ODONATOLOGICAL ABSTRACTS

1975

(10046) KRÜGER, B., 1975. *Libellenfauna von Dänemark.* PrüfungsArb. Lehramt Grund- Hauptschulen, Pädag. Hochschule Flensburg, 181 pp. – (c/o Prof. Dr E. Schmidt, Biol. Didaktik, FB-9, Univ. Essen, Postfach 103764, D-45117 Essen).
This is a commented UTM grid distribution atlas of the odon. fauna of Denmark (52 spp.), based on a very careful literature research and on numerous unpublished data, listing in detail all to the author known localities for each sp. The Bibliography contains several hitherto little known Danish works.

1984

(10047) WILLIAMS, W.D., 1984. Chemical and biological features of salt lakes on the Eyre Peninsula, South Australia, and an explanation of regional differences in the fauna of Australian salt lakes. *Verh. int. Ver. Limnol.* 22(2): 1208-1215. – (Dept Zool., Univ. Adelaide, North Terrace, Adelaide, S.A. 5000, AU).
15 lakes are considered, but the odon. are (suborder-wise) reported from Middle Lake (salinity 26.7‰) only.

1990

(10048) FOIDL, J., 1990. *Untersuchungen zum Larvenbiotop von Gomphus vulgatissimus Linne, 1758 (Gemeine Keiljungfer).* DiplArb. Univ. Freiburg/Br. viii+149 pp. – (Todtmooserstr. 22, D-79837 St. Blasien).
The abiotic and biotic parameters of 4 ecologically different breeding habitats are described and thoroughly analysed. Larval biology and behaviour are dealt with in detail, and information is provided on emergence and on various features of adult habitat selection and behaviour. – The amount of fresh information presented in this work is moderate, but some of the circumstantial evidence it contains is of interest. – For other details cf. *OA* 9266.

(10049) MAY-LAZARUS, S., 1990. Erfassung der Libellenfauna in Erlangen. *Beitr. NatSchutz Landschaftspfl. Erlangen* 1990(8): iv+38 pp. – (Regensburger Str. 94a, D-92318 Neumarkt).
A commented list of 33 spp., evidenced (1989) within the city of Erlangen, Germany. The local status of each sp. is assessed and management measures for some habitats are suggested.

1991

(10050) ARTMANN-GRAF, G., 1991. Tiere und Pflanzen der Kiesgrube Gunzger Allmend, Kanton Solothurn. *Mitt. naturf. Ges. Solothurn* 35: 115-139. – (Author's address not stated).
From a gravel pit in canton Solothurn, Switzerland, 23 spp., recorded during 1981-1990, are listed; the status of 11 of them is briefly discussed. The occurrence of Coenagrion lindenii and Gomphus vulgatissimus is of some national interest.

(10051) BURKHARD, R., E. MIRBACH, M. SCHORR, J. LÜTTMANN, R. RUDOLF, M. SMOLIS & K. MINHORST, 1991. *Planung vernetzter Biotopsysteme: Beispiel Landkreis Alten-kirchen.* Minister. Umwelt Rheinland-Pfalz, Mainz. iv+202 pp., fold. maps excl. → (Third Author: Wald-frieden 25, D-54314 Zerf. – Available free from: Landesamt für Umweltschutz, Amtsgerichtsplatz 1, D(W)-6504 Oppenheim).
This is a comprehensive attempt towards the appli-

cation of species and habitat conservation principle for the objectives of regional and landscape planning, examplified by the conditions in a Rhineland-Palatinate district, Germany. A considerable emphasis is given to the odon., which are suggested as "monitoring organisms", i.e. to serve as a reference in the feasibility assessment of the landscape-planning objectives.

1993

(10052) ARAI, Y., 1993. [Late seasonal data for some dragonfly species]. *Nature & Insects* 28(13): 24. (Jap., with Jap. nomenclature). – (1233-2 Sueno, Yorii-machi, Oosato-gun, Saitama, 369-12, JA).
Adult records: Mnais costalis & Nihonogomphus viridis (7-VIII-1993) – late emergence: Sympetrum darwinianum & S.r.risi (24-IX-1993).

(10053) ESQUIVEL, C., 1993. Psaironeura selvatica sp.nov. (Odonata: Protoneuridae), a new damselfly from [Costa Rica] [sic!]. *Revta Biol. trop.* 41(3): 703-707. (Wish Span.s.). – (Escuela Cien. Biol., Univ. Nacional, Heredia, Costa Rica).
The new sp. is described, illustrated, compared with P. remissa, and some field notes on its habitat, adult phenology and behaviour are provided. Holotype ♂, allotype ♀: Heredia prov., Sarapiqui, Puerto Viejo, La Selva Biol. Stn, 22-XI-1988 & 24-II-1988, resp.; deposited at Natn. Inst. Biodiv., Costa Rica.

(10054) HUTCHINSON, G.E., 1993. *A treatise on limnology*. Vol. 4. *The zoobenthos*. Wiley, New York-Chichester-Brisbane-Toronto-Singapore. xx+944 pp., col. frontispiece. – ISBN O-741-54294-6. – (Orders accepted by the Editors of Odonatologica; price ca NLG 490.- net).
This final volume of this extraordinary work represents a comprehensive examination of freshwater benthic animals from an ecological perspective. More than simply a strict factual account of benthic phenomena, the book offers a rich forum of diverse ideas, testable hypotheses, and a useful synthesis that places the material in the larger context of ecological theory. The odon. larvae are dealt with on pp. 402-546 (cumulative bibliography pp. 811-894), representing by far the best review and synthesis ever written on the odon. immature stages, comparable, to some extent, with the classical general works of R.J. Tillyard (1917) and P.S. Corbet (1962). The volume was published posthumously, which probably explains the minor (editorial) shortcomings/inconsequency in the subtitle structuring of various sections. In all, 11 "chapters" (with numerous titled sections) are indicated as follows: "*Terrestrial odonatan nymphs*", – "*Life history*" (Oviposition and the egg, Time of hatching, hatching period and egg diapause, Hatching and the pronymph, Number of instars, Growth coefficient: the Brooks-Dyar ratio, Nymphal life span, Seasonality and synchronization, Effect of photoperiod), – "*Life forms*" (The zygopteran nymph, The anisopteran nymph, Burrowers, Sprawlers, Climbers, Spination and avoidance of predators, Possible environmental control of form, Pritykina's morphoecological classification of life forms in the Odonata, Coloration); – "*Nutrition*" (Dynamics of feeding, Size and availability of food, Experimental studies of the prey-predator system, Role of special senses in feeding, Feeding in nature, Wastefull killing in odonatan nymphs, Odonatan nymphs and comparable animals as possible agents of natural selection); – "*Respiration*" (Respiration in the Zygoptera, Caudal lamellae as respiratory organs, Possible rectal respiration in Zygoptera, Abdominal pseudopodia, Respiration in Anisoptera, Respiratory rates and acclimation to temperature, Effect of illumination and darkness on respiration, Relation of respiration to oxygen concentration); – "*Survivorship curves, mortality and productivity*"; – "*Territoriality in the nymphs of Odonata*"; – "*Metamorphosis and emergence*" (Stages in metamorphosis, Behavior of metamorphosing nymphs in relation to their environments, Predation, selection and other aspects of the diurnal rhythm of emergence); – "*Adult behavior relating to the limnological significance of the Odonata*"; – "*Chemical ecology*"; – "*Distribution of Odonata as nymphs within lakes and the nature of their interspecific actions*" (Depth limitation, Odonata in large lakes and ecological succession, Niche separation by season and habitat in small lakes, Analysis of co-occurrence, mainly of Anisoptera in North American localities, Co-occurrence of species of Zygoptera, mainly in European waters, Invasion by species hitherto unknown in a habitat, General considerations on coexistence in the Odonata, Odonata in Nestler's morphometric niche space). – The book is an absolute "must" in every serious odonatological library, oriented towards biology, ecology and conservation.

(10055) KANO, K. & H. KITA, 1993. Adaptation of Gynacantha japonica to the rice fields. *Gekkan-Mushi* 274: 19-21. (Jap., with taxonomic nomenclature). –

(First Author: 5-19-17-601 Koishikawa, Bunkyo-ku, Tokyo, 112, JA).
Several of its habitats in Kanto distr., central Japan, are reported, and the occurrence of the sp. in paddy fields is discussed from the point of view of its life history.

(10056) LAMPEN, H.-P. & E. GOTTSCHALK, 1993. Zur Libellenfauna des Naturparks Nossentiner-/ Schwinzer Heide, *NatSchutzArb. Mecklenburg-Vorpommern* 36(1): 20-24. – (First Author: Zassiusstr. 43, D(W)-7800 Freiburg/Br.).
35 spp. are listed and the fauna is briefly discussed; Mecklenburg, Germany.

(10057) MÜLLER, J. & J. BUSCHENDORF, 1993. Rote Liste der Libellen des Landes Sachsen-Anhalt. *Ber. Landesamt. Umweltschutz Sachsen-Anhalt* 1993 (9): 13-16. – (First Author: Pablo-Neruda-Str. 9, D--39126 Magdeburg).
The Sachsen-Anhalt (E Germany) odon. Red List contains 37 spp., listed in 4 categories. Some suggestions on protective measures for various types of habitats are also provided. Most of these are of more than regional interest.

(10058) MURAKI, A., 1993. [Notes on the migrations in Sympetrum cordulegaster and S. depressiusculum]. *Gekkan-Mushi* 272: 17-24. (Jap., with taxonomic nomenclature). – (4-2-309, Shigino-nishi 3-chome, Joto-ku, Osaka, 536, JA).
The 2 spp. are seasonal migrants, from China to Japan. The 1991 data are reviewed, and detailed information on their geographical distribution and habitats is presented. Also included are observations on their ecology and behaviour.

(10059) NARDI, G., 1993. Note preliminari sull'entomofauna acquatica dei monti Lepini (Lazio) (Ephemeroptera, Odonata, Plecoptera, Heteroptera, Coleoptera, Diptera, Trichoptera). *Quad. Mus. Stor. nat. Patricia* 4: 7-91. (With Engl.s.). – (Via G. Galilei 12, I-04012 Latina LT).
This is a comprehensive, mostly literature-based review. For each order, the generalities and a commented species list are given. The odon. are represented by 19 spp., from 2 localities.

(10060) SINSBECK, D., 1993. *Die Odonatenfauna des Küstenbereiches des westlichen Nestos-Deltas, Nordost-Griechenland.* Sinsbeck, Münster. 27 pp. (With Engl.s.). – (Grotemeyerstr. 9, D-48159 Münster).
Almost identic to the paper listed in *OA* 9956.

(10061) TIMMS, B.V., 1993. Saline lakes of the Paroo, inland New South Wales, Australia. *Hydrobiologia* 267 (Saline Lakes 5): 269-289. – (Dept Geogr., Univ. Newcastle, Newcastle, NSW 2308, AU).
25 semi-desert lakes were studied regularly for 27 months. 6 odon. spp. were recorded, and are listed here along with the resp. salinity tolerance data. Austrolestes annulosus was most frequently encountered, it had an upper salinity of 37.5 g/l^{-1}, which is the maximum recorded for a dragonfly. Orthetrum caledonicum (24.6 g/l^{-1}), Diplacodes bipunctata (22.7) and Hemianax papuensis (8.2) also entered hyposaline waters, but to a lesser extent. The remaining 2 spp. are D. haematodes (1.9) and Xanthagrion erythroneurum (0.5).

