 4EL, UK).
18 streams in mid-Wales, UK, were sampled for macroinvertebrates. TWINSPAN classification of the data indicated 3 major stream groups. *Pyrrhosoma nymphula* and *Cordulegaster boltonii* are the only odon. recorded and their distribution is discussed.
- (7475) SALIU, J.K., 1989. Aquatic insects associated with plants in two reservoirs at Ibadan, Nigeria. *Revta Biol. trop.* 37(2): 217-219. (With Span. s.). — (Dept Biol. Sci., Univ. Ilorin, P.M.B. 1515, Ilorin, Nigeria).
In 2 man-made reservoirs nr Ibadan, the odon. were abundantly associated with *Nymphaea lotus*, *Pistia stratiotes* and *Ceratophyllum demersum*. — (*Abstracter's Note*: The genera were apparently "identified" with R.W. Pennak's 1953 "Freshwater invertebrates of the United States", therefore the corresponding non-African taxa are listed from these Nigerian localities!).

- (7476) SOLDAN, T., I.C. CAMPBELL & M. PAPAČEK, 1989. A study of dispersal, phoretic association between *Sphaerium* (*Musculinum*) *tasmanicum* (*Heterodonta*, *Sphaeridae*) and *Sigara* (*Tropocorixa*) *truncatipala* (*Heteroptera*, *Corixidae*). *Věst. čs. Společ. zool.* 53: 300-310, figs 1-4 excl. — (First Author: Inst. Ent., Czechoslovak Acad. Sci., Branišovská 31, CZ-37005 České Budějovice).
Out of the 152 adult and 57 ultimate larval instar individuals of *Tropocorixa truncatipala* examined from an atypical "billabong" pond in Victoria, Australia, 21 adult specimens, all females, carried 1-2 mussels attached to their middle leg (exceptionally to both middle legs), while this was the case in a single larva. The mussels do not hinder the bug in locomotion, and clearly the objective of this phoresis is the dispersal of the bivalves by the flying bugs. The former show an extreme host specificity, and only in 1 case was a mussel found incidentally attached to the claws of the right hind leg of a larval *Austrolestes cingulatus*, though these were abundant at the locality.
- (7477) STERNBERG, K., 1989. Beobachtungen an der Feuerlibelle (*Crocothemis erythraea*) bei Freiburg in Breisgau (Odonata: Libellulidae). *Veröff. NatSchutz LandschPfl. Bad.-Württ.* 64/65: 237-254. (With Engl. s.). — (Schillerstr. 15, D-7513 Stutensee-5, FRG).
2 breeding sites nr Freiburg/Br, FRG, are described, and some observations on reproduction and territorial behaviour are recorded. The health requirement of *C. erythraea*, as a possible limiting factor of its northward distribution, is discussed.
- (7478) STROHMEIER, K.L., P.H. CROWLEY & D.M. JOHNSON, 1989. Effects of Red-spotted Newts (*Notophthalmus viridescens*) on the densities of invertebrates in a permanent, fish-free pond: a one-month enclosure experiment. *J. Freshw. Ecol.* 5(1): 53-65. — (Third Author: Dept Biol., East Tennessee St. Univ., Box 23590 A, Johnson City, TN 37614-0002, USA).
The effects of newt predation on littoral-zone invertebrates were examined (Sept./Oct.) by experimental manipulation of newt density. The abundance of chironomid larvae was significantly reduced, while *Lestes eurinus* and *Enallagma aspersum* showed similar, but non-significant responses to newts.
- (7479) ZESSIN, W., 1989. Neue Meganeuridae (Odonata) im Oberkarbon Mitteleuropas. *Verh. SIEEC 9* (Gotha): 383-385. — (Lübecker Str. 30, D-2754-0-Schwerin, FRG).
With reference to the papers listed in *OA* 5219 and 5349, the theoretical importance of the recently discovered new taxa is briefly outlined.
- ### 1990
- (7480) ADAMOVIĆ, Ž.R., 1990. Odonata collected in Strumička Kotlina, Macedonia, Yugoslavia. *Glas. prir. Muz. Beograd* (B) 45: 47-59. (With Serbian s.). — (Inst. Medical Res., P.O. Box 721, YU-11001 Beograd).
27 spp. and ssp. are recorded from the Strumica R. Basin, SE Macedonia. Various field notes and annotations on some morphological features, notably measurements, are provided for most of them. The biogeographic composition of the regional fauna is briefly analysed.
- (7481) AIDA, M., 1990. Notes on *Stylurus nagoyanus* Asahina from the Noubi Plains, central Japan. (7). *Gekkan Mushi* 236: 11-17. — (Sakae 1-7-15, Ichinomiya-shi, Aichi, 491, JA).
Continuation of the series from *OA* 7375.
- (7482) ASAHINA, S., 1990. A new *Oligoaeschna* from Mindanao, Philippines (Odonata, Aeschnidae). *Proc. Jpn Soc. syst. Zool.* 41: 26-28. — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
O. uemurai sp. n. (holotype ♂, paratype ♂: Tandag, Surigao, NE Mindanao, May 1987; author's coll.) is described and figured, and it is briefly compared with the other spp., characterised by the spatula-shaped app. sup.
- (7483) ASAHINA, S., 1990. *Sympetrum danae*. *Insectarium, Tokyo* 27: 317. (Jap., with Engl. title). — (Takadanobaba 4-4-24, Shinjuku-ku,

Tokyo, 169, JA).

General note.

- (7484) BELFIORE, C. & C. UTZERI, 1990. "Biblion": uno strumento informatico per la gestione di dati bibliografici biologici. *Fragm. entomol.* 22(1): 223-228. (With Engl. s.). — (Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
A new database program for biological literature management is presented, based mainly on odonotol. examples. The main performances of the program which is intended for MS-DOS PCs, are hard-disk space saving and high speed in record retrieving. The program allows: (1) to store literature records together with a virtually unlimited number of keywords in each of the three (taxonomic, geographic and topic) fields; (2) to either select stored records by single or cross-reference keyword(s) or to locate character strings within the database fields; and (3) to compile an ASCII format literature file with selected records.
- (7485) BENZ, E., W. ETTMÜLLER, H. GANZ, H. KELLERMÜLLER, A. KREBS, C. MEIER, E. PLEISCH, H. SCHIESS, E. STIERLI, J. STIERLI, H. STURZENEGGER & J. WALTER, 1990. *Pilotprojekt Irchel*. iv+20 pp., numerous col. figs incl. Aqua Terra, Schwerzenbach. — (c/o Dipl.-Zool. C. Meier, Postfach 252, CH-8636 Wald; — Publishers: Postfach, CH-8603 Schwerzenbach).
On p. 10, *Cordulegaster bidentatus* is mentioned as a characteristic sp. of the reed ditches and springs in the Irchel area, canton Zürich, Switzerland.
- (7486) BEUTLER, H., 1990. Aktueller Nachweis von *Leucorrhinia caudalis* (Charpentier, 1840) in der Mark Brandenburg (Odonata, Libellulidae). *Ent. Nachr. Ber.* 34(2): 94. — (Frankfurter Str. 23, Postfach 63-13, DDR-1230 Beeskow, FRG).
L. caudalis is reported from a mesotrophic acid lake (pH 4.5) SE of Berlin, where the other 4 European *Leucorrhinia* spp. breed in abundance. The habitat is briefly described,
- but from "conservation" considerations the name of the lake is not stated. This is the second of the 3 spp. listed as "extinct" in the former GDR.
- (7487) BIEDERMANN, J., 1990. Die Libellen-Fauna des Naturschutzgebietes Ruggeller Riet, Liechtenstein (Odonata). *Ber. bot.-zool. Ges. Liechtenstein-Sargans-Werdenberg* 18: 219-233. (With Engl. s.). — (In der Blacha 78, FL-9494 Planken).
The Ruggeller Riet Reserve (surface 100 ha, mean alt. 430 m) represents the largest remaining Rhine reedlands in Liechtenstein. During 1971-1988, 32 odon. spp. were recorded there, incl. *Gomphus pulchellus*, *Sympetrum flaveolum* and *S. fonscolombei* that are so far not known from any other Liechtenstein locality. In addition to these, the area supports several other rare or threatened spp., hence, from the odon. point of view, it should be considered of more than regional importance. For each sp. brief field notes and a statement on the general distribution in Liechtenstein are given, and the regional phenology is shown on a graph. Also provided are some suggestions relative to the management of the larval habitats.
- (7488) BLOIS-HEULIN, C., P.H. CROWLEY, M. ARRINGTON & D.M. JOHNSON, 1990. Direct and indirect effects of predators on the dominant invertebrates of two freshwater littoral communities. *Oecologia* 84: 295-306. — (First Author: Lab. Ethol. & Psychophysiol., Univ. Tours, Campus de Grandmont, F-37200 Tours).
Enallagma triviatum dominates in a small bluegill sunfish lake, and *E. aspersum* in the adjacent fishless pond, Tennessee, USA. Various hypotheses are tested on the role of the sunfish and larval *Anax junius* predation, competitive effects on Zygoptera, and on the interaction between competition and predation, in determining invertebrate dominance in these communities. The results suggest an explanation for the clear differences in the community structure of these 2 habitats.
- (7489) BRINGARD, D., 1990. Photographie des

