

ODONATOLOGICAL ABSTRACTS

1973

- (8163) VAN LANGEN R., 1973. Libellenverslag. — [Dragonfly report]. In: D. van Hummel, [Ed.]. De Mariapeel zomerkamp 1973, p. 26, Veren. Natuurstud. "Tuurna", Amsterdam. (Dutch). A list of 10 spp., collected during a Youth Federation summer workshop in the Mariapeel, a part of the Peel swamps, the Netherlands. — For a comprehensive monograph on the odon. fauna of this wetland complex cf. OA 6961.

1981

- (8164) MAUCH, E., 1981. Der Einfluss des Aufstaus und des Ausbaus der deutschen Mosel auf das biologische Bild und den Gütezustand. *Schr. dt. Verb. Wasserwirt. Kulturbau* 45: 39-131. — (Author's address not stated). Brief statements on ecological propensities and the occurrence of 3 odon. spp. on the upper Meuse R., FRG (pp. 90-91).

1982

- (8165) MULLER, J., D. SPITZENBERG & K. LOTZING, 1982. Entomofaunistische Notizen aus den Einzugsbereichen der Ohre (Kreise Klötze, Haldensleben, Wolmirstedt) und des Tanger (Kreis Tangerhütte). *Jh. Kreismus. Wolmirstedt* 6: 3-18. — (Third Author: Str. der Einheit 7, D(O)-3250 Stassfurt, FRG). Contains odon. records and field notes from the 4 districts in E. Germany.

1983

- (8166) COLDWELL, J., 1983. Possible occurrence of

the dragonfly *Aeshna mixta* Latr. at Wilthorpe Marsh. *Sorby Record (J. nat. Hist. Sheffield Area)* No. 21, p. 74. — (Author's address not stated).

An uncertain sight record, 3-X-1983, Sheffield area, UK.

- (8167) STEINER, J., 1983. Libellen. *Jber. Naturschutzgeb. Wollmatingen Ried-Untersee-Gnadensee* 1983: 13-15. — (Fritz-Arnold-Str. 2 c, D(W)-7750 Konstanz, FRG). Annotated list of 24 spp. from a locality in the Lake Constance (= Bodensee) area, FRG.

1985

- (8168) BUCHEN, C., 1985. *Naturwissenschaftliche Beiträge zur Tier- und Pflanzenwelt des Oberbergischen Kreises unter besonderer Berücksichtigung der Gemeinde Morsbach*. Meinerzhagener Verlagshaus, Meinerzhagen, 148 pp. — ISBN 3-88913-087-9. — (Publisher: Postfach 1462, Am Stadion 2, D(W)-5882 Meinerzhagen, FRG). 4 odon. spp. are listed on p. 78 (Morsbach, Rhineland-Westphalia, FRG).
- (8169) LEMMEL, G., 1985. *Einheimische Kleingewässer als Lebensraum für Amphibien, Libellen und Wasserkäfer: ökologische Beziehungen zwischen Gewässerstruktur, Besiedlungsstrategie und Artenspektrum*. DiplArb. Tierärztl. Hochsch., Hannover, iv+120 pp. — (c/o Prof. Dr K. Wächler, Tierärztl. Hochsch., Bischofsholer Damm 15, D(W)-3000 Hannover, FRG). The fauna of 22 ponds in the Hannover area, Germany, is analysed and discussed (18 odon. spp.).

- (8170) MARCHAND, M., 1985. *Untersuchungen zur Phänologie der Libellen (Insecta, Odonata) ausgewählter südniedersächsischer Tümpel*. DiplArb. Univ. Göttingen, iv+163 pp. — (c/o Prof. Dr U. Heitkamp, II. Zool. Inst. Univ. Göttingen, Berliner Str. 28, D(W)-3400 Göttingen, FRG).

The odon. communities are described of 20 hydrol. different ponds in southern Lower Saxony, Germany. The chemical analyses indicate that the pH and O₂ values are the principal factors regulating the structure of a local odon. assemblage. The data on phenology, life history, exuviae size and sex ratios are presented for single spp.; in some cases they deviate from those previously published.

- (8171) SPECHT, R., 1985. *Zur Odonatenfauna des NSG Halbinsel Mettnau*. Stencil, Dt. Bund Vogelschutz, Radolfzell, 8 pp. — (Author's address not stated).

Synopsis of 36 spp., with notes on phenology, abundance and local status; Lake Constance (= Bodensee) area, FRG.

1986

- (8172) SOUTHCOTT, R.V., 1986. Medical ill-effects of Australian primitive winged and wingless insects. *Rec. Adelaide Children's Hospital* 3(3): 277-356. — (2 Taylors Rd, Mitcham-5062, AU).

With reference to the odon., the following case is described on p. 299 (verbatim): "Case PII. Miss Dzintra Lacis, entomologist, South Australian Museum, was bitten in a finger tip by a specimen of the large dragonfly *Hemianax papuensis* (Burmeister), which had been captured by being shot down with birdshot at Cannu-waukakinna Creek bore, Etudanna Station, South Australia, on 8-VIII-1984. The bite was painful, but the skin was not lacerated, and there were no aftereffects." — The Author is Consultant at the Principal Poisons Centre for South Australia, and this seems to be the first case ever recorded of injury to a human caused by a dragonfly.

1987

- (8173) BORGER, K., 1987. *Waldbiotope Steinbachtal:*

faunistische Bioinventur, Analyse und Entwicklungsvorschläge unter Berücksichtigung der vorhandenen und ggf. zu erweiternden fließenden und stehenden Gewässerbiotope. DiplArb. Albert-Ludwigs Univ., Freiburg, iv+[ca] 214 pp. [copy available is incomplete]. — (Author's address unknown).

Contains data on 16 odon. spp., from a locality in the Freiburg/Breisgau area, southern Germany, gathered during Feb.-July, 1987.

- (8174) KNOTZSCH, G. & P. KUCHLER, [Eds], 1987. *Libellen. Jber. Naturschutzgeb. Eriskircher Ried* 1987: 24-25. — (Authors' addresses not stated).

Annotated list of 31 spp. from a locality in the Lake Constance (= Bodensee) area, FRG.

- (8175) SCHMIDT, B., 1987. *Libellen (Odonata). Jber. Naturschutzgeb. "Busenried"* 1987: 8-9. — (Kohlenbacher Talstr. 18, D(W)-7808 Kollnau, FRG).

Commented list of 9 spp., evidenced in Sept. 1987, at a locality in the Lake Constance (= Bodensee) area, FRG.

- (8176) SCHMIDT, B., 1987. *Libellenbestandsaufnahme im Auffüllgelände "Göldern"*. [Gutachten]. Naturschutzzentrum Wollmatinger Ried, Dt. Bund Vogelschutz, Konstanz, 6 pp., 4 maps incl. — (Kohlenbacher Talstr. 18, D(W)-7808 Kollnau, FRG).

23 spp., incl. several records of *Crocothemis erythraea*, the Constance Lake area, FRG. — For a subsequent report cf. OA 8183.

- (8177) SCHMIDT, B., 1987. *Die Libellenfauna der Buchholzer Weiheranlage im Spitalwald Waldkirch. MittBl. Ver. Umwelthilfe Waldkirch* 1987 (1): 1-6. — (Kohlenbacher Talstr. 18, D(W)-7808 Kollnau, FRG).

Commented list of 33 spp., Waldkirch, Baden-Württemberg, FRG.

- (8178) SRIVASTAVA, V.D. & S. DAS, 1987. Fauna of Orissa. Insecta: Odonata. *State Fauna Ser., zool. Surv. India* 1: 135-159. — (Zool. Surv. India, M-Block, New Alipore, Calcutta-700053, India).

Prior to this work, 29 spp. were known from the state of Orissa, India. Herewith the status

is brought up to 58 spp. All the new records are listed and all the spp. are keyed.

- (8179) VERMEULEN, J.W.C. & A.L. SPAANS, 1987. Feeding ecology of Javan Heron, *Ardeola speciosa*, and Cattle Egret, *Bubulcus ibis*, in North Sulawesi, Indonesia, with additional notes on the occurrence of ardeids. *RIN Contr. Res. Manag. nat. Resour.* 1987 (2): 1-37. — (Res. Inst. Nat. Manag., P.O. Box 46, NL-3957 ZR Leersum).

The feeding ecology of the 2 bird spp. was studied on a surface of 120 km² in the W part of the Dumoga Valley, North Celebes (= Sulawesi). Quantitative data on stomach contents, pellets, etc. of individuals of various age and condition are given. Odon. present a significant food item in both spp.

- (8180) WILDERMUTH, H., 1987. (Artenschutzprogramm Baden-Württemberg: Grundlagen, Biotopschutz). Abbauegebiete: Kies-, Sand- und Tongruben, Steinbrüche. *Avifauna Bad.-Württ.* 1(1): 596-611. — (Mythenweg 20, CH-8620 Wetzikon).

Contains a brief section on the odon., listing [for Switzerland/southern Germany] *Enallagma cyathigerum*, *Ischnura pumilio*, *Gomphus pulchellus*, *Libellula depressa*, *Orthetrum brunneum* and *O. cancellatum* as "typical pioneer" spp.

1988

- (8181) OBENAUER, C., 1988. *Faunistik und Ökologie der Odonaten (Libellen) des Federseegebietes*. DiplArb. Fak. Biol., Univ. Tübingen. viii+82 pp. Available from the Author at ca DM 20.-net. — (Rosenweg 48, D(W)-7401 Waldorf-Haslach, FRG).

Monographic treatment of the odon. fauna of several wetlands in the Federsee area, Oberschwaben, FRG.

- (8182) SCHMIDT, B., 1988. *Faunistische Bestandserhebung von Libellen am Standortübungsplatz Konstanz-Wollmatingen 1987. Abschlussbericht*. Dt. Bund Vogelschutz, Konstanz, ii+26 pp. — (Kohlenbacher Talstr. 18, D(W)-7808 Kollnau, FRG).

28 spp. were recorded at 5 localities. incl. Coen-

agrion mercuriale and *Sympetrum meridionale* (Konstanz, southern FRG). Their local ecology, abundance, phenology, etc. are evidenced in great detail.

- (8183) SCHMIDT, B., 1988. *Zweiter Bericht über die Libellenfauna im Auffüllgelände "Göldern", Gemarkung Reichenau*. [Gutachten]. Naturschutzzentrum Wollmatinger Ried, Dt. Bund Vogelschutz, Konstanz, 12 pp. 9 maps incl. — (Kohlenbacher Talstr. 18, D(W)-7808 Kollnau, FRG).

For the first report cf. OA 8176.

- (8184) SUI, J.-z. & H.-g. SUN, 1988. Odonata: Cordulegasteridae, Aeschnidae, Libellulidae, Agriidae, Coenagriidae, Platycnemididae, Lestidae. In: *Insects of Mt Namjagbarwa region of Xizang*, pp. 25-27, (Series of Mountaineering and Scientific Expedition), Science Press, Beijing. — ISBN 7-03-000131-1/Q-25. (Chin., with Engl.s.). — (Inst. Zool., Acad. Sinica, Haitien, Beijing, P.R. China).

An annotated list of 18 spp., collected by the 'Comprehensive Scientific Expedition of Academia Sinica to the Xizang Namjagbarwa' in Tibet (alt. 850-2950 m), is given. The topographic names are stated in Chinese transliteration only.

- (8185) WHALLEY, P., 1988. Insect evolution during the extinction of the Dinosauria. *Entomol. gener.* 13(1/2): 119-124. (With Germ.s.). — (Author retired; his last known address: Dept Ent., Brit. Mus. Nat. Hist., Cromwell Rd, London, SW7 5BD, UK).