(10062) TOKOSHI, M., 1993. On the evolution of commensalism in the Chironomidae. *Freshw. Biol.* 29: 481-489. – (Dept Zool., Trinity Coll., Dublin, Eire).
Includes a list of all reported cases. For the odon. cf. *OA* 7644 and T.R. White & R.C. Fox, 1979, *Notul. odonatol.* 1: 76-77.

(10063) YAMAMOTO, Y., 1993. [Dragonflies of the small ponds on the Hidagawa River valley slopes]. *Gekkan-Mushi* 270: 19-22. (Jap., with taxonomic nomenclature). – (Inafune-biru, 1-2, Inafune-dori, Chikusa-ku, Nagoya, 464, JA).
An annotated list of 32 spp., most of which seem "conservative in the extension of their distribution". The peculiar morphology and origin of the ponds are briefly outlined; Gifu pref., central Honshu.

(10064) ZHOU, W., 1993. [On the discovery of two fossil insects from China (Odonata, Coleoptera)]. *Investigatio et Studium Naturae* 13: 116-118. (Chin.). – (Dept Ent., Zhejiang Mus. Nat. Hist., Gu-shan, Hang Zhou-310012, P.R. China).
Sogdophlebia xinjiangica sp.n. (holotype: Lower Jurassic of Kelamayi, Xinjiang, China) is described, illustrated and compared with S. singularis Pritykina.

1994

(10065) ALONSO-MEJIA, A. & M. MARQUEZ, 1994. Dragonfly predation on butterflies in a tropical dry forest. *Biotropica* 26(3): 341-344. – (c/o Dept Zool.,

Univ. Florida, Gainesville, FL 32611, USA).
At Palo Verde National Park, Costa Rica, Lepthemis vesiculosa feeds upon a great variety of diurnal lepidopteran spp. A list of these is presented, various details are described, and some general aspects of the odon./lepidopt. trophic relationships are pointed out.

(10066) BARTHEL, H.P., 1994. Bemerkenswerte Beobachtungen: – Wegzug 1994. *Limicola* 8(6): 319-330. – (Über dem Salzgraben 11, D-37574 Einbeck).
Aeshna affinis is recorded from the Elbe Valley, Brandenburg (various, but not named localities, incl. oviposition; July 1994), Germany.

(10067) BESCHOVSKI, V.L, 1994. Comparative zoogeographical review of Odonata fauna of Bulgaria (Insecta, Odonata). *Acta zool. bulg.* 47: 3-15. (With Bulg.s.). – (Inst. Zool., Bulg. Acad. Sci., Blvd Tzar Osvoboditel 1, BG-1000 Sofia).
The biogeographic character of 102 of the regional spp. and sspp. is assessed, and the composition of the resp. faunae of Bulgaria, Greece and Romania is analyzed. The available faunistic literature is but partly considered.

(10068) BLADES, D.C.A. & S.A. MARSHALL, 1994. Terrestrial arthropods of Canadian peatlands: synopsis of pan trap collections at four southern Ontario peatlands. *Mem. ent. Soc. Can.* 169: 221-284. (With Fr.s.). – (Dept Envir. Biol., Univ. Guelph, Guelph, ON, N1G 2W1, CA).
15 odon. spp. are listed from 3 bogs and 1 fen.

(10069) BOTH C. & W. SCHUURMAN, 1994. Over de problemen van een beekjuffer. – [On the problems of a Banded Demoiselle]. *Amoeba, Arnhem* 68(5): 14-17. (Dutch). – (First Author: Droevendaalse steeg 57, NL-6708 PB Wageningen).
Some observations on territorial and sexual behaviour of Calopteryx splendens (Dinkel R. nr Beuningen, Twente prov., the Netherlands) and C. virgo (the same locality and the Wark Valley nr Ettelbruck, Luxembourg).

(10070) BRIDGES, C.A., 1994. *Catalogue of the family-group, genus-group and species-group names of the Odonata of the world*, 3rd ed. Charles A. Bridges, Urbana, IL. xlvi+910 pp., col. frontispiece, hardcover (22x28,5 cm). Published 31 Dec. 1994; Author & Publisher deceased 21 Jan. 1995. – (Order can be sent to SIO Central Office, Bilthoven, Holland; – price: NLG 350.- net approx.).
For the previous editions, published on resp., 15 June 1991 and 1 Feb. 1993, cf. *OA* 7953 and 8988. This is a greatly enlarged, revised and, basically, up to Dec. 1994 updated final ed. It also includes 824 venation figs, covering a large number of genera. – [Author's abstract]: Notes on the names of the Odonata, including the related fossil forms, are arranged in a twelve-part catalogue. Part I is an alphabetical list of the Type-Genera of the Family-Group names. Part II is a synonymic list of the Family-Group names. Part III is an alphabetical list of the Genus-Group names, including data on authorship, place of publication, type-species, method of type-species designation and position in the classification. Part IV is a synonymic list of the Genus-Group names. Part V is an index to the authors and bibliography of the Genus-Group names. Part VI is an alphabetical index to the Type-Species of the Genus-Group names. Part VII is an alphabetical list of the Species-Group names, including data on authorship, place of publication, type locality, location of type specimens and classification. Part VIII is a synonymic list of the Species-Group names. Part IX is an index to the authors and bibliography of the Species-Group names. Part X is the bibliography, including information on the author's place and date of birth and death, and on the whereabouts of their collections. Part XI is an index to the bibliography by journal title, including the full titles of the journals and serials, and information on their places and dates of publication. Part XII is an index to the bibliography by year of publication. Appendix I is a list of Genus-Group names that need work. Appendix II is a list of Species-Group names that need work. Appendix III is a list of Bibliography citations that need work. – The arrangement of the names is based entirely on bibliographic references. No specimens have been examined, and no new names are introduced. – (*Abstracter's Note*: Author's personal dedication copy for the Ed. of *Odonatologica* was still mailed by himself, 3 days prior to his unfortunate death, on 17 Jan. 1995. For a brief obituary cf. *OA* 10147).

(10071) BUCZYNSKI, P., 1994. Nowe stanowiska rzadkich gatunków ważek (Odonata) ze wschodniej Polski. – New records of rare dragonflies (Odonata) from eastern Poland. *Wiad entomol.* 13(2): 129-130. (Pol., with Engl. title). – (Author's address not stated).
An annotated list of 9 spp.

(10072) CANNINGS, S.G. & R.A. CANNINGS, 1994. The Odonata of the northern Cordilleran peatlands of North America. *Mem. ent. Soc. Can.* 169: 89-110 (With Fr.s.). – (First Author: B.C. Conserv. Data Centre, 780 Blanshard St., Victoria, BC, V8V 1X4, CA).
The peatlands of the northern Cordillera of N America (consisting of the mountain ranges and intermontane lowlands and plateaus of British Columbia, Alberta, the Northwest Territories, the Yukon, and Alaska) support a distinctive odon. fauna. 40 spp. in 6 fam. and 12 gen. are typical of northwestern peatlands and another 12 spp. are occasional inhabitants of these environments. Of the 40 spp., 8 (20%) are peatland obligates and 4 (10%) almost always occur in such habitats. The remaining 28 (70%) are generalists and live in a wide range of aquatic habitats; nevertheless, they often are common inhabitants of, or are even dominant in, peatland environments. The fauna is dominated by the genera Aeshna and Somatochlora, with 11 and 10 spp., respectively. It is also dominated by spp. restricted to Boreal regions (25 spp., 62.5%), 6 (15%) of which have Holarctic distributions. The remainder of the fauna consists of 8 spp. (20%) ranging transcontinentally in Transition Zone forests S of the Boreal Forest, 5 (12.5%) restricted to the Cordillera, and 2 (5%) with wide distributions in N America. Notes and maps summarize our knowledge of biogeographical information and previously unpublished records are listed. Significant southerly range extensions for spp. such as Coenagrion interrogatum, Aeshna septentrionalis, A. sitchensis, A. subarctica, Somatochlora septentrionalis and Leucorrhinia patricia are reported. Ecological and natural history data are outlined for each sp. There do not appear to be any clear differences between the faunas of bogs and fens; dragonflies seem to respond to the habitat's form and structure rather than to its acidity or nutrient levels. Distinctive species associations result. A better understanding of the preferences of these dragonflies for different peatland microhabitats must await detailed research on oviposition behaviour and larval ecology.

(10073) CARFÌ, S. & M. D'ANDREA, 1994. Contribution to the knowledge of odonatological fauna in Sierra Leone, West Africa. *Quad. Accad. naz. Lincei* 267: 111-191. (With It.s.). – (Dipto Biol. Anim. & Genet., Univ. Firenze, Via Romana 17, I-50125 Firenze).
This is a monographic review, incl. 34 spp. which are for the first time reported from Sierra Leone, bringing the status of the national fauna up to 140 spp. Chlorocnemis nubilipennis Karsch, 1893 is synonymised with C. flavipennis Sel., 1863. Aciagrion walteri sp.n. (holotype ♂: Western Area, Regent, alt. ca 200-250 m, 20-II-1994; deposited at MZUF, No. 3287) is described and illustrated.

(10074) COBOLLI, M., C. UTZERI, E. DE MATTHAEIS & L. DELL'ANNA, 1994. Note preliminari sullo status tassonomico e la corologia italiana di Chalcolestes parvidens (st.nov.) (Odonata: Lestidae). *Atti 17 Congr. naz. ital. Ent., Udine*, pp. 77-82. (With Engl.s.). – (Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma).
C. parvidens and C. viridis are syntopic in at least 3 ponds in Castel Porciano, Rome, where they keep separated by different activity times. The electrophoretic examination of 13 enzymatic proteins brought to light 8 diagnostic loci, supporting the separation of the 2 taxa at a species level.

(10075) D'ANDREA, M., 1994. Segnalazioni faunistiche italiane. 247. Oxygastra curtisii (Dale, 1834) (Odonata: Corduliidae). *Boll. Soc. ent. ital.* 126(1): 76. – (Mus. zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).
First record from Umbria, central Italy.

(10076) D'ANTONIO, C., 1994. Gli odonati della Basilicata (Odonata). *Boll. Soc. ent. ital.* 126(2): 121--133. (With Engl.s.). – (Via A. Falcone 386/B, I-80127 Napoli).
A checklist of all the known records from the Basilicata region, S Italy (47 spp.). Chalcolestes viridis, Boyeria irene and Aeshna mixta are new for the regional fauna.

(10077) D'ANTONIO, C., 1994. Segnalazioni faunistiche italiane. 243. Aeshna affinis (Vander Linden, 1820) (Odonata, Aeshnidae). *Boll. Soc. ent. ital.* 126(1): 75. – (Via A. Falcone 386/b, I-80127 Napoli).
Second record for Calabria, S Italy.