- insectes en plein vol. *Insectes, Opie* 78: 5-6. — (Author's address not stated).
The paper largely deals with dragonflies.
- (7490) BROCKHAUS, T., 1990. Zum Vorkommen von *Somatochlora alpestris* (Sel.) und *Somatochlora arctica* (Zett.) im Erzgebirge (Insecta, Odonata: Corduliidae). *Faun. Abh. Mus. Tierk. Dresden* 17(10): 97-100. (With Engl. s.). — (Markt 20/21, D-9001-0 Chemnitz, FRG).
The 2 spp. are recorded from 8 localities in the Upper Erzgebirge, distr. Chemnitz, eastern FRG, and their habitat preferences are discussed.
- (7491) BUCAILLE, F., 1990. Les libellules. *Bibliothèque de Travail Junior* 1990 (330): 2-23. — (c/o P. Machet, 65 bd de la République, F-92210 Saint-Cloud).
Dragonfly issue of the journal, directed at the youth, with emphasis on excellent col. phot. and drawings on various aspects of odon. biology, behaviour and on their place in the ecosystem. The issue was prepared largely in collaboration with P. Machet.
- (7492) CHAM, S., 1990. Dragonflies (Odonata). Report of the recorder. *Bedfordshire Naturalist* 44: 55-58. — (45 Weltmore Rd, Luton, Beds., LU3 2TN, UK).
1989 was a remarkable dragonfly year in Bedfordshire, UK; most spp. were recorded in higher numbers than normal. A commented list is given of 20 spp., and annotations are provided on their predators, etc. The latest seasonal record appears to be a sighting of *Sympetrum striolatum* on Nov. 12. — For the 1988 report cf. *OA* 7217.
- (7493) CHAO, H.-f. & Z.-y. LIU, 1990. On a new species of *Nihonogomphus* from Guangzhe county of Fujian province (Odonata: Gomphidae). *Wuyi Sc. J.* 7[1987]: 19-21. (Chin., with extensive Engl. s.). — (First Author: Biol. Control Res. Inst., Fijian Agric. Coll., PRC-350002 Fuzhou, Fujian).
N. luteolatus sp. n. (holotype ♂: Huaqiao, Guangzhe Co., Fujian China; 11-IV-1960; deposited in Shanghai Inst. Ent.; — allotype ♀ deposited in Biol. Control Res. Inst., Fujian) is described and figured. It is the sole so far known member of the genus lacking the synthoracic lateral stripes.
- (7494) CONTACTBLAD NEDERLANDSE LIBELLENONDERZOEKERS — [Newsletter of the Netherlands Dragonfly Workers], No. 19 (Aug., 1990). (Dutch). — (c/o Miss K. Verspui, Westerkade 27 bis, NL-3582 CA Utrecht).
The periodical was originally set up as a newsletter, but it is becoming more and more a proper journal, containing various technical notes, indispensable for the work on the Netherlands odon. fauna. Credit for the development of the publication program (and, indeed, for organisation and coordination of most of the current research projects on the Netherlands faunistics) largely goes to Mr M. Wasscher (Minstraat 15 bis, NL-3582 CA Utrecht). — In the present issue, a brief (anonymous) report on the 15th Netherlands Odonate Colloquium (pp. 2, 24) is followed by rather detailed synopses of 5 papers presented there, viz. by *T. de Groot* (pp. 3-5), *M. Waascher* (pp. 5-6, 8-9, the former on dragonfly distribution in a stream system in Surinam), *R. Ketelaar* (pp. 6-7) and *W. Reinboud* (pp. 9-10). In the "Observations" section, there is a vivid discussion on the validity of a controversial and undocumented "sight record" of *Onychogomphus forcipatus* (*W. Renema, R. Jödicke & U. Krüner*, pp. 11-13), followed by a highly interesting account on the Netherlands 1989 dragonfly year (*M. Wasscher*, pp. 14-16). One book review (*M. Wasscher*, p. 17) and summaries of 3 more or less "recent" M. Sc. dissertations (anonymous, pp. 17-18) also belong to the standard repertoire of the journal. The announcement of some simple research projects (*W. Reinboud*, pp. 19-20) and the notification on the opening of the public Library of the Netherlands Dragonfly Workers in Utrecht conclude the issue, to which a complete *directory of the subscribers* (over 100) is added (pp. 21-24).
- (7495) CORBET, P.S., [Ed.], 1990. Current topics in dragonfly biology, Vol. 4: Including a dis-

- cussion focusing on interference among larvae. *Soc. int. odonatol. rapid Comm.* (Suppl.) 12: viii+28 pp. — (Dept Zool., Univ. Edinburgh, West Mains Rd, Edinburgh, EH9 3JT, Scotland, UK).
 Transcript of a tape-recorded discussion, conducted in the framework of the 10th Int. Symp. Odonatol., Johnson City, TN, USA. The booklet contains contributions by 26 authors. As heretofore, Prof. Corbet was the moderator. — For the previous parts cf. *OA* 4563, 6436, 6472.
- (7496) d'AGUILAR, J., J.-L. DOMMANGET & R. PRÉCHAC, 1990. *Guida delle libellule d'Europa e del Nordafrica*. Muzzio, Padova. 333 pp., col. pls & maps incl. — ISBN 88-7021-523-7. — Price: Lit 38.000.- net. (Publishers: Franco Muzzio, Via Makallé 73, I-35138 Padova).
 Italian edition of the work listed in *OA* 5041. For the Engl. and Span. eds cf. *OA* 5650 and 7213, resp. This is the first odon. book that has ever been published in 4 different language editions!
- (7497) DAVID, S., 1990. Vážky (Odonata) vozokanských ramen Hronu s poznámkami k výskytu *Crocothemis erythraea* (Brullé, 1832) — Libellen (Odonata) des Hron-Flussarmes bei der Gemeinde Vozokany mit den Bemerkungen zum Vorkommen von *Crocothemis erythraea* (Brullé, 1832). *Ent. Probl., Bratislava* 20: 49-66. (Slovak, with Germ. s.). — (Tekovské Muz., P.O. Box 69, CZ-934 69 Levice, Slovakia).
 25 spp. are listed from the Hron R., Vozokany, W. Slovakia, Czechoslovakia, 1987-1988. The Slovak records of *Crocothemis erythraea* are reviewed.
- (7498) DE ROND, J. & M. VAN DER HOUT, 1990. *Inventarisatiereport Insecten 1989 Oostvaardersplassen*. — [Report on the 1989 insect survey of the Oostvaardersplassen]. 22 pp. Kon. Ned. natuurh. Ver. & Ned. ent. Ver., Lelystad. (Dutch). — (Copies available from: Neth. Ent. Soc., Plantage Middenlaan 64, NL-1018 DH Amsterdam).
Sympetrum striolatum is the only odon. sp. listed from this locality, Zuidelijk Flevoland, the Netherlands.
- (7499) DEVOLDER, J., 1990. Libellenwaarnemingen in Joegoslavië en Griekenland, juli-augustus 1989 (Odonata). — Observations on dragonflies in Yugoslavia and Greece, July-August, 1989 (Odonata). — *Phegea* 18(3): 143-148. (Dutch, with Fr. & Engl. s's). — (Leopoldstraat 59 bus 1, B-8580 Avelgem).
 14 spp. are listed from 2 localities nr. or on the Lonja R., (60 km SE of Zagreb), Croatia, and 31 spp. from 13 localities throughout Greece. The status of the local *Platycnemis pennipes/nitidula* is briefly discussed, and various annotations are provided for several spp. Of particular interest is the record of a freshly emerged *Hemianax ephippiger* (31-VII-1989) nr Osijek, Vojvodina; cf. *OA* 7197).
- (7500) DODDS, R.M., 1990. Europe's diminishing dragonfly population gives cause for concern. Britons take initiative in setting up first dragonfly reserve. *Bull. amat. Ent. Soc.* 49(72): 210-211. — (62 Holland Park, London, W11 3SJ, UK).
 At Ashton nr Peterborough, Northamptonshire, UK, a reserve has been set up dedicated solely to the conservation and study of dragonflies. This is the first sanctuary of its kind in Europe. The project is sponsored by the WWFN and by the (British) Nature Conservancy Council. — Cf also *OA* 7524.
- (7501) EDA, S., 1990. Dragonflies on stamps in the world. 11th report. *Nature & Insects* 25(9): 3-8. (Jap., with Engl. title). — (3-4-25 Sawamura, Matsumoto, Nagano, 390, JA).
 Dealing with postal stamps issued by the Philippines (1986), North Korea (1986), Poland (1988), El Salvador (1985, 1988), Kampuchea (1988), Thailand (1989), Niuafo'ou (1989) (all showing a dragonfly as the main motif), and Denmark (1981), North Korea (1981), Lesotho (1987), Tanzania (1989), the Falkland Isles (1982) and Gambia (1989) (dragonfly as part of the composition). — For the last previous report cf. *OA* 6015.