Possible catastrophic events at the Cretaceous-Tertiary boundary and their effect on insect populations are discussed. The effects of a long-term "black-out" resulting from a meteorite strike or massive volcanic eruption are considered. The extensive and diverse insect faunas of the Lower Cretaceous, with specialised forms suggesting habits similar to living insects, are compared with other faunas from the Tertiary. From this study of fossil insect faunas, no evidence can be found for the suggested occurrence of world-wide catastrophic events over the Cretaceous-Tertiary boundary, in which connection a reference is also made to the recently discovered Lower Cretaceous Aeshnidae from

Dorking, Surrey, UK.

- (8186) WIESMATH, I., 1988. *Verbreitung und Ökologie der Odonaten in Gewässern der Tübinger Umgebung*. DiplArb. Fak. Biol., Univ. Tübingen. x+96 pp. — Available from the Author at ca DM 20.- net. — (Rossbergstr. 52, D(W)-7400 Tübingen, FRG).
Detailed review of the odon. fauna (27 spp.) of 12 water bodies in the Tübingen area, southern Germany. *Gomphus pulchellus* is here reported from the region for the first time.

1989

- (8187) BONORA, V., 1989. Das Beutefangverhalten von Libellenlarven. *Praxis Naturw. Biol.* 38(6): 22-26. — (Otterbachstr. 28, D(W)-8615 Melkendorf, FRG).
Technical description of laboratory experiments on odon. larvae prey capture behaviour, designed didactically for use in German (European) secondary school teaching programs.
- (8188) DONATH, H., 1989. Meliorationsgräben als Odonaten-Habitate. *Verh. 9. Int. Symp. EntFaun. Mittel-Europ.*, Gotha, pp. 357-360. — (Hauptstr. 36/37, D(O)-7960 Luckau, FRG).
The odon. fauna (28 spp.) of the drainage ditches in the districts of Cottbus and Potsdam, FRG, is analysed, the environmental conditions of these are outlined, and the importance of this type of man-made habitats for species conservation is emphasised.
- (8189) KRETZSCHMAR, E., 1989. Übersicht über die in Dortmund nachgewiesenen Libellenarten. *Dortmund. faun. Mitt.* 1(1): 14-19. — (Feldgarten 21, D(W)-4600 Dortmund-72, FRG).
Annotated list of 25 spp. so far recorded from the Dortmund city area, Germany. — For additions cf. OA 8199.
- (8190) NAGEL, P., 1989. Arthropoden als Indikatoren für die Gewässergüte urban-industriell belasteter Flüsse. *Verh. 9. Int. Symp. EntFaun. Mittel-Europ.*, Gotha, pp. 83-85. — (Inst. Biogeogr., Zentr. Umweltf., Univ. Saarland., Dudweiler, D(W)-6600 Saarbrücken, FRG).
The paper is mainly concerned with the odon. Within the pH range 7.0-8.3 these are not selec-

tive. Various other physical, chemical and biological parameters are also considered.

- (8191) REZBANYAI-RESER, L., 1989. Zur Insektenfauna von Vogelmoos (775 m) bei Neudorf, Kanton Luzern. I. Allgemeines. *Ent. Ber., Luzern* 22: 1-20. — (Natur-Mus., Kasernenplatz 6, CH-6003 Luzern).
Contains a reference to the odon. material collected (1987-1988), but no species list; canton Luzern, Switzerland.
- (8192) SCHMIDT, B., 1989. Systematische Erfassung der Libellen auf 32 Probeflächen in den Jahren 1987/88. *Jher. Wollmatinger Ried-Untersee-Gnadensee* 1988: 26-37. — (Kohlenbacher Talstr. 18, D(W)-7808 Kolnau, FRG).
Contains first regional records of *Calopteryx splendens*, *Erythromma viridulum*, *Gomphus pulchellus* and *Orthetrum albistylum*, bringing the species status of this Constance Lake area nature reserve, FRG, up to 47.

1990

- (8193) ARNOLD-REICH, U., 1990. Ökologisch-faunistische Untersuchungen an Libellen in Auwälgewässern bei Unterfahlheim (Landkreis Neu-Ulm). *SchrReihe bayer. Landesamt Umweltschutz* 99: 101-112. (With Engl.s.). — (Bettewiese 4 B, D(W)-3550 Marburg-Schröck, FRG).
The species abundance and composition of the odon. fauna (34 spp.) was studied in ecologically different habitats, Bavaria, FRG. The odon. community of the riparian forest water bodies clearly differs from that of the pool habitats. Detailed community analyses are presented, the evidence is discussed also from the point of view of conservation.
- (8194) BORSUTZKI, H., 1990. Libellen und Amphibien in einem Wiedervernässungsgebiet des Donaumooses. *SchrReihe bayer. Landesamt Umweltschutz* 99: 113-127. (With Engl.s.). — (Bahnhofstr. 17, D(W)-7906 Herrlingen, FRG).
The secondary wetlands were studied in the nature reserves of "Langenauer Ried" (Baden-Württemberg) and the "Leipheimer Ried" (Bavaria), FRG. 35 odon. spp. are listed and the differences in the faunal composition of different habitats are discussed.

- (8195) FRANTSEVICH, L.I. & P.A. MOKRUSHOV, 1990. Behavioural choice of conspecific mates in closely related dragonfly species. In: F.G. Gribakin et al., [Eds], Sensory systems and communication in arthropods, pp. 142-147, Birkhäuser, Basel-Boston-Berlin. — (Schmalhausen Inst. Zool., Ukrain. Acad. Sci., Lenin St. 15, 252030 Kiev, Ukraine).
Dead specimens or dummies were offered to resident *Lestes* and *Sympetrum* males. Spectro-zonal phot. of dragonflies against the vegetative background were prepared and checked by the resynthesis of colour image. 6 modes for processing of the species-specific visual signals were established and their physiological functioning identified.
- (8196) HECKL, S., U. MARTINI, D. NARR & H.-J. SCHUSTER, 1990. Renaturierungskonzept Altmühltal zwischen Gunzenhausen und Treuchtlingen (Landkreis Weissenburg-Gunzenhausen, Mittelfranken). *SchrReihe bayer. Landesamt Umweltschutz* 99: 55-81. (With Engl.s.). — (First Author: Lohbachstr. 30, D(W)-8543 Hilpoltstein, FRG).
Calopteryx virgo and *C. splendens* are reported from the Altmühl Valley, Bavaria, FRG.
- (8197) HERDEN, K., 1990. *Einige Untersuchungen zur Biologie von Onychogomphus forcipatus L. (Odonata: Gomphidae)*. DiplArb. Albert-Ludwigs Univ., Freiburg, v+93 pp. — (Xerox copies available from the Author, at DM 25,- net). — (Kurze Gasse 3, D(W)-8867 Oettingen, FRG).
Comprehensive treatment of ecology, life history, and adult and larval behaviour at 3 habitats in the Freiburg area, southern Germany.
- (8198) HOLM, A., 1990. *Ökologischer Bewertungsrahmen Fließgewässer (Bäche) für die Naturräume der Geest und des Östlichen Hügellandes in Schleswig-Holstein*. Landesamt NatSchutz LandschPfl. Schleswig-Holstein, Kiel, 56 pp. — ISBN 3-923339-31-3. — (Publisher: Hansaring 1, D(W)-2300 Kiel-14, FRG).
Contains annotations on the local status of *Calopteryx splendens*, *C. virgo*, *Gomphus vulgatissimus* and *Cordulegaster boltonii*.
- (8199) KRETZSCHMAR, E., 1990. Die Libellen Dortmunds — 1. Ergänzungsbericht. *Dortmund. faun. Mitt.* 2(1): 37-39. — (Feldgarten 21, D(W)-4600 Dortmund-72, FRG).
Additions to the paper listed in OA 8189.
- (8200) MECIBAH, S., 1990. *Contribution à l'étude des odonates du Parc national d'El Kala*. Mém. Dipl. Etud. supér., Univ. Annaba. xii+44 pp. (With Engl.s.). — (c/o Dr B. Samraoui, 4 rue Hassi-Beïda, Annaba, Algeria).
The habitats and odon. fauna (27 spp.) of the El Kala National Park, Algeria, are described. The records of *Acisoma panorpoides* and particularly, that of *Urothemis edwardsi* are of more than national interest only.
- (8201) MUNSHI, D., O.N. SINGH & D.K. SINGH, 1990. Food and feeding relationships of certain aquatic animals in the Ganga ecosystem. *Trop. Ecol.* 31(2): 138-144. (With Fr. & Span. s's). — (Post-Grad. Dept Zool., Bhagalpur Univ., Bhagalpur-812007, India).
Food and feeding habits of 13 common invertebrates of the Ganga R., India, are examined. The diet of larval *Mesogomphus lineatus* consists of rotifers, protozoans, cladocerans, copepods, fish fry, aquatic insects and phytoplankton.
- (8202) SCHLUMPRECHT, H., 1990. Die möglichen Auswirkungen von Speicherbauten auf die Tierwelt kleiner Fließgewässer. *SchrReihe bayer. Landesamt Umweltschutz* 99: 159-167. (With Engl.s.). — (Lehrstuhl Tierökol. I, Univ. Bayreuth, D(W)-8580 Bayreuth, FRG).
Lists *Calopteryx virgo* and *Cordulegaster boltonii* from Püttlach, Frankenalb, Bavaria, FRG.
- (8203) SCHMIDT, B., 1990. Faunistisch-ökologische Untersuchungen zur Libellenfauna (Odonata) der Streuwiesen im NSG Wollmatinger Ried bei Konstanz. Auswirkungen und Bedeutung der Streuwiesenmähnd und Überschwemmungen auf die Libellensiedlung. *Naturschutzforum* 3/4: 39-80. — (Kohlenbacher Talstr. 18, D(W)-7808 Kollnau, FRG).
43 spp. are recorded from the Nature Reserve "Wollmatinger Ried" nr Konstanz, southern FRG, of which 30 spp. are autochthonous in the temporarily flooded reedlands. Peculiar effects of the mowing frequency on the odon. populations are outlined, and the ecology of

Coenagrion puella, C. pulchellum, Erythromma najas, Lestes barbarus, L. dryas, L. sponsa, Sympecma paedisca, Sympetrum depressiusculum, S. flaveolum and S. striolatum is discussed in considerable detail, elucidating several previously unknown aspects.

- (8204) SEVERIN, I. & R. WOLF, 1990. 1989: 10 neue Naturschutzgebiete im Regierungsbezirk Karlsruhe. *Carolinea* 48: 155-176. — (Bezirksstelle NatSchutz LandschaftsPfl., Kriegsstr. 5a, D(W)-7500 Karlsruhe).

Various odon. spp. are mentioned from the newly created nature reserves "Glaswiesen & Glaswald" and "Oberbruchwiesen", Karlsruhe distr., FRG.

- (8205) SRIVASTAVA, V.D. 1990. Odonata (dragonflies, damselflies). *In*: Collection and preservation of animals, pp. 95-96, Zool. Surv. India, Calcutta. — (Zool. Surv. India, M-Block, New Alipore, Calcutta-700053, India).

Very brief instructions on the subject include the suggestion to use a small bore shotgun with dust shot cartridges for collecting the Anisoptera. The specimens should be triangled, but no reference is made to acetone processing.

- (8206) WEID, R. & G. ZÖCKLEIN, 1990. Vorschläge zur Erhaltung und möglichen Verbesserung der ökologischen Funktionsfähigkeit der Talaue des Unteren Wiesentals bei Forchheim (Oberfranken). *SchrReihe bayer. Landesamt Umweltschutz* 99: 83-99. (With Engl.s.). — (First Author: St-Benedikt-Str. 21, D(W)-8044 Lohhof, FRG).