(10078) D'ANTONIO, C., 1994. Segnalazioni faunistiche italiane. 244. Anax parthenope Selys, 1839 (Odonata, Aeshnidae). *Boll. Soc. ent. ital.* 126(1): 75. – (Via A. Falcone 386/b, I-80127 Napoli).
Second record for Calabria, S Italy.

(10079) D'ANTONIO, C., 1994. Segnalazioni faunistiche italiane. 245. Onychogomphus uncatus (Charpentier, 1840). (Odonata, Gomphidae). *Boll. Soc. ent. ital.* 126(1): 75-76. – (Via A. Falcone 386/b, I-80127 Napoli).
Second record for Calabria, S Italy.

(10080) D'ANTONIO, C., 1994. Segnalazioni faunistiche italiane. 246. Thecagaster bidentata bidentata (Selys, 1843). (Odonata, Cordulegastridae). *Boll. Soc. ent. ital.* 126(1): 76. – (Via A. Falcone 386/b, I-80127 Napoli).
First record for Calabria, S Italy.

(10081) DAVID, S., 1994. Neobvyklé koplační spojení u vážky Lestes sponsa (Hansemann, 1823) (Zygoptera: Lestidae). – Unusual copulation between dragonflies Lestes sponsa (Hansemann, 1823) (Zygoptera: Lestidae). *Acta Musei tekovensis* 2: 95-98. (Slovak, with Engl.s.). – (Tekovské Muz., P.O. Box 69, SLK-93469 Levice).
A description of a ♂-♀-♂ triple connection.

(10082) DAVID, S., 1994. Nové nálezy vzácných a ohrožených druhu vážek (Insecta: Odonata) jihozápadního Slovenska. – New discoveries of rare and endangered species of dragon-fly (Insecta: Odonata) in south-western Slovakia. *Acta Musei tekovensis* 2: 81-90. (Slovak, with Engl.s.). – (Tekovské Muz., P.O. Box 69, SLK-93469 Levice).
Annotations on 12 spp.

(10083) DE MARMELS, J., 1994. A new genus of Aeshnini (Odonata: Aeshnidae) from the Andes, with description of a new species. *Ent. scand.* 25(4): 427-438. – (Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Aptdo 4579, Maracay 2101-A, Venezuela).
Andaeschna gen.n. is established for 3 neotropical spp., currently assigned in Aeshna (Aeshna s.str.) Fabr.: Andaeschna unicolor (Martin, 1908. A. rufipes (Ris, 1918) and A. andresi (Racenis, 1958) (= type sp.). A fourth sp., A. timotocuica sp.n. (holotype ♂, reared: Venezuela, Parque Nac. Guaramacal, alt. ca 1300 m, 4-IV-1993; deposited at MIZA) is described. The ♂ lectotype of A. unicolor is redescribed. Andaeschna shares some peculiar character states with the Old World species 'Anaciaeschna' isoceles (Müller, 1767), but a close phylogenetic relationship between the two can not be demonstrated convincingly, and the true generic affiliation of the latter is unknown.

(10084) DIDION, A. & J. GERSTNER, 1994. Aufruf zur Mitarbeit bei der Libellenkartierung im Saarland. *Faun.-flor. Notiz. Saarland* 26(2): 345. – (First Author: Marienstr. 1, D-66424 Homburg-Schwarzenacker).
A call for collaborators in the odon. mapping scheme of Saarland, Germany.

(10085) DOMMANGET, J.-L. & J.-P. THAUVIN, 1994. Compte rendu du voyage en Brenne (Indre) du 21 au 23 mai 1994. *Bull. Naturalistes Yvelines* 21(3): 58-61. – (First Author: 7 rue Lamartine, F-78390 Bois-d'Arcy).
Contains odon. records from the Pinail Nature Reserve (Vienne) and from the marsh of Purais (Lingé); France.

(10086) *FRASERIA* (New Series). *South Asian Bulletin of Odonatology*, [SIO], Vol. 1, No. 2 (dated Dec. 1, 1994; mailed March, 1995). – (Order addresses as specified in *OA* 9853).
[*Tembhare, D.B.*]: Editorial: The SIO and SIOROSA (pp. 1-2); – *Khaliq, A. & H.G. Murtaza*: Description of the last instar larva of Anax nigrolineatus Fraser (pp. 3-4); – *Prasad, M.*: Variation in wing markings in the female of Neurothemis fulvia (Drury) collected from various regions of India (pp. 5-7); – *Subramanian, M.A., A.P. Bhanu, A.R. Prabha & G. Varadaraj*: Growth patttern and respiratory metabolism in the larvae of dragonfly Pantala flavescens (Fabricius) (pp. 8-10); – *Wazalwar, S.M.*: Labral sensilla in the dragonfly Brachythemis contaminata (Fabricius) (pp. 11-15); – *News* (PhD and M.Sc. dissertations; Call for specimens; Odon. collection visit by M. Bedjanič; Call for a location for the 5th Sth Asian Symp. Odonatol.) (p. 16); – *Schmidt, E.*: Announcement XIIIth International Symposium of Odonatology (pp. 17-18).

(10087) FUTAHASHI, R., M. FUTAHASHI & T. KITAYAMA, 1994. Dragonflies of Toyama prefecture, Honshu, Japan. *Res. Rep. Toyama Sci. & Cult. Center* 17: 49-82. (Jap., with Engl.s.). – (c/o Prof. Dr K. Suzuki, Dept Biol., Fac. Sci., Toyama Univ., 3190 Gofuku, Toyama, 930, JA).
80 spp. (of which 72 were evidenced during 1981-1993) are listed with detailed locality data. The spp. assemblages in 4 areas are analysed, and the fluctuations in the adult occurrence in the prefecture are

stated for each sp.

(10088) GARRISON, R.W., 1994. Synopsis of the genus Argia of the United States with keys and descriptions of new species Argia sabino, A. leonorae, and A. pima (Odonata: Coenagrionidae). *Trans. am. ent. Soc.* 120(4): 287-368. – (1030 Fondale St., Azusa, CA 91702-0821, USA).
A synopsis of all 29 spp. occurring N of Mexico includes keys to both sexes based primarily on caudal appendage morphology in males and morphology of the mesostigmal plates in the females, diagnoses, distributional notes and diagnostic illustrations. A. leonorae sp.n. (holotype ♂: Mexico, Nuevo Leon state, in FSCA), A. pima sp.n. (holotype ♂: U.S.A., Arizona, Pima Co., in USNM), and A. sabino sp.n. (holotype ♂: U.S.A., Arizona, Pima Co., in USNM) are described. The following nomenclatural changes are proposed: Argia mista Navás is considered a junior synonym of A. extranea (Hag.), A. solita Kenn. a junior synonym of A. pallens Calv., A. spegazzinii Navás a junior synonym of A. plana Calv., and A. espinalensis Navás a junior synonym of A. translata Hag.

(10089) GEISSEN, H.-P., 1994. Neufunde der Gemeinen Keiljungfer, Gestreiften Quelljungfer und Glänzenden Binsenjungfer (Odonata: Gomphus vulgatissimus (L.), Cordulegaster bidentatus (Sélys) und Lestes dryas (Kirby) bei Koblenz. *Fauna Flora Rheinland-Pfalz* 7(3): 747-750. – (Brunnenstr. 34, D-56075 Koblenz-Stolzenfels).
Commented records of the 3 spp. from the Koblenz area, Germany.

(10090) GRIMBERGEN, A.H.M. & A.A. STORM, 1994. Water en waterdieren op het Landgoed Schothorst. – [Water and aquatic animals at the Schothorst Estate]. *Natuur Landsch. Milieu Amersfoort* 18: 1-65. (Dutch). – (Copies available from: Centrum voor Natuur- en Milieu-educatie, Gemeente Amersfoort, Schothorsterlaan 21, NL-3822 NA Amersfoort).
A commented review of 15 spp. It is emphasized, the local populations increased since 1988; Utrecht prov., the Netherlands. – Cf. also *OA* 7619.

(10091) GROWNS, I.O. & J.A. DAVIS, 1994. Longitudinal changes in near-bed flows and macroinvertebrate communities in a Western Australian stream. *Jl N. Am. benthol. Soc.* 13(4): 417-438. – (First Author: AWT EnSight, 51 Hermitage Rd, West Ryde, NSW 2114, AU).
Lists 5 odon. spp. from Carey Brook, SW of Western Australia.

(10092) HAN, F., J. LI & J. PEI, 1994. A study on the antennal sensilla in eight dragonfly species (Insecta: Odonata). *J. Shanxi Univ.* (nat. Sci.) 17(4): 428-432. (Chin., with Engl.s.). – (First Author: Dept Life Sci., 42-38, Shanxi Univ., Taiyuan-03006, Shanxi, P.R. China).
The representatives of 5 families were examined (SAM). In the Zygoptera, there are mainly 3 types of antennal sensilla, while there are 4 of these in the Anisoptera. The number and arrangement appear "different among the categories".

(10093) HOEFFNAGEL, W.J.A., 1994. *Odonata (libellen) in de 's-Gravelandsche buitenplaatsen Bantam, Schaep en Burgh, Boekesteijn, Spanderswoud, Hilverbeek in 1994.* – [*Odonata (dragonflies) of the 's-Graveland country estates of Bantam, Schaep-en-Burgh, Boekesteijn, Spanderswoud and Hilverbeek, in 1994*]. Hoeffnagel, Hilversum. ii+34 pp. (Dutch). – (Krekelmeent 72, NL-1218 ED Hilversum).
A detailed report on the odon. survey (18 spp.), conducted in 5 country estates in the vicinity of the city of Hilversum, Noord Holland prov., the Netherlands. Lestes virens is among the regionally noteworthy records.

(10094) HUMPESCH, U.H. & O. MOOG, 1994. Flora und Fauna der österreichischen Donau. *Limnologie actuell* 2: 81-107. (With Engl.s.). – (First Author: Inst. Limnol., Österr. Akad. Wiss., Gaisberg 116, A-5310 Mondsee).
Calopteryx splendens is the only odon sp. listed for the Austrian section of the Danube. – Cf. also *OA* 7047.

(10095) HUTCHINSON, R. & B. MÉNARD, 1994. Emergence massive d'Ophiogomphus (Odonata: Gomphidae) à la rivière "Ausable-East Branch", près de Lake Placid, dans les Adirondacks, New York. *Fabreries* 19(3): 81-82. – (First Author: 12 La Savane, app. 12, Gatineau, Que., J8T 1P7, CA).
The emergence of 41 O. aspersus and O. mainensis indiviuals, on 19-VI-1993, is brought on record.

(10096) HUTCHINSON, R. & B. MÉNARD, 1994. Mention le plus méridionale d'Aeshna sitchensis Hagen (Odonata: Aeshnidae) au Québec. *Fabreries*

19(3): 80-81. – (Second Author: 58 rue Smith, Gatineau, Que., J8T 3A1, CA).
2 ♀ were taken on 27-VIII-1994, at Kazabazua, Gatineau. This is the southernmost known record in Quebec, Canada.

