

ODONATOLOGICAL ABSTRACTS

1979

- (9339) KARAMAN, B.S., 1979. *Ekološko faunistička istraživanja Odonata SR Makedonije*. — [*Studies on ecology and fauna of the Odonata of Macedonia*], PhD thesis Univ. Zagreb. viii+151 pp. (Croatian). — (Author's current address unknown).

This is a monographic treatment of the odon. fauna of the Republic of Macedonia (62 spp.). Parts of it were subsequently published in the papers listed in OA 5933, 5934. A larval population of *Epallage fatime* is reported from Mt Belasica, which is said to represent the northernmost locality of this sp. The fauna of Prespa Lake (34 spp.) is dealt with in great detail, the biogeographic composition of the national fauna is analysed, and a chapter on population biology of *Coenagrion puella* in a man-made pond at Skopje is added.

1984

- (9340) BUCHHOLTZ, C., 1984. Die Formkonstanz des Beutefangschlages und dessen Habituation bei der Larve der Libelle *Aeschna cyanea*. In: W. Nachtigall, [Ed.], *Verhaltensphysiologischer Grundkurs*, pp. 28-32, Verlag Chemie, Weinheim-Deerfield Beach (Fla) — Basel. — ISBN 3-527-25901-5. — (Author's current address unknown).
Description of a laboratory experiment; cf. OA 907.
- (9341) KAISER, H., 1984. Aufteilung des Paarungsplatzes und "Territorialverhalten" bei Libellen.

In: W. Nachtigall, [Ed.], *Verhaltensphysiologischer Grundkurs*, pp. 32-46, Verlag Chemie, Weinheim-Deerfield Beach (Fla)-Basel. — ISBN 3-527-25901-5. — (Author deceased).
A very detailed description of field methodology and evidence assessment in odon. behavioural studies.

- (9342) RÜPPELL, G., E. BARTELS & H. SCHULZE, 1984. *Calopteryx splendens* (Calopterygidae) — Flugverhalten des Männchens und Balz. *Publ. wiss. Filmen* (Biol.) 16(37): 3-16. (With Engl. & Fr.s's). — (Zool. Inst., Techn. Univ., Pockelsstr. 10a, D-38106 Braunschweig).
Explanatory text for film No. E-2741 (Inst. Wiss. Film, Göttingen; spoken text). The major types of flight are described and illustrated. — Further data in OA 4991; cf. also OA 5060.

1988

- (9343) BILLE, R.-P., 1988. Accouplement de l'aeschna mixte (*Aeschna mixta*). *13 Etoiles Reflects du Valais* 38(6): 36-37. — (rue Ed.-Bille 44, CH-3960 Sierre).
A 2 p. col. phot., with a comprehensive caption, containing also a note on the occurrence and biology of several *Aeschna* spp. in Valais, Switzerland.
- (9344) BILLE, R.-P., 1988. Les libellules de Finges. *13 Etoiles Reflects du Valais* 38(6): 38-40. — (rue Ed.-Bille 44, CH-3960 Sierre).
A general outline of the fauna as dealt with also in the papers listed in OA 3103, 8462, but no species list: canton Valais, Switzerland.

1989

- (9345) SIGRIST, M. & E. STEGMANN, 1989. *Makro Fotoschule. Die faszinierende Welt der Nahaufnahme. Verlag Photographie, Schaffhausen. 200 pp.* — ISBN 3-7231-9300-5. — (Publisher: Photographie AG, CH-8201 Schaffhausen).
A handbook, using dragonflies for description of various macrophotographic techniques, on pp. 29, 56, 69, 76, 87, 110-113, 143, 157, 182.

1990

- (9346) BROCKHAUS, T., 1990. Bericht über die 3. Tagung des Arbeitskreises Odonata. *Mitt. sächs. Ent.* 21: 3-4. — (Markt 20/21, D-09111 Chemnitz).
A brief report on the 3rd Meeting of East German odonatologists, Chemnitz, Aug. 24-26, 1990. — For the previous Meetings cf. *OA* 5718, 6930.
- (9347) CORDERO, A., 1990. Competencia espermativa en la libelula *Ischnura graellsii* (odonatos, insectos). *Actas 3er Cong. nac. Etol.* Spain, pp. 33-39. — (Area Ecol., Escola Universitaria de Enxeñaría Técnica de Industrias Forestais, Univ. Vigo, Avda Buenos Aires s/n, ES-36002 Pontevedra, Galicia).
A preliminary text of the subsequently published full paper as listed in *OA* 8534.
- (9348) GARCIA AVILÉS, J., 1990. *Insectos acuáticos de Baleares (Odonata, Ephemeroptera, Heteroptera, Plecoptera y Coleoptera)*. Tesis doctoral, Univ. Complutense, Madrid. 690 pp. — (Depto Ecol., Fac. Biol., Univ. Autónoma Madrid, Cantoblanco, ES-28049 Madrid).
The odon. (19 spp.) are dealt with on pp. 510-525. Various types of assemblages are identified, analyzed and described in detail.
- (9349) BILLE, R.-P., 1991. Les libellules du Bois de Finges. *Diana* 1991 (2): 12-15. — (rue Ed.-Bille 44, CH-3960 Sierre).
A nicely illustrated account on dragonflies of the Finges, canton Valais, Switzerland. — Cf. also *OA* 3103, 8462.
- (9350) BURGER, H., 1991. Die Libellenfauna der Stadt Aarau. *Aargau. NeujahrsBl.* 65: 59-71. — (Author's address not stated).
A good presentation of the order, with emphasis on the fauna of the city of Aarau, Switzerland (19 spp., but not all listed).
- (9351) CORDERO RIVERA, A., 1991. *Estrategias reproductivas, polimorfismo y selección sexual en la libélula Ischnura graellsii (Rambur)*. Tesis doctoral Univ. Santiago de Compostela. 250 pp. — (Ecología, E.U. Enxeñaría Técnica, Univ. Vigo, Avda Buenos Aires s/n, ES-36002 Pontevedra, Galicia).
[Most parts of the dissertation were published as journal papers].
- (9352) GALLARDO MAYENCO, I., 1991. *Respuesta de macroinvertebrados fluviales a la salinidad*. Tesis doctoral, Univ. Sevilla. 125 pp., 27 tabs excl. — (Author's current address unknown).
The effects of salinity and some other chemical parameters are analyzed for 12 odon. spp., based on the evidence from 11 sampling stations on the rio Guadaira, Spain.
- (9353) KEIM, C., 1991. L'anax porte-selle. *13 Etoiles Reflets du Valais* 1991(7): 2 pp. [sep.]. — (Finettes 10, CH-1920 Martigny).
A 41 x 28 cm col. lay-in, showing a ♂ *Hemianax ephippiger* (emerged Sept. 1990, Verney, Switzerland). In a comprehensive caption some evidence is reviewed on its occurrence in the Swiss Rhône Valley in 1990.
- (9354) ÓLAFSSON, E., 1991. *Islenskt skordyratal*. — A checklist of Icelandic insects. *Fjölbrit Náttúrfraeðistofnunar* 17: 1-69. (Icelandic, with Engl.s.). — (Iceland. Mus. Nat. Hist., P.O. Box 5320, IC-125 Reykjavik, Iceland).
The 1245 spp. known to occur in Iceland are catalogued. *Hemianax ephippiger* is the only odon. sp. occasionally recorded there. — For a review of records cf. *OA* 1460, 1656.
- (9355) SCHWALLER, T., 1991. Vergleichende faunistisch-ökologische Untersuchungen an den Libellenzönosen zweier Kleinscen im schweizerischen Mittelland. *Mitt. natw. Ges. Solothurn* 35: 7-78. — (Bahnhofstr. 26, CH-4708 Luterbach).

A comprehensive study of odon. communities in the lakes Burgäschisee and Inkwilensee, in the Berne-Solothurn region, Switzerland. The present status of some spp. is compared also with that evidenced in the 1880s.

- (9356) SOLTESZ, K., 1991. *A survey of the damselflies and dragonflies of Cape May county, New Jersey*. Cape May Bird Observatory, New Jersey Audubon Soc., Cape May Point. ii+54 pp. — Price: US \$ 10.- net. — (Author: P.O. Box 62, South Salem, NY 10590, USA; — Publishers: P.O. Box 3, Cape May Point, NJ 08212, USA). This is a commercially available booklet on the Cape May Co. odon. (New Jersey, USA). Since 1890, 80 spp. were evidenced, 76 of which were encountered during the 1986-1990 survey. They are listed here along the locality and flight data, field notes and bibliographic references. — For an abridged checklist cf. *OA* 9370.

- (9357) WYSS, G., 1991. [Aus Forschung und Praxis]. Libellen. *Schweiz. Bienenztg* 114(11): 641-645. — (Grauholzstr. 64, CH-3063 Ittigen). General, on dragonfly morphology and biology, with a reference to Musée Robert, Biel (cf. *OA* 5233).

1992

- (9358) BOTTGER, K. & R. POPPERL, 1992. Zur Makroinvertebraten-Besiedlung eines norddeutschen Tieflandbaches unter Herausstellung rheotypischer Arten. *Limnologische Studien im Naturschutzgebiet Kossautal (Schleswig-Holstein)*. II. *Limnologica* 22(1): 1-15. (With Engl.s.). — (Zool. Inst., Univ. Kiel, Olshausenstr. 40, D(W)-2500 Kiel). *Calopteryx splendens* is recorded from the Kossau R., Schleswig-Holstein, Germany. Detailed water quality data of the habitat are also provided.

- (9359) CHAO, H.-f., 1992. The taxonomy, fauna and zoogeographical distribution of Chinese gomphid dragonflies (Odonata: Gomphidae). *Proc. 19th Int. Congr. Ent., Beijing*, p. 27. [Abstract only]. — (Biol. Control Res. Inst., Fujian Agric. Coll., Fuzhou-350002, Fujian, PRC). [Verbatim]: Up to the present, 145 spp. and ssp. in 33 gen. and 2 sgen. are known to occur

in China. They belong to 4 sfam., i.e. Gomphinae (93 spp. in 17 gen.), Onychogomphinae (41 spp. in 12 gen.), Hageniinae (5 spp. in 1 gen.) and Lindeniinae (6 spp. in 3 gen.). In earlier publications, Gomphus and Onychogomphus are 2 very large genera consisting of many heterogeneous spp. lumped together. They are divided into 8 and 7 genera respectively in the present studies. No genuine members of them occur in China. With the exception of Ophiogomphus (s.str.), all the remaining genera occur in the Indo-Chinese Subregion of the Oriental Region. It seems that the Subregion may be the centre of distribution from where gomphids spread radially to various parts of the old world. It is of particular interest to note that among the transregional genera, 10 of them constituting a fairly high percentage 28.5% of the total number of genera occur in the Oriental+Eastern Palearctic Regions. — There are 21 spp. in 16 gen. that occur in Taiwan. All genera are common in both sides of the Taiwan Strait. Among the 21 spp., 14 occur both in Taiwan and Fujian. The remaining 7 endemic spp. are congeneric with the closely related spp. that occur in Fujian. It is evident that the Taiwanese gomphid fauna is very close to that of Fujian.

- (9360) COBOLLI, M., E. DE MATTHAEIS & G. CARCHINI, 1992. Biochemical systematics in Odonata: the mediterranean Coenagrionidae. *Proc. 19th Int. Congr. Ent., Beijing*, p. 27. Abstract only. — (First Author: Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).

Enzyme electrophoresis was used to study the genetic divergence in various populations of 10 spp., referable to *Cercion*, *Coenagrion*, *Erythromma* and *Ischnura*. The allele frequencies were identified at 22 loci, but no results are presented in the abstract.

- (9361) KHALIQ, A. & M. YOUSUF, 1992. *Calopterygoidea* (Zygotera: Odonata) of Pakistan. *Pakistan Ent.* 14(1/2): 84-87. — (First Author: Dept Ent., Univ. Coll. Agric., Rawalakot, AK, Pakistan).

The Pakistani members of the fam. *Calopterygidae* (1 sp.), *Chlorocyphidae* (3 spp.) and *Euphaeidae* (1 sp.) are listed along with distributional records and descriptive annotations.