22 odon. spp. are listed and the composition of the fauna is briefly discussed; Bavaria, FRG.

- (8207) WOLF, T., 1990. Die Libellenfauna des Landkreises Neustadt a.d. Waldnaab. *SchrReihe bayer. Landesamt Umweltschutz* 99: 195-199. — (Stadtplatz 38, D(W)-8482 Neustadt a.d. Waldnaab, FRG).

Commented list of 51 spp., incl. Aeshna subarctica, Onychogomphus forcipatus and Somatochlora arctica; Bavaria, FRG.

1991

- (8208) (Anonymous), 1991. Entomologisches Inventar

des Kantons Genf. *Nouvelles Cent. suisse Cartogr. Faune* 2: 22-23.

Interim report, without species list. As far as the odon. are concerned, the Geneva canton, Switzerland, has been divided into 2 sections, separated by the Rhone R. 178 records (ca 20 spp.) are available for the left bank section, while the other area has not yet been surveyed.

- (8209) ACTA HYDROENTOMOLOGICA LATVICA, Riga, Vol. 1 (1991), published by the SIO Regional Office for the Baltic States & the Latvian Entomological Society; — Executive Editor: Dr Z. Spuris. — Annual Subscription: Hfl. 45.- net.; Orders outside the countries of the former USSR are to be sent to the SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven, The Netherlands.

This basically multilingual annual periodical was set up with the objective to cover as much of the aquatic insect research in the successor states of the former USSR as possible, but any other papers related to the palaearctic fauna are also acceptable. The emphasis will be on the Odon., though the 1st vol. (102 pp.) contains also a significant number of papers presented at the 3rd All-Union Trichoptera Conference (1990). In the present issue some papers are in Engl., some in Russian or Latvian, all with Engl. titles and good Engl. summaries. The abstracts of those related to the Odon. (by S. Gorb, Z. Spuris, R. Varzinska) are listed elsewhere in this issue.

- (8210) ADAMS, J.H. & T.B. HERMAN, 1991. A comparison of the male genitalia of three Calopteryx species (Odonata: Calopterygidae). *Can. J. Zool.* 69(5): 1164-1170. (With Fr.s.). — (Second Author: Dept Biol. Acadia Univ., Wolfville, N.S., BOP 1X0, CA).

C. aequabilis, C. amata and C. maculata from Nova Scotia, Canada, are treated. Differences are most pronounced between maculata and the other 2 spp. The number of spines and the arrangement and density of spinulae on the ventrolateral surface of the penis shaft varied among sp.: the largest sp., amata, has 3 times as many spines as did the smallest, maculata. Scanning electron micrographs of penes revealed structures in aequabilis and amata similar to those in maculata.

Males of both *amata* and *aequabilis* can likely remove sperm from the reproductive storage organs of females, as previously shown in *maculata* and *dimidiata*.

- (8211) *ADVANCES IN ODONATOLOGY*, Vol. 5 (170 pp.), Dec. 1991. Edited by J. Legrand; published by the Societas Internationalis Odonatologica (S.I.O.), Paris. Price: Hfl. 125,- net. — Vols 1-5, with standing order: Hfl. 500,- net. — (Orders to: SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven).
- Bauerfeind, J. & H. Komnick*: Biochemical and morphological characterization of lipophorin of *Aeshna cyanea* larvae (Anisoptera: Aeshnidae) (pp. 5-10); — *Chao, H.-f.*: Recent advances in the study of Chinese Gomphidae (Anisoptera) (pp. 11-19); — *Corbet, P.S.*: A brief history of odonatology (pp. 21-44); — *Faber, V. & H. Komnick*: Peroxisomes and their putative role in the midgut epithelium of larval *Aeshna cyanea* (Anisoptera: Aeshnidae) (pp. 45-48); — *Flint, O.S.*: The Odonata collection of the National Museum of Natural History, Washington, U.S.A. (pp. 49-58); — *Komnick, H.*: Utilization of dietary fatty acids by larval *Aeshna cyanea* (Anisoptera: Aeshnidae) (pp. 59-65); — *Kukel, S. & H. Komnick*: Lipid storage in the Malpighian tubules of *Aeshna cyanea* larvae (Anisoptera: Aeshnidae) (pp. 67-70); — *May, M.L.*: Thermal adaptations of dragonflies, revisited (pp. 71-88); — *Miller, P.L.*: Pre-tandem and in-tandem courtship in Libellulidae (Anisoptera) (pp. 89-101); — *Moore, N.W.*: Recent developments in the conservation of Odonata in Great Britain (pp. 103-108); — *Pfau, H.K.*: Contributions of functional morphology to the phylogenetic systematics of Odonata (pp. 109-141); — *Susanne, G.R. & G.L. Harp*: Selected biological aspects of *Gomphurus ozarkensis* (Westfall) (Anisoptera: Gomphidae) (pp. 143-151); — *Wootton, R.J.*: The functional morphology of the wings of Odonata (pp. 153-169).
- (8212) *ALJANČIČ, M.*, 1991. Kovač (Faber ferrarius) iz Šiške. (Ob 200-letnici rojstva Ferdinanda Schmidta). — [At the 200 birth anniversary of Ferdinand Schmidt]. *Proteus, Ljubljana* 54(2): 58-64. (Slovene). — (Slovene Mus. Nat. Hist., Prešernova 20, P.O. Box 290, SLO-61001 Ljubljana, Slovenia).

The paper gives a biographic outline and a comprehensive evaluation of work of F. Schmidt (born 20-II-1791, Ödenburg/Austria, now Sopron/Hungary; deceased 16-II-1878, Ljubljana/Slovenia). He was one of the early odon. collectors in Slovenia, his collection is in the Slov. Nat. Hist. Mus., Ljubljana [PMSL]. The sole known portrait is included. — For another paper cf. B. Kiauta, 1962, *Kronika, Ljubljana* 10(1): 54-59 (with bibliography); for description of his unpublished autobiography cf. B. Kiauta, 1961, *Proteus, Ljubljana* 23: 269-270. — (*Abstracter's Note*: The sole other major odon. collector of the 19th Century in central Slovenia was Julius von Gspan [1848-1888 from Tyrol], notary in Kostanjevica, whose collection did not survive. An appreciable, but unpublished Slovene odon. collection in PMSL is that of Dr Josef Staudacher [1876-1948].

- (8213) *ANHOLT, B.R.*, 1991. Measuring selection on a population of damselflies with a manipulated phenotype. *Evolution* 45(5): 1091-1106. — (Dept Biol., Queen's Univ., Kingston, Ont., K7L 3N6, CA).
- The estimation of the relationship between phenotype and fitness in natural populations is constrained by the distribution of phenotypes available for selection to act on. Because selection is blind to the underlying genotype, a more variable phenotype distribution created by using environment effects can be used to enhance the power of a selection study. Selection was measured on a population of adult *Enallagma boreale* (Coast Mts, B.C., Canada), whose phenotype had been modified by raising the larvae under various levels of food availability and density. Selection on body size (combination of skeletal and mass at emergence) and date of emergence was estimated in two consecutive episodes. The first episode was survival from emergence to sexual maturity and the second was reproductive success after attaining sexual maturity. Female survival to sexual maturity was lower, and therefore opportunity for selection greater, than males' in both years. Opportunity for selection due to reproductive success was greater for males. The total opportunity for selection was greater for males one year and for females the other. Survival to sexual maturity was related to mass gain between emer-

gence and sexual maturity. Females gained more mass and survived less well than males in both years but there was no linear relationship between size at emergence and survival for females in either year. However, females in the tails of the phenotype distribution were less likely to survive than those near the mean. In contrast, small males consistently gained more mass than large males and survived less well in one year. There was significant selection on timing of emergence in both years, but the direction of selection changed due to differences in weather; early emerging females were more successful one year and late emerging males and females the other. The number of clutches laid by females was independent of body size. Because the resources used to produce eggs are acquired after emergence and this was independent of size at emergence, female fitness did not increase with size. Small males may have had lower survival to sexual maturity but they had higher mating success than large males. Resources acquired prior to sexual maturity are essential for reproductive success and may in some species alter their success in inter- and intrasexual competition. Therefore, ignoring the mortality associated with resource acquisition will give an incomplete and potentially misleading picture of selection on the phenotype.

- (8214) ANHOLT, B.R., J.H. MARDEN & D.M. JENKINS, 1991. Patterns of mass gain and sexual dimorphism in adult dragonflies (Insecta: Odonata). *Can. J. Zool.* 69(5): 1156-1163. (With Fr.s.). — (First Author: Dept Biol., Queen's Univ., Kingston, Ont., K7L 3N6, CA). Data are presented on 54 spp., referable to 8 fam. Males and females emerge at similar mass in most species (14 of 17 measured). However, females are significantly heavier than males when mature in 37 species. Males are heavier in only four species (though none significantly so). Females increase in thoracic mass as well as abdominal mass (presumably for egg maturation). Males allocate most additional mass to the thorax. Females increase in mass by an average of 125% between emergence and sexual maturity. The average increase for males is only 84%, and in some spp. males lose mass. Sexual dimorphism in mass at maturity is most striking in the nonterritorial Coenagrionidae, where fe-

males average >60% heavier than males. In spp. known to be territorial, male and female masses are more similar; female mass does not exceed that of males by more than 32%. It is proposed that mass gain as an adult is beneficial to females regardless of mating system because it increases fecundity. In territorial spp., heavier males are more likely to acquire and hold territories and thereby gain access to mates. In nonterritorial species, heavy males do not have the same advantage in access to mates. Because acquiring resources for mass gain has costs in time and mortality, and there are metabolic costs of maintaining additional mass, males of spp. with nonterritorial mating systems gain less mass. As a result, the mass of males and females in spp. with territorial mating systems are more similar than in spp. with nonterritorial mating systems.