(10097) HUTCHINSON, R. & B. MÉNARD, 1994. Neurocordulia yamaskanensis (Provancher) (Odonata: Corduliidae): répartition et notes biologiques. *Fabreries* 19(3): 73-79. (With Engl.s.). – (First Author: Centre Rech. Terres & Res. Biol., Agriculture Canada, Ottawa, ON, K1A 0C6, CA).
The 14 hitherto known localities in Quebec, Canada, are reviewed, and some field observations on the biology of the sp. are presented. – Cf. also *OA* 2368.

(10098) HUTCHINSON, R. & B. MÉNARD, 1994. Note sur la répartition géographique connue de Libellula incesta Hagen (Odonata: Libellulidae) au Québec. *Fabreries* 19(3): 66-67. (With Engl.s.). – (First Author: Centre Rech. Terres & Res. Biol., Agriculture Canada, Ottawa, ON, K1A 0C6, CA).
The sp. has been reported recently from the Outaouais and the adjacent area; it is now known from 9 localities in Quebec, Canada.

(10099) HUTCHINSON, R. & B. MÉNARD, 1994. Ophiogomphus anomalus Harvey (Odonata: Gomphidae): répartition et notes biologiques. *Fabreries* 19(3): 60-65. (With Engl.s.). – (Second Author: 58 rue Smith, Gatineau, Que, J8T 3A1, CA).
The available information on the occurrence of the sp. in Quebec, Canada, is summarized. The abundance of exuviae in the field, the possibility of larvae collecting, and the extreme difficulties in capturing adult specimens are emphasized. A ♂ and 7 ♀ were reared to emergence by the Second Author.

(10100) HUTCHINSON, R. & B. MÉNARD, 1994. Première mention de Somatochlora incurvata Walker (Odonata: Corduliidae) au Québec et notes biologiques. *Fabreries* 19(3): 68-72. (With Engl.s.). – (Second Author: 58 rue Smith, Gatineau, Que., J8T 3A1, CA).
27-VIII & 4/5-IX-1994, 7 ♂ were taken at a bog W of Kazabazua, Gatineau Co. This is the first record for Quebec, Canada. The habitat and its odon. fauna are briefly described.

(10101) ISHII, M., 1994. [Libellula angelina protected by the national act]. *Gekkan-Mushi* 278: 28-29. (Jap., with vernacular nomenclature). – (Dept Ent., Fac. Agric., Osaka Prefectural Univ., 1-1 Gakuen-cho, Sakai-shi, Osaka, 593, JA).
As from Feb. 28, 1994, the sp. is protected under the Japanese Act on "Conservation of Endangered Species of Wild Fauna and Flora". The provisions are stated in detail and some of the related problems are briefly discussed. – (*Abstracter's Note*: A paper on the same subject was published by K. Matsuki, in *Nature & Insects* 29(5) 1994: 33-35. An abridged Engl. translation is listed in *OA* 10155).

(10102) JAKOB, E.M., 1994. Contests over prey by group-living pholcids (Holocnemus pluchei). *J. Arachnol.* 22(1): 39-45. – (Dept Biol. Sci., Bowling Green St. Univ., Bowling Green, OH 43403, USA).
The fruit fly, housefly and Ischnura sp. are among the natural prey of the facultatively group-living Holocnemus spiders in California and were used in the present study. In cases where more than 1 spider wrapped a single prey item, the spider that ultimately fed on the prey (the "winner") did more of the wrapping than did other spiders. For Ischnura, "winners" spent significantly less time wrapping than did spiders who wrapped alone. A large prey (as Ischnura) requires more time to subdue, fights were increasingly more common with increasing size of prey sp., but the size of the prey did not significantly affect the intensity of fights.

(10103) JANSSENS, M.P.-E., R. KELLNER & G. GÄDE, 1994. A novel adipokinetic octapeptide found in the damselflies Pseudagrion inconspicuum and Ischnura senegalensis. *Biochem. J.* 302(2): 539-543. – (Third Author: Zool. Dept, Univ. Cape Town, Private Bag, Rondebosch-7700, RSA).
A member of the adipokinetic hormone family of peptides was identified using a heterologous (in migratory locusts and American cockroaches) and a homologous (in P. inconspicuum) bioassay. After isolation of the peptide by reversed-phase h.p.l.c. of corpora cardiaca, its structure was determined by automated Edman degradation and matrix-assisted laser-desorption ionization m.s. The sequence of a blocked uncharged octapeptide was established: pGlu-Val-Asn-Phe-Thr-Pro-Gly-TrpNH_2. One corpus cardacum of P. inconspicuum contains about 2.4 pmol of this novel peptide. The synthetic peptide was chromatographically indistinguishable from the natural compound, and on injection in low quantities into P. inconspicuum, haemolymph levels of lipids were in-

creased. It is concluded that the novel peptide may be involved in controlling lipid mobilization during flight. Hence the peptide is designated Psi-AKH, P. inconspicuum adipokinetic hormone.

(10104) JIANG, Y.-H., 1994. Identifications on female adults of Ischnura senegalensis (Rambur) and its polymorphism. *Ent. Knowledge* 31(6): 368-369. (Chin., with Engl. title in Contents table). – (Author's address not transliterated).
[Abstract not available].

(10105) JOHANSSON, F., 1994. Att äta eller ätas – födosöksbeteenden hos trollsländelarver. – To be or not to be eaten – foraging behaviours in odonate larvae. *Ent. Tidskr.* 115(3): 73-80. – (Swed., with Engl.s.). – (Dept Anim. Ecol., Univ. Umea, S-90187 Umea).
In the 4 spp. as listed in *OA* 9135, the foraging behaviour could be classified as a fixed "sit and wait", as an active search, or as a flexible strategy, shifting between the 2. Generally, predation is higher on moving larvae. If larvae have a flexible mode, they reduce the activity in the presence of predators, thereby reducing the predation rate.

(10106) JOHNSON, P.D., K.M. BROWN & C. V. JOVELL, 1994. A comparison of the macroinvertebrate assemblage in Doe Run Creek, Kentucky: 1960 and 1990. *Jl N. Am. benthol. Soc.* 13(4): 496-510. – (First Author: Dept Zool., Louisiana St. Univ., Baton Rouge, LA 70803-1725, USA).
Lists 4 odon. genera from this creek, Meade Co., KY.

(10107) KANO, K., F. KOBAYASHI & H. KITA, 1994. [Notes on reproductive behaviour of Stylurus nagoyanus]. *Gekkan-Mushi* 275: 35-36. (Jap., with taxonomic nomenclature). – (First Author: 5-19-17-601 Koishikawa, Bunkyo-ku, Tokyo, 112, JA).
Notes on field observations at the Konuma-gawa R., Ibaragi pref., central Japan (Aug. 30 - Sept. 13, 1992).

(10108) KERN, D., 1994. *Die Libellen des Landkreises Diepholz*. Kern, Sulingen. 33 pp. – Taxusweg 3, D-27232 Sulingen).
The odon. fauna (49 spp.) of Diepholz distr., Lower Saxony, Germany, is described, analysed and the regional distribution of each sp. is mapped. The status of each sp. is discussed and various conservation and habitat management measures are suggested.

(10109) KESLER, D.H., T.R. MOORE, M.W. SEARS, J.G. SCHERER, R.A. PARDIECK & R.A. REARDON, 1994. Two larval odonate communities of the Edward J. Meeman Biological Station in western Tennessee. *J. Tenn. Acad. Sci.* 69(2): 59-62. – (Dept Biol., Rhodes Coll., 2000 N Parkway, Memphis, TN 38112-1690, USA).
99.7% of the 3556 larvae collected July 1990-March 1992, at 2 ponds are referable to Dromogomphus spinosus, Gomphus submedianus, Boyeria sp., Epicordulia princeps, Tetragoneuria cynosura, Libellula lydia, L. vibrans and Perithemis tenera. Headwidths of the same sp., collected at the same time were often significantly greater in one pond (A) than the other (B). Comparisons of cumulative size-frequency distributions showed significant differences between ponds for T. cynosura, L. lydia, L. vibrans, and P. tenera but not for D. spinosus. Fish were more abundant and longer and had higher condition indices in pond B. This may explain the higher larval mass in pond A for T. cynosura and L. vibrans and indirectly explain the higher larval mass of D. spinosus in pond B. The success of D. spinosus in pond B may be due to its avoidance of predation by burrowing and associated differences in feeding behavior.

(10110) [KUNATH, G.] SCHRANCK, M. & J. ZINKE, 1994. In memoriam. Gerhard Kunath (1941-1993). *Ent. Nachr. Ber.* 38(2): 140. (Germ.). – (Authors' addresses not stated).
A brief biography and appreciation of work (born: 10-I-1941, Ottendorf-Okrilla nr Dresden; deceased: 25-V-1993; electrical engineer). His odonatol. interests were intense, but local, directed mainly at photography and local habitat conservation. Of importance is his unpublished work on interspecific tandems. His sole odonatol. work published is probably that listed in *OA* 7653 (with a few other phot. in the same issue).

(10111) LABATE, P. & C. D'ANTONIO, 1994. Segnalazioni faunistiche italiane. 142. Erythromma viridulum (Charpentier, 1840) (Odonata: Coenagrionidae). *Boll. Soc. ent. ital.* 126(1): 75. – (First Author: Oasi WWF di Vulci, Via Mazzola 32, I-01011 Canino VT).
The sp. is recorded from Lacio. – (*Abstracter's Note*: Contrary to the Authors' statement, this is not the second record from Lazio. For earlier records see *OA* 1878, 2018, 4010, and Rota, E. & C. Utzeri, 1985, *Notul. odonatol.* 2: 95-97).

(10112) ŁABEDZKI, A., 1994. Ważki (Odonata) rezerwatu "Cisy Staropolskie im. L. Wyczółkowskiego w Wierzchlesie" i okolic (Bory Tucholskie. – Dragonflies (Odonata) of the reserve "Cisy Staropolskie im L. Wyczółkowskiego w Wierzchlesie" and environs (Tuchola Forests). *Acta ent. silesiana* 2(1): 7-12. (Pol., with Engl.s.). – (Katedra Entomologii Lesnej AR, ul. Wojska Polskiego 71 c, PO-60-625 Poznan).
A commented review of the odon. fauna (34 spp.) of the reserve.

(10113) LAISTER, G., 1994. Die Libellenfauna der Donauauen im südöstlichen Linzer Raum. *Naturk. Jb. Stadt Linz* 37/39: 163-185. (With Engl.s.). – (Naturk. Stn Stadt Linz, Roseggerstr. 22, A-4020 Linz).
The odon. fauna (43 spp.) of the Danube oxbows in the SE Linz area, Upper Austria, is analysed. Some considerations on its conservation are appended.

(10114) LAISTER, G., 1994. Zusammenstellung einiger Neunachweise von Libellen (Odonata) in Oberösterreich. *Naturk. Jb. Stadt Linz* 37/39: 139-162. (With Engl.s.). – (Naturk. Stn Stadt Linz, Roseggerstr. 22, A-4020 Linz).
The Upper Austrian records of 8 spp. are stated and discussed, and the respective habitats are described in great detail.