- Aristocypha trifasciata and Paracypha unimaculata are described in detail.
- (9362) KÜHNE, C., 1992. Die Winterlibelle im Vogtland. *Reichenbacher Kalender, Lengsfeld* 1992: 92-93. — (Am Hochmoor 1, D-08262 Tannenbergsthal).
Sympecma fusca is recorded from 2 ponds, Reichenbach distr., Vogtland, E Germany.
- (9363) LENK, P., 1992. Die Fröhlich'sche Odonaten-Sammlung im Naturwissenschaftlichen Museum der Stadt Aschaffenburg. *Nachr. naturw. Mus. Aschaffenburg* 99: 25-36. — (Hirtenborn 16, D(W)-8751 Haibach).
The inventory is given of the odon. collection of Dr Carl Fröhlich (31-VII-1850/28.10.1928), deposited in the Aschaffenburg Nat. Hist. Mus. It mostly contains material of local provenience, but includes also some important specimens from Norway, Scotland and Switzerland (e.g. Leucorrhinia albifrons from "Wallis").
- (9364) LENK, P., 1992. Die Libellen der Stadt Aschaffenburg. *Nachr. naturw. Mus. Aschaffenburg* 99: 1-24. — (Hirtenborn 16, D(W)-8751 Haibach).
A commented list of 24 spp. from the Aschaffenburg city area, Bavaria, Germany.
- (9365) [LEUERS, A.], 1992. *Naturschutzgebiet Swistbachau in der Gemeinde Grafschaft-Eckendorf. Kreis Ahrweiler*. Hand-out for the visitors of Nature Reserve. 3 pp. — (Birkenweg 5, D-54574 Birresdorf).
Gives a checklist of 15 odon. spp., no comments, German vernacular names only; Nature Reserve "Swistbachau", Ahrweiler distr., Rhineland-Palatinate, Germany.
- (9366) MITRA, T.R., 1992. Ecology of dragonflies (Insecta: Odonata) — a review. *Proc. zool. Soc. Calcutta* 45 (Suppl. A): 509-517, pl. 1 excl. — (Zool. Surv. India, 'M'Block, New Alipore, Calcutta-700053, India).
This is a concise review of the subject, with emphasis on the Indian fauna. It is the text of the paper presented at the Symposium on "Zoological research in relation to man and Environment", Zool. Soc. Calcutta, March 1-4, 1992.
- (9367) MOUND, L., 1992. *Insekten. Die interessantesten und schönsten Kerbtiere aus aller Welt: Lebensweise, Formenvielfalt, Sinnesleistungen*. Gerstenberg, Hildesheim. 64 pp. — ISBN 3-8067-4614-1. — Price: DM 32.- net.
Originally the booklet was published (1990) under the title "Eyewitness guides: insect", by Dorling Kindersley, London. — It contains a rarely published col. phot. of Tetracanthagyna plagiata (Borneo) and 7 pp. of other odon. illustrations, with descriptive captions.
- (9368) PAVAN, M., 1992. *Contributo per un "Libro rosso" della fauna e flora minacciate in Italia*. Ist. Ent. Univ. Pavia, Pavia. 719 pp. — (Ist. Ent., Univ. Pavia, Via Taramelli 24, I-27100 Pavia).
This is a monumental work, particularly so considering it has been carried out by just a few compilers. 43 odon. taxa are identified as (very) rare, vulnerable, or (partially) threatened. There are a few spelling and synonymy errors, e.g. Mesogomphus genei/Paragomphus genei and Ophiogomphus cecilia/O. serpentinus are listed as 4 spp. Confusing is also the listing of Ceragrion tenellum nielseni and C. tenellum, stating that both taxa are rare. It can be hardly maintained the N African Ischnura fontainei is "rare" in Italy, since it solely occurs in the Pantelleria Isl. On the other hand, no reference is made to I. graellsii, recorded from Sardinia. — (*Abstracter's Note*: Since the work represents the first attempt at identification and classification of the Italian threatened fauna, a beforehand consultation with the respective specialists would have certainly increased its reliability).
- (9369) SÖCHTIG, W., 1992. Die Makroinvertebraten-Fauna des Benthos zweier Altarme des Fliessgewässers Innerste bei Salzgiiter-Bad (Niedersachsen, Deutschland). *Limnologica* 22(1): 34-42. (With Engl.s.). — (Zool. Inst., Techn. Univ. Braunschweig, Pockelsstr. 10a, D-38106 Braunschweig).
Lists Anax imperator.
- (9370) SOLTESZ, K., 1992. *Checklist of the damselflies and dragonflies of Cape May county, New Jersey*. Cape May Bird Observatory, New Jersey Audubon Soc., Cape May Point. 16 pp. — Price: US \$ 3.25 net. — (Author: P.O. Box 62,

South Salem, NY 10590, USA; — Publishers: P.O. Box 3, Cape May Point, NJ 08212, USA). Annotated checklist, based on the work listed in *OA* 9356.

- (9371) SPEDDING, G.R., 1992. The aerodynamics of flight. *Adv. comp. environ. Physiol.* 11: 51-112. — (Depts Aerospace & Mech. Engin., Univ. Southern California, Los Angeles, CA 90089-1191, USA).

A review paper, dealing in great detail also with various aspects of dragonfly flight mechanics.

- (9372) SRIVASTAVA, V.D., 1992. Significance of mayflies and dragonflies in fresh water ecosystem, man and their Indian faunal component. *Proc. zool. Soc. Calcutta* 45(Suppl. A): 581-588. — (Zool. Surv. India, 'M'Block, New Alipore, Calcutta-700053, India).

The odon. role as predators of disease spreading insects, their value as bio-indicators of pollution, their importance in food chain in freshwater ecosystems, and their (marginal) applications as human food are briefly outlined. It is said that the inhabitants of the Malay Isls make "some kind of dragonfly paste for food", while in Jaintia (Meghalaya, India) the adults are consumed by the local people. In a subfamily-wise tab. the status of Indian fauna is estimated at 490 spp., referable to 134 genera.

- (9373) STOUT, R.J., 1992. Responses to Extremely Low Frequency electro-magnetic fields by a dragonfly naiad (*Ophiogomphus colubrinus*) in a northern Michigan stream: a five year study. *J. Freshw. Ecol.* 7(4): 343-352. — (Dept Ent., Michigan St. Univ., East Lansing, MI 48824, USA).

Movement patterns were followed (1985-1989) to determine if Extremely Low Frequency (ELF) electromagnetic fields affected movements for this predator. ELF lines were activated in 1986 and increased in amperage and duration from that time until the system went to full power in 1989. Mark-recaptures at 2 sites, and experimental and a reference site on the Ford R., showed that *O. colubrinus* only moved in a downstream direction and travelled relatively short distances. Distances the animals travelled were related to discharge rather than to ELF antenna cumulative exposures.

- (9374) WEITZEL, M., 1992. Zur Libellenfauna des Koppelsteingebietes am Mittelrhein. *Fauna-Flora Rheinland-Pfalz*: (Beih.) 8: 177-187. — (Graf-Regina-Str. 43, D-54294 Trier). From various wetlands in the Lahnstein-Braubach area, Middle Rhine Valley, Germany, 13 odon. spp. are reported and discussed. Of interest is the record of *Orthetrum brunneum*. Particularly valuable are the detailed chemical data of the habitats surveyed.

1993

- (9375) *AESCHNA*. Published by the Tombo Kenkyukai [= Odonatological Society of Osaka], Osaka, No. 27 (Dec. 10, 1993). (Jap., some papers with Engl. titles). — (c/o A. Muraki, Shigino nishi 3-4-2-309, Joutou-ku, Osaka, 536, JA).

As stated on the cover, the Osaka Society of Odonatology has now 3 local branches, viz. Kansai Branch (c/o Ichi-i, H., Uchikuhouji-cho 2-2-8, Chuou-ku, Osaka, 540), Toukai Branch (c/o Masaki, N., Nakaodai 3-475, Nishi-ku, Nagoya, Aichi pref. 452), and Kantou Branch (c/o Suzuki, Y., Hanai 209-9, Noda, Chiba pref., 278). — The recent issue contains 10 articles and notes in Japanese, and a major paper, *Matsuki, K. & K. Kitagawa*: Bornean Odonata taken by Dr T. Ueda. 2. Zygoptera (pp. 1-10, with very useful figs of terminalia and other structural features of 9 spp.; for pt 1 cf. *OA* 8935).

- (9376) AMJAD, H., H.A. JAFARY & L.Q. AMJAD, 1993. Hematological studies in dragonflies, a possible biomedical insect model. *Abstr. 35th ann. Meet. Am. Soc. Hematol.*, 1 p. [sep.]. — (First Author: 32 Hummingbird Lane, Beckley, WV 25803, USA).

[Verbatim]: Dragonflies are an ancient lineage of insects; fossil records go over 200 million yrs. They do not have oxygen carrying pigment such as Hb. *Epithecya princeps* is a common northeastern dragonfly found around ponds. It constantly flies and hovers around water surfaces for hrs. Several specimens were netted and instant smears of hemolymph were made from the thoracic aorta and coelomic cavity. Giemsa-Wright stains were used and photographic documentation was done immediately. Three different types of cells consist of 2 different types of cells which measure 12-15 microns; predomi-

nately spherical cells with resemblance to large PMN with extremely packed, circularly arranged granulation. The second cell, which is sausage shaped, with mitochondrian appearance. These cells were abundantly present in this species, compared to 2 other species of dragonflies (*L. luctose*, and *A. junius*). These cells correlated with extreme metabolic activity; they were present in the interstitium of the air tracheal system. These cells may have dual function of microbial defense and respiratory oxygen transport. There is a considerable interspecies variation in hemolymph cells; large spherical cells, similar to PMNS cells. However, they have more complex structures, easily degranulating with change in pH of staining reaction. The second line of cells resembles plasmacytoid lymphocytes; are present in fat cells of the thoracic region. The third line of cells are rare, with appearance of elliptical normablast. Some insect species are known resistant to proliferation of HIV infection; insect immunity may have evolutionary advantages to viral infections compared to mammals. Hematological and immune functions studies may have good relevance to mammalian physiology.

- (9377) ANDREW, R.J. & D.B. TEMBHARE, 1993. Functional anatomy of the secondary copulatory apparatus of the male dragonfly *Tramea virginia* (Odonata: Anisoptera). *J. Morphol.* 218: 99-106. — (Second Author: Dept. Zool., Nagpur Univ. Campus, Amravati Rd, Nagpur-44010, Maharashtra, India).

In *T. virginia*, the secondary copulatory apparatus (SCA) on the venter of the second and third abdominal segments consists of the anterior and posterior laminae, a pair of genital lobes and hamules, the ligula, genital fossa, supporting frame work, and the four segmented, highly specialized penis. The penis head represents the distal or fourth segment of the penis and bears paired lateral and apical lobes and a medial process. The medial process includes a sperm reservoir, a short sperm tube, and paired cornua and inner lobes. The sperm reservoir opens into the sperm tube which bears a terminal orifice between the inner lobes. Gross morphology of the SCA of *T. virginia* is similar to that of other libellulids except that the genital lobes and hamules are comparatively large in size, the ligula

is triangular in shape with an apical flat rectangular lobe and stiff basal setae, the penis bears a pair of cuticular denticles below the spur of the second segment, the apical lobes are inflatable without spines and bristles, and the cornua with smooth outer and spiny inner surface collectively signifying the species-specific anatomical features and the functional specialization for sperm transfer and removal.

- (9378) ARGIA. *The news journal of the Dragonfly Society of America*, Vol. 5. No. 3 (Dec. 1, 1993). — (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA). [Signed articles]: *Tennessee, K.*: DSA Southeastern Regional Meeting to be held in Alabama, April 1994 (pp. 1-2); — *Carpenter, G.*: *Williamsonia lintneri*, a phantom of eastern bogs (pp. 2-4); — *Dunkle, S.*: Bouncing through Belize (pp. 4-6); — *Dunkle, S.W.*: A Texan in Thailand (pp. 6-8); — *Ramirez, A.*: Costa Rican Odonata larvae (pp. 8-9); — *Hellebuyck, V.*: A new locality for *Gomphaeschna furcillata* (Say) (Odonata: Aeshnidae) in Quebec (p. 9); — Confirmation of *Enallagma civile* (Hagen) (Odonata: Zygoptera) in southern Quebec (pp. 9-10); — *Shiffer, C.*: Pennsylvania collecting notes (p. 10); — Observations on *Somatochlora incurvata* in Pennsylvania (pp. 10-11); — *Fraser, A.*: Dragonfly swarm attacks Chinese ship (p. 11); *Yellow Sea*; — *Glotzhofer, B.*: Avoid plastic boxes! (pp. 11-12); — Which names (pp. 12-13); — *Orr, R.*: *Celithemis martha* and *Celithemis ornata* — are they the same species? (p. 13); — *Konrad, R.*: Devils from the sky come out in force, thanks to wet weather (pp. 13-14). — *Donnelly, N.*: Brief notes and commentary (pp. 15-18).
- (9379) BENDA, J., 1993. Wie sehen Prachtlibellen? *Naturk. Beitr. DJN* 28: 37-56. — (Lehmgrubenweg 11, D-74321 Bietigheim). General considerations on dragonfly vision, based in part on 2 weeks of field observations on *Calopteryx xanthostoma*.
- (9380) BENDA, J., M. NICOLAYSEN, A. KRISMANN, J. HEIDELBERGER, P. EMMERICH & B. MÜLLER, 1993. Verhaltensbeobachtungen an Prachtlibellen: ethologische Studien über die Südliche Prachtlibelle (*Calo-*

pteryx xanthostoma Charpentier, 1825) (Zygoptera: Calopterygidae) am Oberlauf der Loire während des DJN/YEE-Sommerlagers bei Serre de la Fare vom 25.7.-9.8.1992. *Naturk. Beitr. DJN* 28: 3-36. — (First Author: Lehmgrubenweg 11, D-74321 Bietigheim).