- (8215) *ANNUAL REPORT OF THE INTERNATIONAL ODONATA RESEARCH INSTITUTE*, No. 4 (1990), 1991. Soc. Int. Odonatol. (S.I.O.), Gainesville, FL, USA vi+12 pp. — (Standing Orders from the New World: Int. Odon. Res. Inst., P.O. Box 1269, Gainesville, FL 32602-1269; from the Old World: SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven; - price Hfl. 15.- net). The actual report, subdivided into 13 traditional small sections (cf. OA 7613), is authored by S.W. Dunkle & M.J. Westfall (resp. General Manager and the Director); the 2 Appendices, titled "1990 additions to the Odonata primary type specimens in the Florida State collection of Arthropods" and "Contents of Borror archives", were contributed by M.J. Westfall.
- (8216) *ARGIA*. The news journal of the Dragonfly Society of America. Vol. 3, No. 4 (Dec. 15, 1991). — (c/o Dr C. Cook, 469 Crailhope Rd, Center, KY 42214, USA). Barlow, A.E.: Field notes of an urban odonatist (pp. 1-4); — *Tachopteryx thoreyi* in the Northeast U.S. (pp. 4-5); — *Cannings, R.A.*: Further comments on the genus *Sympetrum* (pp. 5-6); — *Carpenter, V.A.*: 11th SIO Symposium held in Trevi, Italy (p. 7); — *Daigle, J.J.*: A late summer collecting trip to Texas (p. 8); — *Donnelly, T.W.*: Current problems in *Sympetrum* and *Libellula* (a.k.a. *Plathemis*) (pp. 8-12); —

- Glotzhofer, R.C.*: Ohio dragonfly survey produces interesting observations: "stinging dragonflies" and migrating swarms (pp. 13-14); — *Michalski, J.*: Over the trails with the Michalski's in 1990 (pp. 14-17); — *Tennessee, K.*: Alabama collecting in 1991 (p. 18); — *Barlow, A.E.*: New applications for the syringe (pp. 18-19); — *Juritz, G.*: Extruding the odonate penis during preservation (p. 19); — *Cook, C.*: A better method for shipping pinned specimens (p. 20); — *Johnson, D.M.*: 40th Annual Meeting of the North American Benthological Society (pp. 20-22); — *Cook, C.*: Literature reviews (pp. 22-23); — *Notices* (pp. 24-25); — *Membership list* of the Dragonfly Society of America (pp. 25-28); — The "Mystery Dragonfly" puzzle (p. 29).
- (8217) *AŠMERA, J. & DOLNY, 1991*. K výskytu rodu *Cordulegaster* Leach, 1815 v ČSFR. — On the problem of the occurrence of the genus *Cordulegaster* Leach, 1815 in Czechoslovakia. *Acta Fac. paedagog. ostraviensis* (E 21) 127: 17-25. (Czech, with Engl.s.). — (First Author: Katedra Biol., Pedagog. Fac., Univ. Ostrava, Bráfova 7, CZ-70103 Ostrava-1; — Second Author: Kmochova 2, CZ-73601 Havířov-Bludovice). A review is given of the known records of *C. boltonii* and *C. bidentata* in Czechoslovakia, their biology is outlined, and some protective measures are suggested.
- (8218) *BERGMANN, R.F. & E. KRETZSCHMER, 1991*. Vom Flotationsbecken zum schützenswerten Feuchtgebiet — ein Beitrag zur Ökologie von Industrieflächen, *LÖLF-Mitt.* 91(4): 26-30. — (First Author: Schulenburgstr. 2, D(W)-4600 Dortmund-18, FRG). The flora and fauna of a former flotation pond in the area of Dortmund, FRG, is described, incl. a list of 12 (presumably locally breeding) odon. spp.
- (8219) *BESHOVSKI, V., 1991*. Pregled na vidovite Odonata s'obshcheni za B'lgariya. — Review of the dragonflies (Odonata species) of Bulgaria. 1. *Nac. Konf. Ent., Sofia*, pp. 34-38. (Bulg., with Engl.s. in the reprints). — (Inst. Zool., Bulg. Acad. Sci., Bd Russki, BG-1000 Sofia). A revised checklist (64 spp.), from which the 7 previously erroneously listed (but here mentioned) taxa are omitted.
- (8220) *BOESCH, M., 1991*. Laudatio für Josef Biedermann, Planken. In: M.F. Broggi, [Ed.], Verleihung des Binding-Preises für Natur- und Umweltschutz am 11. Dezember in Vaduz, pp. 34-35, Binding-Stiftung, Schaan. — (c/o Dipl.-Biol. J. Biedermann, Blachastr. 78, FL-9494 Planken). Address on the occasion of award of the Binding Award for the Conservation of Nature and Environment to Mr J. Biedermann, the well known Liechtenstein odonatologist. Some of his achievements in the field of the Liechtenstein nature conservation are assessed. — For Biedermann's reply cf. the same publication, pp. 36-37.
- (8221) *CARVALHO, A.L., 1991*. Notas sobre a odonofauna de restinga, em Maricá, Rio de Janeiro (Insecta, Odonata). *Revta bras. Biol.* 51(1): 197-200. (With Engl.s.). — (Depto Zool., Inst. Biol., UFRJ, CCS, bloco A, Cidade Universitaria, BR-21941 Rio de Janeiro). In a typical "restinga" habitat at Maricá, Rio de Janeiro, Brazil, adults and larvae were collected monthly between Sept. 1986 and Apr. 1988. The aquatic habitats available are described and correlated with the 34 odon. spp. recorded. The data are compared with those published earlier for a similar area of the State.
- (8222) *CARVALHO, A.L., N. FERREIRA & J.L. NES-SIMIAN, 1991*. Descrição das larvas de três espécies do gênero *Erythrodiplax* Brauer (Odonata, Libellulidae). *Revta bras. Ent.* 35(1): 165-171. (With Engl.s.). — (Depto Zool., Inst. Biol., UFRJ, CCS, bloco A, Cidade Universitaria, BR-21941 Rio de Janeiro, RJ). The ultimate instar larvae of *E. anomala* (Brauer), *E. juliana* Ris and *E. ochracea* (Burm.) are described and illustrated, based on exuviae of reared specimens. They are compared with *E. connata* (Ramb.) and *E. umbrata* (L.), and tabs are given with measurements and morphological variations of the labium of all 5 spp.
- (8223) *CONTACTBLAD NEDERLANDSE LIBELLEN-ONDERZOEKERS* — Newsletter of the Netherlands Dragonfly Workers, No. 20 (Dec. 1991). (Dutch). — (c/o M.T. Wasscher, Minstraat 15 bis, NL-3582 CA Utrecht).

- In addition to the traditional "newsletter items", the issue contains 5 minor technical papers by *M. Wasscher, R. Ketelaar, M. v.d. Weide, R. Geene* and *C. Knotters*, all related to the Netherlands fauna. Valuable are the exhaustive 1985-1990 bibliography (*R. Ketelaar*, pp. 12-16), various book reviews (by *M. Wasscher, R. Ketelaar, J. van Tol, R. Geene*), and the "evaluation" of the 1991 Netherlands dragonfly season (*M. Wasscher*, pp. 34-36). The note by *J. van Tol*, on the 8 spp. brought recently under legal protection of the national Nature Conservation Act, will be of more than national interest (pp. 4-5: *Sympetma braueri*, *Aeshna viridis*, *Stylurus flavipes*, *Ophiogomphus cecilia*, *Oxygastra curtisii*, *Leucorrhinia albifrons*, *L. caudalis*, *L. pectoralis*).
- (8224) CÔTÉ, S. & R. HUTCHINSON, 1991. Odonates intéressants capturés dans l'extrême-sud du Québec en 1986, 1987 et 1991. *Fabriques* 16(4): 94-100. (With Engl.s.). — (First Author: Dépt. Ent., Coll. MacDonald, 21, 111 Lakeshore, Sainte-Anne-de-Bellevue, Que., H9Z 1C0, CA).
Commented records and circumstantial evidence re *Lestes forcipatus*, *Aeshna clepsydra*, *Gomphus fraternus*, *G. vastus*, *Somatochlora tenebrosa* and *Tramea lacerata*, from the Sainte-Anne-de-Bellevue/Trois-Rivières corridor in the southernmost Quebec, Canada.
- (8225) CURTIS, B.A., 1991. Freshwater macro-invertebrates of Namibia. *Madoqua* 17(2): 163-187. — (State Mus., P.O. Box 1203, Windhoek, Namibia).
Contains a region and habitat annotated list of 85 odon. spp. of Namibia.
- (8226) DE MARMELS, J., 1991. *Dorocordulia nitens* sp. n., eine neue Smaragdlibelle aus Venezuela (Odonata: Corduliidae). *Mitt. ent. Ges. Basel* 41(4): 106-111. (With Engl.s.). — (Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay 2101-A, Venezuela).
The new sp. (holotype ♂: Venezuela, Bolivar, Cerro Guaiquinima, alt. 1000 m, 6/13-II 1990, deposited at M.I.Z.A., U.C.V., Maracay) is described and illustrated on the basis of a single subterminal ♂ and its larval exuviae. The imago differs from males of *D. errans* and *D. vagans* in the shape of the caudal appendages and in wing venation. The larva is similar to larvae of *N. Amer. Dorocordulia* but has longer dorsal abdominal projections.
- (8227) DUDGEON, D., 1991. An experimental study of abiotic disturbance effects on community structure and function in a tropical stream. *Arch. Hydrobiol.* 122(4): 403-420. — (Dept Zool., Univ. Hong Kong, Hui Oi Chow Sci. Bldg, Hong Kong).
The odon. are not considered, but in an appended list of invertebrates collected from multiple samplers and litter bags in Magnolia Falls Stream, Hong Kong (Oct.-Dec., 1988), *Philoganga vetusta*, *Euphaea decorata*, *Heliogomphus scorpion* and *Onychogomphus sinicus* are listed.
- (8228) ELLINGTON, C.P., 1991. Aerodynamics and the origin of insect flight. *Adv. Insect Physiol.* 23: 171-210. — (Dept Zool., Univ. Cambridge, Downing St., Cambridge, CB2 3EJ, UK).
The paper has an important bearing on our understanding of flight in odon. and is organised into the following chapters: "Early insects" [incl. a review of the 'paraglide', 'floating' and 'running jump/flying leap' theories], "Basic aerodynamics", "Gliding cylindrical bodies", "Aerodynamic function of winglets", and "Concluding remarks".
- (8229) FOPMA, M., F. MAJOOR & M. VAN DER WEIDE, 1991. *Van waterbak tot oevergemak. Een beheers- en inrichtingsplan voor het Overijssels Kanaal*. — [A tentative plan for nature refeaturing and management of the Overijssels Canal]. Rijkshogeschool IJsselland, Deventer, ii+38 pp. (Dutch). — (Author's addresses not stated).
With special emphasis on the odon. fauna (24 spp.), a plan is developed for the featuring and management of nature-like aquatic landscape and habitats in this well known major canal, Overijssel prov., the Netherlands. The financial aspects of the project are also specified in detail.
- (8230) FOSTER, J. & C. TURNER, 1991. Insects and otter diet. *Entomologist* 110(4): 166-169. — (Natn. Rivers Authority, Southern Region, Guildbourne House, Chatsworth Rd, Worthing, BN11 1LD, UK).

(Not identified) Coenagrionidae are listed in the diet of the eurasian otter, *Lutra lutra*, from the upper Wye R. system, Wales, UK. The diet is compared with that of the American *Lutra canadensis* (cf. K.F. Lagler & B.T. Ostenson, 1942, *J. Wildl. Mgmt* 6: 244-254).