- (7502) FRANKOVIĆ, M., 1990. Vretenca. III, B. Srodstveni odnosi — [Dragonflies. III, B. Phylogenetic relationships]. *Priroda, Zagreb* 80(1): 34-36. (Croatian). — (Dept Animal Physiol., Univ. Zagreb, P.O. Box 933, YU-41001 Zagreb, Croatia).
Continuation of the generic key, as listed in OA 7399.
- (7503) GATTER, P. & W. GATTER, 1990. Das Migrationssystem des Windenschwärmers (*Agrius convolvuli*) zwischen Westafrika und dem Westen der Paläarktis — Ergebnisse und Hypothesen. *Ent. Z., Essen* 100(17): 313-332. (With Engl. s.). — (Buchstr. 20, D-7318 Lenningen, FRG).
Contains a passing reference to the Dec. 1986 odon. migrations in Liberia (p. 316); the spp. involved are not stated.
- (7504) GOMPHUS. Mededelingsblad van belgische libellenonderzoekers — Bulletin de liaison des odonatologues belges, Vol. 6, No. 3 (Oct. 1990). (Dutch & Fr.). — (c/o A. Anselin & P. Goffart, Inst. Roy. Sci. Nat. Belg., 29 rue Vautier, B-1040 Bruxelles).
Contains several book reviews, the agenda of the Brussels meeting of Belgian odonatologists (Dec. 1, 1990), an *anonymous* note on the 1990 occurrence of *Crocothemis erythraea* on the Belgian W coast (p. 7), and reports and spp. records of field trips in the Herbeumont region (*P. Goffart*, pp. 4-5) and in de Wurf and Den Diel areas (*M. Taily*, p. 6).
- (7505) GORB, S.M., 1990. Mikroskul'ptura systemy funktsii golovy u strekoz v skaniruyushchem elektronnom mikroskope. — The microsculpture of the head fixing system in dragonflies as seen by a scanning electron microscope. *Zool. Zh.* 69(2): 147-154. (Russ., with Engl. s.). — (Dept. Insect Physiol., Schmalhausen Inst. Zool., Lenin Str. 15, USSR-252001 Kiev, Ukraine).
The postcervical sclerite of dragonflies is covered by microscopic outgrowths. Similar outgrowths are located symmetrically with respect to the longitudinal axis of the body, on the rear head surface. These 2 surfaces forming a morpho-functional entity are used for head fixation. A scanning electron microscope was used to examine the shape, the number and location of microsculptural formations for head fixation. 9 structure types have been identified 3 species groups were isolated by the location and degree of development of the microtrichia. It is indicated that the sculpturing of the postcervical sclerite and the fields of the head's rear part can be used for practical taxonomy.
- (7506) GORB, S.N., 1990. Strekozy ozera Supoy i ego okrestnostey (Kievskaya oblast). — The dragonflies of Lake Supoy and its neighbourhood (Kiev distr.). *Lav. Ent.* 33: 31-36. (Russ., with Engl. s.). — (Inst. Zool., Ukrain. Acad. Sci., Lenin St. 15, USSR-252601 Kiev, Ukraine).
Annotated list of 27 spp. from the surroundings of the city of Jagotin (Kiev distr., Ukraine).
- (7507) HARTUNG, M., 1990. Libellen am Flughafen: ein Beispiel für erfolgreichen Naturschutz in der Grossstadt. *In: 100 Jahre Entomologische Gesellschaft Orion-Berlin*, pp. 70, 102-112, Ent. Ges. Orion, Berlin. — (Wehnertstr. 20 a, D-1000 Berlin-48, FRG).
The development of the odon. fauna (35 spp.) within a conservancy enclosure of a lake at the Tegel Airport, Berlin, is described and discussed.
- (7508) HAYASHI, F., 1990. Convergence of insular dwarsim in damselflies (*Euphaea*) and dobsonflies (*Protohermes*). *Freshw. Biol.* 23(2): 219-231. — (Lab. Anim. Ecol., Dept Biol., Fac. Sci., Tokyo Metropolitan Univ., Fukazawa 2-1-1, Setagaya-ku, Tokyo, 158, JA).
The life history was compared between mainland and island congeners of *Protohermes* (Megaloptera: Corydalidae) and between those of *Euphaea*. Larvae of these genera coexisted in stream riffles, and prey availability for them was assessed to examine the effects on their body size at maturation. — Body size of *P. costalis* on the "mainland", Taiwan, was larger than that of an insular congener, *P. sp.*, on Iriomote and Ishigaki

- Islands about 200 km east from Taiwan. Insular dwarfism also occurred between *E. formosa* on the mainland and *E. yayeyamana* on the islands. All species had an annual life cycle. — Prey availability was much lower in the island streams than in mainland streams throughout the year. Convergence of insular dwarfism in these phylogenetically distant but ecologically similar taxa (both predatory insects) suggested that prey availability is an important factor affecting their body size determination. — Seasonal changes in body size occurred within a population of *Euphaea* which lacked synchronous emergence. Adults emerging from larvae spending their late instars in the warm season were smaller than those in the cold season. However, the size differences between species always exceeded the range of such intraspecific variation. — Dwarfism in *E. yayeyamana* was probably achieved by decreasing the size of first-instar larvae without changing the number of instars and with the size ratio at each moult constant. The mechanisms producing the dwarf from Protohermes are also discussed. — Cf. also *OA* 7237.
- (7509) HERBERT, C., 1990. The colonisation of Rowley Green Common Pond by dragonflies. *Newsl. Herfordshire nat. Hist. Soc.* 12: 8-10. — (67 A Ridgeway Ave., East Barnet, Herts., EN4 8TL, UK).
The pond is located in the London Borough of Barnet, UK. During the second yr of colonisation, 9 odon. spp. were recorded. No other site in the Rowley Green Common Nature Reserve has a higher species diversity, and it is likely that the climax has not yet been reached. Some tentative suggestions for odon. management at the locality are proposed. — For the checklist of the odon. fauna of the area cf. *OA* 7573.
- (7510) HERBERT, C., 1990. Preliminary observations in the colonisation by odonates of a recently restored pond at Rowley Green Common Nature Reserve *In*: M. Melling, [Ed.], *The naturalist in Barnet: a focus on Barnet's wildlife*, pp. 30-36. Herbert, East Barnet. [ISBN 0-9515608-1-6] — (67 A Ridgeway Ave., East Barnet, Herts., EN4 8TL, UK).
Text almost identic to that listed in *OA* 7509.
- (7511) HEYM, W.-D. & I. HIEKEL, 1990. Von Azurjungfer bis Zwiebelbinse. Wie sich Feuchtbiotope und Restgewässer in der Bergbaufolgelandschaft der Lausitz entwickeln. *NatSchutz heute* 90(3): 26 ?? — (Hallenser Str. 3, D-07500 Cottbus, FRG).
Brief description of biotic community succession in the ponds of abandoned open cast brown coal mines, Lausitz, eastern Germany, with emphasis on the odon. Cf. also *OA* 7084.
- (7512) HUTCHINSON, R., 1990. Notes sur la biologie de *Lanthus parvulus* Sélys (Odonata: Gomphidae) à Port-au-Saumon (Charlevoix-Est) et les environs. *Fabriques* 15(3): 63-68. (With Engl. s.). — (Centre Biosyst. Res., Agriculture Canada, Neatby Bldg, Ottawa, Ont., K1A 0C6, CA).
Field observations, made at Port-au-Saumon, Quebec, Canada, over a period of 15 yrs, with a fig. of the ultimate instar larva, and some suggestions for a tentative experimental autecology research.
- (7513) *JAHRESBERICHT [DER] ARBEITSGEMEINSCHAFT LIBELLEN IM LKR. SCHWÄBISCH HALL 1* (1989), 1990. iv+24 pp. — (c/o Arbeits-Gemeinschaft Libellen im Landeskreis Schwäbisch Hall, Mönchsberg 13, D-7173 Mainhardt, FRG).
The report was compiled by *B. Kunz & R. Sziringer*, and presents a commented list and local distribution maps of the 37 spp. so far recorded in the district of Schwäbisch Hall, Baden-Württemberg, FRG.
- (7514) *JAHRESBERICHT [DER] ARBEITSGEMEINSCHAFT LIBELLEN IN LKR. SCHWÄBISCH HALL 2* (1990), 1990. ii+22 pp. — (c/o Arbeitsgemeinschaft Libellen im Landeskreis Schwäbisch Hall, Mönchsberg 13, D-7173 Mainhardt, FRG). Available at DM 5.-.
Kunz, B. & R. Sziringer: Die Libellen des Landeskreises Schwäbisch Hall (pp. 1-21); — Entwurf einer Roten Liste der Libellen für den Lkr. Schwäbisch Hall (p. 22).