This is a very detailed record of field observations on all aspects of adult behaviour in *C. xanthostoma*, carried out during a 2 week summer workshop of German Youth federation of Naturalists, at the upper Loire R. (Serre de la Fare), France. — (For a "monographic" treatment of this subject cf. *OA* 251, 309).

- (9381) BESCHOVSKI, V. & M. MARINOV, 1993. Vodnite koncheta (Odonata) ot biooverniya rezervat Sreb'ma. — The dragonflies (Odonata) from the reservation of "Srebarna" in Bulgaria. *In*: Second National Scientific Conference of Entomology, pp. 9-13, Bulg. Ent. Soc., Sofia. (Bulg., with Engl.s.). — (Second Author: Macedonia St. 112, BG-7500 Silistra).

A commented list of 35 spp., evidenced in the "Srebarna" Nature Reserve, 18 km W from Silistra, NE Bulgaria.

- (9382) BOTH, C., 1993. Spreeuwen en libellen. — [Starlings and dragonflies]. *Amoeba, Amst.* 67(5): 154-155. (Dutch). — (Droevendaalsesteeg 57, NL-6708 PB Wageningen).
During his starling field work on the Thames R. nr Oxford, UK, Mai 1993, the *Author* has seen a pair of starlings having collected 5 adults (teneral) and 5 larval *Gomphus vulgatissimus* within 1 h (1 Mai). Subsequently, the same pair were catching at least 1 specimen per 30 min. Another nesting starling pair were collecting 2 adults and 1 larva per 30 min. All the adults were in very teneral condition, mostly with the wings still unspread; they were emerging in large numbers from the river, but only some of the local starlings appeared to have been specialized on dragonfly food. According to a rough assessment, a starling pair could consume 40-70 *G. vulgatissimus* individuals daily. — At the same time, the *Author* noticed a house sparrow catching *Calopteryx splendens* on a nearby stream.

- (9383) BROCKHAUS, T., 1993. Die Federlibelle *Platynemis pennipes* (Pallas, 1771) in Mecklen-

burg-Vorpommern, Berlin/Brandenburg, Sachsen-Anhalt, Thüringen und Sachsen (Odonata). *Ent. Nachr. Ber.* 37(4): 213-224. (With engl. & Fr.s's). — (Markt 20/21, D-09111 Chemnitz).
Based on 220 records, the distribution, habitat requirements and the status of the sp. in eastern Germany are outlined and discussed. The centre of its distribution are the large river valleys in the Mecklenburg Lake District and in the Spree Forest. Generally, the populations are decreasing, mainly so due to the deterioration of water quality, the cultivation of river banks and flood plains, and because of the lowering of the ground water table.

- (9384) BRUNELLE, P.-M., 1993. *Collecting dragonflies and damselflies in eastern Canada, with a species list and distribution for northeastern North America*. Brunelle, Halifax, 42 pp. — (Author/Publisher: 2460 John St., Halifax, NS, B3K 4K7, CA).

This is a most useful "booklet" (A4 size), designed in the first place to encourage the study of dragonflies in Nova Scotia, Canada. Unlike in most other similar regional publications, the emphasis here is on practical field and collection work. The following are the main chapters: "Geographic scope", "Introduction", "Taxonomy", "Terminology", "Common and English names", "Why an interest in collecting", "Ethical considerations", "Collecting or watching", "Legalities and courtesies", "Depositing specimens and records", "Equipment and techniques", "Choosing your sites", "Site visits", "Travelling with specimens", "Killing", "Cleaning", "Preserving", "Documenting appearance", "Storage", "Identification", "Shipping", "Data collection", "Rearing specimens in captivity", "Bibliography and references". There are 2 Appendices, the first of these gives models of collection labelling and field protocol blanks, the second contains a checklist of regional distribution (Nova Scotia, Prince Edward Island, New Brunswick, Newfoundland incl. Labrador, Quebec, Maine New Hampshire, Massachusetts, Rhode Island), incl. also the vernacular names and annotations on the habitats. Particularly the list for the (Canadian) Maritime provinces contains a wealth of previously unpublished evidence. After British Columbia (*OA* 2055) and Quebec (*OA* 2516),

- this is the third more or less "commercially" available treatment of a Canadian region, produced in the past 2 decades. The attractive booklet will certainly trigger and facilitate dragonfly studies in that part of Canada. A second, revised edition is to appear shortly.
- (9385) BUCHWALD, R., 1993. Habitatselektion bei *Ceragrion tenellum* (Coenagrionidae, Odonata). *Mitt. dt. Ges. allg. angew. Ent.* 8(4/6): 517-519. (With Engl.s.). — (Inst. Biol. II, Univ. Freiburg, Schänzlerstr. 1, D-79104 Freiburg). In SW Germany this is a conservative and very stenotopic sp., largely restricted to 2 types of habitats, with highly specific vegetation. Normally, it chooses its habitats on the basis of breeding site fidelity, but in one case it was shown that in a catastrophic situation an active selection is made using the narrow ecoscheme.
- (9386) BURTON, T.M. & K.G. SIVARAMAKRISHNAN, 1993. Composition of the insect community in the streams of the Silent Valley National Park in southern India. *Trop. Ecol.* 34(1): 1-16. (With Fr., Span. & Port.s's). — (First Author: Dept Zool., Michigan St. Univ., East Lansing, MI 48824, USA). The aquatic insect community of the Kunti Puzha and its tributaries, Kerala, was sampled. The odon. are mostly genus-wise listed, and only larval records are included.
- (9387) CAPINERA, J.L., 1993. Insects in art and religion: the American Southwest. *Am. Entomol.* 39(4): 221-229. — (Dept Ent., Univ. Florida, Gainesville, FL 32611-0620, USA). References are made to dragonfly representations on Mimbres pottery (SW New Mexico, ca A.D. 1100), in Hopi religious ceremonies (N Arizona), and in the figurative arts and traditions of the Navajos.
- (9388) CHAO, H.-f. 1993. Description of the nymph of *Sympetrum ruptum* Needham (Odonata: Libellulidae). *Wuyi Sci. J.* (A) 10: 71-72. (With Chin.s.). — (Biol. Control Res. Inst., Fujian Agric. Coll., Fuzhou, Fujian-350002, PRC). The ultimate instar (♂, ♀) is described and illustrated. In the Wuyishan Nature Reserve, Fujian, China, the adult season lasts from mid June to late Oct., with a peak in the second half of Aug.
- (9389) CHOVANEC, A. & S.E. WANZENBÖCK-ENDEL, 1993. Das "Tritonwasser" — ein neuer Lebensraum für Libellen? *Mitt. dt. Ges. allg. angew. Ent.* 8(4/6): 433-435. (With Engl.s.). — (First Author: Umweltbundesamt, Abt. Ökologie, Spittelauer Lände 5, A-1090 Wien). A brief description of the project as described in detail in OA 9105.
- (9390) DEL CERRO, C., L. MANCINI, M. DI CARLO, F. FORNASIER, C. BERTONI & L. VOLTERRA, 1993. La qualità del fiume Tevere attraverso analisi multiparametriche. *Ambiente Risorse salute* 7(19): 33-41. — (Last Author: Ist. Superiore di Sanità, Viale Regina Elena, I-00100 Roma). The Tevere R. is the most important water body in central Italy. Comprehensive chemical data are presented, but among the fauna only Calopteryx and Onychogomphus are genus-wise listed from some of the sampling stations.
- (9391) DELL'ANNA, L. & C. UTZERI, 1993. Behavioural thermoregulation in *Trithemis annulata* (Odonata, Libellulidae). *Ethol. Ecol. & Evol.* 5: 391. — (Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma). Abstract of the paper published in *Odonatologica* 19(1990): 375-380.
- (9392) DEVRIESE, A., K. LOCK, J. SCHAERLAKENS & B. VERCOUTERE, 1993. Dagritme van libellen. — [Diurnal rhythm of dragonflies]. *Amoeba, Amst.* 67(5): 141-144. (Dutch). — (Authors' addresses not stated). Rather sketchy notes on diurnal activities of *Enallagma cyathigerum*, *Ischnura elegans*, *Leestes sponsa*, *Sympetrum striolatum* and *S. vulgatum*, as recorded at 5 min intervals, between 06:25 and 21:00 h. on August 8, 1993, at a pond in Vallée de Rabais, Belgium.
- (9393) DOLMEN, D., H. OLSVIK & P. TALLAKSRUD, 1993. Statusrapport om øyestikkere i Kopstadelva med omgivelser 1993. — Report on the status of dragonflies in the Kopstadelva River and the surroundings, 1993. *Notat zool.*

- Avd. Univ. Trondheim* 1993(12): 1-26. (Norweg.). — (Second Author: N-6598 Foldfjorden [this is correct & full address]; — Orders to: Dr D. Dolmen, Dept Zool., The Museum, Univ. Trondheim, N-7005 Trondheim).
The 1993 records in the Kopstadelva R. system (Hof in Vestfold, Norway) are reported, with emphasis on the locally endangered *Calopteryx splendens*, *Gomphus vulgatissimus*, *Epitheca bimaculata*, *Leucorrhinia caudalis* and *L. pectoralis*. With reference to the development schemes, involving the reduction of water level and the removal of aquatic vegetation, tentative management measures to secure the survival of the small populations of those spp. are proposed.
- (9394) DONATH, H., 1993. Quantitative Untersuchungen der Libellenfauna in der Kiesgrube Giessmannsdorf. *Biol. Stud. Luckau* 22: 75-84. — (Hauptstr. 21, D-15926 Luckau).
A detailed description of a gravel-pit odon. community which is particularly valuable because of the intensity of the 3 yr monitoring, and because of the quantitative evidence presented.
— For an earlier paper on the same locality cf. OA 3267, for some management suggestions cf. OA 9395.
- (9395) DONATH, H., 1993. Schutzstrategie für eine ehemalige Kiesgrube. *Biol. Stud. Luckau* 22: 60-67. — (Hauptstr. 21, D-15926 Luckau).
With emphasis on the odon., the paper deals with some tentative management strategies for a gravel-pit nr Giessmannsdorf, E Germany. — Cf. also OA 3267, 9394.
- (9396) DONNELLY, T.W., 1993. Two new genera of isostictid damselflies from New Britain, Bougainville, and the Solomon Islands (Odonata: Zygoptera). *Tijdschr. Ent.* 136(2): 125-132. — (2091 Partridge Lane, Binghamton, NY 13903, USA).
From the eastern Papuan-Melanesian region are described *Cnemisticta angustilobata* gen.n., sp.n. (holotype ♂: Papua New Guinea, New Britain, Yalom, 18-V-1962; UZMC), *C. latilobata* sp.n. (holotype ♂: Solomon Isls, Malaita Is., Kware'a R., 19-II-1987; RMNH), and *Titanosticta macrogaster* gen.n., sp.n. (holotype ♂: Papua New Guinea, New Britain, Yalom, 20-V-1962; UZMC). The 2 genera bear no particularly close relationship with any of the Papuan (Selysioneura, Tanymecosticta), New Caledonian (Isosticta), or Australian (7 genera) taxa.
- (9397) EDA, S., 1993. The seashore and dragonflies. *Nature & Insects* 28(11): 31-34. (Jap., with Engl. title). — (3-4-25 Sawamura, Matsumoto, Nagano, 390, JA).
The paper deals with the Japanese *Mortonagrion hirosei* and *Sympetrum striolatum imitoides*, of which spp. the distribution maps are also provided.
- (9398) EITSCHBERGER, U., 1993. Die Entomologie am Scheideweg!(?). *Atalanta* 24(1/2): 313-316. — (Humboldtstr. 13a, D-95168 Marktpleuthen).
The *Author* is a well known lepidopterologist and makes here no reference to dragonflies. Instead, he is emphasizing the science of systematic entomology is at a critical crossroads, and describes briefly some aspects of the enormous, worldwide negative impact of the currently fashionable insect "species conservaton", the legislation on which is being promulgated by a rapidly increasing number of countries, and which has been commented upon also e.g. in OA 3112. The private taxonomic research and the supporting systematic collections are increasingly criminalized, the result of which is, a.o., the globally decreasing interest in systematic entomology. In the article, brief references are made to the large-scale confiscations of voucher material in Australia, to the systematic rides by the United States Fish & Wildlife Service officers of private scientific collections, files and even private correspondence [as experienced recently also by some of the foremost US odonatologists!], etc. — (*Abstracter's Note*: In the past few years the number of this kind of articles, most of them scientifically and otherwise very well documented, published in various entomological periodicals, is becoming almost "countless". However, their effect on the responsible political authorities is apparently none. Numerous resolutions by entomological societies and appeals to the IUCN and WWF, containing factual evidence on the contraproductivity of such legislations and attitudes, do not seem to have brought about any visible relaxation either, while the individual appeals to local national authorities usually re-