- (8231) FOX, A.D. & T.A. JONES, 1991. Oviposition behaviour and generation time in *Ischnura pumilio* (Charpentier) (Odonata, Coenagriidae). *Ent. mon. Mag.* 127: 253-255. — (Wildfowl & Wetlands Trust, Slimbridge, Gloucester, GL2 7BT, UK).
Field observations on oviposition behaviour in Wiltshire, UK, are summarised and a report is given on its generation time. The sp. appears only able to survive at newly created sites, such as gravel and clay extraction pits, for relatively short periods, disappearing when vegetation cover closes over open water and bare muddy substrates. It is suggested that it would be of adaptive value for the sp. to show rapid larval growth and complete adult development within 1 yr to exploit most effectively the early seral stages of new freshwater sites. This it may be able to do by virtue of the relatively high water temperatures of such shallow pools. — The literature on the subject is briefly reviewed.
- (8232) GEISTER, I., 1991. Nekaj o kačjih pastirjih okrog Šočjanske luže. — [Sulle libellule attorno allo stagno di San Canziano]. *Anal. koprškega Primorja / Annali Litorale capodistriano* 91(1): 47-50. (Slovene, with Ital.s.). — (Pokopališka pot 13, SLO-64202 Naklo, Slovenia).
Commented list of 9 spp. from a brackish pond in the Koper/Capodistria area, Istria, Slovenia. *Sympetrum fonscolombi* has not been previously reported from Slovenia.
- (8233) GEISTER, I., 1991. *Protocolla odonatologica, Slovenija, 1991*. Privately distributed, 28 pp. (Slovene). — (Pokopališka pot 13, SLO-64202 Naklo, Slovenia).
Field protocols from 30 localities in Slovenia, with species lists and brief annotations. A topographic map is also included.
- (8234) GLITZ, D., 1991. Die Wiederherstellung natürlicher Bachläufe in Hamburger Naturschutzgebieten. *Seevögel* 12 (Sonderh. 1): 27-29. (With Engl.s.). — (Umweltbehörde Hamburg, Stein-damm 22, D(W)-2000 Hamburg-1, FRG).
Since 1982, straightened brooks in the Hamburg nature reserves have been (in stages) led back into their former meandering beds. The very significant and immediate effects of these measures on the biotic communities are outlined. The *Calopteryx splendens* territories were recorded during the very first season subsequent to the reconstruction.
- (8235) GOMPHUS. Mededelingsblad van belgische libellenonderzoekers — Bulletin de liaison des odonatologues belges. Vol. 7, No. 3/4 (Dec. 1991) (Dutch & Fr.). — (c/o Ms A. Anselin, KBIN, 29 rue Vautier, B-1040 Bruxelles).
Following the traditional Fr. & Dutch Editorials (resp. *P. Goffart* & *A. Anselin*; pp. 2-3), most of the issue is occupied by the paper by *P. Goffart, M. Dufrène* & *D. Marchal*: La surveillance de l'état de l'environnement wallon par bioindicateurs: résultats des deux premières années de suivi des odonates (pp. 4-12). 2 field reports were contributed by *A. Anselin*. (pp. 13-14), who also reported on the Second Meeting of Belgian Dragonfly Workers (Brussels, Dec. 14, 1991; p. 15). Local faunistic notes on *Cordulegaster boltonii* (p. 16), *Sympetma fusca* (pp. 16-17) and *Crocothemis erythraea* (p. 18) were provided by resp. *G. De Knijf, I. Hoste* and *M. Taily*. — A reprinted ed. of the Belgian identification key (cf. OA 3960) is again available, at bFr 120,-, at JNM-winkel, Kortrijksepoortstraat 140, B-9000 Gent.
- (8236) GORB, S., 1991. The dragonfly *Cordulegaster boltoni* Donovan, 1807 (Odonata, Cordulegastriidae) in the Ukraine. *Acta hydroent. latv.* 1: 24-27. — (Lab. Insect Physiol., Schmalhausen Inst. Zool., Ukrain. Acad. Sci., Lenin St. 15, 252601 Kiev, Ukraine).
So far a single Ukrainian record was known (*A. Brauner*, 1910, *Trudy bessarab. Obshch. Estestvoispytat., Kishinev* 2(1): 34-36). In the present paper the sp. is recorded from a locality in the Kiev district (13-VII-1989), it is illustrated and the habitat is described.
- (8237) GORB, S., 1991. Nekotorye nahodki strekoz v Yuzhnom Primor'ye. — Some dragonfly records from Southern Primorje. *Acta hydroent.*

latv. 1: 28-37. (Russ., with Engl.s). — (Lab. Insect Physiol., Schmalhausen Inst. Zool., Ukrain. Acad. Sci., Lenin St. 15, 252601 Kiev, Ukraine).

List of 17 spp., with morphological notes and structural figs. from the Russian Far East.

- (8238) GORB, S.N., 1991. Faunistische Untersuchungen der Libellen (Odonata) eines Kanew-Reservats an der Mitteldnieper [sic!]. *Abstr. Pap. 4th Europ. Congr. Ent./13th Int. Symp. EntFaun. Mittel-Europ.*, Gödöllő, p. 68 [published by Hung. Nat. Hist. Mus., Budapest]. — (Lab. Insect Physiol., Schmalhausen Inst. Zool., Lenin St. 15, 252601 Kiev, Ukraine).
The Kanew Nature Reserve odon. fauna is characterized, and 7 spp. that were not previously known from the Cherkassy Distr., E. Ukraine, are listed.
- (8239) HUTCHINSON, R., 1991. Précisions sur un habitat d'*Amphiagrion saucium* Burmeister (Odonata: Zygoptera: Coenagrionidae). *Fabries* 16(4): 101-104. (With Engl.s.). — (12, de La Savane, app. 12, Gatineau, Que., J8T 1P7, CA).
The exuviae were collected at 1 locality, and the adults at 3 others in Quebec, Canada. The habitats are described and compared with the evidence known from the literature.
- (8240) HUTCHINSON, R., 1991. Récoltes de larves d'*Erythemis simplicicollis* (Say) (Odonata: Libellulidae) et répartition géographique de cette espèce peu trouvée au Québec. *Fabries* 16(3): 81-83. (With Engl.s.). — (12 de La Savane, app. 12, Gatineau, Que., J8T 1P7, CA).
The distribution of the sp. in Quebec is reviewed, and the ultimate instar larva from Fairy Lake is illustrated.
- (8241) JAQUEMIN, G. & J.-P. BOUDOT, 1991. Les odonates (libellules) de la réserve de la Biosphère des Vosges du Nord: état actuel de nos connaissances. *Annls scient. Réserve Biosphère Vosges Nord* 1: 35-48. (With Engl. & Germ.s.s). — (First Author: Biol. Insectes, Univ. Nancy-1, B.P. 209, F-54506 Vandoeuvre-les-Nancy).
Based on literature and on recent collections, a commented list is given of the 51 spp. so far recorded from the Northern Vosges Biosphere Reserve, France. 5 of these seem to be at present locally extinct, 4 spp. are incidental visitors, while 37 spp. were evidenced during recent surveys. The richness and diversity of the fauna is ascribed to the presence of a great variety of biotope types, and an efficient conservation of the region is advocated. — For some other recent regional papers cf. OA 5379, 7274.
- (8242) JONGBLOED, M., 1991. *The green guide to the Emirates*. Motivate Publishing, Dubai, 96 pp. — ISBN 1-873544-22-7. — (Publishers: P.O. Box 2331, Dubai, UAE).
A naturalist's guide to the Emirates, with several references to the odon., and a phot. of *Arabicnemis caerulea*.
- (8243) KEIM, C., 1991. *Recensement des odonates du Valais romand*. Service des Forêts & Paysage, Canton Valais, 53 pp. — (Author: Finettes 10, CH-1920 Martigny).
52 spp. are listed from canton Valais, Switzerland, with locality data, habitat descriptions and regional distribution maps for each sp. The work contains numerous locally interesting records. Of particular general interest is the record of *Cordulegaster bidentata* from a subterranean lake at Saint-Léonard, alt. 520 m (1 exuviae, VIII-1986; 1 dead ♂, 4 exuviae, 14-VII-1987).
- (8244) [KESSLER, E.], [Ed.], 1991. Seltene in Naturschutzzonen der aargauschen Reussebene geförderte Pflanzen und Tiere. *Jher. Stift. Reusstal* 28 [1990]: 28-30. — (c/p Stiftung Reusstal, Zieglerhaus, CH-8919 Rottenschwil).
Contains a list of 14 odon. spp., with the indication of their status in canton Aargau, Switzerland.
- (8245) KITT, M., 1991. Limnologische Untersuchungen im Bereich der Verbandsgemeinde Herrheim (Südpfalz). *Fauna Flora Rheinland-Pfalz* 6: 769-828. — (Raiffeisenstr. 39, D(W)-6741 Minfeld, FRG).
Contains a commented list of 31 odon. spp., Palatinate, FRG.
- (8246) KRIESTEN, B., 1991. Zwei Nachweise der Pokal-Azurjungfer *Cercion lindenii* (Sélys, 1840) im Kreis Herford. *Natur & Heimat, Münster* 51(3): 95-96. — (Biologiezentrum. Bustedt, Gutsweg, D(W)-4901 Hiddenhausen, FRG).

C. lindeni is recorded from 2 localities nr the Weser R., FRG, and the habitats are described.

- (8247) **LEGRAND, J.**, 1991. Une nouvelle *Macromia* de Côte d'Ivoire, *M. girardi* n. sp. (Odonata, Anisoptera, Corduliidae). *Revue fr. Ent.* (N.S.) 13(4): 163-166. (With Engl.s.). — (Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris).
The new sp. (holotype ♂: Lamto, 12-XI-1989; allotype ♀, several paratypes, deposited in MNHN, Paris) is described, illustrated and compared with the related *M. schoutedeni* Fraser and *M. hervei* Legrand.
- (8248) **LEGRAND, J. & M. LACHAISE**, 1991. Résultats de la mission Berti et Girard au Burkina-Faso en 1986. (Odonata). *Revue fr. Ent.* (N.S.) 13(4): 181-182. (With Engl.s.). — (Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris).
Annotated list of 23 spp. *Brachythemis wilsoni* has not been previously recorded from Burkina-Faso, western Africa.
- (8249) **LIBELLULA**. Mitteilungsblatt der Gesellschaft deutschsprachiger Odonatologen (GdO), Vol. 10 (1/2) (Dec. 1991). — (c/o Mrs U. Krüner, Gelderner Str. 39, D(W)-4050 Mönchengladbach-4, FRG).
Wildermuth, H.: Libellen und Naturschutz — Standortanalyse und programmatische Gedanken zu Theorie und Praxis im Libellenschutz (pp. 1-34); — *Brockhaus, T.*: Das Vorkommen von Fließwasser-Libellen im Bezirk Chemnitz aus Sicht des Naturschutzes (pp. 35-44); — *Martens, A.*: Kolonisationserfolg von Libellen an einem neu angelegtem Gewässer (pp. 45-61); — *Martens, A., P. Schridde & F. Suhling*: Libellen in der Erwachsenenbildung und Umwelterziehung (pp. 63-72); — *Buck, K.*: [Bildbeitrag] Moorlibellen im Kreis Steinburg (Holstein) (pp. 73-76).
- (8250) **LIMONGI, J.**, 1991. Estudio morfo-taxonomico de nayades de algunas especies de Odonata (Insecta) en Venezuela. (II). *Mems Soc. Cien. nat. 'La Salle'* 49/50 [1989/1990]: 405-420. (With Engl.s.). — (Cent. Invest. Biomédicas, Univ. Carabobo, Núcleo Aragua, La Morita, Venezuela).

The larvae of *Cannaphila vibex*, *Erythrodiplax melanorubra*, *Macrothemis pseudimitans*, *Miaethyria simplex*, *Rhodopygia geijskesi* and *Sympetrum illotum gilvum* are described, illustrated and compared with the allied taxa. — For pt I cf OA 5263.

- (8251) **MARTINIA**. Bulletin de liaison des odonatologues de France, Vol. 7, No. 4 (Dec. 1991). — (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois d'Arcy).
Dommanget, J.-L.: Un mot du Président (pp. 69-70); — *Jacquemin, G. & J.-P. Boudot*: *Ophiogomphus cecilia* (Fourcroy, 1785) dans les Vosges du Nord (Odonata: Gomphidae) (pp. 71-77); — *Benstead, P.J. & C.J. Jeffs*: Observation de *Libellula quadrimaculata* (L., 1758) près de Ponte-Leccia (Corse) (p. 78); — *De Visscher, M.N. & G. Balança*: Nouvelles observations de *Macromia splendens* (Pictet, 1843) et de *Cordulegaster bidentata* Sélys, 1843 (Odonata: Corduliidae et Cordulegastridae) (pp. 79-80); — *Kerihuel, C.*: Les odonates de la Sarthe (pp. 81-84); — *Bignon, J.-J.*: *Coenagrion ornatum* (Sélys, 1850) en Saône-et-Loire (p. 85); — *Dommanget, J.-L.*: Rubrique bibliographique (pp. 86-88).
- (8252) **MENARD, B.**, 1991. Captures d'odonates dans la vallée de l'Outaouais et dans la Haute-Gatineau en 1990. *Fabriques* 16(3): 69-77. (With Engl.s.). — (58 rue Smith, Gatineau, Que, J8T 3A1, CA).
Subsequent to the papers listed in OA 6563, 7020 and 7660, this is the fourth report on the odon. of the Ottawa R. Valley, Canada. A drawing of an *Hylogomphus brevis exuviae* is included.
- (8253) **MÉNARD, B., E. SOUCI & R. HUTCHINSON**, 1991. Première mention de *Tramea lacerata* Hagen (Odonata: Libellulidae) au Québec et aperçu sur la biologie du genre et de l'espèce. *Fabriques* 16(4): 85-87. (With Engl.s.). — (First Author: 58 Smith, Gatineau, Que, J8T 3A1, CA).
T. lacerata is for the first time recorded from Quebec (1 ♂, Longueuil, S of Montreal, 6-IX-1990), and the literature on the sp. is briefly reviewed.