- (7515) JATZEK, H.-J., 1990. Beitrag zur Struktur und vergleichende Untersuchungen des Makrozoobenthons des Rheins aus den Jahren 1980, 1982 und 1987 im Bereich der BASF AG. *Limnologie aktuell* 1: 217-225. (With Engl. s.). — (BASF Aktiengesellschaft, Abt. DUU/00-A 520, D-6700 Ludwigshafen, FRG)
The macroinvertebrate distribution and abundance at 11 Rhine R. sites on the BASF Co. estate, Ludwigshafen, FRG, are stated. *Calopteryx splendens* occurs upstream and downstream of the Company's area.
- (7516) JEFFRIES, M., 1990. Interspecific differences in movement and hunting success in damselfly larvae (Zygoptera: Insecta): responses to prey availability and predation threat. *Freshw. Biol.* 23(2): 191-196. — (Dept Forest. & Nat. Resour., Univ. Edinburgh, Darwin Bldgs, Mayfield Rd, Edinburgh, EH9 2JU, UK).
Freshwater invertebrate predators can alter their hunting behaviour in response to prey availability and threat from their own enemies. Movement patterns and hunting success of the larvae of *Enallagma cyathigerum* and *Lestes sponsa* were monitored in 4 combinations of prey availability and enemy threat. *Aeshna juncea* larvae acted as predator and *Daphnia magna* (Cladocera) as prey in the combinations: no predator/no prey; 1 *Aeshna* present/no prey; no predator/30 *Daphnia* present; 1 *Aeshna* present/30 *Daphnia* present. — *E. cyathigerum* showed significantly reduced movement in the + *Aeshna*/no prey treatment but hunting success was not significantly affected. No other treatment effects were noted. *L. sponsa* movement patterns differed significantly across all 4 treatments and hunting success was significantly reduced in the presence of *Aeshna*. — Interspecifically, movement patterns of the two species differed markedly in all four treatments. *L. sponsa* larvae were much more active, and caught many more prey. Despite their activity *L. sponsa* larvae did not appear markedly more vulnerable than the immobile *E. cyathigerum*. — The interspecific differences between the 2 damselflies reflect predictions based on larval life-history. Activity patterns and ability to capture adequate prey under varying levels of predation may be important in the ecology of damselfly species.
- (7517) *JOURNAL OF THE BRITISH DRAGONFLY SOCIETY*, Vol. 6, No. 2 (Oct. 1990) (c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR2 4AG, UK).
Moore, N.W. & P.S. Corbet: Guidelines for monitoring dragonfly populations (pp. 21-23); — *Clarke, D.J., S.M. Hewitt, E.M. Smith & R.W.J. Smith*: Observations on the breeding habits of *Aeshna caerulea* (Strom) in Scotland (pp. 24-29); — *Randolph, S.*: The breeding dragonflies of the Bristol area (pp. 29-34); — *C.M. Drake*: Records of larval *Lestes dryas* Kirby in Essex during 1987 (pp. 34-41); — *Cham, S.A.*: A study of *Ischnura pumilio* (Charpentier) with particular reference to the state of maturity of the female form *aurantiaca* (pp. 42-44); — *Radford A.P.*: Dragonflies and sound (pp. 44-47); — *Recent odonatological publications* (p. 48).
- (7518) JURZITZA, G., 1990. Über *Aeshna* (*Neureclipta*) *diffinis* Rambur, 1842, *Ae.* (N.) *absoluta* (Calvert 1952) und *Ae.* (N.) *bonariensis* Rambur, 1842 (Odonata: Anisoptera: Aeshnidae). *Ent. Z., Essen* 100(19): 353-365. (With Engl. & Sp. s's). — (Reinmuthstr. 27, D-7500 Karlsruhe-21, FRG).
The 3 taxa are compared, their structural differences described, and *A. diffinis absoluta* Calv. raised to the species rank. Based on Calvert's 1956 work (Mem. Am. ent. Soc. 11), the distribution of the 3 spp. is discussed.
- (7519) KENNEDY, J.O. & J.G. MILLER, III, 1990. A survey of the benthic macroinvertebrates of the Big Spring Basin, Iowa. *J. Iowa Acad. Sci.* 97(2): 46-54. — (Hygienic Lab., Univ. Iowa, Iowa City, IA 52242, USA).
17 odon. genera (very few taxa identified to the sp. level) are listed from 8 creeks in this area in NE Iowa.
- (7520) KIAUTA, B. & M. KIAUTA, 1990. Early summer dragonflies of the Ryder Lake area, Chilliwack district, British Columbia, Canada. *Opusc. zool. flumin.* 58: 1-10. — (SIO Central

Office, P.O. Box 256, NL-3720 AG Bithoven). Annotations are given on 17 spp., referable to 5 families, evidenced in this area of the Upper Fraser Valley (alt. 240-338 m approx.) during June 28 through July 16, 1990. The regional fauna is considered fairly rich. It represents a typical southwestern B.C. biogeographic assemblage (incl. *Ischnura erratica*, *Plathemis lydia*, etc.), but *Aeshna umbrosa occidentalis* is the sole rheophilous sp. encountered. Any spp. peculiar to peat bogs and Sphagnum moors are also so far missing.

- (7521) *KIMMINSIA*. Newsletter of the United Kingdom National Office of the International Odonatological Society (SIO), Vol. 1, No. 2 (Nov. 1, 1990). — (c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR8 4AG, UK).
The notification of the XIth International Symposium of Odonatology (Trevi, Perugia, Italy; Aug. 18-25, 1991) and of the Odonate Satellite Symposium in the framework of the XIXth International Congress of Entomology (Beijing, China; 1992) is followed by "News from members" (pp. 8-10), contributed by *D. Chelmick, P. Corbet, S. Corbet, A. Davies, R. Gambles, R. Lindley, R.M. Dodds, I. Meskin, P. Mill, N. Moore, M. Parr, M. Samways, J. Silsby, D. Thompson and G. Vick, S. Brooks* reports on the odon. visitors at the BMNH (p. 11), and *I. Meskin, A. Davies, N. Moore, M. Parr* and *D. Thompson* contributed to the "Conservation" section (p. 11). In addition to the anonymous "News from Universities" (p. 12), the issue contains the following signed notes and articles: *Dodds, R.M.*: Head-down emergence by *Ischnura elegans* (P. 12); — *Corbet, P.S.*: Suppression of the yellow fever mosquito by augmentative release of dragonfly larvae (Odonata: Libellulidae) (p. 12); — *Davies, A.*: Tales (& tails) of dragonflies, 1990 (pp. 13-14; New Caledonia, Australia, Thailand, Japan); — *Kemp, R.*: Malaysian dragonflies: a trip to Peninsular Malaysia & North Borneo in February 1990 (pp. 14-16).
- (7522) KUHBIER, J., 1990. Die Roten Listen und was sie wirklich aussagen. *Hamburg. Abend-Bl.*, (Umwelt & Natur), issue of Sept. 11, p. 4. — (Author's address not stated).
Contains an IUCN-style red list of odon. for the Hamburg area, GFR.
- (7523) KUSCHKA, V., F. NÜSSLER & U. MEYER, 1990. Eine neue Methode zur quantitativen Erfassung der Makrofauna des Phytals und Pelagials stehender Gewässer. *Hercynia* (N.F.) 27(2): 134-141. (With Engl. s.). — (First Author: Talstr. 10, D-09380 Flöha, FRG).
A method for quantitative assessment of macroinvertebrate fauna in the phytal and in the pelagial of stagnant waters is described, and the odon. are suborder-wise considered. It is based on the sampling of populations by means of semi-open "cages" (50x50x50 cm), placed in the water during the season.
- (7524) LAWSON T., 1990. Re-enter the dragonfly. Europe's first dragonfly reserve [...]. *Daily Telegraph* (Weekend Telegraph) issue of Sept. 15, p. 3. — (c/o R.M. Dodds, 62 Holland Park, London, W11 3SJ, UK).
The 4.9-acre Dragonfly Reserve is housed on Dame Miriam Rothschild's Ashton estate, Oundle, Northamptonshire, UK, and was officially inaugurated on Sept. 15, 1990. The Warden & Manager is Mr R.M. Dodds, address above. For the time being, the access is by appointment only (071-937-3233), but it is hoped the Reserve will be developed into an allweather dragonfly watching centre.
- (7525) LHOSTE, J. & B. HENRY, 1990. Les insectes dans l'art d'Extrême-Orient. *Insectes, Opie* 76: 16-17. — (Authors' addresses not stated).
Contains a brief chapter on dragonfly representations as "favourable omens" in Chinese and Japanese figurative arts.
- (7526) MACHET, P., 1990. Deux nouvelles espèces d'Aeshnidae de la Guyane française: *Neuraeschna clavulata* et *Neuraeschna capillata* (Odonata: Anisoptera). *Entomologiste* 46(5): 209-218. (With Engl. s.). — (65 bd de la République, F-92210 Saint-Cloud).
N. clavulata sp. n. (♂ holotype: Montagne-des-Chevaux, French Guiana, 19-X-1989; ♀ allotype and 1 ♂ paratype from the same locality) and *N. capillata* sp. n. (♂ holotype:

- CD5 pk 20, French Guiana, 31-VIII-1989; several ♂ paratypes from French Guiana and Brazil) are described and illustrated. The holotypes are in the MNHN, Paris. The new spp. are closely related to *N. claviforcipata* Martin, but they are readily separated from it by the shape of the ♂ app. sup. and the genital fossa.
- (7527) *MALANGPO*. Newsletter of the Thai National Office of the International Odonatological Society (S.I.O.), No. 7 (Nov., 1990). — (c/o Bro. A. Pinratana, St Gabriel's Coll., 565 Samsen Rd, Bangkok-10300, Thailand).
Davies, D.A.L.: An odonatological visit to Thailand (pp. 37-48). — (This is the sole text in this issue, and contains also 4 lists of spp. collected by various collectors, in different years, but without locality data and collection dates).
- (7528) *MARTINIA*. Bulletin de liaison des odonatologues de France. Vol. 6, No. 3 (Sept., 1990). — (c/o J.-L. Dommanget, 7 rue Lamertine, F-78390 Bois d'Arcy).
Dommanget, J.-L.: Bonnevaux 1990: bilan et perspectives (pp. 49-57); — *Le Quellec, J.-L.*: La mythologie des libellules (pp. 59-63); — *Grand, D.*: Deux nouveautés pour le département de la Gironde: *Leucorrhinia albifrons* (Burmeister, 1839) et *Orthetrum albistylum* (Selys, 1848) (Odonata, Anisoptera: Libellulidae) (pp. 65-66); — *Papazian, M.*: Contribution à l'inventaire des odonates du Gers (pp. 67-69); — *Orieux, G.*: *Coenagrion ornatum* (Selys, 1850) dans le département de la Nièvre (Odonata, Zygoptera: Coenagrionidae) (pp. 69-70); — *Dommanget, J.-L.*: Rubrique bibliographique (pp. 71-72); — *Dommanget, J.-L./Boulet, W.*: Analyses d'ouvrages (pp. 73-76).
- (7529) *MARTINOVA, O.M.*, 1990. Ob entomologe A.V. Martinove (1879-1958). — On the entomologist A. Martynov (1879-1938). *Latv. Ent.* 33: 111-124. (Russ., with Engl. title). — (Author's address not stated).
 A concise, but detailed outline of life and work of Andrey Vasil'evich Martynov, one of the greatest Russian entomologists and palaeoentomologists. His work on classification and phylogeny of the Class and on fossil odon.
- assemblages remains of paramount importance in odonatology ever since. The appended bibliography (1901-1948) contains 172 titles (contributions in textbooks and general identification works excl.) A bibliography of the obituaries published for him is added.
- (7530) *MATSUKI, K.*, 1990. Description of the larva of *Heliogomphus scorpio* (Ris, 1912) in Hongkong (Gomphidae: Odonata). *Nature & Insects* 25(9): 9-12. (Jap., with Engl. title). — (Hansama-cho 3-1575-14, Funabashi-shi, Chiba, 274, JA).
 The ultimate instar is described, figured and compared with the allied taxa.
- (7531) *MATSUKI, K., T. YAMAMOTO & H. ICHII*, 1990. On a small collection of the Odonata of Hong Kong. *Gekkan Mushi* 235: 12-18. (Jap., with Engl. title). — (First Author: Hasama-cho 3-1575-14, Funabashi-shi, Chiba, 274, JA).
 Commented list of 26 spp.
- (7532) *McPEEK, M.A.*, 1990. Behavioral differences between *Enallagma* species (Odonata) influencing differential vulnerability to predators. *Ecology* 71(5): 1714-1726. — (Archbold Biol. Stn, P.O. Box 2057, Lake Placid, FL 33852, USA).
E. aspersum, *boreale*, *geminatum* and *vesperum* are considered. The spp. from fishless lakes walked in rapid bursts of 2-3 s and frequently performed a conspicuous behavioral display, while the spp. from lakes containing fish walked very slowly for durations of 20-30 s and almost never performed the conspicuous display. The spp. from lakes containing fish also swam for longer durations and remained motionless longer following swims than species from fishless lakes. The spp. from fishless lakes also greatly reduced their movement and responsiveness toward prey and increased the duration of motionless periods in the presence of dragonflies, but only reduced the number and duration of the conspicuous display in the presence of fish. In contrast, the species from lakes containing fish reduced their movement and responsiveness toward prey and increased the duration of

motionless periods in the presence of both fish and dragonflies. In videotaped feeding trials, larvae of an *Enallagma* spp. from fishless lakes usually swam away from attacking *Aeshna* dragonflies. Larvae of an *Enallagma* spp. from lakes containing fish usually did not respond to attacking dragonflies, and were usually captured without attempting to evade the dragonfly. These behavioral differences are consistent with observed differences in their vulnerabilities to predators, and probably contribute to causing the pattern of habitat separation observed in the field.

- (7533) MEEK, S.B. & T.B. HERMAN, 1990. A comparison of the reproductive behaviours of three *Calopteryx* species (Odonata: Calopterygidae) in Nova Scotia. *Can. J. Zool.* 68(1): 10-16. (With Fr. s.) — (Biol. Dept, Acadia Univ., Wolfville, N.S. BOP 1X0, CA).

Although repertoires were similar, duration of pair-forming and postcopulatory displays varied among 3 sympatric *Calopteryx* spp. in Nova Scotia. Preliminary ("cross") displays were shortest in *C. maculata* and longest in *C. aequabilis*, and were often omitted completely in *C. amata*. Courtships display ("arcs") were briefest and least elaborate in *C. maculata* and most elaborate and protracted in *C. amata*. Courtship sequences were most successful (led to copulation) in *C. aequabilis* and least successful in *C. amata*, although males of this sp. were most persistent. Most female *C. maculata* oviposited at the surface, guarded by mates. Most female *C. aequabilis* were also guarded, but oviposited both above and below the surface. Female *C. amata* were commonly unguarded, and most oviposited below the surface. We suggest that an interaction between territorial and oviposition behaviours, influenced by resource abundance, modulates reproductive behaviour in *Calopteryx* spp.

- (7534) MICHIELS, N.K. & A.A. DHONDT, 1990. Costs and benefits with oviposition site selection in the dragonfly *Sympetrum danae* (Odonata: Libellulidae). *Anim. Behav.* 40: 668-687. — (First Author: Res. Group Zool., Dept S.B.M., Limburg Univ., Universitaire

Campus, B-3610 Diepenbeek).

Predation by frogs, site selection and site usage during oviposition were studied. Data were collected under natural conditions and in a large outdoor field-cage. *S. danae* oviposits in flight as a pair (tandem) following copulation, as a released post-tandem female or as an unattended female. Under natural conditions 14% of all females that started oviposition in tandem and 10% of all solitary females were killed by frogs, while this was so for only 3% of all males in tandem. Ovipositing post-tandem females were less frequently attacked by frogs than females that were not seen to have mated previously. Sites with Sphagnum were preferred. Substrate selection was probably mainly visual as some dragonflies were also attracted to a structurally similar, but non-aquatic, moss. Sites were chosen in relation to thermoregulatory requirements: south-facing sites were used at low ambient temperatures late in the season and north-facing sites at high ambient temperatures early in the season. Pairs searched longer for a suitable site at higher ambient temperatures and preferred sites with ovipositing individuals on them. They were more hesitant about choosing a site when frogs were present than when they were absent. Compared with pair or solitary/unmated females, unattended females were more likely to oviposit at the site where the male released them. The results are discussed in terms of optimized habitat selection for larval development at minimized oviposition costs.

- (7535) MIELEWCZYK, S., 1990. Dotychczasowy stan poznania fauny ważek (Odonata) Ojcowskiego Parku Narodowego — The present state of knowledge on the fauna of Odonata of Ojców National Park. *Pradnik Prace Muz. Szefera* 1: 59-62. (Pol., with Engl. s.) — (Dept Agrobiol., Pol. Acad. Sci., Swierczewskiego 19, PO-60-809 Poznan).

A brief outline of the history of odon. research (1855-1981) is followed by a checklist of the 16 known spp., and by a discussion on the odon. fauna of the National Park.

- (7536) MITAMURA, T., 1990. [Odonate fauna of

- Fukushima Prefecture]. *Nature & Insects* 25(9): 23-26. (Jap.). — (1-57, Moto-machi, Nihomatsu, Fukushima Pref., JA). Annotations on 19 spp.; Jap. nomenclature.
- (7537) MIYAKAWA, K., 1990. Rotation in developing embryos of *Tanypteryx pryeri* Selys (Petaluridae) and *Davidius nanus* Selys and *Sieboldius albardae* Selys (Gomphidae) (Insecta: Odonata). *Proc. arthropod. embryol. Soc. Jpn* 25: 5-6. — (1024 Imafuku, Kawagoe, Saitama, 356, JA).
The phenomenon is described, and its occurrence in 9 odon. families is shown in a table.
- (7538) MIYAKAWA, K., 1990. Rotation of embryo in eggs of Petaluridae, Gomphidae, and Corduliidae, in connection with types of oviposition, egg shape and germ band (Odonata, Anisoptera). *Jap. J. Ent.* 58(3): 447-463. — (Imafuku 1024, Kawagoe, Saitama, 356, JA). In the ellipsoidal eggs (*Sieboldius albardae*, *Davidius nanus*, *Somatochlora viridiaenea atrovirens*, *Tanypteryx pryeri*) gravity-dependent rotation takes place without reference to systematic affiliation of the taxa concerned. Unlike in the *Aeshna nigroflava* embryo (cf. *OA* 5946), in *Aeshna juncea* and *Gynacantha japonica* the embryos do not rotate during development.
- (7539) mm, 1990. Will Hemianax ephippiger in den Aargau einwandern? *Aargauer Tagblatt* 1990 (200): 11 (issue of Aug. 28). — (c/o G. Vonwil, Oberdorf, CH-6042).
Same subject as in *OA* 7141 and 7197.
- (7540) MOUM, S.E. & R.L. BAKER, 1990. Colour change and substrate selection in larval *Ischnura verticalis* (Coenagrionidae: Odonata). *Can. J. Zool.* 68(2): 221-224. (With Fr. s.). — (Dept Zool., Erindale Coll., Univ. Toronto, Mississauga, Ont., L5L 1C6, CA).
Larvae of *I. verticalis* reared on either green or brown substrates showed significant differences in colour; larval colour tended to match that of the substrate. When presented with different-coloured substrates, both green and brown animals chose brown in preference to green. Preference for brown was not significantly altered by the presence of fish. Green larvae on green substrates were at significantly greater risk to predation by fish than they were on brown substrates. In addition, green larvae on brown substrates captured significantly more larval mayflies (*Callibaetis* sp.) than did green larvae on green substrates. Results suggest that the adaptive significance of colour and choice of substrates is related to both avoidance of predators and concealment from potential prey.
- (7541) MÜLLER, L. & F. SUHLING, 1990. Verbreitung und Ökologie der Westlichen Keiljungfer, *Gomphus pulchellus* Selys, 1840, in Südostniedersachsen (Odonata: Gomphidae). *Braunschw. naturk. Schr.* 3(3): 655-667. (With Engl. s.). — (Zool. Inst., Tech. Univ., Pockelsstr. 10a, D-3300 Braunschweig, FRG). In SE Lower Saxony, FRG, *G. pulchellus* was first recorded in 1979, and 10 sites were known until 1987. The present survey brought to light 40 localities, at 28 of which exuviae were also collected. Ecology and behaviour are described in considerable detail, and the pertaining literature is reviewed and discussed.
- (7542) MURAKI, A., 1990. [Considerations on *Macromia urania*]. *Gekkan Mushi* 237: 27-30. (Jap.). — (476-2-4-1312, Kano, Higashi-Osaka, 578, JA).
Continuation of the series listed in *OA* 7449. It deals with behaviour, but an abstract is not available.
- (7543) MURAKI, A., 1990. [Some observations on *Macromia ishidae*]. *Nature & Insects* 25(9): 13-17. (Jap.). — (476-2-4-1312, Kano, Higashi-Osaka, 578, JA).
Various field observations, with emphasis on flight patterns.
- (7544) NEWSLETTER [OF THE] BRITISH DRAGONFLY SOCIETY, No. 18 (Autumn, 1990). — (c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR2 4AG, UK).
On its 8 pp., the issue contains much more interesting information than could be reported here. Of faunistic interest are the "Unusual