- main "unnoticed" by these. It would be highly opportune, therefore, to set up a worldwide organisation of systematic entomologists, which could attempt, e.g. through the International Congress of Entomology, to trigger some effective support from the IUCN and WWF, i.e. an immediate and determined application of their influence with the national governments. After all, and although at this stage perhaps not yet clearly realized, the confidence of many insect taxonomists into these international organisations is seriously and increasingly getting at stake. In the context of this situation, the *Abstracter* is of the opinion, the recent formation of the "International Scientific Collectors Association" [address: 469 Craihope Rd, Center, KY 42214, USA] should be warmly welcomed by all serious odon. taxonomists, and their membership in this organisation urgently recommended.
- (9399) GAPUD, V.P. & J.D. RECUENCO, 1993. An interesting *Argiolestes Selys* (Odonata: Zygoptera: Megapodagrionidae) from the Philippines. *Philipp. Ent.* 9(2): 155-162. — (Second Author: Dept Ent., Mus. Nat. Hist., U.P., Los Baños, College, Laguna, Philippines). *A. realensis* sp.n. is described and illustrated from a series of both sexes (holotype ♂, allotype ♀: Real, Quezon, resp. 26-III-1986 & 8-IV-1987; deposited in Author's institution). Some notes on the habitat are added. The new sp. is considered endemic to Quezon.
- (9400) *GOMPHUS. Mededelingsblad van de belgische libellenonderzoekers. — Bulletin de liaison des odonatologues belges*, Vol. 9., No. 3 (Nov., 1993). — (c/o Ms A. Anselin, KBIN, 29 rue Vautier, B-1040 Bruxelles). *A. Anselin* reports on a field trip in the Westvlaamse Heuvelland (pp. 84-85; incl. a small population of *Crocothemis erythraea* at Gavers), *M. Tailly* describes the vols listed in OA 6282 and 9136 (p. 88), all in Dutch. The main paper of the issue was contributed by *Goffart, P. & M. Dufrière*: La surveillance de l'état de l'environnement wallon par la méthodes des bioindicateurs: résultats de quatre années de suivi des odonates (pp. 59-83).
- (9401) *GRACILE*. [Newsletter of Odonatology]. Published by the Kansai research Group of Odonatology, Osaka, No. 50 (Dec. 5, 1993). (Jap., with Engl. titles). — (Distribution outside Japan: K. Inoue, 5-9 Fuminosato 4-chome, Abe-no-ku, Osaka, 545, JA).
- Kondoh, S.*: How to breed small larvae of dragonflies by using zoea of Brine Shrimp as their food (pp. 1-3); — *Nishu, S.*: Report of the survey trip on the odonate fauna of North Hyogo (7) in early summer, 1992 (pp. 4-8); — *Matsuda, I.*: "Tombo-turi" (catching dragonflies by threads) meeting held in Osaka prefecture (3), 1993 (pp. 9-11); — *Yamamoto, T.*: Report of the survey trip on the odonata fauna of Kōmyōike Pond, Osaka prefecture (1) in spring, 1993 (pp. 11-12); — *Matsuda, I.*: Report of the surveys of dragonflies at Kōmyōike and Shinodayama, Izumi, Osaka prefecture (2) in summer, 1993 (pp. 13-14); — *Miyatake, Y.*: Report of the surveys of dragonflies at Kōmyōike and Shinodayama, Izumi, Osaka prefecture (3) in autumn, 1993 (pp. 15-16); — *Takamatsu, T.*: First record of *Ictinogomphus pertinax* at the southeastern part of Kii peninsula, Wakayama prefecture (p. 17).
- (9402) GUNTERT, M., K. GROSSENBACHER, C. HUBER, A. AERNI & H.U. MORGENTHALER, 1993. The E.A. Goeldi zoological collection in the Natural History Museum Bern: comments on an inventory. *Jb. naturh. Mus. Bern* 11: 147-161. (With Germ.s.). — (Second Author: Naturh. Mus. Bern, Bernastr. 15, CH-3005 Bern). Includes a reference to 45 odon. specimens (Brazil), but no species list.
- (9403) GÜNZEL, W.R., 1993. *Lebenselement Wasser: Feuchtbiopte unserer Heimat*. Schmettkamp Verlag, Bornheim. 142 pp. — ISBN 3-928819-03-08. — Price: DM 98.- net. The book is directed at the general reader. In a somewhat "poetical" style it briefly characterizes various types of German freshwater habitats and their inhabitants. The emphasis is on col. photographs; ca 20 pp. are devoted to dragonflies.
- (9404) HÄMÄLÄINEN, M., 1993. Description of *Neurobasis daviesi* sp.n. from Palawan, with taxonomic notes on other species of the N. chi-

- nenis group (Odonata, Calopterygidae). *Tijdschr. Ent.* 136(2): 133-136. — (Tullilaboratorio, Pl 53, SF-02150 Espoo).
- The new sp. (holotype ♂: Brooke's Point, S Palawan, the Philippines, I-VIII-1980: deposited at RMNH, Leiden) is described in both sexes. It is closest to the Bornean *N. longipes* Hag., which is considered specifically distinct from *N. chinensis* (L.). The 3 recognized spp. of the *chinensis* group are keyed.
- (9405) HARBRECHT, D., 1993. Animals in the Ad game. *Int. Wildlife* 23(6): 38-43. — (Author's address not stated).
- On the use of animal symbols in commercial advertisements, with a passing reference to dragonflies, and with a phot. of a Thai canned-food label, where the dragonfly is used as a symbol of grace.
- (9406) HARITONOV, A. Yu. & O.N. POPOVA, 1993. Opyt ocenki roli strekozy *Sympetrum flaveolum* v troficheskikh cepyah biocenzov. — [An attempt at the evaluation of the role of *Sympetrum flaveolum* in the ecosystem trophic nets]. *Proc. 6th Meet. 'Species and its productivity in the distribution area'*, UNESCO [Man and Biosphere], pp. 264-265, St Petersburg. (Russ.). — (Inst. Biol., Siber. Sect. Russ. Acad. Sci., Frunze 11, RUS-630091 Novosibirsk).
- In Siberia, *S. flaveolum* has 2 different modes of life history; these are here described, and population estimates are given for 3 localities in Western Siberia. Serological method was used for the assessment of food consumption. In W. Siberia, the chironomids account for 75% of food in this sp.
- (9407) HAVEL, J.E., J. LINK & J. NIEDZWIECKI, 1993. Selective predation by *Lestes* (Odonata, Lestidae) on littoral microcrustacea. *Freshw. Biol.* 29(1): 47-58. — (First Author: Dept Biol., Southwest Missouri St. Univ., Springfield, MO 65804, USA).
- For an advance abstract cf. OA 8556.
- (9408) HEIMANN, H., 1993. Von Prachtlibellen und Quelljungfern. *Natur-Report* 7(1/2): 40-42. — (Albert-Schweitzer Str. 8, D(W)-4755 Holzwickede).
- General, on *Calopteryx splendens*, *C. virgo* and *Cordulegaster bidentata* in the Schwerte-Holzwickede area, Northrhineland-Westphalia, Germany.
- (9409) HOESS, R., 1993. *Die aquatische Invertebratenfauna im Naturschutzgebiet Auried (Kleinbörsingen, FR)*. Lizentiatsarbeit Zool. Inst. Univ. Bern. Bern. 105 pp. — (Normannenstr. 35, CH-3018 Bern).
- With reference to the paper listed in OA 2885, the macroinvertebrate fauna and population biology were studied in a pond system nr Kleinbörsingen, canton Fribourg, Switzerland, alt. 490 m. The emphasis is on the odon. (29 spp., of which 21 autochthonous). The work contains important information on the local emergence phenology, sex ratios, on the structure of odon. assemblages in different habitats, etc.
- (9410) HOLYOAK, M., 1993. The frequency of detection of density dependence in insect orders. *Ecol. Ent.* 18(4): 339-347. — (NERC Cent. Popul. Biol., Imperial Coll. at Silwood Park, Ascot, Berks SL5 7PY, UK).
- (1) A priori, there are no obvious reasons why patterns should exist in the frequency of density dependence across insect orders. However, orders may reflect related factors which influence population regulation (e.g. life-history patterns and ecology) and are difficult to quantify. The frequency of occurrence of density dependence is compared in 171 time series (of ten or more generations) from Lepidoptera, Hemiptera, Diptera, Odonata, Hymenoptera and Coleoptera. A posteriori attempts are made to identify the cause of observed patterns. — (2) Bulmer's (1975) test found non-delayed density dependence more frequently in Odonata than Lepidoptera and Hymenoptera, which in turn showed non-delayed density dependence more frequently than Diptera, Hemiptera and Coleoptera. Similarly, detection was greater for Odonata than other orders using Dennis & Taper's (1993) test for density dependence and Crowley's (1992) test for attraction. Varley & Gradwell's (1960) test found density dependence less frequently in Hemiptera than other orders. These differences were independent of time series length, temporal trends and numbers of generations per year. — (3) The reasons for observed patterns in detection of density dependence