(10115) [MAIJ-WEGGEN, J.R.H., The Netherlands Minister of Traffic and Waterworks], 1994. [*Two dragonfly posters*]. – (Reference No.: HW/AW 172787; Address: Ministerie van Verkeer en Waterstaat, Postbus 20901, NL-2500 EX Den Haag).
The 2 posters represent a part of the set related to the management of aquatic habitats in the Netherlands, and were distributed by the Minister, with a covering letter, to all Biology and Geography teachers in the country.

(10116) MARDEN, J.H. & R.A. ROLLINS, 1994. Assessment of energy reserves by damselflies engaged in aerial contests for mating territories. *Anim. Behav.* 48(5): 1023-1030. – (Dept Biol., 208 Mueller Labs, Pennsylvania St. Univ., University Park, PA 16802, USA).
Male Calopteryx maculata engage in prolonged, highly escalated aerial contests for mating territories. A previous study (cf. *OA* 7407) found that winners of contests had a higher fat content than losers in 88% of cases, whereas differences in physical variables related to size and flight ability were not related to the outcome of contests. Here that study is extended in order to determine whether contests proceed until one contestant reaches a lower physical limit in fat reserve, or alternatively, whether contestants are able to assess each other's fat reserves and thereby settle contests before physical limits are reached. The physical limitation hypothesis was not supported, as losers showed no reduction in variability of fat content relative to winners. The assessment hypothesis was supported by an increase in the accuracy of the 'fatter wins' rule with increasing contest duration. Winners were fatter in 17 of 25 (68%) short contests (duration < 500 s), versus 20 of 21 (95%) long contests (> 500 s), which suggests a gradual accumulation of information during contests. The assessment hypothesis was supported further by a negative relationship between contest duration and energetic asymmetry between contestants in long contests. Duration of long contests was also positively related to the total fat content of the 2 contestants, which suggests that the ability of contestants to perceive relative energetic status may vary depending on absolute levels of energy reserves. A model that assumes an asymptotic increase in flight performance with increasing fat content (i.e. Michaelis-Menten or 'saturation' kinetics) is proposed to explain the simultaneous effects of relative and absolute fat content on contest duration, and to examine possible mechanisms that damselflies use to assess each other's energy reserves.

(10117) MATSURA, T., 1994. Yago no seisokubasho tositeno gakkou pool. – [Outdoor swimming pools of primary schools as a habitat for dragonfly larvae]. *Nature Conserv. & Entomologists* 5: 9-12. (Jap.). – (Dept Biol., Kyoto Univ. Educ., Fushimi-ku, Kyoto, 612, JA).
For an Engl. abstract cf. *OA* 9738.

(10118) MIELEWCZYK, S., 1994. Wstepne razpoznanie składu jakościowego niektórych grup owadów (Odonata, Heteroptera, Coleoptera) jezior lobeliowych w okolicy Bytowa (Pojezierze Pomorskie). – Preliminary recognition of the qualitative composition of some insect groups (Odonata, Heteroptera, Coleoptera) in lobelian lakes in the vicinity of Bytów (Pomeranian Lake District). *Idee ekologiczne* 7 (Szkice 5): 85-92. (Pol., with Engl.s.). – (Res. Cent. Agric. & Forest Environ., Pol. Acad. Sci., ul. Bukowska 19, PO-60-809 Poznan).

18 odon. spp. are listed from 10 lakes.

(10119) NIELSEN, O.F., 1994. Anax imperator Leach, 1815 – ny dansk guldsmed (Odonata, Aeshnidae). – Anax imperator Leach, 1815 – a new Danish dragonfly (Odonata, Aeshnidae). *Ent. Meddr* 62: 97-99. (Danish, with Engl.s.). – (Søkildevej 87, DK-8680 Ry).
The sp. is for the first time recorded from Denmark (several ♂, oligotrophic lake nr Bordrup Klitplantage, SW Denmark, 25-VII/7-VIII-1994).

(10120) OHGAI, H., 1994. [A note on submerged oviposition in Boyeria maclachlani]. *Gekkan-Mushi* 276: 37-38. (Jap., with taxonomic nomenclature). – (5-12-8 Takata-dai, Kamigori-cho, Ako-gun, Hyogo, 678-12, JA).
Evidenced at Mure, Akou-shi, Hyogo pref., SW Japan (15-IX-1993). A phot. is included.

(10121) PAPAZIAN, M., 1994. Influence du vent sur le comportement des odonates. *Entomologiste* 50(2): 89-98. – (23 bd de Roux Prolongé, F-13004 Marseille).
Various behavioural patterns, as triggered by the wind, and recorded in the Camargue, France, in Ischnura elegans, Anax parthenope, Crocothemis erythraea, Orthetrum cancellatum and Sympetrum fonscolombii, are described, analysed and shown in graphs.

(10122) PAPAZIAN, M., 1994. Prédations et odonates. *Entomologiste* 50(5): 297-303. – (23 bd de Roux Prolongé, F-13004 Marseille).
Detailed observations on predation on the spp. mentioned in *OA* 10121 and on Coenagrion mercuriale, in the Camargue, France, both by heterospecific odon. and by other predators.

(10123) REHFELDT, G.-E., 1994. *Natürliche Feinde adulter Libellen und ihr Einfluss auf Fortpflanzungssysteme und Populationsdynamik.* HabilitationsSchr. Univ. Braunschweig. 195 pp. (Exhaustive Engl.s. is available from the Eds of Odonatologica, Bilthoven). – (Roseggerweg 41a, D-38304 Wolfenbüttel).
Studies on the bearing of predators on the evolution of reproductive systems are few and far apart. In the present work, the predator impact on reproductive behaviour and on adult population dynamics of several odon. spp., as evidenced in southern France and Germany, is presented. Also included is the available information of the influence of ectoparasites on the odon. reproductive behaviour. The present knowledge on these topics is reviewed and an exhaustive bibliography is appended.

(10124) RESCH, U., 1994. Zwei Libellen in Tandemstellung. *Fossilien* 94(6): 364-365. – (Author's address not stated).
A commented photograph of 2 Aeschnidium (?) individuals, fossilized in a tandem-like position (Malm Zeta 2; Eichstätt).

(10125) SCHMIDT, B., 1994. *Vegetation, Struktur und Mikroklima von Larval- und Imaginal-Habitaten der Zwerglibelle (Nehalennia speciosa) sowie Untersuchungen zu Habitatwahl und ökologischen Ansprüchen im Alpenvorland. Eine biozönologische Fallstudie.* DiplArb. Univ. Freiburg/Br. iv+138 pp., 3 fold. tabs excl. – (Kohlenbacher Talstr. 18, D-79183 Waldkirch-Kollnau).
The abiotic and biotic features of larval and adult habitats were thoroughly examined, over 20 parameters measured and thousands of observations on behaviour, under natural and under experimental conditions, were carried out. On the basis of these, habitat selection and the life history are described. The main conclusions of the work are summarized in 19 numbered clauses. – (*Abstracter's Note*: The overall quality and presentation of this work are considerably exceeding the usual standards of a M.Sc. dissertation. A commercial/journal publication would be highly desirable).

(10126) SIVA-JOTHY, M.T. & Y. TSUBAKI, 1994. Sperm competition and sperm precedence in the dragonfly Nanophya pygmaea. *Physiol. Ent.* 19(4): 363-366. – (First Author: Dept Anim. & Plant Sci., Univ. Sheffield, Western Bank, Sheffield, S10 2UO, UK).
The sp. has an average ejaculate volume of 0.16 mm^3. During successive copulations the volume of sperm stored in the female's sperm storage organs increases in steps equivalent to this volume, suggesting that the sperm competition mechanism in this sp. is sperm repositioning, i.e. adding an ejaculate to what is already present in the female's sperm storage organ. By using sterile/normal males in double matings with females it is shown that this mechanism results in last male sperm precedence ($P_2 = 0.979$).

(10127) STERNBERG, K., 1994. Einfluss der Mahd ufernaher Wiesen auf Libellen (Odonata). *Verh.*

westdt. Ent. Tag. 1993: 21-29. – (Schillerstr. 15, D-76297 Stutensee).
The impact on odon. population of grassland mowing in the vicinity of 2 adjacent small streams is described and analyzed in great detail. It concerns species composition of the local assemblage, population structure, individual abundance, various behavioural features, vulnerability to spider and bird predation, etc.

(10128) SUBRAMANIAN, M.A., 1994. *Studies on the impact of tannery affluent on ecophysiology and biochemistry of the nymphs of dragonfly Pantala flavescens (Fab.).* PhD diss. Bharathier Univ., India. [Pagination unknown]. – (Dept Zool., Chikkaiah Naicker Coll., Erode-638004, India).
[Not available for abstracting].

(10129) SUZUKI, K., 1994. Some new approaches to odonate wing morphology. *Insectarium, Tokyo* 31(9): 276-283. (Jap., with Engl. title, fig. & tab. captions). – (Dept Biol., Fac. Sci., Toyama Univ., 3190 Gofuku, Toyama, 930, JA).
The following features are analyzed: (1) the symmetry/asymmetry relationships between the left and right wings, with reference to the crossvein numbers, in 18 populations of 4 Mnais spp., – (2) the fore and hind wing outlines (with the application of a modified D'arcy W. Thomspon's Cartesian transformation method), in 4 zygopt. spp., – (3) the partinioning patterns of wing membrane by longitudinal veins and their branching, in 4 zygopt. spp., – (4) branching patterns of longitudinal veins (in the light of the rule of Horton) in 16 zygopt. spp., – and (5) the Mnais wings as a mosaic construction of polygonal cells.

(10130) *SYMNET. Newsletter of the Aka-tombo Network*, Ishikawa, No. 2 (Oct. 1994). (Jap. & Engl. editions). – (c/o N. Ishizawa, 1644-15, Yamaguchi, Tokorozawa, Saitama, 359, JA).
[Titles and pagination from (abridged) Engl. ed.]: *Ueda, T.*: The prohibited red of Sympetrum pedemontanum elatum (p. 1); – *Eda, S.*: The secret stories about the song of "Aka-tombo" (pp. 1-2); – *Ishizawa, N.*: A story of the tumult of Aka-tombo at Makuhari (pp. 2-3); – *Nakayama, S.*: Remembrance of Sympetrum frequens in Mt Hakusan (p. 3); – *Ito, S.*: A notice on the beginning period of reproductive behaviour of Sympetrum frequens at Shizunai-achi, Hokkaido (p. 4); – Observations of Sympetrum frequens in the highlands at Kamikawa-machi, Hokkaido (p. 4); – *Matsuki, K.*: Observations of Sympetrum frequens in Hokkaido late in August (p. 4); – *Tone, S.*: A small sized Sympetrum frequens was captured at Matsuzaka (p. 5); – *Tsubuki, T.*: Early oviposition of Sympetrum frequens at the Yunomaru Heights in Nagano prefecture (p. 5); – *Ishikawa, H.*: Some reports on Sympetrum in Shikoku (p. 5); – *Ishizawa, N.*: Thoracic patterns and weight of Sympetrum frequens migrating at Makuhari (p. 5); – *Arai, Y*: Aka-tombo at the forest margin (p. 5); – *Ishizawa, N.*: The height of the exuviae of Sympetrum frequens (p. 5); – *Aka-tombo post* (p. 6). – (*Note*: S. Eda's article was originally published in *Bull. Matsumoto dental Coll.* 2(13): 3; 1978).