sightings" (compiled by A. Paine, pp. 2-3) and the records gathered during various field meetings (pp. 5-7, various authors). In all, there are 18 numbered news items and scientific notes; the following is the verbatim text of item (12c), pp. 4-5: A dragonfly Sanctuary, sponsored by WWF and the NCC has been set up at Ashton near Oundle, Peterborough. The sanctuary covers about 2 hectares, consists of a large lake and its surrounding margins, and has been planted with various species of plants known to attract dragonflies; the lake has been fenced off and lion dung, obtained from London Zoo, has been deposited in large heaps to deter the valuable herd of Pere David deer from invading the area. It is especially appropriate that the reserve has been set up on the estate which belonged to Charles Rothschild, commonly regarded as the father of modern nature conservation. It remains the home of his daughter Miriam who has warmly endorsed the project. The reserve is dedicated solely to the conservation and study of dragonflies and several interesting pieces of research are underway. Already, in about six months, 14 species have been recorded and the project organiser is our new Fund-raising Officer, Ruary Mackenzie Dodds.

(7545) OBRDLIK, P., E. SCHNEIDER & R. SMUKALLA, 1990. Zur Limnologie der Rastatter Rheinaue. *Limnologie aktuell* 1: 477-489. (With Engl. s.). — (First Author: WWF Auen Inst., Josefstr. 1, D-7550 Rastatt, FRG). *Enallagma cyathigerum*, *Erythromma viridulum*, *Ischnura elegans* and various unidentified zygopt. and anisopt. taxa are reported from the Rhine backwaters nr Rastatt, FRG.

(7546) OLBERG, R.M. & R.B. PINTER, 1990. The effect of mean luminance on the size selectivity of identified target interneurons in the dragonfly. *J. comp. Physiol. (A)* 166(6): 851-856. — (First Author: Dept Biol. Sci., Union Coll., Schenectady, NY 12308, USA). By penetrating axons in the ventral nerve cord of adult *Aeshna umbrosa*, the intracellular responses of target-selective visual interneurons to movement of black square "targets"

ranging from 1° to 32° visual angle at several levels of mean background luminance were measured. — Neuronal responses, measured both in number of spikes and in the magnitude of integrated postsynaptic potentials, showed a preference for large target size at lower mean luminance. The latency of postsynaptic potential (psp) and spike responses from onset of target movement increased with a decrease in mean luminance. — A measure of mean target size preference for one identified interneuron (MDT4) in both laboratory and outdoor lighting shows a continuous decrease of preferred size with increases of mean luminance over more than 4 orders of magnitude. — The time to reach the new steady state of cell response after the decrease of mean luminance was ordinarily less than 30 s, but sometimes longer.

(7547) OLSVIK, H., 1990. *Somatochlora flavomaculata* (Van der Linden, 1825) (Odonata, Corduliidae) a new species to Norway. *Fauna norv. (B)* 37: 111-112. — (Bru-Fjellvegen 4, N-1004 Siggerud). 2 records from southern Norway (June 23, July 26, 1989). It is not yet clear whether the specimens taken were migrants, or bred locally. — (*Abstracter's Note*: This may be another indication of the ever increasing northward expansion of holarctic odon.).

(7548) ORMEROD, S.J., N.S. WEATHERLEY & W.J. MERRETT, 1990. The influence of conifer plantations on the distribution of the Golden Ringed Dragonfly *Cordulegaster boltoni* (Odonata) in Upland Wales. *Biol. conserv.* 53: 241-251. — (First Author: UWCC, c/o Natn. Rivers Authority, 19 Penyfai Lane, Llanelli, Dyfed, SA15, 4EL, UK).

The distribution of *C. boltonii* larvae was assessed in 18 streams in contrasting land use in the upper catchment of the River Tywi, mid-Wales, in each year during 1985-89, inclusive. Larvae occurred abundantly in moorland streams and in a deciduous woodland stream, but were never found in five streams draining plantations of conifer forest. Although the latter were the most acidic,

transplant experiments and distributional data showed that larvae were tolerant of the water conditions found there. Conifer forest streams were also generally cooler than moorland streams, but experimental removal of bankside trees to a width of over 10 m did not lead to colonization by *Cordulegaster* despite increased temperature. Dietary studies also revealed no likely restriction by food availability in conifer forest streams, though we could not exclude the possibility that foraging conditions for adults were impaired in conifers. However, larvae were strongly associated with habitats at the stream margins which were highly eroded and often absent from conifer forest streams. These habitat features probably explained their absence under forest conditions. Further data are required to assess whether other aquatic resources of high conservation value are affected in similar ways by conifer forestry. The effectiveness of aspects of new forest design, such as buffer strips around streams, also requires consideration.

- (7549) PATRZICH, R., 1990. Zum Vorkommen von *Cordulegaster bidentatus* Sélys (Odonata: Cordulegasteridae) bei Giessen/Hessen. *Hess. faun. Br.* 10(1): 4-13. (With Engl. s.). — (Gnauthstr., 5, D-6300 Giessen, FRG).
Rather detailed circumstantial evidence is given on 6 local habitats (Hessen, FRG), the habitat requirements are discussed, and the recent increase of records of this sp. in Germany is emphasized.

- (7550) PAVLIUK, R.S. [in other publications usually spelled as "Pavlyuk" or "Pavljuk"], 1990. Strekozy zapadnyh oblastey Ukrainy. — The dragonflies of the western districts of Ukraine. *Larv. Ent.* 33: 37-80. (Russ., with Engl. s.). — (Dept Invert. Zool., Lvov Univ. Shcherbakov Str. 4, USSR-290005 Lvov, Ukraine).
This is a very carefully prepared catalogue of the 65 spp. known to occur in the 7 western districts of Ukraine, based on records published since 1875 and on enormous material brought together by the author during 1965-1986. In all, 274 localities are exactly identified, where possible annotated as

to the type of habitats, and the exact collection dates are provided. The objective of the work is the registration of localities and their fauna for the sake of the distribution mapping and fauna monitoring projects scheduled. — (*Abstracter's Note*: It is most refreshing and encouraging to see this kind of serious faunistic work still being performed in Eastern Europe, with precision and with the feeling of moral responsibility for an adequate scientific documentation, both of which were once the proverbial features of faunistic work in the Old Continent. In Western Europe, however, the initiative of faunal mapping and "monitoring" is increasingly passing out of the hands of professionals and/or independent amateurs into those of a young generation of "conservationists" without firm institutional affiliations. On one hand, many of these cherish the "philosophical convictions" of non-collecting, while on the other, they depend on time-limited grants supplied by conservancy authorities. Under these circumstances, emphasis is often on quantity rather than on quality of information. Consequently, in disregard of scientific standards and in spite of repeated recommendations and urging by the international institutions, such as e.g. the IUCN, the output of published undocumented "observations", records and "inventories" is increasing alarmingly. Not only are these generally not based on verifiable voucher material, in some countries a strong trend seems to be becoming more and more apparent aiming at refraining from publication of any detailed locality data, replaced them by cumulative dots on large-scale maps. Some recently published regional faunal works (usually called in the computer terminology "inventories") claim to be based on the examination of hundreds of localities, none of which is identified. It is usually said that the locality lists are computerized at the institutions financing the relative projects. If so, these are certainly not readily available to the general odonatol. community, without cooperation of which an adequate monitoring to the fauna is unthinkable. It also seems that information on localities in some cases represents a certain financial value and it is said to have been

bought and sold. It goes without saying that endless publishing and republishing of col. portraits of the spp. readily photographed, cannot substitute for proper specimen documentation. The damage to conservation objectives, and the uncertainty and confusion caused by publication of undocumented and unverifiable data will certainly be felt for a long time to come!).

- (7551) REINBOUD, W., T. DE GROOT & M. WASSCHER, 1990. *Odon-tabel voor het op naam brengen van libellen zonder te vangen*. — [*Odonata identification key for non-collectors*], pt 1, 28 pp. Odon & Atalanta, Utrecht. (Dutch). — (c/o Miss T. de Groot, Vlieland 20, NL-3524 AK Utrecht).

A well constructed adult Zygoptera key for the Netherlands fauna, with annotations on the habitat features for each sp.

- (7552) REINHARDT, K., 1990. Die Kleine Pechlibelle — bodenständig im Stadtgebiet von Karl-Marx-Stadt (Odonata). *Veröff. Mus. Naturk. Chemnitz* 14: 103-107. — (Irkutsker Str. 153, D-09044 Chemnitz, FRG).

The odon. assemblage and a population of *Ischnura pumilio* of a gravel pit in the city of Chemnitz (formerly "Karl-Marx-Stadt"), eastern FRG, are described, and the control of vegetation succession is suggested to maintain the population of this "endangered" sp.