- (8254) MICHIELS, N.K. & A.A. DHONDT, 1991. Sources of variation in male mating success and female oviposition rate in a nonterritorial dragonfly. *Behav. Ecol. Sociobiol.* 29(1): 17-25. — (First Author: Res. Group Zool., Dept SRM, Limburgs Univ. Cent., B-3590 Diepenbeek). Variance in ♂ mating success and ♀ oviposition rate was studied on a lifetime and daily scale in *Sympetrum danae*. While controlling for weather, population density, and sex ratio, we investigated whether phenotypic variation could explain a significant amount of the observed variation. By collecting most of the data in a large outdoor field enclosure, the authors had access to (1) real lifetime data as emigration was prevented, (2) exact values of density and sex ratio, and (3) phenotypic data that are virtually unavailable under natural conditions. Variance in LMS was higher in males than variance in lifetime number of ovipositions in females. Lifespan was of major importance in explaining the variation. Males readily remated on the same day whenever possible (maximum 6 times), whereas in females each oviposition bout usually was followed by a nonreproductive period of approximately 4 days. An analysis of the sources of variance in daily reproduction rate showed that, besides the expected effects of weather, an excess of one sex resulted in a negative effect on the individual mating probability of members of that sex. Even after correction for weather and population parameters, phenotypic traits explained a significant amount of the remaining variation: males with a high mating rate were large, agonistic, active mate searching, and long-living individuals. Females were more likely to oviposit when they showed higher flight activity and when more days had elapsed since the previous oviposition. The presence of a strong size effect on male mating probability, and its absence in females, was confirmed at a pond (native habitat). A model is proposed on the causal relationships between the relevant parameters and the variation in reproductive success, and the reasons why variance in reproductive success is not a very good measure of the opportunity for sexual selection in this sp. are briefly discussed.
- (8255) NARAOKA, H., 1991. Tandem mass migration of the Japanese Common Darer, *Sympetrum frequens* (Libellulidae, Odonata). *Gekkan-Mushi* 246: 17-20. (Jap., with Engl. title). — (Fukunoda, Itayanagi-machi, Kitatsugara-gun, Aomori, 038-36, JA). [Abstract not available.]
- (8256) ORIAN, G.H. & J.F. WITTENBERGER, 1991. Spatial and temporal scales in habitat selection. *Am. Nat.* 137 (Suppl.): 29-49. — (Dept Zool., Inst. Envir. Stud., Univ. Washington, Seattle, WA 98195, USA). Female yellow-headed blackbirds in eastern Washington State settle to nest at higher densities on marshes with higher emergence rates of odonates, the most important prey delivered to nestlings. However, settling densities of females were not correlated with odonate emergence rates on individual territories or on individual territories plus adjacent ones. Apparently, females assessed production of insects on breeding marshes at the time they settled, and they used this information when making settling decisions. However, they selected nest sites on the basis of vegetation density rather than food availability. The complexity of decision making by female yellowheads would not have been detected had the analysis been restricted to one spatial scale. Because interpretations of habitat selection behavior are scale-dependent, careful attention to scale and performing analyses on more than one spatial scale are essential in studies of habitat selection.
- (8257) OTT, J., 1991. Die Odonatenfauna der Kiesgrube "Schleusenloch" bei Ludwigshafen (Insecta: Odonata). *Fauna Flora Rheinland-Pfalz* 6: 609-645. (With Engl.s.). — (L.A.U.B., Rudolph-Breitscheid-Str. 15, D(W)-6750 Kaiserslautern, FRG). 29 spp. (of which 19 autochthonous) are recorded from a gravel pit nr Ludwigshafen, Rhineland-Palatinate, FRG. Ecological and ethological observations are stated for every sp. in considerable detail, and the composition of the local fauna is discussed.
- (8258) PALMER, C.G., J.H. O'KEEFFE & A.R. PALMER, 1991. Are macroinvertebrate assemblages in the Buffalo River, southern Africa, associated with particular biotopes? *Jl N. Am. benthol. Soc.* 10(4): 349-357. — (Inst. Freshw.

Stud., Dept Zool. & Ent., Rhodes Univ., Grahamstown-6140, SA).

Contains a brief reference to the Libellulidae, without specific names and particular comments.

- (8259) PECKHAM, M. & D.C.S. WHITE, 1991. Mechanical properties of demembrated flight muscle fibres from a dragonfly. *J. exp. Biol.* 159: 135-147. — (Dept Biol., Univ. York, Heslington, York, YO1 5DD, UK).

The mechanical properties of demembrated muscle fibres of synchronous flight muscle from a dragonfly *Libellula quadrimaculata*, asynchronous flight muscle from the giant waterbug *Lethocerus indicus* and synchronous psoas muscle from rabbit were compared in relaxed, active and rigor conditions. The properties were compared to the known structure and protein compositions of these muscles. We found that active tension of *L. indicus* flight muscles was stretch-activated (tension was low and was significantly increased following a rapid stretch of 1% of muscle length), whereas both dragonfly flight muscle and rabbit psoas muscle were not (active tension was high and did not significantly increase following a rapid stretch of 1%). 3 different properties have been suggested to give rise to stretch activation in asynchronous muscles: (1) a matching of the helix periodicities of actin target sites to myosin crossbridge heads, (2) a special form of troponin subunit called troponin-H, and (3) the high resting stiffness of these muscles inducing strain in the thick filaments. Rabbit psoas muscle has none of these properties. Dragonfly flight muscles do not have the helix matching, but they do have a form of troponin-H and a high resting-stiffness. It seems most likely that dragonfly flight muscles are not stretch-activated because they do not have the helix matching.

- (8260) PILON, J.-G. & D. LAGACÉ, 1991. Capture de *Gomphaeschna furcillata* (Say) (Odonata: Aeshnidae) dans la tourbière de Lanoraie (Berthier). *Fabriques* 16(4): 91-93. (With Engl.s.). — (Dépt. Sci. biol., Univ. Montréal, C.P. 6128, Montréal, Que., H3C 3J7, CA).
The sp. has been so far known in Quebec, Canada, from a single specimen. In the present note a population is reported from the Lanoraie

bog; 10 adult individuals were recorded during 31-V/1-VI, 1991.

- (8261) REHFELDT, G., 1991. Riesenlibellen, Spezialisten des tropischen Regenwaldes, *Urania Mag.* 91(3): 48-53. — (Zool. Inst. Techn. Univ., Pockelsstr. 10a, D(W)-3300 Braunschweig, FRG).

Directed at the general reader, the article deals with the pseudostigmatid habitat structure, seasonal colour change, territorial and reproductive behaviour, and with the life history on the Barro Colorado island, Panama (*Mecistogaster lineatus*, *M. ornatus*, *Megaloprepus coerulatus*). — For the identification key of the Barro Colorado odon. cf. OA 2644.

- (8262) REINBOUD, W., T. DE GROOT & M. WASCHER, 1991. *Odon-tabel*. — [*Odonata identification key for non-collectors*], pt 2 16 pp., Atalanta, Utrecht (Dutch). — (c/o M. Wasscher, Minstraat 15 bis, NL-3582 CA Utrecht).

The Anisoptera part of the work listed in OA 7551. The keys contain several not previously used structural features in the Netherlands spp. (e.g. *Cordulegaster*).

- (8263) ROCKWOOD, J.P. & R.A. COLER, 1991. The effect of aluminium in soft water at low pH on water balance and hemolymph ionic and acid-base regulation in the dragonfly *Libellula julia* Uhler. *Hydrobiologia* 215(3): 945-952. — (Environ. Sci., Univ. Massachusetts, Amherst, MA 01003, USA).

The physiological responses of last instar larvae exposed for 96 (or 192)h to low pH (4.0 and 2.3) and elevated Al concentrations (0.3, 3, and 30 mg l⁻¹) at low pH were investigated. To some extent, both low pH alone and Al at low pH were found to affect water balance (wet weight and hemolymph volume), ionic regulation (hemolymph osmolarity and concentrations of Na⁺, Cl⁻, and K⁺), and acid-base balance (hemolymph pH). The extent and significance of these alterations are discussed.

- (8264) RODEL, M.-O., 1991. Erstnachweis von *Ophiogomphus cecilia* (Fourcroy, 1785) für Griechenland (Odonata: Gomphidae). *Mitt. int. ent. Ver.* 16(3/4): 93-96. (With Engl.s.). — (Kirchenweg 1, D(W)-7990 Friedrichshafen-5,

FRG).

1 ♂ was taken 30-V-1991 in a riparian forest on the Nestos R., NE Greece. The sp. has not been previously known from Greece.