(10131) TERZANI, F., V. ROMANO & S. CARFÌ, 1994. Attuali conoscenze sulla odonatofauna della Romagna (Odonata). *Boll. Soc. ent. ital.* 126(2): 99-120. (With Engl.s.). – (First Author: Mus. Zool. "La Specola", Univ. Firenze, Via Romana 17, I-50125 Firenze).
The odon. fauna of Romagna, Italy (60 spp.) is reviewed and numerous new records are listed. Sympetrum pedemontanum is for the first time recorded from the province.

(10132) TITTIZER, T., H. LEUCHS & M. BANNING, 1994. Das Makrozoobenthos der Donau im Abschnitt Kehlheim-Jochenstein (Donau-km 2414-2202). *Limnologie aktuell* 2: 173-188. (With Engl.s.). – (Bundesanst. Gewässerk., Kaiserin-Augusta-Anlagen 15-17, D-56068 Koblenz).
Platycnemis pennipes and Gomphus vulgatissimus are the only odon. spp. listed.

(10133) TROCKUR, B. & A. DIDION, 1994. Bemerkenswerte Libellenfunde für das Saarland aus den Jahren 1988 bis 1993. *Faun.-flor. Notiz. Saarland* 26(2): 329-344. – (First Author: Schulstr. 4, D-66636 Tholey-Scheuern).
Records and comments are given for 28 spp., and an annotated checklist of the 54 hitherto in Saarland, Germany, recorded spp. is appended. Epitheca bimaculata and Crocothemis erythraea are expanding in the province.

(10134) UDONO, K., 1994. [Some observations on adult hibernation in Aciagrion migratum and Indolestes peregrinus in Aichi prefecture, central Japan]. *Gekkan-Mushi* 278: 16-17. (Jap., with vernacular nomenclature). – (1-14-47, Ontake, Togo-cho, Aichi-

-gun, Aichi, 470-01, JA).
During 1985-1990, the phenomenon was observed in various Aichi habitats; it is here also photographically documented.

(10135) VAN CAPELLEN, W. & M. LA HAYE, 1994. Zokaverslag JNM-NJN De Gaume. *Amoeba, Arnhem* 68(5): 64-67. (Dutch). – (First Author: Pr. Hendrikweg 34, NL-2202 EB Noordwijk).
Contains records of Cordulegaster bidentata and Orthetrum brunneum from Luxembourg.

(10136) VAN DER WEIDE, M., C. BOTH & I. TIELEMAN, 1994. Noordoost Twente en haar libellen. – [Northeastern Twente and its dragonflies]. *Amoeba, Arnhem* 68(5): 50-55. (Dutch). – (First Author: Heidevenstraat 223, NL-6533 TP Nijmegen).
27 spp. are listed and briefly discussed, from 16 localities in Twente prov., The Netherlands.

(10137) VAN DER WEIDE, M. & R. KETELAAR, 1994. Het libellenproject, wat levert het eigenlijk op? – [What are the actual results of the current Dragonfly Mapping Scheme in the Netherlands?] *Amoeba, Arnhem* 68(5): 38-43. (Dutch). – (First Author: Heidevenstraat 223, NL-6533 TP Nijmegen).
During 1990-1995, ca 10000 records were evidenced. Coupled with the very substantial earlier evidence, published in the GEIJSKES & VAN TOL work as listed in *OA* 4101, these are bringing to light some highly interesting information on the current status, distribution, expansion and phenology of various spp., 6 of which are here presented as an example.

(10138) VAN TOL, J., 1994. Gunung Rantemario. *Infusis, Leiden* 61: 3-5. (Dutch). – (Natn Nat. Hist. Mus., P.O. Box 9517, NL-2300 RA Leiden).
Notes on a collecting trip to Gunung Rantemario, Sulawesi, Indonesia (Nov. 3-12, 1993) with reference to an undescribed corduliide sp., the sole odon. representative breeding in a stream at an alt. of 1800 m.

(10139) VANDERHAEGHE, F., 1994. Libellen in De Teut. – [Dragonflies in The Teut]. *Amoeba, Arnhem* 68(5): 4-8. (Dutch). – (Lijsterstraat 20, B-8800 Roeselare).
11 spp. are listed from the Teut nr Zonhoven, Belgium, and field observations on dial activity in adult Ischnura elegans, Orthetrum coerulescens, Sympetrum danae and Leucorrhinia dubia are recorded and discussed.

(10140) VOGT, T.E. & E.D. CASHATT, 1994. Distribution, habitat, and field biology of Somatochlora hineana (Odonata: Corduliidae). *Ann. ent. Soc. Am.* 87(5): 599-603. – (First Author: Nature Conservancy, Southern Illinois Fld Office, Rte 1, Box 53E, Ullin, IL 62992, USA).
The sp. is among the most endangered odon. in the US. Its populations were discovered in Illinois (1988) and Wisconsin (1989), and status surveys were conducted there 1990-1993. Adults were observed 30 May-8 September in Illinois and 27 June-23 August in Wisconsin. S. hineana habitat can be characterized as shallow, calcareous, spring-fed marshes or the marshy margins of small, sluggish, calcareous streams. Notes are presented on feeding behavior, male territorial patrols, copulatory behavior, and oviposition. The previously unknown nymph was discovered. The holotype and allotype of S. hineana were compared with specimens from Illinois, Ohio, and Wisconsin. No consistent morphological differences were noted.

(10141) WANG, Z., 1994. A new species of Coeliccia (Odonata: Platycnemidae) [sic!] from China. *Entomotaxonomia* 16(2): 82-84. (Chin., with Engl.s.). – (Inst. Biol., Henan Acad. Sci., Zhengzhou, Henan-450003, P.R. China).
C. sexmaculatus sp.n. (holotype ♂: Mt Laojunshan, Luanchuan Henan prov., alt. 900-1200 m, 17-VIII-1986; ♀ allotype, same locality; both deposited at Author's inst.) is described and illustrated.

(10142) YANG, Z.-d. & S.-s. LI, 1994. Descriptions of a new species and a subspecies of dragonflies from Shaanxi province, China (Odonata: Cordulegasteridae, Amphipterygidae). *Acta ent. sin.* 37(4): 458-462. (Chin., with Engl.s.). – (Dept Biol., Hanzhong Teachers' Coll., Hanzhong, Shaanxi-723001, P.R. China).
Neallogaster choui sp.n. (holotype ♂, allotype ♀: Dabasha Mts, Nanzheng Co., Shaanxi prov., China, 25-VI-1990) and Philoganga robusta infantua ssp.n. (holotype ♂, allotype ♀: Qinling Mts, Lueyang Co., Shaanxi prov., China, 30-VII-1988) are described and illustrated. The types are in the Authors' institution.

(10143) YONG, H.S. & M. HÄMÄLÄINEN, 1994. Ceriagrion chaoi, a rare damselfly rediscovered. *Nature malayana* 19(4): 100-103, col. phot. on issue cover. – (First Author: Dept. Zool., Univ. Malaya, 59100 Kuala Lumpur, Malaysia).

A mating pair was collected and photographed at the Univ. Fac. Sci. Botanical Garden, Kuala Lumpur, 25--IV-1994. The sp. has not been recorded from Malaysia since 1901. Several excellent photographs are included in the paper.

(10144) YOSHIDA, M. & H. KARUBE, 1994. [Notes on Leucorrhinia dubia orientalis from Tomakomai--shi, Hokkaido]. *Gekkan-Mushi* 275: 22-23. (Jap., with taxonomic nomenclature). – (Second Author: 1-7-34 Tsurumi, Tsurumi-ku, Yokohama, Kanagawa, 230, JA).

A new locality is reported. The ♀ ♀ of this population have a yellowish brown wing base. Photographs of 2 specimens are also presented.

(10145) ZINTZ, K., S. ENKE-ZÖRLEIN, U. HAHN, G. HEIMBACH, A. KÖNIG, D. ROTHMUND & H. RAHMANN, 1994. Gefährdet das regelmässige Ablassen von Fischweihern deren Biozönose? Einfluss des Ablassens von Weihern auf die Libellen-Biozönose. *Hohenheimer Umwelttagung* 26: 185-190. – (Inst. Zool., Univ. Hohenheim, Garbenstr. 30, D-70599 Stuttgart).

On the example of 14 Upper Swabian (Germany) fishponds with different water regimes (permanent water, emptied and immediately refilled, drained during the winter), the effect is shown of a particular water regime upon the structure and composition of the resp. odon. assemblage.

1995

(10146) (Anonymous), 1995. Hyönteiskartoitus/Insektkartering 81: Vuoden 1994 tulokset 21 suomalaisen hyönteislajin levinneisyyskartoituksesta. – Resultat av kartering av 21 insektarters utbredning i Finland år 1994. – Results of the mapping in 1994 of the distribution of 21 insect species in Finland. *Baptria* 20(1): 47-60. (Finn. & Swed., with Engl.s.). – (c/o Div. Ent., Zool. Mus., Univ. Helsinki, P.O. Box 17, SF-00014 Helsinki).

Continuation of the series as listed in *OA* 9654. It includes Finnish distribution maps of Calopteryx splendens and C. virgo, and a phenology graph of the latter.

(10147) *ARGIA. The news journal of the Dragonfly Society of the Americas*, Vol. 6, No. 4 (Jan 31, 1995). – (c/o Dr & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13903, USA).

In addition to various unsigned notes, the issue contains the following articles: *Cashatt, T. & A. Walsh*: [Obituary] Charles A. Bridges III (p. 2); – [*McPeek, M.*]: Enallagma studies (pp. 3-4); – *Donnelly, N.*: Dot--map project (p. 4); – Dragonflies in caves? (p. 4); – *Jurzitza, G.*: Are mainly females predating on other dragonflies? (p. 5); – *Donnelly, N.*: Back to Thailand – Farangpo 94 (pp. 5-7); – *Daigle, J.*: Onward Wisconsin! (pp. 7-8); – *Donnelly, N.*: What is the Lacey Act and how it does affect us? (pp. 8-10); – *Mauffray, B.*: I.O.R.I. and the Lacey Act impact (pp. 10-12); – Odonata in cyberspace (p. 12); – Looking for Cordulegaster sayi records (pp. 12-13); – Databases and Odonata (p. 13); – *Kiauta, B.*: SIO publications (p. 14); – Regional, national, and local odonatological organizations and their periodicals (pp. 15-16). – Appended is the USF & WS form 3-177, to be used for import or export of odon. specimens (pp. 17-18, with filling instructions).

(10148) BECHLY, G.H.P., 1995. Morphologische Untersuchungen an Flügelgeäder der rezenten Libellen und deren Stammgruppenvertreter (Insecta; Pterygota; Odonata) unter besonderer Berücksichtigung der Phylogenetischen Systematik und des Grundplanes der Odonata. *Petalura* (Spec. Vol.) 1: 1-341. (With Engl. s.). – Available from the Author, at DEM 45.- net. – (Breslauer Str., 30, D-71034 Böblingen).