- (and attraction) in insect orders are not clear; however, plausible explanations are differences in: (i) intrinsic growth rate, which is correlated with body size (although evidence to support this hypothesis is weak); (ii) the sampling method used; or (iii) whether individuals, come from a single population or many populations. — (4) Using Turchin's (1990) test, delayed (lag 2) density dependence was detected most frequently in Hymenoptera, which often show delayed diapause or are parasitoids.
- (9411) HUTCHINSON, R., 1993. Note sur le vol de patrouille au milieu d'une rivière des mâles de *Stylurus spiniceps* (Walsh), *Dromogomphus spinosus* (Sélys) et *Argia moesta* Hagen (Odonata). *Fabries* 18(3): 90-91. — (12 rue de La Savane, apt. 12, Gatineau, Que., J8T 1P7, CA). A supplementary note on the paper listed in OA 8840, incl. also a few field observations, mostly on *A. moesta*.
- (9412) HUTCHINSON, R. & B. MÉNARD, 1993. Deux nouvelles localités pour la demoiselle très rarement trouvée au Québec, *Lestes vigilax* Hagen (Odonata: Lestidae). *Fabries* 18(3): 78-81. (With Engl.s.). — (First Author: 12 rue de La Savane, apt. 12, Gatineau, Que., J8T 1P7, CA). Records from Quyon (Pontiac) and from the Beauchamp Lake (Hull), Quebec, Canada.
- (9413) HUTCHINSON, R. & B. MÉNARD, 1993. Mise à jour de la répartition géographique d'*Erythemis simplicicollis* (Say) (Odonata: Libellulidae) au Québec. *Fabries* 18(3): 69-73. (With Engl.s.). — (First Author: 12 rue de La Savane, apt. 12, Gatineau, Que., J8T 1P7, CA). 7 new localities are reported from SW Quebec, Canada, and it is argued, the sp. is there more widespread than hitherto assumed. A fig. of the ultimate larva is added.
- (9414) HUTCHINSON, R. & B. MÉNARD, 1993. *Stylomphus albistylus* (Hagen) (Odonata: Gomphidae): répartition et notes biologiques. *Fabries* 18(3): 82-89. (With Engl.s.). — (Second Author: 58 rue Smiith, Gatineau, Que., J8T 3A1, CA). The sp. is now known from 25 localities in Quebec, Canada, which are here reviewed, and about half of which were not published previously. Some field observations are presented and discussed in terms of the published evidence. A fig. of the ultimate instar larva is added.
- (9415) ISHIZAWA, N., 1993. *Dragonflies in Sayama Hills*. Privately circulated by the Author. 3 pp. — (1644-15, Yamaguchi, Tokorozawa City, Saitama, 359, JA). Sayama Hills are situated 40 km off Tokyo, on the Tokyo-Saitama pref. border, forming a green island in a heavily urbanized landscape. Field observations are given here on 6 spp., with emphasis on the *Sympetrum frequens* seasonal migrations that are still not completely understood.
- (9416) JAHRESBERICHT DER ARBEITSGEMEINSCHAFT LIBELLEN IM LKR. SCHWÄBISCH HALL 3 (1991/1992), 1993. ii+29 pp. — (c/o B. Kunz, Veinauer Str. 25, D-74523 Schwäbisch Hall). *Kunz, B., A. Nowak & R. Sziringer*: Die Libellen des Landkreises Schwäbisch Hall (pp. 1-29; updated version of the work listed in OA 7513).
- (9417) JOHANSSON, F., 1993. The distribution of Odonata in Västerbotten and South Lapland, northern Sweden. *Entomol. fenn.* 4(3): 165-168. — (Dept Anim. Ecol., Univ. Umea, S-90187 Umea). Distribution maps for 24 spp. are presented. They are based on 176 localities, sampled during 1986-1992. 10 of the recorded spp. are considered common in the area, while *Leucorhinia albifrons* and *Sympetrum vulgatum* are very rare.
- (9418) KEIM, C., 1993. Le leste enfant. *13 Etoiles Reflets du Valais* 1993(4): 2 pp. [sep.]. — (Finettes 10, CH-1920 Martigny). A 41 x 28 cm col. lay-in, showing an ovipositing pair of *Sympetma paedisca*, accompanied by a comprehensive caption. In the Martigny area, Switzerland, adults appear in March and April and are active at temperatures above 10°C. The ovipositing ♀ is per collum accompanied by the ♂, and deposits (endophytically) about 250 eggs/h.
- (9419) KEIM, C., 1993. *Recensement des odonates du Valais*. Privately published by the Author, Mar-

tigny, 83 pp. (With Germ. & Engl.s's). – (Finettes 10, CH-1920 Martigny).

This is a greatly enlarged and updated 2nd ed. of the work listed in OA 8243, covering now the whole territory of the canton (i.e. also the German-speaking areas). During 1990-1993, 238 localities were examined and 54 spp. are reported. The observations on *Lestes dryas*, *Sympecma paedisca*, *Hemianax ephippiger*, *Cordulegaster bidentata*, *Sympetrum flaveolum* and *Leucorrhinia albifrons* are of particular interest. In the Zermatt area, *Aeshna juncea* was found breeding still at the alt. of 2757 m. – This is certainly one of the very best treatments of the odon. fauna of a Swiss canton.

- (9420) KEIM, C., 1993. Une année chez les demoiselles. *13 Etoiles Reflets du Valais* 1993(4): 34-35. – (Finettes 10, CH-1920 Martigny).

Field observations on biology, behaviour and larval development of *Sympecma paedisca* in the Martigny area, Switzerland.

- (9421) KEIM, C., 1993. Une libellule unique. *Info-Nature, Sion* 37: 13-16. (With Germ. fig. captions). – (Finettes 10, CH-1920 Martigny).

A brief general account on biology and life history of *Sympecma paedisca* at Les étangs du Rosel nr Martigny, Switzerland, with a note on *Sympetrum depressiusculum* from the same locality.

- (9422) KETELAAR, R., 1993. Inventarisatieproject van libellen in Nederland. – [Inventarisation project of dragonfly distribution in the Netherlands]. *Natura, Amst.* 70(3): 161-162. (Dutch). – (c/o Libellenproject NJN/JNM, Bokkingshang 1, NL-7411 GG Deventer).

Refers to the project as described in OA 8752, and contains a distribution map of *Gomphus vulgatissimus* in the Netherlands.

- (9423) KETELAAR, R., 1993. Libellen in Zuid-Limburg. – [Dragonflies in the province of Southern Limburg, the Netherlands]. *Amoeba, Amst.* 67(4): 114-118. (Dutch). – (Zwinstraat 18, NL-7417 GJ Deventer).

Comprehensive annotations on 18 spp.

- (9424) KÖHLER, R., 1993. *Ökologische und ökotoxikologische Bewertung von Umweltchemikalien in*

naturnahen Freilandteichen am Beispiel von γ -HCH (Lindan). Diss. Dr. rer. nat., Techn. Hochschule Darmstadt. [Available Odon. pp. 182-186 only]. – (Fischerhüttenweg 12, D-63450 Hanau).

Odon. larvae were hitherto assumed fairly resistant against Lindane (γ -HCH). This is here confirmed for *Libellula depressa*; the larvae treated with 2-32 μ g/l concentration, did not show any effect even after 96 h. On the other hand, the Coenagrionidae were highly sensitive. At concentrations 20 μ g/l, 40% of larvae died within 48 h.

- (9425) KOTARAC, M., 1993. *Favna kačjih pastirjev (Odonata) na Pohorju*. – [*Dragonfly fauna (Odonata) of Pohorje mountains*]. ii+4 pp. Rep. Dept Nature & Cultural Heritage, Maribor. (Slovene). – (Marohovih 11, SLO-62000 Maribor).

A review is presented of the results of a 21 day survey (1991-1993) of the odon. fauna (18 spp.) of 8 swamps, ponds and lakes on Pohorje Mts (Bachergebirge), NE Slovenia. The national status of *Aeshna juncea*, *Somatochlora arctica*, *Sympetrum danae* and *Leucorrhinia dubia* is outlined, and habitat conditions at 6 localities are briefly discussed.

- (9426) KOTARAC, M., 1993. Odonatološka skupina. – [The odonate research team]. In: I. Žolgar, [Ed.], *Ekološko-raziskovalni tabor "Cerkniško jezero 93"*, pp. 5-8, col. phot. p. 63, Mladi forum Združene liste, Ljubljana. (Slovene). – (Marohovih 11, SLO-62000 Maribor, Slovenia).

The annotations are given on 32 spp., evidenced during June-July, 1993, at 14 localities in the Bloke Plateau and in the area of the intermittent Cerknica Lake, Slovenia. Exciting is the observation on co-occurrence of *Somatochlora arctica* and *S. meridionalis* at Bloke (alt. 760 m).

- (9427) KÜNZLI, L., 1993. Insectes à l'aurole de star: les libellules ne peuvent s'épingler. *24 Heurs, Yverdon* 1993(260), issue of Nov. 8. – (c/o Dr A. Maibach, Les Croix, CH-1610 Oron-la-Ville).

A local daily's article on the occasion of the Sixth Colloquium of Swiss Odonatologists; Champ-Pittet nr Yverdon, Nov. 6, 1993. – 2 anonymous articles have appeared also in *Jour-*

- nal du Nord vaudois 1993 (258) and (260), resp.
- (9428) KÜRY, D., 1993. Feuersalamander und Quelljungfern im Gebiet um St. Chrischona. Der Schutz bedrohter Bewohner unserer Bäche. *z'Rieche heimatliches Jb.* 1993: 139-149, 1 pl. excl. — (Murbacherstr. 34, CH-4056 Basel). A brief review of the biology of *Cordulegaster bidentata* and *C. boltonii*, with notes on population densities at 3 localities in canton Basel-Stadt, Switzerland.
- (9429) LABHARDT, F., 1993. *Libellen. Jäger mit gläsernen Schwingen*. Kinderbuchverlag, Luzern, 40 pp., 2 col. frontispieces incl. — ISBN 3-276-00098-9. — Available from the SIO, Bilt-hoven, at Hfl. 50,- net. This is the 2nd, revised and enlarged ed. of the volume listed in *OA* 7722.
- (9430) MAIBACH, A. & C. MEIER, [Eds], 1993. Bericht Champ-Pittet [6. Tagung der Schweizerischen Libellenkundler]. *Nouvelles Cent. suisse Cartogr. Faune* 6: 20-22. — (Second Author: Postfach 252, CH-8636 Goldingen). Contains abstracts of papers, presented at the 6th Colloquium of Swiss odonatologists (Champ-Pittet, Nov. 6, 1993), viz.: *Pedroli-Christen, A.*: Libellendatenbank (CSCF, Stand Oktober 1993) (p. 20); — *Hoess, R.*: Libelleninventar des Kantons Bern (p. 20); — *Mulhauser, B. & A. Gander*: Colonisation de deux nouveau plans d'eau de la Grande Cariçaie (rive sud du lac de Neuchâtel) par les odonates (p. 20); — *Keim, C.*: Recensement des odonates du Valais (p. 20); — *Wildermuth, H. & E. Knapp*: Beobachtungen zur Biologie von *Somatochlora metallica* in den Alpen (p. 21); — *Gander, A. & B. Mulhauser*: Etude de la population de *Ceriatrigon tenellum* de la Grande Cariçaie (rive sud du lac Neuchâtel) (p. 21); — *Meier, C. & A. Maibach*: Bemerkungen zur Situation einiger seltener Arten in der Schweiz (p. 21); — *Deliry, C.*: Variabilité des populations de *Calopteryx* en Savoie et en Isère (France) (p. 21). — Also appended is a brief and greatly incomplete bibliographic list of the 1992 and 1993 Swiss odonatological publications (4 titles). — The new coordinator for western Switzerland ("Romandie") is Mr C. Keim (10 rue des Finettes, CH-1920 Martigny).
- (9431) MALIKOVA, E.I., 1993. Strekozy (Insecta: Odonata) okrestnosti goroda Blagoveschensk. — [Dragonflies (Insecta: Odonata) of the Blagoveshchensk area]. In: V.A. Dugin-cov, [Ed.], *Problemy ekologii Verhnego Priamur'ya*, pp. 91-101, Ecol. Lab., St. Pedagog. Inst., Blagoveshchensk. (Russ.). — (Inst. Biol., Siber. Sect. Russ. Acad. Sci., Frunse 11, RUS-630091 Novosibirsk). An annotated list of 45 spp.
- (9432) MALKMUS, R., 1993 *Die Libellen im Landkreis Aschaffenburg*. Landratsamt, Aschaffenburg, 124 pp. — [SchrR. Fauna Flora Aschaffenburg, Vol. 4] — ISBN/ISSN none. — (Publishers: Bayernstr. 18, D-63739 Aschaffenburg). An attractive, commercially available booklet on the odon. fauna of the Aschaffenburg distr., Bavaria, Germany (45 spp.). The following information is given for each sp.: habitat, mode of oviposition, flight period, local distribution, local status. for each sp., a local distribution map and (where available) a col. phot. are also provided. In the introductory chapter, general odon. biology is briefly outlined, and in the concluding section, the status of the local fauna is discussed and some management measures are suggested. — (*Abstracter's Note*: The first commercially available book on the Aschaffenburg dragonflies has been published by C. Fröhlich [1903, *Die Odonaten und Orthopteren Deutschlands mit besonderer Berücksichtigung der bei Aschaffenburg vorkommenden Arten nach der analytischen Methode bearbeitet*, Fischer, Jena]. It is amazing that, unlike e.g. in the United Kingdom, various other European countries, Japan, etc., in Germany no commercial book exists on dragonflies of any other district, and not even on any of the federated states. — Cf. also *OA* 9363, 9364).
- (9433) MARTINIA. Bulletin des odonatologues de France. Vol. 9, No. 4 (Dec. 1993). — (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois-d'Arcy). *Dommanget, J.-L.*: Le mot du Président (pp. 77-78); — *Coppa, G.*: Observations sur la biométrie de l'exuvie de *Cordulegaster bidentata* Sélys, 1843 et comparaison avec celle de *Cordulegaster boltonii* (Donovan, 1807) (pp. 79-85); — *Male-Malherbe, E. & J. Deberge*: Epitheca

bimaculata (Charpentier, 1825) nouveau pour le département de l'Indre (p. 86); — *Deliry, C.*: Etat d'avancement de l'atlas des odonates du nord des Alpes françaises (pp. 87-90); — *Dommanget, J.-L.*: Les arrêtés du 22 juillet 1993: mise au point et commentaires (pp. 93-99); — *Boudier, F.*: 6ème Symposium des odonatologues de Suisse (pp. 101-104); — *Dommanget, J.L.*: Rubrique bibliographique (pp. 104-105); — *Wichmann, H.*: Analyse d'ouvrage (pp. 105-108); — *Informations diverses* (pp. 85, 90-92, 100).