- (8265) SARTORI, M., 1991. Liste des types déposés au Musée de Zoologie, Lausanne. 2. Collembola, Odonata, Psocoptera, Neuroptera, Strepsiptera (Insecta). *Bull. Soc. vaud. Sci. nat.* 80(3): 357-360. (With Engl.s.). — (Mus. Cantonal Zool., Place Riponne 6, C.P. 448, CH-1000 Lausanne-17).
 ♂ neotypes of *Calopteryx haemorrhoidalis* (Vander L.) and *C. splendens xanthostoma* (Charp.) are deposited in the Museum. — (Cf. A. Maibach, 1987, *Odonatologica* 16: 145-174).
- (8266) SCHMIDT, B., 1991. Libellen. *Jber. Naturschutzgeb. Halbinsel Mettnau* 1991: 14. — (Author: Kohlenbacher Talstr. 18, D(W)-7808 Kollnau, FRG; — Publisher: Naturschutzhaus Mettnau, Floerickeweg 2, D(W)-7760 Radolfzell, FRG).
 Records of 4 spp., Lake Constance (= Bodensee) area, FRG. — (A commented checklist of 10 spp. from the same locality was published anonymously in the same periodical 1989, pp. 24-25).
- (8267) SCHMIDT, T., B. HACHMÖLLER & D. HERING, 1991. Bach- und Flussauen im Hessischen Rothaargebirge: Inventarisierung und mögliche Schutzkonzepte. *Natur & Landschaft* 66(12): 583-589. — (Büro Naturschutzplanung, Am Markt 12, D(W)-3550 Marburg, FRG).
 Contains a list of 21 odon. spp. recorded from the Rothaargebirge, Hessen, FRG.
- (8268) SINNEMA-BLOEMEN, J.W. [et al.], 1991. Excursie Lindevallei, 25-5-1991. — [Field trip to the Lindevallei, 25-5-1991]. *Krant ned. ent. Ver. Noord* 1991(6): 6 (Dutch). — (c/o H. Bijl, Wilmerts 69, NL-9204 GS Drachten).
 List of 7 spp. collected, incl. *Brachytron pratense* and *Libellula fulva*. — For another paper on this locality in the Netherlands cf. J. Dvorak, *Ent. Ber., Amst.* 32 (1972): 21-22.
- (8269) SOEFFING, K., 1991. Die Bedeutung der Torfmoose für die Ontogenie von *Leucorrhinia rubicunda* (Linnaeus, 1758) (Odonata: Libellulidae). *Seevögel* 12 (Sonderh. 1): 109-110. (With Engl.s.). — (Hammer Hof 20, D(W)-2000 Hamburg-26, FRG).
 The optimal temperature for the egg development lies within the 25-30°C range, and that for early instars between 20-25°C. Eggs are deposited in Sphagnum, hence conductivity of Sphagnum enables the larvae to easily get out of high lethal temperatures. — Cf. also *OA* 5988, 7556.
- (8270) SOUTHCOTT, R.V., 1991. A further revision of *Charletonia* (Acarina: Erythracidae) based on larvae, protonymphs and deutonymphs. *Invertebr. Taxon.* 5: 61-131. — (2 Taylors Rd, Mitcham, S.A. 5062, AU).
 Out of the 50 spp. included in the genus, the larvae of *Charletonia rageau* Southcott (New Caledonia) are ectoparasitic on Libellulidae, and those of *C. rocciai* Treat & Flechtmann (S. America) on unidentified Anisoptera.
- (8271) SPURIS, Z., 1991. Jānis Rāčenis (1915-1980) kā odonatologs. — Jānis Rāčenis (1915-1980) as odonatologist. *Acta hydroent. latv.* 1: 86-91. (Latvian, with Engl.s.). — (Miera iela 19-6, 229021 Salaspils, Latvia).
 General biographic data (born 1915, Riga, Latvia; deceased 1980, Caracas, Venezuela), outline of his odonatological work, and his complete odonatol. bibliography. — For another biographic paper cf. J. de Marmels, 1980, *Odonatologica* 9: 125-129.
- (8272) SPURIS, Z., 1991. Literatūras apskats. — Reviews of publications. *Acta hydroent. latv.* 1: 96-99. (Latvian, with Engl. title). — (Miera iela 19-6, 229021 Salaspils, Latvia).
 12 odonatol. titles; some annotated, a few with more detailed descriptive reviews.
- (8273) SRIVASTAVA, V.D. & M. PRASAD, 1991. Odonata. In: Animal resources of India, pp. 253-258, Zool. Surv. India, Calcutta. — (Second Author: Zool. Surv. India, M-Block, New Alipur, Calcutta-700053, India).
 The development of odon. research in India is traced from the beginnings in the Sangam literature (prior to the 8th Century A.D.; cf. also *OA* 3339) to present, and a good outline is given of the current activities in this field, listing the

research projects and the personnel involved. So far 491 spp., referable to 135 gen. of 33 fam. are known from India.

- (8274) STANIONYTE, A., 1991. *Orthetrum coerulescens* Fabr. — novyy dlya Litvy vid strekoz (Odonata), obnaruzhennyy v 1991 g. — *Orthetrum coerulescens* Fabr. — new to Lithuania Odonata species [sic!]. In: A. Jankauskienė et al., [Eds], *Naujos ir retos Lietuvos vabzdžių rūšys*, 1991 m. pranešimai ir aprašymai, pp. 9-12, Academia, Vilnius. (Russ., with Engl. & Lithuan.s's). — (Inst. Zool. & Parasitol., Lithuanian Acad. Sci., Akademijos 2, 232600 Vilnius, Lithuania). 3 ♂, 1 ♀ were taken at Antaliedė and Lukna, both Švenčionys distr., 17-VI-1990, bringing the status of the Lithuanian odon. fauna up to 57 spp.
- (8275) *SYMPETRUM*. Revue d'odonatologie. Nos 4/5 (1991). — (c/o C. Deliry, 36 rue Jean Jaurès, F-94350 Villiers-sur-Marne).
Zannoni, C.: En guise d'éditorial (p. 3); — *Mystérieuses disparitions* (pp. 5-7); — *Les libellules de montagne et leur milieu. Étude d'une zone humide d'altitude: Massif de Belledonne (Isère)* (pp. 9-20); — *Deliry, C.*: Note sur les libellules du département d'Eure et Loir (28) (pp. 21-32); — *Grand, D.*: Les odonates du département de la Saône et Loire et plus particulièrement du Brionnais. 2^e complément (pp. 33-35); — *Deliry, C.*: Bilan e perspective des observations d'odonates dans le nord des Alpes françaises, Isère (38) (2^e synthèse), Savoie (73) et Haute Savoie (74) (3^e synthèse) (pp. 37-63); — *Zannoni, C.*: *Hemianax 90*: compte rendu d'observation (pp. 65-66); — *Histoire de migration* (pp. 67-70); — *Grand, D.*: Quelques commentaires sur *Lindenia tetraphylla* et *Anax parthenope* en Grèce du nord (pp. 71-76).
- (8276) TAKAMURA K., S. HATAKEYAMA & H. SHIRAIISHI, 1991. Odonate larvae as an indicator of pesticide contamination. *Appl. Ent. Zool.* 26(3): 321-326. — (Natl. Inst. Environ. Stud., 16-2 Onogawa, Tsukuba, Ibaraki, 305, JA). The abundance of odon. larvae was surveyed in the Sunakawa R. system (Yamagata pref., Japan) at 2 upstream stations surrounded by rice fields lacking aerial spraying of pesticides, 4 midstream stations surrounded by rice fields with and without aerial spraying, and 4 downstream stations surrounded by sprayed fields. Species diversity and numbers of individuals were much lower at the downstream stations. Pesticide contamination from ground spraying occurred at 1 upstream station as well as 1 midstream and all downstream stations. Damage to the larvae was not clearly evident except at 1 downstream station. Damage by the aerially sprayed insecticides seemed appreciable at the downstream stations. The distribution of odon. larvae in a river may be restricted by pesticide contamination and thus can indicate pesticide contamination. — Cf. also OA 5905.
- (8277) TIANZHE, 1991. [Book review]. The gomphid dragonflies of China (Odonata: Gomphidae), by H.-f. Chao. *Entomotaxonomia* 13(3): 218. (Chin., with Engl. title). — (Author's address not stated).
 A very brief indicative review of the volume listed in OA 7911.
- (8278) TOMBO. *ACTA ODONATOLOGICA*. Published by the Society of Odonatology, Tokyo, Vol. 34, Nos 1/4 (Dec. 25, 1991). — (c/o Dr S. Asahina, Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
Eda, S.: A male of *Nannophya pygmaea* sitting on reed top, Aug. 3, 1991, at Karakemi Marsh, Nagano pref. (p. 1; col. cover phot., with caption); — *Asahina, S.*: A taxonomic revision of the *Ischnura rufostigma* group in Southeast Asia (pp. 2-22; incl. the description of *I. r. montans* ssp. n., holotype ♂, allotype ♀: Godavari, Nepal, 17-V-1980, S. Asahina coll.); — A record of the Odonata taken by Mr M. Tomokumi on Rishiri Island (p. 22); — Notes on some problematical dragonfly specimens from Nepal (pp. 23-26); — *Matsuki, K.*: Description of the larval stage of *Prodasineura croconota* (Ris) from Taiwan (Protoneuridae, Odonata) (pp. 27-28); — *Suzuki, K.-J., K. Saitoh & J. Sawano*: Male germ-line chromosomes of *Orthetrum poecilops miyajimaensis* Yuki et Doi, 1938 (Libellulidae: Odonata) (pp. 29-30); — *Arai, Y.*: The behaviour of adult *Oligoaeschna pryleri* (Martin) at shadow space, II (pp. 31-32); — Observation on a interspecific connection between *Crocotemis servilia* and *Sympetrum speciosum* (p. 32); — *Eguchi, M.*: *Davidius moiwanus taruii* Asa-

- hina et Inoue inhabiting Noto peninsula (pp. 33-35); — *Taketo, A.*: *Cordulia aenea amarensis* in the vicinity of Kanazawa city (p. 36); — *Naroaka, H.*: Capture of *Sympetrum depressusculum* and *S. cordulegaster* in Aomori prefecture (p. 36); — *Watanabe, K. & Y. Higa*: Habitat segregation of *Euphaea yayeyamana* and *Bayadera brevicauda ishigakiana* on Ishigaki island (pp. 37-38); — *Watanabe, K.*: The first record of *Sympetrum fonscolombi* from Ishigaki island, the Ryukyus (pp. 38-39); — Two new additions to the dragonfly fauna of Takarajima, Tokara islands (p. 40); — *Anaze, N.*: Capture of *Epophthalmia elegans* (Brauer) in Irimote island, Okinawa prefecture (p. 41); — *Yamamoto, T.*: Record of *Sympetrum fonscolombi* (Selys) from Mie prefecture (p. 42); — *Wakana, I. & Y. Wakana*: An unexpected occurrence of *Somatochlora exuberata* Bartenef from Japan (p. 43); — *Asahina, S.*: 1991 observations on the seasonal prevalence of several *Sympetrum* species at Takadanobaba, Tokyo (pp. 44-46); — *Miyakawa, K.*: Observations of *Sympetrum* frequens Selys inhabiting forest canopies in lowland Sayama Hills during summer. II. Survey of 1991 in connection with early autumn population of Kawagoe (pp. 47-51); — Discovery of *Orthetrum triangulare melania* Selys from Shikane isl., Izu islands (pp. 51-52); — *Sonehara, I.*: 1991 visit of *Aeschna mixta soneharai* to my garden pond (p. 52); — Establishment of dragonfly species at a man-made pond, second report (Observations at Tazawa, Toyoshina, Nagano pref.) (pp. 53-54); — *Inoue, K. & M. Aiura*: Distribution records of the dragonflies of Tsushima island, Nagasaki pref., part 4 (pp. 55-56); — *Inoue, K.*: Information on S.I.O. — next Symposium decided to be held in Japan (pp. 56-57); — *Eda, S.*: Annual meeting of the Society of Odonatology, 1991, held in Osaka, with a field meeting at Aonogahara in Hyogo prefecture (pp. 57-58). — Translations of the titles of a few brief Jap. notes are not available.
- (8279) VARZINSKA, R., 1991. Odonatological papers published in the periodical "Latvijas Entomologs" (1960-1991, 1-34). *Acta hydroent. latv.* 1: 92-94. — (c/o Dr Z. Spuris, Miera iela 19-6, 229021 Salaspils, Latvia).
22 original papers, 14 book reviews.
- (8280) VERSPUI, K., 1991. *Dwingelderveld: libellen en dagvlinders*. — [*The Dwingelderveld: dragonflies and butterflies*]. Staatsbosbeheer Drenthe-zuid, Pesse & Veren. Behoud Natuurmonumenten, 's-Graveland, iv+149 pp. (Dutch) — (Author: State Inst. Nature Manag., Kasteel Broekhuizen, P.O. Box 46, NL-3956 ZR Leersum).
26 odon. spp. are listed from the territory of the scheduled Dwingelderveld National Park, Drenthe prov., the Netherlands. Of local interest are *Sympetma braueri*, *Lestes dryas*, *Ceragrion tenellum*, *Coenagrion lunulatum*, *Aeshna subarctica elisabethae*, *Sympetrum striolatum*, *Leucorrhinia dubia*, *L. pectoralis* and *L. rubicunda*. The local occurrence and habitat ecology are stated for each sp. in detail. It is emphasized that there is a confusion relative to the occurrence and abundance of *L. dubia* and *L. rubicunda* in the Netherlands, which is due to the circumstance that in the past surveys often no voucher specimens were collected.
- (8281) [Vo], 1991. Libellenlarven dezimieren Moskitos. *Naturw. Rundschau* 44(12): 483.
German summary of Prof. P.S. Corbet's interview, listed in OA 7877.
- (8282) WASSCHER, M. & R. KETELAAR, 1991. Libellen in de nederlands-belgische Kempen. — [*Dragonflies of the Netherlands-Belgian Kempen*]. *Amoeba* 65(8) & *Euglena* 10(6): 38-41. (Dutch). — (First Author: Minstraat 15 bis, NL-3582 CA Utrecht).
Annot: J list of 35 spp., with discussion of the fauna of this locality on the Netherlands-Belgian border. — (*Abstracter's Note*: This issue was published as a joint issue of the 2 periodicals, in each representing a different vol. & issue number! Needless to say, this is a most unusual and highly confusing editorial policy. *Amoeba* commenced publication in 1922, under the able editorship of M.A. Liefinck. The subsequent, frequently changing and often inexperienced editors created a bibliographically notoriously confusing periodical, with countless changes of size, lay-out, frequency, during some periods failing even to mark the vol. numbers, etc.).
- (8283) WERNER, E.E., 1991. Nonlethal effects of a

predator on competitive interactions between two anuran larvae. *Ecology* 72(5): 1709-1720. — (Dept Biol., Univ. Michigan, Ann Arbor, MI 48109, USA).