[Almost verbatim summary]: Different structures of the dragonfly wing, especially of the wing venation, are described and their phylogenetic and functional--adaptive meaning is discussed. It is emphazised that wing veins are complex 3-dimensional organs, which show a variety of specialisations in their surface structure, such as flexible joints, sutures, membranous areas, microsculptures, spines and true hairs. Different kinds of braces, that are important for flight-mechanical reasons, are comparatively described for many taxa. The distribution of spines (especially at veinal joints) and hairs is analyzed, a distinct correlation with the corrugation of the respective wing veins is demonstrated and 2 different types of macrotrichs are discovered. Within the dragonflies with petiolated wings, 3 types of petiolation are described, that differ significantly in their veinal fusions. – Criteria that have been proposed for the homologisation of wing veins are discussed, the pretracheation-theory is dismissed in favour of the predetermination-theory. Several morphological criteria that have been proposed for the distinction of crossveins and longitudinal

veins, especially the presence or absence of macrotrichs, is shown to be unreliable. A critical comparison of the conflicting hypotheses concerning the interpretation of dragonfly wing-venation and the referring terminologies clearly shows that the system of RIEK & KUKALOVA-PECK (1984) has the highest explanatory power and needs only minor modifications. Still unpublished changes in their former interpretation of the basal wing-venation of the "Eugeropteridae" could not be supported with this study. – The hypothesis that the costal margin is formed by the fusion of 3 longitudinal veins (basaly CA & CP & ScA'; distally CA&ScA'&ScP) is confirmed, but the existence of a Precosta (KUKALOVA--PECK, 1983) is considered doubtful, because of lack of conclusive empiric evidence. The same holds for the interpretation of the RP3&4 (here: RP") as fusion of primary RP-branches. The apparent prolongation of the ScP through the nodus is considered to be a secondary formation by postnodal crossveins in all referring fossil and extant odon. except the Sieblosiidae. The discovery of non-aligned antenodal crossveins in the forewing of Zenithoptera makes the identification of the 2 primary antenodal brackets (ax1 and ax2) for the first time possible within the Libellulidae. The apparent Rspl – in cordulegastrids is recognized as a secondary bifurcation of the IR2 – The problem if the distal side of the discoidal cell or the trigonal cell is representing a primary branch of the MA or only a secondarily reinforced crossvein could not been solved, while the costal side of the trigonal cell clearly is formed by a secondary veinlet. – A new interpretation of the complex evolution of the cubito-anal wing-venation, especially the CuA is presented. The secondarily convex corrugation of the AP (anal margin) is explained with a fusion of the concave AP and the convex AA". The apparent bifurcation of the anal vein (CuP&AA') in the forewing of the Libelluloidea and Petaluridae and both wingpairs of the Aeshnidiidae is caused by the formation of a secondary branch out of a cubito-anal--crossvein. The jugal veins are interpreted to be secondarily absent or fused within the hind margin in all Odonata. The membranule of the Anisoptera is interpreted as secondarily outgrowth of the articular membrane, not as vestigal jugal field (RIEK & KUKALOVA-PECK, 1984). A possible homolog of the membranule is demonstrated to be present in some broadwinged Zygoptera. The double pleural joint of the wing articulation is interpreted as an autapomorphy of the Odonata (contra PFAU, 1991). In the stemline of the Odonata this structure most probably has not been formed by a secondary bifurcation of a single joint, but by the fusion of 2 pleural ridges (autapomorphy of the Odonatoptera), which each support a separate pleural joint. A new interpretation of the wing-venation of the extant Platystictidae and the fossil Protanisoptera, Triadophlebiomorpha and "Protozygoptera", as well as several other fossil taxa, is presented. On the basis of the wing-venational peculiarities of the Aeshnidiidae a plausible explanation for the extinction of this mesozoic taxon is proposed. – A homology-based terminology of dragonfly wing-venation is introduced as essential base for future phylogenetic analysis, as well as several definitorial improvements and amendations to the general terminology of insect wings. – The wing-venation in the groundplan of the Odonata is reconstructed with the methods of Phylogenetic Systematics. This groundplan includes the presence of numerous antenodal crossveins, a median position of the node and a non-petiolated wing with a basaly open discoidal cell. Fraser's argumentation with the "anal crossing" and the "primary antenodals" in favour of a zygopteroid ancestor of all extant odonates is refuted and replaced by the hypothesis of an anisozygopteroid ancestor. Graphical scenarios of the evolution of the wing-venation within the Odonatoptera and their subordinated groups, especially the Triadophlebiomorpha and Anisoptera, are presented. – Since the monophyly of the Odonata and the Anisoptera is beyond doubt and the pharaphyly of the "Anisozygoptera" could be demonstrated as well as their phylogenetic relationship with the Anisoptera, the phylogenetic position of the Zygoptera remains the biggest enigma of dragonfly phylogeny (PFAU, 1991). Furthermore the question, if the Zygoptera are representing the monophyletic sistergroup of "Anisozygoptera" & Anisoptera or a paraphyletic grade towards the other extant Odonata, is quite important for the reconstruction of the wing-venation in the groundplan of Odonata. Concerning this question all formerly proposed arguments in favour of a paraphyly could be refuted within this study. This holds especially for Fraser's argument of an alleged basad-shifting of the first RP-bifurcation (midfork) and the origin of the IR2. Furthermore, new hints (19 potential synapomorphies!) are presented in favour of a monophyletic taxon Zygoptera, such as the presence of microsculptures on the pterostigma; the shape and distribution of spines at flexible veinal junctions; the reduction of long dorsal spines on the

RP and MP; the presence of short, bristel-like macrotrichs on the ventral side of the ScP and some other concave veins and the dorsal side of several convex veins; the lateral compression of most crossveins; the formation of a distinct discoidal bracket; the obliteration of the posterior part of the basal bracket in the ventral wing-membrane, and the (at least partly) obliteration of the nodal CP-kink. – Independantly from the special issue of dragonfly wing-venation the different hypotheses concerning the evolution of insect wings are compared and a new scenario is proposed, which implies a synthesis of the opposing paranotal- and pleural-theory. Furthermore some theoretical aspects of homology research, functional morphology and evolutionary biology are discussed from the cladistic point of view.

(10149) BELLE, J., 1995. On the type locality of Progomphus occidentalis (Odonata: Gomphidae). *Ent. Ber., Amst.* 55(3): 51. – (Onder de Beumkes 35, NL-6883 HC Velp).
Descriptive notes on 2 ♂ from Bolivia. – Cf. *OA* 4395.

(10150) *BULLETIN OF AMERICAN ODONATOLOGY*, Vol. 2, No. 4 (Febr. 1995). – (c/o Dr. & Mrs T.W. Donnelly, 2091 Partridge Lane, Binghamton, NY 13906, USA).
May, M.L.: The subgenus Tetragoneuria (Anisoptera, Corduliidae: Epitheca) in New Jersey (pp. 63-74).

(10151) *BULLETIN OF THE HOKKAIDO ODONATOLOGICAL SOCIETY*, Vol. 7 (Suppl.) (Jan. 25, 1995). (Jap., with Engl. titles). – (c/o Prof. Dr H. Ubukata, Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).
This is the original Jap. ed. of the *"Transactions of the International Symposium on the Conservation of Dragonflies and their Habitats"*, held in Kushiro, Japan, 13 Aug. 1993. It is based on the transcripts of the tape recorded sessions. – For an abridged Engl. ed. cf. *OA* 10044. – Contents: *Moore, N.*: Dragonfly conservation: international and national (pp. i-ii); – *Ubukata, H.*: The details and the significance of holding "The International Symposium on the Conservation of Dragonflies and their Habitats" (pp. iii-v); – *Kohmaru, M.*: Opening address for the Specialist Meeting (p. 1); – *Nihashi, A.*: Sponsor's address for the Symposium (p. 2); – *Hiratsuka, K.*: A brief history of actions on the conservation of a dragonfly habitat (Nishioka reservoir) in Sapporo (pp. 3-6); – *Ijima, K.*: On an attempt to recover insect habitats in eastern Hokkaido (pp. 7-8); – *Fukumoto, A.*: Present state and the dragonflies of Shizukari Marsh, Oshamanbecho, Hokkaido, Japan (pp. 9-12); – *Ott, J.*: Do dragonflies have a chance to survive in industrialized countries? – shown at the example of the Federal Republic of Germany (pp. 13-16); – *Samways, M.J. & J. Ott*: Questions and replies in the Specialist Meeting (p. 17); – *Corbet, P.S./M.J. Samways/J.A.L. Watson/S. Eda/S.W. Dunkle/E. Schmidt/B. Kiauta/J. Ott*: Impressions and comments about the conservation of Kushiro Marsh as a habitat of dragonflies (pp. 18-26); – *Koyama, T. & M. Kohmaru*: Questions and replies on the conservation of Kushiro Marsh (pp. 27-28); – *Ichijo, N.*: Opening address for the Main Symposium (p. 29); – *Ubukata, H.*: Address by the Coordinator of the Main Symposium (pp. 30-31); – *Corbet, P.S.*: Habitats and habits of world dragonflies and the need to conserve species and habitats (pp. 32-35); – *Samways, J.M.*: Conservation of red-listed dragonflies and their habitats in South Africa (pp. 36-41); – *Watson, J.A.L.*: The conservation status and management of the enigmatic Australian damselfly Hemiphlebia mirabilis Selys (pp. 42-44); – *Eda, S.*: The conservation of dragonflies, including endangered or vulnerable species, in Japan (pp. 45-51); – *Dunkle, S.W.*: Conservation of dragonflies and their habitats in North America (pp. 52-57); – *Schmidt, E.*: A survey of threatened dragonfly habitats from central Europe, especially bogs and bog management (pp. 58-62); – *Kiauta, B.*: Collector's code of ethics in the light of odonate conservation (pp. 63-65); – *"Kushiro Appeal"* arising from the International Symposium on the Conservation of Dragonflies and their Habitats (p. 67); – *Moore, N.W.*: Message to the International Symposium on the Conservation of Dragonflies and their Habitats (p. 69); – *Corbet, P.S.*: Greeting on behalf of all the panelists (p. 70); – *Ichijo, N.*: Closing address of the Symposium (p. 71); – *Schmidt, E.*: Questions in the Main Symposium and replies by E. Schmidt (p. 72); – *Official schedule of the Symposium and related actions* (p. 73); – *The members of the Executive Committee of the Symposium* (p. 74); – *List of the panelists, the Coordinator and the reporters* (p. 75).

(10152) ČERVEK, U., A. FERK & M. SAMEJA, 1995. *Kačji pastirji AJ Komarnik. – [Dragonflies of the Komarnik man-made lake].* Naloga 12 Srečanja mladih Raziskovalcev, Maribor, 23 pp., 1 col.pl. incl. (Slovene). – (First Author: Vlahoviča 35, SLO-62000 Maribor).

A commented list of 32 spp., evidenced (1993-1994) at the Komarnik lake nr. Lenart (alt. 235 m, surface 26 ha), Styria, NE Slovenia. Of particular interest is a large local population of Epitheca bimaculata. The breeding of Aeshna affinis is confirmed only for the second time in Slovenia. The adult emergence of Cordulia aenea and E. bimaculata is shown in graphs.