- (7553) RETTIG, K., 1990. Neues aus der Insektenwelt Ostfrieslands. *Beitr. Vogel- Insektenwelt Ostfrieslands* 43: 10-16. — (Danziger Str. 11, D-2970 Emden, FRG).

Aug. 29, 1990 is recorded as the latest seasonal emergence record in Ostfriesland, northern Germany. *Cordulia aenea* was taken on Aug. 11, 1990, which is also considered a late record for this sp. in the region concerned.

- (7554) SCHORR, M., 1990. *Grundlagen zu einem Artenhilfsprogramm Libellen der Bundesrepublik Deutschland*. vi+512 pp., inlay excl. Ursus, Bithoven. — ISBN 90-73527-01-5. — Available from the SIO Central Office, P.O. Box 256, NL-3720 AG Bithoven; — price: Hfl. 86.- net.

This is a manual of scientific foundations for a management program of odon. species & habitat conservation in Central Europe. In its scope, the work is unique in odonatol. literature. — The rapid decline of Central-European odon. spp. and their biotopes makes it necessary to summarize our present knowledge on this insect order from the viewpoints of species and habitat conservation. This monographic presentation of the autecology of the 80 spp. so far known from Germany is based upon a screening of the literature on the Central-European fauna. Over 700 titles were perused with respect to distribution (Germany, Austria, Switzerland, etc.), habitat requirements of adults and larvae, threatening factors and conservation possibilities. — The manual presents a detailed and documented information on the theoretical, mainly autecological background required for an adequate species and habitat conservation management in Central Europe. At the same time, it is pointing out the lacunae in the existing knowledge on the subject.

- (7555) SELYSIA. *Newsletter of the Societas Internationalis Odonatologica and of the U.S. National Office*, Vol. 19, No. 2 (Sept. 1, 1990). — (c/o Dr D.M. Johnson, Dept Biol. Sci., East Tennessee St. Univ., Box 23580 A, Johnson City, TN 37614-0002, USA).

Utzeri, C.: XI International Symposium of Odonatology (p. 13); — *Silby, J.*: *Kimminsia* (p. 13); — *Boehms, C.N.*: Dr Charles Jenner dies (p. 13); — *Varadaraj, G.*: Third Indian Symposium of Odonatology (p. 14); — *Dunkle, S.W.*: Artificial bogs for Odonata? (pp. 14-15); — *Donnelly, T.W.*: *Calopteryx aquabilis* "flying" on water (p. 15); — *Harp, G.H.*: Dragonfly Society of America's 1990 meeting (p. 15); — *Varzinska, R.*: The organization of an odonatological section in the U.S.S.R. (p. 16); — *Donnelly, T.W.*: North and Central American catalogue of Odonata: a proposal (p. 16); — *Van Brink, J.M.*: New regulations for payments (pp. 16-17); [*Johnson, D.M.*]: From the Editor's desk (pp. 17-19); — *Cannings, R.A.*: Minutes of the Business Meeting of the Societas Internati-

- onalis Odonatologica [...] Johnson City [data wrong, it should read 10 August 1989; — printing errors are also in figures of the Treasurer and IORI reports].
- (7556) SOEFFING, K., 1990. *Verhaltensökologie der Libelle Leucorrhinia rubicunda (L.) (Odonata: Libellulidae) unter besonderer Berücksichtigung nahrungsökologischer Aspekte*. Diss. Univ. Hamburg. viii+182 pp. — (Books available from the SIO Central Office, Bilthoven, Holland, at Hfl. 50.-).
Using the example of *L. rubicunda*, the adaptations of larval and adult dragonflies to the sphagnum moore environment are examined. After the classical work on *L. dubia*, by H. Steiner (1948, *Zool. Jb. Syst.* 78: 65-96), this is a much deeper and in many aspects a pilot study in this field. The 4 main sections of the book deal in considerable detail with the biology of egg and larva, food consumption ecology and adult behaviour. Whenever possible, the evidence is discussed in terms of the situation in the other central European sphagnum moore odon.
- (7557) SPURIS, Z., 1990. Jaunas zīnas par spārēm Latvijas centrālajā daļā. — New data on dragonflies in the central part of Latvia. *Latv. Ent.* 33: 81-89. — (Latvian, with Engl. s. & separate Russ. abstr. outside the text). — (Miera iela 19-6, USSR-229021 Salaspils, Latvia).
New records of 33 spp.; from 46 localities (incl. 14 stations on the unpolluted Maza Jugla R.), brought together during 1986-1988.
- (7558) SPURIS, Z., 1990. [Recenzii]. Opuscula zoologica fluminensia. *Latv. Ent.* 33: 129-130. (Russ.). — (Miera iela 19-6, USSR-229021 Salaspils, Latvia).
Detailed indicative book review, with an analysis of the first 43 parts (1984-July 1989), and the list of titles of 21 odon. issues.
- (7559) SPURIS, Z., 1990. [Recenzii]. Zoological catalogue of Australia, Vol. 6. *Latv. Ent.* 33: 131-132. (Russ.). — (Miera iela 19-6, USSR-229021 Salaspils, Latvia).
Description of the odon. part, as listed in *OA* 6595, appears on p. 131.
- (7560) SPURIS, Z., 1990. [Recenzii]. Fauna i ekoloģija strekoz. *Latv. ent.* 33: 133-135. (Russ.). — (Miera iela 19-6, USSR-229021 Salaspils, Latvia).
A very detailed and critical book review of the volume listed in *OA* 7103, with numerous useful comments (also e.g. relative to the spelling of the generic name *Aeshna*) and some suggestions (among which, for example, the reviewer's considerations on separate reference lists for each chapter (paper) vs cumulative bibliography at the end of the book), would certainly deserve the attention of the editors of similar "readers" outside the USSR as well.
- (7561) STÖBBE, H., 1990. Ein Beitrag zur Kenntnis der Verbreitung von *Calopteryx splendens* und *Calopteryx virgo* (Odonata: Zygoptera) in Griechenland. *Naturk. RundBr.* 4: 2-4. (With Engl. s.). — (Holthusenstr. 4, D-2000 Hamburg-67, FRG).
The distribution of the 2 taxa on the mainland of Greece, as evidenced by the author during his 1977 and 1985 surveys, is mapped. The literature date are also included.
- (7562) STOBBE, H., 1990. Bemerkungen zur Gattung *Calopteryx* in Griechenland. *Naturk. RundBr.* 4: 5-19. — (Holthusenstr. 4, D-2000 Hamburg-67, FRG).
23 *C. virgo*, and 27 *C. splendens* localities from peninsular Greece are listed, the characteristic wing patterns of individuals of both sexes from various populations are figured, their geographic distribution is discussed, and a preliminary map of *C. s. balcanica* and *C. s. mingrelica* in Greece is produced. — (*Abstracter's Note*: This is one of the most significant recent contributions on the Odon. of Greece).
- (7563) STRAKA, V., 1990. Vážky (Odonata) slovenska. — The dragonflies (Odonata) of Slovakia. *Zbor. slov. nár. Muz. (Prir.)* 36: 121-147. (Slovak, with Engl. s.). — (Turčianske Muz. "A. Kmeta", Engelsova 2, CZ-036 01 Martin, Slovakia).
Since 1977 (cf. *OA* 2016), 8 additional spp. became known from Slovakia; the status of the fauna being at present at the 69 spp. mark. A review of all known regional records, crossrefe-

renced to the work listed in OA 5292, is presented. It is based on material from 417 localities, numbered in accordance with the Data Bank of Slovak Fauna code. The Slovak territory is divided into 12 natural faunal districts, and the fauna of each of these is shown in a table.

- (7564) SUZUKI, K.-J. & K. SAITOH, 1990. A revised chromosome study of Japanese odonates. (I). Chromosomes of 14 species belonging to 9 families. *Sci. Rep. Hirosaki Univ.* 37(1): 38-49. (Jap., with extensive Engl. s, fig. captions & tabs). — (Dept Biol., Hirosaki Univ., Bunkyo-cho 3, Hirosaki, Aomori, 036, JA).

Almost all material originates from Aomori, Hokkaido, and is referable to the spp. whose karyotypes were known previously. The present observations are largely in agreement with the evidence on karyotypic morphology published for the respective spp. earlier. The 2 significant additions are: (1) the lack of an *m*-pair in *Calopteryx cornelia* (no 13, XO), and (2) the "tripartite structure" of the giant X in *Mortonagrion selenion* (=27, XO), whose segments despiralise asynchronously.

- (7565) TAGUCHI, M., 1990. Community of coexisting *Sympetrum* species in the paddy fields surrounded by hills in autumn. *Nature & Insects* 25(9): 18-22. (Jap., with Engl. title). — (Hashimoto High School, Sagamihara, Kanagawa, 229, JA).

For a full Engl. version cf. *Odonatologica* 17 (1988): 249-262.

- (7566) TAVE, D., M. REZK & R.O. SMITHERMAN, 1990. Effect of body colour of *Oreochromis mossambicus* (Peters) on predation by dragonfly nymphs. *Aquacult. Fish. Manag.* 21: 157-161. — (Agric. Exp. Stn, Univ. Arkansas, P.O. Box 4005, Pine Bluff, AR 71601, USA).