The nonlethal effects of larval *Anax junius* on competitive interactions between *Rana catesbeiana* and *R. clamitans* were examined. Laboratory experiments indicate that in the absence of the predator, the 2 frog spp. are similar in competitive abilities and grow at identical rates. In the presence of caged *A. junius*, *R. catesbeiana* grows to be larger and *R. clamitans* much smaller than when the predator is absent. Both spp. react to the presence of dragonfly by reducing activity and altering space use. The interactions are discussed and a method for quantitative evaluating the net balance of (negative) direct mortality effects and (sometimes positive) indirect effects that alter competitive ability is presented.

- (8284) WIDMER, M., 1991. Der Alte Rhein bei Rüdlingen SH. *Ornis* 1991(2): 13-15. — (Author's address not stated).
Calopteryx splendens is reported as common on the Alte Rhein R. nr Rüdlingen, canton Schaffhausen, Switzerland.

- (8285) YABU, S., 1991. *Ikomono no sumu Kankyo-zukuri. [Construction of artificial habitats: dragonflies]*. Kankyo Ryokka Shimbunsha, Tokyo, iv+158 pp., 4 col. pls excl. — ISBN none. (Jap.). — Price: ¥ 1500.- (hardcover, 13 x 18 cm). — (Publishers: 2-18-404 Shimomiyabi-cho, Shinjuku-ku, Tokyo, 162, JA; — Author: Dept Forestry. Fac. Agric., Kagoshima Univ., 21-24 Korimoto 1, Kogoshima, 890, JA).

A well documented "monograph" on construction of dragonfly ponds. For a book edition of a collection of selected journal papers on the same subject cf. OA 7950, for a pamphlet by British Dragonfly Soc. cf. OA 6581.

- (8286) YANG, Z. & S. LI, 1991. Description of the female of *Davidius yuanbaensis* Zhu, Yan & Li, 1988 (Odonata: Gomphidae). *Entomotaxonomia* 13(4): 240. (Chin., with Engl. title). — (Dept Biol., Hanzhong Teachers' Coll., Hanzhong, Shaanxi-723001, P.R. China).
Description, with a fig. of terminalia.

- (8287) ZIMMERMANN, W., 1991. Rote Liste der Libellen des Bundeslandes Thüringen. *LandschPfl. Naturschutz Thüringen* 28(4): 90-97. — (Mus. d. Natur, Postfach 217, Parkallee 14, D(O)-5800 Gotha, FRG).
Commented odon. Red List for Thuringia, eastern Germany (situation 1990).

1992

- (8288) BUTLER, S.G., 1992. Notes on the collection and rearing out of the larva of *Somatochlora sahlbergi* Trybom from Finland (Odonata: Corduliidae). *Opusc. zool. flumin.* 84: 1-5. — (Red Willow, All Stretton, Shropshire, SY6 6HN, UK).

Larvae are recorded from Inari Lapland (July/Aug. 1988), and brief notes are given on the local distribution and habitat ecology of the sp., and on the successful indoor and outdoor rearing of 2 individuals. It seems the sp. requires a minimum water depth of 50 cm, emergent vegetation and plenty of bottom debris, and it is emphasised that neither adult, nor larval Zygoptera were evidenced at any of the *S. sahlbergi* breeding sites visited.

- (8289) CANNINGS, S.G., R.A. CANNINGS & R.J. CANNINGS, 1992. Distribution of the dragonflies (Insecta: Odonata) of the Yukon Territory, Canada, with notes on ecology and behaviour. *Contr. nat. Sci., Victoria*, BC 13 [Dec. 1991]: 1-27. — (Second Author: Dept Exp. Biol., Ontario Agric. Coll., Univ. Guelph, Guelph, Ont., N1G 2W1, CA).

The results of a 9-yr study of the odon. of the Yukon Territory are presented. 17 spp. are added to the 16 previously known from the Territory: *Coenagrion interrogatum*, *C. resolutum*, *Aeshna canadensis*, *A. palmata*, *A. sitchensis*, *A. subarctica*, *Somatochlora franklini*, *S. kennedyi*, *S. minor*, *S. sahlbergi*, *S. semicircularis*, *S. septentrionalis*, *S. whitehousei*, *Libellula quadrimaculata*, *Sympetrum danae*, *S. internum* and *S. madidum*. Collection data for all the material examined and distribution maps for the spp. recorded are provided. — Although there are no dragonflies in the large rivers and few in the large lakes of the Territory, distinctive odon. communities occur in small lakes and ponds, sedge marshes, fen ponds with aquatic moss,

shallow sedge-moss fens and bogs, and small, slowly moving streams. Permafrost is a dominant feature of habitats in the northern Yukon. Summers are warmest in the low, central valleys, but the northern valleys can also have warm, albeit short summers. The arctic slope has cool, very short, summers; dragonflies do not breed there. — Zoogeography, distribution, habitat, flight period, and other ecological data are discussed for the 33 species listed. Faunal elements are outlined: 8 spp. (24%) are holarctic; 24 (73%) are boreal; 3 (9%) are from the transition zone; 2 (6%) are cordilleran; 1 (3%) is widespread in the west; 3 (9%) are widespread throughout North America. Boreal species can be further subdivided into five sub-elements: 13 spp. (40%) are widespread in the north; 4 (12%) are northern boreal; 4 (12%) are southern boreal; 2 (6%) are western boreal; 1 (3%) is Beringian.

- (8290) GEISTER, I., 1992. Čudoviti svet kačjih pastirjev. — [The wonderful world of dragonflies]. *Gea, Ljubljana* 2(1): 26-29. (Slovene). — (Pokopališka pot 13, SLO-64202 Naklo, Slovenia). This is a general presentation of dragonfly biology in the broadest sense, by an experienced birdwatcher, nature photographer, renowned belletrist, haiku poet and oncoming odonatologist. It contains some ethno-odonatological and odon. conservation notes from Slovenia, and it is important also because of the use of Slovene technical terminology for the peculiar odon. behavioural phenomena. Published in a wide-spread and luxuriously made-up popular-science monthly, it probably represents the best general text on dragonflies yet available in the Slovene language.

- (8291) HAGENIA. Mitteilungsblatt des Nationalen Büros der SIO in der Bundesrepublik Deutschland und der GdO, No. 3 (March 1, 1992). Edited by M. Schorr & U. Krüner. Subscription orders outside Germany to the SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven. On 18 pp., there are almost 30 informative communications, reports on international, national and regional meetings, various bibliographic communications and book reviews, reports on research and teaching activities, conservation projects, etc. Most texts are signed with (easily

recognizable) authors' initials only. — Some of the titles: *Kiauta, B.*: Nachruf: Dr. Hans Schiemenz (pp. 2-3); — *Schorr, M.*: Odonatologische Bibliographie von Hans Schiemenz (p. 3); — Symposium der Vereinigung der schweizerischen Libellenkundler (p. 5); — Tagungsberichte aus der ehemaligen DDR (pp. 6-7); — *Buchwald, R.*: Libellenforschung an der Universität Freiburg (pp. 7-8); — *Schorr, M.*: Libellenzeitschriften im Eigenverlag (pp. 9-10; description of 7 local odonatol. periodicals in Germany); — *Ott, J.*: Graue Literatur aus Rheinland-Pfalz und Berlin/Brandenburg (p. 10); — *Ruddek, J. & B. Trockur*: Libellen auf Briefmarken (pp. 16-18; a complete catalogue, with technical annotations). — There are also several requests for cooperation, and programmes of the forthcoming 11th Symposium of the German Odonatological Society (Gotha, March 27-29, 1992), and the Dragonfly Workshop for the Swiss secondary school teachers (Wetzikon, June 23-25, 1992, moderated by Dr H. Wildermuth).

- (8292) LINDENIA. Notiziario dell'Ufficio Nazionale Italiano della Società Odonatologica Internazionale, Roma, No. 17 (Jan. 1, 1992). — (c/o Prof. dr Carlo Utzeri, Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).

A report and the Organising Secretary's comments on the 11th Int. Symp. Odonatol. occupy most of the issue, which, in addition to a few SIO management notes, also contains a note on the M. Sc. work of Ms Claudia Ercoli, and obituaries for C. Longfield and F. Capra (both 1896-1991).

- (8293) MOORE, N.W., 1992. Report of the 7th Meeting of the I.U.C.N. Odonata Specialist Group. *Rep. Odon. Specialist Group Int. Un. Conserv. Nat.* 9: 1-22. — (Copies available, at Hfl. 20.-net, from SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven). Contains fairly detailed regional status accounts by the following workers: *M.J. Parr* (Africa, general, pp. 2-3), — *M.J. Samways* (South Africa, pp. 3-6), *H. Dumont* (Somalia, p. 6), *B.K. Tyagi* (India, pp. 6-8), *S. Asahina* (Japan, pp. 8-9), *H. Dumont* (Middl.-East, p. 10), *M. Hämäläinen* (The Philippines, p. 10), *J.A.L. Watson*

- (Australia, p. 11), *E. Schmidt* (Europe, pp. 11-14), *Z. Spuris* (USSR, pp. 14-15), *S. Dunkle* (North America, pp. 15-18), and *A.B.M. Machado* (South America, pp. 18-21). — Other authors of the discussion items: *K. Inoue*, *B. Kiauta*, *H. Lohmann*, *N.W. Moore* [Chairman], *W. Schneider*, *M. Schorr*, *J. van Tol*.
- (8294) SCHMID, R., 1992. Frühe Heidelibelle, *Sympetrum fonscolombei*, bei Aurich. *Beitr. Vogel-Insektenwelt Ostfrieslands* 53: 21-22. — (Weserstr. 1, D(W)-2960 Aurich, FRG).
- A "second generation" of *S. fonscolombei* is reported from an unnamed locality nr Aurich, Ostfriesland, northern Germany (4 exuviae and 6 teneralis, 14-IX-1991).
- (8295) WOOTTON, R.J., 1992. Functional morphology of insect wings. *A. Rev. Ent.* 37: 113-140. — (Dept Biol., Univ. Exeter, Exeter, EX4 4PS, UK). .
Comprehensive review, with numerous references to the situation in the Odon.