- (9434) MAY, M.L., 1993. *Lestes secula*, a new species of damselfly (Odonata: Zygoptera: Lestidae) from Panama. *Jl NY ent. Soc.* 101(3): 410-416. (With Span.s.). — (Dept Ent., New Jersey Agric. Exp. Stn, Cook Coll., Rutgers Univ., New Brunswick, NJ 08903, USA).

The new sp. (holotype ♂: Barro Colorado Is., 28-III-1974; deposited at IORI, Gainesville) most closely resembles *L. tenuatus*, *L. pictus* and *L. henschawii*, but it is distinctive in colour pattern, in the form of the ♂ cerci, and in the form of the ovipositor. Brief notes on its ecology and probable relationships, as well as a key to the regional spp., are provided.

- (9435) MENDEL, H., 1993. *Suffolk dragonflies*. Suffolk Naturalists' Soc., Ipswich. 159 pp., hard cover. — ISBN 0-9508154-5-4. — Price: £ 15.- net. Available from: Suffolk Naturalists' Soc., c/o The Museum, High Street, Ipswich, IP1 3QH, Uk. — (Author: same address).

At present, the regional odon. fauna is certainly nowhere as carefully explored and its continuously changing status as intensely monitored to as in the United Kingdom. The results are recorded in an ever increasing number of commercially published books, the most recent addition to which is the present guide to the dragonflies of Suffolk. It is the most comprehensive study of this kind ever published in Britain. The informative text, based on detailed evaluation of old and new records and observations, and accurate, up-to-date distribution maps (in the context of East Anglia), supplemented with concise, well organised general information on the odon. biology and behaviour, makes the book of more than local significance. In the style and presentation it is very much compar-

able to the excellent guide for British Columbia, Canada, by R.A. Cannings & K.M. Stuart, as described in OA 2055. The text is enhanced by a well-balanced set of high quality col. photographs of all spp. The Foreword, by Professor N.W. Moore, the doyen of odon. conservation in Britain and in the world, gives to the book an additional relevance in the field of odon. habitat conservation and management (cf. OA 9438). — The book is the culmination of a 6 yr survey work, organised by the Author (cf. OA 6290), who has been studying dragonflies for over 15 yrs, and has an exceptionally detailed knowledge of Suffolk, its wildlife and habitats, and of the voluminous, but scattered regional odonotol. literature. — Although the regional assemblage and the changing status of many spp. are in the first place of relevance to Britain, the *Abstracter* is strongly of the opinion, the information and the presentation definitely make the book a must for every serious odonotol. library. The (British) pronunciation gazetteer of taxonomic names (which is slightly different from the American pronunciation) has not been published since the times of C. Longfield (1937, *The dragonflies of the British Isles*, Warne, London-New York).

- (9436) MIELEWCZYK, S., 1993. Wstępne rozpoznanie składu jakościowego niektórych grup owadów (Odonata, Heteroptera, Coleoptera) kilku jezior lobeliowych okolic Bytowa (Pojezierze Pomorskie). — [Preliminary inquiry into the qualitative composition of some insect groups (Odonata, Heteroptera, Coleoptera) of some Lobelia lakes in the area of Bytow (Pomerania)]. *Abstr. I Konf. Jeziora lobeliowe, Poznań-Bytów*, p. 17, Zakł. Ochr. Wod. Univ. A. Mickiewicz, Poznań. [Abstract only]. (Polish). — (Res. Cent. Agric. & Forest Environ., PAN, Bukowska 19, PO-60-809 Poznań).

9 lakes were examined in 1992. *Gomphus vulgatissimus* and *Leucorrhinia albifrons* are the only odon. listed.

- (9437) MILLER, P.L., 1993. Responses of rectal pumping to oxygen lack by larval Calopteryx splendens (Zygoptera: Odonata). *Physiol. Ent.* 18: 379-388. — (Dept Zool., Univ. Oxford, South Parks Rd, Oxford, OX1 3PS, UK).
Larvae of most stadia of *C. splendens* have been

shown to pump water in and out of the rectum for much of the time. In each cycle of pumping there are from three to seven inhalant strokes which progressively fill the ileum with water. A short pause intervenes before a strong compression of segments 5-8 expels the water in a jet. The pattern resembles the gulping ventilation of aeshnid and libellulid dragonfly larvae. Larvae made hypoxic or otherwise stressed show a rise in the frequency and amplitude of pumping. The increase in frequency is brought about by a reduction of the pause duration, while the gain of amplitude results from a rise in both the number of inhalations/cycle and the magnitude of the stroke volume of each inhalation. Some evidence concerning the role of stretch receptors in the execution of the cycle is presented. It is proposed that rectal pumping promotes the exchange of ions and dissolved gases between the rectal water and the hindgut epithelia, supplying mainly the chloride-absorbing cells in the rectal pads. Pumping also stirs the water in the vicinity of the caudal lamellae which are probably the insect's major sites of gaseous exchange.

- (9438) MOORE, N.W., 1993. Foreword. *In*: H. Mendel, Suffolk dragonflies, pp. 6-8, Suffolk Naturalists' Soc., Ipswich. — ISBN 0-9508154-5-4. — (Farm House, 117 Boxworth End, Swavesey, Cambridge, CB4 5RA, UK).

It contains minor autobiographic notes, and a number of important suggestions re the measures to reverse the decline of some spp. The creation of suitable acid water habitats is, under the prevailing local conditions, not an easy, though not an impossible proposition. But the declines of less exacting spp. could be relatively easily reversed by restoration of old cattle and horse ponds, by creation of suitable, large enough garden ponds, etc.

- (9439) MUÑOZ POZO, B., M. AGUERO PELEGRIN & M. FERRERAS ROMERO, 1993. Odonatos de origen africano en península ibérica: perspectiva histórica y situación actual. *Resum. 7 Congr. Asoc. españ. Linnol.*, Bilbao, p. 90. [Abstract only]. — (Third Author: Depto Biol. Anim. (Zool.), Fac. Cien., Univ. Córdoba, Avda San Alberto Magno s/n, ES-14004 Córdoba). *Paragomphus genei*, *Orthetrum chryso stigma*,

O. nitidinerve, *Crocothemis erythraea* and *Tar-netrum fonscolombei* are known in the Iberian peninsula since the early surveys in the 19th century. To these, *Hemianax ephippiger*, *Diplacodes lefebvrei* and *Zygonyx torrida* were added in the first half of the 20th cent., while the African *Brachythemis leucosticta*, *Orthetrum trinacria*, *Sympetrum decoloratum* and *Trithemis annulata* were for the first time recorded in the region not until the second half of this century.

- (9440) NEL, A. & F. ESCUILLE, 1993. Découverte d'un nouveau genre de Sieblosiidae dans le Miocène supérieur de l'Ardèche (France) (Odonata, Zygoptera, Lestoidea, Sieblosiidae). *Nouv. Revue Ent.* (N.S.) 10(3): 233-242. (With Engl.s.). — (First Author: 8 av. Gassion, F-13600 La Ciotat).

Paraoligolestes miocenicus gen.n., sp.n. is described from the Upper Miocene of Montagne d'Andance. It appears to represent a sister group of *Stenolestes* Scudder + *Parastenolestes* Nel & Paicheler. It also shares several features with *Oligolestes* Schmidt. The type (IPM-R 103821) is in the MNHN, Paris.

- (9441) NEL, A. & J.-C. PAICHELER, 1993. Les Odonata fossiles: état actuel des connaissances. 7. Les Coenagrionidea (Odon., Zygoptera). *Ent. gall.* 4(2/3): 59-63. (With Engl.s.). — (First Author: 8 av. Gassion, F-13600 La Ciotat).

A commented checklist is given of the known fossil Coenagrionidae. Almost all the hitherto described taxa are incertae sedis. The family probably appeared during the Lower Jurassic, but it is with certainty evidenced since the Lower Cretaceous.

- (9442) *ODONATOLOGICAL LIBRARY NEWS*. Published by the Kansai Research Group of Odonatology, Osaka, No. 13 (Dec. 5, 1993). (Jap., with Engl. title). — (Distribution outside Japan: K. Inoue, 5-9 Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA). Lists 450 titles of papers, published in *Tombo*, vols 1(1958)-35(1992).

- (9443) OTT, J., 1993. Auswirkungen des Besatzes mit Graskarpfen auf die Libellenfauna einer Kiesgrube bei Ludwigshafen. *Artenschutz-report*

- 1993(3): 6-11. (With Engl.s.). — (L.A.U.B., Hölzengraben 2, D-67657 Kaiserslautern). The succession of the odon. community in a gravel pit nr Ludwigshafen, Germany, has been traced during 4 years after the introduction of grass carp. The original assemblage of 19 autochthonous spp. was reduced to 14 spp. in the first year, to 7 in the second year, and only *Ischnura elegans*, *Cercion lindenii* and *Orthetrum cancellatum* were still found breeding in the fourth year after fish introduction. — This is the best analysis of the phenomenon at a European locality.
- (9444) OTT, J., 1993. Die Libellenfauna des Stadtgebietes von Kaiserslautern: Ergebnisse einer Stadtbiotopkartierung und planerische Konsequenzen. *Fauna Flora Rheinland-Pfalz* 7: 103-146. (With Engl.s.). — (Hölzengraben 2, D-67657 Kaiserslautern). 42 spp. (of which 32 autochthonous) were evidenced from 73 aquatic localities in the city area of Kaiserslautern. Remarkable is the recent decrease in the number and strength of populations of *Coenagrion hastulatum* and *Aeshna juncea*, and the increasing abundance of *Crocothemis erythraea* and *Sympetrum fonscolombei*. Tentative suggestions relative to the landscape planning and habitat management are outlined.
- (9445) [OTT, J.] GdO, 1993. Libellenkundler tagten. *NatSchutz Landschaftsplanung* 25(6): 236. — (L.A.U.B., Hölzengraben 2, D-67657 Kaiserslautern). Text identic to that listed in OA 9312.
- (9446) POGGI, R., 1993. Felice Capra (1896-1991). *Annali Mus. civ. Stor. nat. Genova* 89: 571-608. (Ital.). — (Mus. civ. Stor. nat., Via Brigata Liguria 9, I-16121 Genova). The text is identic to that listed in OA 9160, but numerous phot. are different.
- (9447) RIEDEL, M., 1993. Beitrag zur Libellenfauna der Kleingewässer des NSG Fürstenkuhle im Kreise Borken (Nordrhein-Westfalen). *Metelen. Schr.Reihe NatSchutz* 4: 145-147. (With Engl.s.). — (Sophienstr. 17, D-48145 Münster). 19 spp. were evidenced at 5 ponds, Borken distr., Germany, and some management measures are suggested.
- (9448) SANDHU, R. & G.K. WALIA, 1993. Chromosome complements in six species of damselflies. *Chrom. Inf. Serv.* 54: 22-23. — (Dept Zool., Punjabi Univ., Patiala-147002, India). Chromosome numbers $2n \delta = 27 (m)$ are reported for *Pseudagrion hypermelas* (Meghalaya), *Aciagrion tillyardi* (Meghalaya & Assam), *A. hisopa* (Himachal Pradesh) and *Agriocnemis clauseni* (Meghalaya & Assam), and $2n \delta = 25 (m, XO)$ for *A. lacteola* (Assam) and *Enallagma malayanum* (Assam). — (*Abstracter's Note*: The quality of the published micrographs is inadequate for a reliable karyotype analysis. The chromosome number stated for *E. malayanum* deviates from that reported in a Nepalese population of this sp. [cf. OA 1003], but no comments are made).
- (9449) [SCHNEIDER, W.], 1993. Personalia. *Informat. hessisch. Landesmus. Darmstadt* 1993(2): 35. — (Abt. Zool., Hessisches Landesmus., Friedensplatz 1, D-64283 Darmstadt). Concise biographic data of Dr Wolfgang Schneider (born Aug. 10, 1953, Bad Kreuznach, Germany), Head of Zool. Dept, Hessisches Landesmus., Darmstadt. Currently he is one of the leading odon. taxonomists in continental Europe. — Cf. also OA 9476.
- (9450) (sda), 1993. Libellen und Fische zwischen N3-Brückenpfeilern. Aquatisches System unter N3-Brücke geflutet. Neuer Lebensraum für Wasserflora und -fauna bei Schinz nach Bad. *Badener Tagblatt*, issue of Dec. 18, pp. 3, 13. At the cost of 1 million CHF, a man-made aquatic system (500 x 100 m) was set up under/along the N3 super highway land-bridge at Badschachen nr Schinz nach Bad, canton Aargau, Switzerland. The system was flooded on Dec. 17, 1993, and left to natural colonisation and succession.
- (9451) S/OJA. [Information bulletin of the SIO Japan Branch Office], Osaka, 1993, No. 1 (Dec. 1, 1993). (Jap.). — (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA). On 4 pp., it contains a brief report on the 12th int. Symp. Odonatol., the main conclusions of the SIO 1993 Plenary Business Meeting (Osaka), and various management communications, a request and an announcement.