Gold and black *O. mossambicus* fry were stocked in 0-043-m³ hapas along with early instar dragonfly larvae to determine the effect of body colour of the tilapia on vulnerability to predation by the insect. Hapas were stocked with either: 10 gold fry, 10 black fry and no

dragonfly nymphs (10-10-0); 5 gold fry, 5 black fry and 2 dragonfly larvae (5-5-2); 10 gold fry, 10 black fry and 2 dragonfly larvae (10-10-2); or 10 gold fry, 10 black fry and 3 dragonfly larvae (10-10-3). Four levels of predation were assessed: no predation, 1 dragonfly larva per fish, 1 per 6-7 fish, and 1 per 10 fish. Hapas were censused daily for 14 days. Fish that had been eaten were replaced with similar-sized fish to restore stocking densities. Average daily predation rate ranged from 0-24 to 3-0 and averaged 1-94 fry/dragonfly/day. Average daily predation rates for all treatments were significantly ($P = 0.05$) different and were a function of both dragonfly and fish stocking rates. Dragonfly larvae ate significantly more black fish than gold fish in the 10-10-2 and 10-10-3 treatments: overall (10-10-2, 10-10-3 and 5-5-2 treatments combined), dragonfly larvae ate significantly more black (324) than gold (245) tilapia. Results from this study indicate that the bright body colour of the gold tilapia does not increase rate of predation by dragonfly larvae.

- (7567) THOMPSON, D.J., 1990. On the biology of the damselfly *Nososticta kalumburu* Watson & Theischinger (Zygoptera: Protoneuridae). *J. Linn. soc. Lond.* 40(4): 347-356. — (Dept Envir. & Evol. Biol., Univ. Liverpool, P.O. Box 147, Liverpool, L69 3BX, UK).

The habitat and the territorial and reproductive behaviours are described. The sp. breeds in shallow, narrow (< 2 m wide) fast-flowing permanent streams in the Kimberley region of Western Australia. The presence of suitable perches (protruding rocks or overhanging vegetation) seems to be important in determining its distribution. It is a sexually dimorphic sp.; males have prominent dark brown spots on the wings and a blue pruinescence, which the females lack. Males are strongly territorial. Territories (radius around 1 m) are small in both high and low density populations and are defended vigorously against conspecific males. Male courtship behaviour towards potential mates involves a vigorous hovering flight in front of, and by the side of, the female, during which the prominent dark brown spots on all 4 wings are

displayed. Mean length of copulation is 15.4 min. 2 stages of copulation were recognized. It is thought that the first stage which occupies most time (94.7%) is concerned with removing sperm from previous matings in the usual zygopteran manner. Oviposition begins in tandem in the stems of aquatic macrophytes or the roots of terrestrial plants that hang into the water. Males exhibit plasticity in post-copulatory guarding behaviour: in pairs undisturbed during the early stages of oviposition, the male may release the female before the current bout of egg-laying has been completed and attempt to regain a territory. The penis is unusual in having a heavily armoured shaft and two pairs of cornua; it is probably used in sperm removal as well as intromission.

- (7568) TITTIZER, T., F. SCHÖL & M. SCHLEUTER, 1990. Beitrag zur Struktur und Entwicklungsdynamik der Benthalfauna des Rheins von Basel bis Düsseldorf in den Jahren 1986 und 1987. *Limnologie aktuell* 1: 293-323. (With Engl. s.). — (Bundesanst. Gewässerök., Kaiserin-Augusta-Anlage 15-7, Postfach 309, D-5400 Koblenz, FRG). *Calopteryx splendens* is listed from 2 localities on the (German) Upper Rhine (Basel-Breisach), and *Somatochlora metallica* from the Central Rhine nr Mainz.
- (7569) VAN DEN BRINK, F.W.B., G. VAN DER VELDE & W.G. CAZEMIER, 1990. The faunistic composition of the freshwater section of the river Rhine in the Netherlands: present state and change since 1900. *Limnologie aktuell* 1: 191-216. (With Germ. s.). — (Lab. Aquatic Ecol., Univ. Nijmegen, Toernooiveld 2, NL-6525 ED Nijmegen). *Ischnura elegans* and *Calopteryx splendens* are listed from resp. the Waal and the IJssel, i.e. the Rhine R. branches in the Netherlands.
- (7570) VAN DER VELDE, G., F.W.B. VAN DEN BRINK, R. VAN DER GAAG & P.J.M. BERGERS, 1990. Changes in numbers of mobile macroinvertebrates and fish in the river Waal in 1987, studied by sampling the cooling-water intakes of a power plant: first results of a Rhine biomonitoring project. *Limnologie aktuell* 1: 325-342. (With Germ. s.). — (Lab. Aquatic Ecol., Univ. Nijmegen, Toernooiveld 2, NL-6525 ED Nijmegen). *Calopteryx splendens* is recorded from the Gelderland Power Plant on the Waal, i.e. a Rhine branch in the Netherlands.
- (7571) VAN URK, G. & BIJ DE VAATE, A., 1990. Ecological studies in the Lower Rhine in the Netherlands. *Limnologie aktuell* 1: 131-145 (With Germ. s.). — (Rijkswaterstaat, Dienst Binnenwateren/RIZA, P.O. Box 17, NL-8200 AA Lelystad). *Ischnura elegans* is the only odon. sp. recorded during 1973-1983 from the IJssel R., i.e. a branch of the Lower Rhine in the Netherlands.
- (7572) WEGMÜLLER, R., 1990. Die Libellenfauna von Feuchtgebieten im intensiv genutzten Kulturräum, dargestellt am Beispiel Grosses Moos, Kt. Bern. *Mitt. schweiz. ent. Ges.* 63(1/2): 5-23. (With Engl. s.). — (Gurnigelstr. 26, CH-3132 Riggisberg). The paper is based on the PhD dissertation, listed in *OA* 7314.
- (7573) WENHAM, R., 1990. Checklist of the dragonflies and damselflies of Barnet. In: M. Melling, [Ed.], *The naturalist in Barnet: a focus on Barnet's wildlife*, pp. 28-29. ISBN 0-9515608-1-6. — (12 Stanhope Court, East End Rd, London, N3 3LU, UK). 14 spp. are listed from this locality in the London Borough, UK. Cf. also *OA* 7509.
- (7574) WILBUR, H.M. & J.E. FAUTH, 1990. Experimental aquatic food webs: interaction between two predators and two prey. *Am. Nat.* 135(2): 176-204. — (Dept Zool., Duke Univ., Durham NC 27706, USA). 4 replicates of all 16 combinations of the presence and absence of 2 predators (larval *Anax junius* and adult salamanders *Notophthalmus viridescens*) and 2 anuran prey (*Bufo americanus* and *Rana palustris* larvae) were performed in an array of artificial temporary ponds. The 2 anurans were introduced at densities high enough to cause density-dependent reductions in survival and body size at metamorphosis and to increase larval period. They

were in competition when raised together. *Notophthalmus* reduced the density of *Bufo* and caused the survivors to metamorphose early and at a small size. *Anax* caused an even greater reduction in survival but not as strong an acceleration of metamorphosis. Newts also reduced the density of *Rana*, but survivors benefited by growing rapidly. The effects of *Anax* were even stronger; the only *Rana* tadpoles that were able to metamorphose in the 2 mo of the experiment were from ponds in which *Anax* reduced densities enough to permit rapid growth of the surviving tadpoles.

- (7575) XU, J.-f., 1990. A note on a collection of gomphid dragonflies from northern Fujian (Odonata: Gomphidae). *Wuyi Sci. J.* 7 [1987]: 22-24. (Chin, with engl. translation). — (Biol. Control Res. Inst., Fijian Agric. Coll., PRC-350002 Fuzhou, Fujian).

A collection of mature gomphid larvae, clinging on cliffs, stones or grass along the river banks in 3 counties of northern Fujian, China, was made from a bamboo raft, during the period of peak emergence (May 13-18, 1987). The larvae were kept in cages until the adults emerged. In addition to the large number of exuviae, 380 adults, associated with the larvae, and referable to 10 spp. of 10 genera in 4 subfam. were obtained. The larvae of 3 previously unidentified spp. can now be associated with the adults, viz. *Stylogomphus tantalus*, *Heliogomphus retroflexus* and *Hagenius deflexus*. It is emphasized that the larva reported by H.-f. Chao (1954, *Acta ent.*

sin. 4(3): 225) as a *Microgomphus* sp., proved to be *H. retroflexus*, thus confirming the discovery of *K. Matsuki* (*OA* 2606) in Taiwan. Consequently, the genus *Microgomphus* should be deleted from the list of Chinese Gomphidae.

- (7576) ZESSIN, W., 1990. Die Suche nach fossilen Insekten. *Rudolstädter naturh. Schr.* 3: 33-42. (With Engl. & Russ. s's). — (Lütbecker Str. 30, D-2754-0-Schwerin, FRG). Includes photographs of a number of recently described fossil odon. taxa.

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- (7577) MACHET, P., 1991. Contribution à l'étude des odonates de la Guyane française. 2. Anisoptera: Aeshnidae, Gomphidae, Corduliidae. *Opusc. zool. flumin.* 61:1-16. (With Engl.s.). — (65 bd de la République, F-92210, Saint-Cloud). The records of 37 spp., collected since 1976, are listed, of which 19 spp. are new to French Guiana. Annotations and brief comments are provided for some of them. — *Coryphaeschna guyanensis* sp.n. is described and illustrated (holotype ♂: Marais de Kaw, 9-V-1989; deposited in MNHN, Paris). The new sp. can be separated from *C. adnexa* (Hag.) by the colour pattern of pterothorax and by the shape of caudal app. — Illustrations and descriptive notes, facilitating the separation of ♀ *C. amazonica* De Marmels and *C. virididas* Calv. are included. — For pt 1 cf. *OA* 6765.