- (9452) STANIONYTE, A., 1993. The check-list of dragonflies (Odonata) of Lithuania. *New & rare Lithuan. Insect Species* 1993: 50-60. (With Lithuan. & Russ.s's). — (Inst. Ecol., Akademijos 2, LIT-2600 Vilnius, Lithuania).
A checklist of 59 spp., evidenced by the Author during 1958-1992, crossreferenced with the bibliography.
- (9453) STENGÅRD, E. & U. CARLBERG, 1993. *Environmental data standardization: European Odonata*. Nordic Code Centre & Swedish Mus. Nat. Hist., Stockholm. 84 pp. — ISSN 1103-7504. — (Available from: Document. Cent., Swed. Mus. Nat. Hist., P.O. Box 50007, S-10405 Stockholm).
This is a book ed. of the print-out from the Nordic Code Centre (NCC) biological species thesaurus, covering the odon. of Europe, North Africa and Asia Minor. It has been produced to help the researchers in their efforts to record data that will be understandable in the future, to exchange data between projects, and to facilitate computerized processing thereof.
- (9454) STERNBERG, K. 1993. Bedeutung der Temperatur für die (Hoch-) Moorbindung der Moorlibellen (Odonata, Anisoptera). *Mitt. dt. Ges. allg. angew. Ent.* 8(4/6): 521-527. (With Engl.s.). — (Schillerstr. 15, D-76297 Stutensee-Friedrichstal).
In most parts of central Europe, *Aeshna caerulea*, *A. juncea*, *A. subarctica elisabethae*, *Somachlora alpestris*, *S. arctica* and *Leucorrhinia dubia* are confined to oligotrophic (*Sphagnum*) bogs. This stenotopic feature is lacking in northern Europe and at the altitudes above ca 1100 m. These spp. require warm aquatic habitats for the larvae, and a cooler environment for the adults. The adults avoid the extreme temperatures in the bog (at noon or during night) by moving to the places where the temperature regime is more equalized. The ability of reversible colour change in *A. caerulea* and the permanently dull melanized colour in adults of the other bog-breeding spp. must be seen as a thermoregulatory adaptation to the cool conditions, and which has restricted their distribution to the cooler climates. — Cf. also OA 7688.
- (9455) TAYLOR, P.D. & G. MERRIAM, 1993. Differences in landscape structure and the nature of a damselfly-gregarine host-parasite relationship. *Bull. ecol. Soc. Am.* 74(Supl. 2): 452 (abstract only) — (Dept Biol., Carleton Univ., Ottawa, ON, K1S 5B6, CA).
[Verbatim]: Changes in landscape structure may alter the population biology of animals. Depending on the resource configuration in the altered landscape, some animals will move more to meet their resource needs. We are exploring how animals respond to altered landscapes by studying aspects of the population dynamics of *Calopteryx maculata* in forest and fragmented forest (pasture) habitats. We posed the question: Does the host-parasite relationship between *C. maculata* and a midgut gregarine differ between forested and pasture habitats? We compared counts of large and small gregarines in adults from forest and pasture streams at 3 sites. In forest habitats, incidence of parasitism was marginally higher (binomial model: large- $p=0.039$; small- $p=0.071$) and the level of parasitism was significantly higher (gamma model: large- $p<0.0001$; small- $p=0.0001$). In pasture, damselflies forage at forests about 500 m from the stream side and so move over a larger area than those in forest. Consequently, gregarine oocysts may be distributed (in fecal matter) over a larger area thus lowering encounter rates between host and parasite.
- (9456) TENNESSEN, K.J., 1993. New distribution records for *Ophiogomphus howei* (Odonata: Gomphidae). *Great Lakes Ent.* 26(3): 245-249. — (1949 Hickory Ave., Florence, AL 35630, USA).
The sp. is for the first time reported from Wisconsin, and new state records are presented for Kentucky, Maine and Minnesota, all USA. Larval habitats appear to be undisturbed rivers, 10-200 m wide, with sand and gravel substrates.
- (9457) TERZANI, F., 1993. Segnalazione di ibrido interspecifico di *Calopteryx* Leach, 1815, (Odonata, Calopterygidae). *Boll. Soc. ent. ital.* 125(2): 99-100. (With Engl.s.). — (Mus. zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).
A tentative hybrid between *C. haemorrhoidalis* and *C. virgo meridionalis* is described in terms of colour and size (Vincio, Pistoia, 21-VIII-

- 1991). The sex is not stated and no figs are given.
- (9458) THEISCHINGER, G., 1993. Two new species of *Austroaeschna* Selys from Queensland, Australia (Odonata: Aeschnidae: Brachytroninae). *Linz. biol. Beitr.* 25(2): 805-819. — (20 Leawarra St., Engadine, N.S.W. 2233, AU). Adults and last instar larvae are described and illustrated from the Eungella area in NE Queensland of *A. christine* sp.n. (holotype ♂: Dalrymple Rd nr Eungella, 3-IV-1993; ANIC Type No. 9795; most similar to *A. sigma* Theisch.) and *A. eungella* sp.n. (holotype ♂: same locality & date; ANIC Type No. 9796; closely resembles *A. pulchra* Till.).
- (9459) TOMBO. *ACTA ODONATOLOGICA*. Published by the Society of Odonatology, Tokyo, Vol. 36, Nos 1/4 & Annex (Dec. 25, 1993). — (c/o Dr S. Asahina, Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
Eda, S.: A male of *Oligoaeschna pryleri* making his territory (frontispiece col. phot., p. 1); — *Asahina, S.*: Further contributions to the odonate fauna of Thailand, based on the recent collection made by Bro. A. Pinratana and Mr Yunosuke Kimura (pp. 2-11); — Episodes relating *Rhipidolestes okinawanus* (pp. 11-12); — *Fukui, M.*: Record of the dragonflies taken in Siberia, part II (pp. 13-18); — Observations on the larval growth of *Libellula angelina* (p. 18); — *Matsuki, K. & K. Watanabe*: Description of the possible larva of *Chlorogomphus iriomotensis* Ishida (Cordulegastridae; Odonata) (pp. 19-22); — *Matsuki, K.*: Description of the larva of *Copera ciliata* (Selys, 1863) (Platycnemididae; Odonata) from Taiwan and Hong Kong (pp. 22-24); — Description of the larva of *Lyriothemis bivittata* (Rambur, 1842) from Thailand (*Libellulidae*; Odonata) (pp. 25-28); — *Ubukata, H.*: "International Symposium on the Conservation of Dragonflies and their Habitats" held on August 14, 1993 in Kushiro city (p. 28); — *Arai, Y.*: Life-history of *Stylogomphus suzukii* (Oguma) in Saitama prefecture (pp. 29-34); — *Watanabe, K.*: *Trithemis aurora* larvae brought to adult from a swimming pool (p. 34); — *Aoki, T.*: Larval development in *Asiagomphus pryleri* (Selys) in nature, I (pp. 35-38); — *Miyakawa, K.*: Observations on *Sympetrum frequens* (Selys) inhabiting forest canopies on lowland Sayama Hills during summer, IV: A case of unusually cool summer (pp. 39-40); — *Sasahara, S.*: *Rhyothemis severini* Ris on Amami-oshima Island: the discovery and probable colonization (pp. 41-43); — Two newly recorded dragonflies from the limits of Kagoshima prefecture (p. 44); — *Muraki, A.*: Record of three rare dragonfly species taken around Nishi-Funatsuki-Bashi area, Iriomote Island (pp. 44-45); — *Eda, S.*: A strange action of a male of *Anotogaster sieboldii*, resembling oviposition (p. 46); — *Asahina, S.*: A problematical bred batch of *Libellula angelina* (pp. 47-50); — Observations on two kinds of "Dragonfly Pond" in Shizuoka prefecture (pp. 50-53); — Prof. Dr Janny Margaretha Van Brink (1923-1993), in memoriam (p. 54); — *Inoue, K. & M. Aiura*: Distribution records of the dragonflies of Tsushima Island, Nagasaki prefecture, part 5 (pp. 55-57); — *Asahina, S.*: Twelfth S.I.O. Symposium, held at Osaka, Aug. 1-11, 1993 (p. 57); — *Eda, S.*: Annual meeting of the Society of Odonatology, 1993, held in Tokyo (pp. 58-59). — **A n n e x**: *Inoue, K.*: The Twelfth International Symposium of Odonatology held in Japan (pp. 1-12).
- (9460) TOŃCZYK, G., 1993. Zsynchronizowany wylot ważki *Coenagrion pulchellum* (Van. Lind.) (Odonata: Coenagrionidae). — Synchronized adult emergence of *Coenagrion pulchellum* (Van. Lind.) (Odonata: Coenagrionidae). *Przegl. zool.* 37(1/2): 81-86. (Pol., with Engl.s.). — (Inst. Invert. Zool. & Hydrobiol., Łódź Univ., ul. S. Banacha 12/16, PO-90237 Łódź).
 A synchronized adult emergence was evidenced in the vicinity of Kolo (Warta R. Valley, Poland; 22-V-1992). The data accumulated during a 4-day period enable an analysis of the phenomenon, which is shown in a tab. — In Poland, the sp. has a single annual generation. The number of emerging adults (34/m²) in relation to the number of actually laid eggs is estimated at "several" %.
- (9461) UEDA, T., 1993. Questions in the life history of *Sympetrum frequens*, pts 1 & 2. *Insectarium. Tokyo* 30(9): 292-299, (10): 346-355. (Jap., with Engl. title). — (Ishikawa Agric. Coll., Suematsu 1-chome, Nonoichi-machi, Ishikawa-gun, Ishikawa, 921, JA).

- This is a very detailed record of the discussions at the Symposium on *Sympetrum frequens* biology (Meijo Univ., Nagoya; March 14, 1993), with the keynote by Dr T. Ueda. — For pt 3 cf. OA 9462.
- (9462) UEDA, T. & N. ISHIZAWA, 1993. Questions in the life history of *Sympetrum frequens*, pt 3. *Insectarium, Tokyo* 30(11): 390-397. (Jap., with Engl. title). — (Second Author: 1644-15, Yamaguchi, Tokorozawa, Saitama pref., 359, JA). Cf. OA 9461.
- (9463) UTZERI, C. & M. COBOLLI, 1993. Ricerche zoologiche della nave oceanografica "Minerva" (C.N.R.) sulle isole circumsarde. XIV. Gli odonati delle isole circumsarde. *Annali Mus. civ. Stor. nat. "G. Doria"* 89: 457-476. (With Engl.s.). — *Dipto Biol. Anim. & Uomo*, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
24 spp. were collected in 26 Circumsardinian islands, Italy. The larger islands, with permanent water, probably support autochthonous populations of some spp., while the small islets, where there are no adequate breeding habitats, depend entirely on annual immigration from the mainland of Sardinia.
- (9464) UTZERI, C., & C. ERCOLI, 1993. Are dragonfly males (Odonata, Lestidae) able to assess population density? *Ethol. Ecol. & Evol.* 5: 418 [abstract only]. — (*Dipto Biol. Anim. & Uomo*, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
[Almost verbatim]: Following copulation, the males of several dragonfly spp. guard their females by keeping them "in tandem", thus preventing other males from mating with these females, which would cause loss of sperm precedence by the first male. The male guarding time varies greatly within the same sp., and in *Lestes barbarus* and *L. virens*, the earlier oviposition begins the longer guarding lasts. Further investigation has shown that in *L. virens* this correlation does exist at high, but not at low, male population density, suggesting that the male density at the reproductive site might influence the behaviour of the guarding male. The duration of the post-copulatory tandem was recorded in 24 *L. virens* pairs starting between 11 and 14 h. For each pair, disturbance by unpaired males, inferred by the wing warning or flight reactions of the disturbed males, was recorded. The males kept their females in tandem for a longer time if they experienced a more consistent presence of unpaired males at the reproductive site, and vice versa ($r = 0.88$; $p < 0.001$). Since on one hand the risk that the released females are taken over is greater when unpaired males are more numerous and on the other guarding causes loss of mating opportunities, time for feeding, etc., by this means males match their energy investment for guarding with the actual risk of losing sperm precedence. Also, since population density increases from 10 to 13-14 hr and then it decreases from 13-14 to 15, earlier tandems experience more disturbance, on average, than later ones, giving rise to the negative correlation of the tandem duration with its starting time. At low male density such a correlation does not exist, probably because the few males are unevenly distributed in the pond throughout the day.
- (9465) VAN VEEN, M. & R. KLEUKERS, 1993. Twentse heerlijkheden: insecten-weekeinde van 29 tot 30 augustus 1992. Odonata (libellen en waterjuffers). *Veelpoot* 4(1): 23, 29. (Dutch). — (First Author: Sumatrastraat 279, NL-1095 HR Amsterdam).
5 odon. spp. are recorded from 3 localities in Twente, the Netherlands.
- (9466) WALKERIA. *Newsletter of the Canadian National Office of the International Odonatological Society*, Vol. 8, No. 2 (Dec., 1993). — (c/o Ms N.L. House, 116 Irving Ave., Ottawa, Ont., K1Y 1Z4, CA).
Pilon, J.G.: Twelfth International Symposium of Odonatology — 12ième Symposium International d'Odonatologie (p. 1); — *Kiauta, B.*: Chililiwack (BC) dragonflies to receive attention (p. 2); — [*Kiauta, B. & M. Kiauta*]: Canadian dragonfly bibliography (pp. 2-4).
- (9467) [WATSON, J.A.L.], 1993. [Obituary notice]. *West Australian*, issue of Dec. 7, p. 56. — (c/o Mrs Barbara Watson, 47 Clianthus St., O'Connor, A.C.T. 2601, AU).
The family obituary notice for Dr John Anthony Linthorne Watson (born Sept. 20, 1935, Ned-

lands, W. Australia; deceased Dec. 4, 1993, Canberra, Australia), Chief Research Scientist with the CSIRO Division of Entomology (Canberra), the inaugural Ian Mackerras Medallist of the Australian Entomological Society, for excellence in entomology (1984), Member of Honour of the Societas Internationalis Odonatologica (elected 1989), Member of the SIO Council (since 1982), Member of the Editorial Boards of *Odonatologica* (since 1982) and *Advances in Odonatology* (since 1987), etc., etc. He was one of the greatest odonatologists of our times, author of some 60 odonatological publications, and stood at the cradle of the international organisation of odonatologists, at the First Purdue colloquium in 1963.

- (9468) WILDERMUTH, H., 1993. *Libellen der Stillgewässer als Indikatoren für die Möglichkeiten und Grenzen bei der Schaffung und Pflege von Feuchtstandorten*. Tag. ökol. Verb. Schweiz (Bioindikation mit Wirbellosen in Umweltverträglichkeitsprüfungen und ökologischen Expertisen, Neuchâtel [Mitt. 10], 6 pp. – (Langenrainstr. 5, CH-8340 Hinwil).
A concise analysis of various types of man-made habitats in terms of the odon. fauna they support. A tab., listing 48 spp. and their habitat requirements in Switzerland is appended.

1994

- (9469) ASHTON WATER DRAGONFLY SANCTUARY, [Publ.], 1994. [*Dragonfly calendar 1994*]. Ashton Wold, Ashton nr Oundle, Peterborough. – (c/o Mr R. Mackenzie Dodds, 62 Holland Park, London, W11 3SJ, UK).
As described in *OA* 8985. All photographs are by R. Mackenzie Dodds.
- (9470) BERNARD, R. & J. SAMOLAG, 1994. *Aeshna affinis* (Vander Linden, 1820) in Poland (Odonata: Aeshnidae). *Opusc. zool. flumin.* 117: 1-7. – (First Author: Dept Gen. Zool., Mickiewicz Univ., Fredry 10, PO-61-701 Poznań).
A new locality is reported from the northern limit of the sp. range, in the Wielkopolsko-Kujawska Lowland (25 km W of Poznań; July 1992). Literature and museum data on the distribution in Poland are summarized and analysed. It is suggested that summer climatic conditions

influence its range, and the nature of the occurrence of the sp. in Poland is briefly discussed. Some information on the habitats at Polish localities is given. It is emphasized, *A. affinis* is often associated with temporary lentic habitats.

- (9471) JOHNSON, D.M. & [endorsing postscript] P.S. CORBET & G. PRITCHARD, 1994. *To readers of Selysia: reasons for resigning*. Personal circular to the SIO membership, 1 p. – (c/o D.M. Johnson, Dept Biol. Sci., East Tennessee St. Univ., Box 70703, Johnson City, TN 37614-0703, USA).
A highly critical personal view re some aspects of Dr B. Kiauta's management of the SIO. – The next issue of the newsletter, *Selysia*, will be produced by Dr M.J. Westfall (Int. Odon. Res. Inst, P.O. Box 147100, Gainesville, FL 32614-2100, USA).
- (9472) KINGSOLVER, J.G. & M.A.R. KOEHL, 1994. Selective factors in the evolution of insect wings. *A. Rev. Ent.* 39: 425-451. – (First Author: Dept Zool., NJ-15, Univ. Washington, Seattle, WA 98195, USA).
A range of possible morphologies that seem consistent with the available evidence is described, and a variety of plausible functions is explored in terms of the possibility, the small changes in wing morphology could result in functional changes.
- (9473) *LINDENIA*. *Notiziario dell'Ufficio nazionale italiano della Società odonatologica internazionale*, Roma, No. 21 (Jan. 1, 1994). – (c/o Prof. Dr C. Utzeri, Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
In addition to various personal news, management and other announcements, the following are the notes of major interest: [Ottolenghi, C. & C. Utzeri]: *Chalcolestes viridis parvidens* oppure *Chalcolestes parvidens*? (pp. 95-96); – [Utzeri, C.]: *Archivio Hemianax* (p. 96); – [Ottolenghi, C. & C. Utzeri]: *Battezzare le libellule italiane?* (pp. 96-97); – [Busetto, A. & C. Utzeri]: *Per migliorare Lindenia* (p. 97); – [Utzeri, C.]: *Bibliografia* (p. 98).
- (9474) MOORE, N.W., [Ed.], 1994. Report of the 8th Meeting of the I.U.C.N. Odonata Specialist

- Group. *Rep. Odon. Specialist Group Int. Un. Conserv. Nat.* 10: 1-25. — (Copies available at NLG 20.- net, from SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven).
 Contains fairly detailed outlines of the regional problematics in odon. conservation, etc., by the following workers: *Watson, J.A.L.*: Australia and Pacific (pp. 2-4); — *Machado, A.B.M.*: Brazil (pp. 5-6); — *Paulson, D.*: Central and South America (less Brazil) (pp. 6-8); — *Asahina, S.*: Japan (pp. 9-12); — *Hämäläinen, M.*: Thailand and Philippines (pp. 12-19); — *Dunkle, S.*: North America (pp. 19-20); — *Samways, M.J.*: South Africa (pp. 20-22). — Further there is a list of the revisions to the *Red List of Threatened Animals*, as approved for submission to IUCN (pp. 23-25). — Brief notes on "Collecting in protected areas" (p. 25) and on "Damage by boats" (p. 25) conclude the exhaustive report of this Meeting, held on 1 August 1993 at Osaka, Japan; chaired by N.W. Moore, and attended by Standing Members: S. Asahina, S.W. Dunkle, B. Kiauta, M.J. Samways, E.G. Schmidt and J.A.L. Watson, and by the following other odonatologists: S. Chowdhury (Bangladesh), P.S. Corbet and D. Thompson (United Kingdom), M. Hartung, J. Lempert, H. Lohmann, A. Martens, J. Ott, W. Piper and F. Suhling (Germany), K. Inoue (Japan), G. Sahlen (Sweden), B. Samraoui (Algeria), J. van Tol (Netherlands), and Mrs M. Kiauta (SIO Central Office).
- (9475) RETTIG, K., 1994. Neues aus der Insektenwelt Ostfrieslands. *Beitr. Vögel- Insektenwelt Ostfrieslands* 70: 10-12. — (Danziger Str. 11, D-26725 Emden).
 Contains a reference to the photographs of 2 odon. spp. as recorded previously in the paper listed in OA 8742.
- (9476) [SCHNEIDER, W.] WANNEMACHER, A. & C. VÖLKER, 1994. Schlangen in Alkohol: wie bei Dr Jekyll und Mr. Hyde. *Darmstädter Echo*, issue of Jan. 3, p. 9. — (Abt. Zool., Hessisches Landesmus., Friedensplatz 1, D-64283 Darmstadt).
 Based on an interview, this is an exhaustive local daily's article on the work of Dr Wolfgang Schneider, with a portrait. — Cf. also OA 9449.
- (9477) SHALAWAY, S., 1994. Dragonfly swarms stump experts. *Newsl. ent. Soc. Pennsylvania* 28(1): 2-3. — (Rd 5, Cameron, WV, USA).
 This is a transcript of an article, published originally in the *Sunday Patriot-News*, Harrisburg/PA, issue of Oct. 3, 1993. It reports on "swarms of dragonflies" and "clouds of dragonflies that darkened the sky", in Aug. 1993, in Pennsylvania, northern West Virginia and NE Ohio. Also "sedentary swarms" are reported, but no species names are given.
- (9478) THIELE, V., A. BERLIN, U. THAMM, D. MEHL & W. ROLLWITZ, 1994. Die Bedeutung ausgewählter Insektengruppen für die ökologische Bewertung von nordostdeutschen Fließgewässern und deren Niederungsbereichen (Lepidoptera, Odonata, Trichoptera). *Nachr. ent. Ver. Apollo* (N.F.) 14(4): 385-406. (With Engl.s.). — (First Author: Projektbüro "Warnowsanierung", Landesamt f. Umweltschutz u. Natur, Boldeucker Weg 3, D-18276 Gülzow).
 On the basis of the assemblages of up to 22 odon. spp., the habitat quality is assessed at 6 localities along the Nebel R., Mecklenburg-Vorpommern, Germany.

ERRATUM & ADDENDUM

SAMWAYS, M.J., G. CARCHINI & M. DI DOMENICO, 1993. The last instar larvae of the southern African endemics *Aeshna minuscula* McLachlan, 1896 and *A. subpupillata* McLachlan, 1896 (Anisoptera: Aeshnidae). *Odonatologica* 22(1): 83-88.

The erroneously printed text:

p. 85, line 26:

"... segments of the ♂ ..."

p. 86, line 13:

"... the epiproct (Fig. 9) ."

p. 87, lines 2 and 3:

"... segments of the ♂ ..."

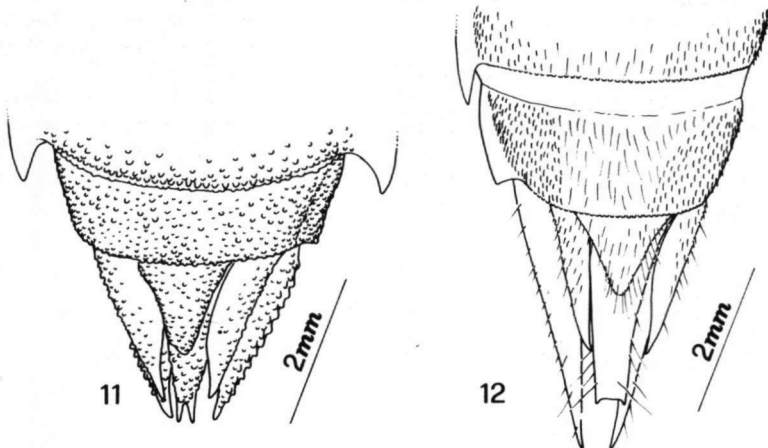
Should read:

"... segments of the ♀ ..."

"... the epiproct."

"... segments of the ♀ ..."

Figures 11 and 12 should be added:



Figs 11-12. Male terminal abdominal segments, dorsal view: (11) *Aeshna subpupillata*; – (12) *A. minuscula*.