(10153) *CONTACTBLAD NEDERLANDSE LIBELLENONDERZOEKERS – [BULLETIN OF THE NETHERLANDS DRAGONFLY WORKERS]*, No. 23 (March 1995). (Dutch). – (Editorial address: W.J.A. Hoeffnagel, Krekelmeent 72, NL-1218 ED Hilversum; – Subscription address: G. Abbingh, Muddegoorn 78, NL-9403 NK Assen).
This is the first issue produced by the new Ed. Board (G. Abbingh, W.-J. Hoeffnagel, R. Ketelaar), the lay-out was changed from A5 to A4, and the increase of publication frequency, from annual to semiannual, was announced. M. Wasscher is to continue as the External Advisor to the Board. The traditional section headings are abandoned, but the scope of the journal remains unchanged. In spite of the increased frequency, annual subscription for 1995 remains as heretofore (NLG 11.- net). – *M. Wasscher* gives brief outlines of the current "Preliminary dragonfly atlas of the Netherlands" (p. 3); – while *R. Ketelaar* is presenting a more detailed progress report on the current (second) national odon. mapping project (pp. 13-14). – *J. van Tol* reports on a sight record of Anax parthenope, the first in the Netherlands since 1938 (Winterswijk, 23-VII-1994; pp. 4-5); – *W. Reinbout* is describing and discussing her observations on the Sympetrum striolatum migration at Vlissingen (15--X-1994; pp. 5-6); – *G. Abbingh* gives a detailed technical description of his design for the construction of an exuviae collection cabinet (pp. 6-7, with figs); – and presents annotations on the odon. fauna of the Boswachterij Borger in the province of Drenthe (pp. 8-9). – Of more than national interest are *M. Wasscher's* annotations on the "1994 dragonfly year" (pp. 10-13), particularly so the record of Leucorrhinia albifrons from Aekinga in Friesland (a potential breeding site), the occurrence of Crocothemis erythraea during 2 successive yr in Zeeuws Vlaanderen, the record of Aeshna affinis on the Waal R. nr Tiel, etc. – *R. Ketelaar* compiled the bibliography of 48 titles pertaining to the Netherlands odon. fauna, as listed in *OA* of *Odonatologica*, vols 20-22.

(10154) CORDERO, A., S. SANTOLAMAZZA-CARBONE & C. UTZERI, 1995. Male disturbance, repeated insemination and sperm competition in the damselfly Coenagrion scitulum (Zygoptera: Coenagrionidae). *Anim. Behav.* 49: 437-449. – (Third Author: Dipto Biol. Anim. & Uomo, Univ. Roma "La Sapienza", Viale dell'Università 32, I-00185 Roma). Before mating, all ♂ odon. translocate sperm from the testes (9th segm.) to the penis (2nd segm.), but in C. scitulum this behaviour is repeated up to 6 times during copulation. – The aim of this study was to find an explanation for this unusual behaviour. Copulation behaviour consists of 3-7 cycles, each of which includes 1 intra-♂ sperm translocation, 1 stage I and 1 stage II (i.e. the complete copulatory sequence typical of zygopt.). The duration of pre-copulatory tandem and cycle 1 of copulation was negatively correlated with time of day and positively with ♂ disturbance. ♂ ♂ captured during stage I of any copulatory cycle always had the seminal visicle full of sperm, thus indicating that they do translocate sperm during sperm translocation behaviour. ♀ ♀ were inseminated at stage II. The volume of ejaculate in ♀ ♀ in the field interrupted during stage I of the first copulatory cycle was not significantly different from the volume stored by pre-copula ♀ ♀ indicating that ♂ ♂ cannot remove a significant amount of sperm from the ♀ genital tract at this stage. Spines on the horns of the penis, which in other damselflies help remove the sperm stored by ♀ ♀ are absent in C. scitulum. Experiments with virgin ♀ ♀ that received up to 5 inseminations indicated that the sperm are progressively packed, and therefore the volume is not directly proportional to the number of inseminations. ♂ C. scitulum thus has a poor sperm removal ability and multiple intra-♂ sperm translocation and insemination of the ♀ during the same copulatory act seems to be a mechanism of sperm competition by which the ♂ achieves a greater fertilization success.

(10155) *DIGEST OF SHORT [JAPANESE ODONATOLOGICAL] COMMUNICATIONS*, No. 1 (Feb. 1995). Published by N. Ishizawa (1644-15, Yamaguchi, Tokorozawa, Saitama, 359, JA).
The bulletin is scheduled to appear at irregular intervals. It contains Engl. translations of brief Jap. articles, published originally in various periodicals, selected and translated by the Editor/Publisher. The value of this service can hardly be exaggerated: for the first time the access to this kind of important Jap. odonatol. literature is provided for the international odonatol. community. – The first issue contains 14

titles, from some of the recent issues of *Gekkan-Mushi* and *Nature & Insects*, viz. *Sato, T.*: Collection of an extremely melanized male of Copera annulata (p. 1); – *Kano, K. & K. Hita*: Observation on multiple copulations of Acisoma p. panorpoides and its breeding (p. 1); – *Ogai, H.*: An abnormal type of Asiagomphus melaenops (Selys) (p. 1); – *Takasaki, Y.*: Oligoaeschna pryeri collected at an underground market at Nagoya (pp. 2-3); – *Arai, Y.*: Ovipositing spots of Sympecma p. paedisca (continued report) (p. 2); – *Hosoda, H.*: A male Sympetrum infuscatum without dark spots on wingtips, collected in Shizuoka (p. 2); – *Kano, K.*: Reproductive behaviours of male Rhinocypha p. perforata (Percheron) (p. 2; Hong Kong); – *Eda, S.*: A female Somatochlora uchidai oviposited at the spot 2 m apart from the water edge (pp. 2-3); – *Arai, Y.*: Yearly changes of the first observation day of the year of oviposition of Sympetrum r. risi Bartenef (p. 3); – *Ishizawa, N.*: Oviposition of Sympetrum e. eroticum Selys (p. 3); – *Usuda, A.*: Easy tour of collecting dragonflies in USA (p. 4); – *Eda, S.*: Heterospecific tandem formation between male Cercion c. calamorum Ris and female Indolestes peregrinus Ris (p. 4); – *Sugimura, M.*: Melanized female Lyriothemis pachygastra Selys (p. 4); – *Matsuki, K.*: The dragonfly Libellula angelina designated as a protected species (p. 4).

(10156) THE DRAGON-FLIER. Newsletter of the Ohio Dragonfly Survey, Columbus, Vol. 5, No. 2 (Apr. 1995). – (c/o B. Glotzhober, Ohio Hist. Soc., 1982 Velma Ave., Columbus, OH 43211-2497, USA).
There are 4 pp. of various notes by the Ed. – Recently, the mailing list has increased appreciably, therefore a fee of US $ 5.-/yr had to be instituted for non-Ohio residents. – So far, the Ohio Dragonfly Survey was not a membership organization. The question is here posed as to whether or not it would be opportune to set up a formal society. – Of considerable general insterest is the record of a ♂ Stylurus notatus (Marietta Coll. Campus, 8-IX-1994), which has not been seen in Ohio since 1946 (the earlier records are from 1897 and 1899). – Effective Jan. 26, 1995, Somatochlora hineana became a "Federally Endangered Species".

(10157) FORNAT [=Forschungsstelle für Naturschutz und angewandte Ökologie, Männedorf], 1995. *Katzensee: einmal die Libellen besuchen*. Zürcher Kantonalbank, Zürich. Folding brochure, 10 pp.
Informative brochure for the visitors of this well known lake, canton Zürich, Switzerland; a few odon. spp. are mentioned or illustrated.

(10158) G[ARDINER], B.G., 1995. The joint essay of Darwin and Wallace. *Linnean* 11(1): 13-24. – (Author's address not stated).
Contains parts of the verbatim text of a letter A.R. Wallace wrote in Jan. 1858 from Ternate, Indonesia, to H.W. Bates, in which he enclosed a memorandum of his estimate of the number of distinct insect spp. he had collected during his East Indies mission, incl. "dragonflies etc." (assessed at 110 spp.).

(10159) *HAGENIA. Mitteilungsblatt des Nationalen Büros der SIO in der Bundesrepublik Deutschland und der GdO*, No. 9 (March 1, 1995). – (c/o M. Schorr & U. Krüner, p/a Waldfrieden 25, D-54314 Zerf).
On 18 pp., mostly under the traditional section headings, the issue contains approx. 30 news items, brief reports and articles. New is the section of the "Faunistic notes", containing the following titles: *Fliedner, H.*: Weitere Libellenarten erstmals in Bremen beobachtet (p. 16); – *hf.*: Zum Eiablageverhalten von Aeshna viridis (pp. 16-17); – *Fischer, P.P.*: Feuerlibelle (Crocothemis erythraea) im Steinbruch "Burg" Grafenau/Maichingen (Baden Württemberg) (p. 17). – Among the numerous other noteworthy titles are e.g. a detailed report on the 7th Symposium of the Swiss Odonatol. Soc. (pp. 1-3, by *M. Schorr*); – the list of the presentations at the 1995 GdO meeting (pp. 3-4); – a concise appreciation of the monumental odonatol. "life work" of Professor H. Wildermuth, who was awarded the 1994 "Baden-württembergischer Libellenkundler-Preis" (p. 5; by *R. Buchwald*); – the list of some recent M.Sc. dissertations and some general comments and suggestions relative to the preparation of this kind of works in the inadequately explored European countries (pp. 6-8; by *M. Schorr*); – an annotated list of currently published odonatol. periodicals and serials in the world (pp. 9-12; by *B. Kiauta*) – 3 articles on dragonfly-music (pp. 11-14; by *A. König* and *M. Schorr*); – a gender-wise list of the European genus-group names (p. 15; by *R. Jödicke*), etc.

(10160) HATTO, Y., 1995. [Dragonfly catching is a traditional culture, too]. *Sankei Shimbun*, issue of Feb. 14, p. 23. (Jap.). – (c/o Y. Hatto, 4-17-19 Yakumo, Meguro-ku, Tokyo, 152, JA).
The text is based on an interview with Y. Hatto, the "Master" of the Japanese traditional *buri* and *toriko*

dragonfly catching techniques. A portrait is included. – Cf. also *OA* 9988.

(10161) HOESS, R., 1995. Libelleninventar des Kantons Bern. *Mitt. NatSchutzVerb. Bern* 95(1): 10--11. – (Normannenstr. 35, CH-3018 Bern).
Author's book review of the work listed in *OA* 9865.

(10162) HOLZINGER, W.E., 1995. Libellen (Odonata). *In*: C. Wieser, A. Kofler & P. Mildner, [Eds], Naturführer Sablatnigmoor, pp. 97-102, Naturw. Ver. Kärnten, Klagenfurt. – (Kalvarienweg 11, A-8051 Graz).
A commented list of 27 spp.; Sablatnigmoor (46° 34'N, 14°36'E), alt. 479 m, SE Carinthia, Austria.

(10163) KAPPES, E. & W. KAPPES, 1995. Australien: naturkundliche Reisenotizen 4. Juli-5. August 1990. Reisetagebuch, Vogel- und Libellenlisten, Säugetier- und Schmetterlingsnotizen, sowie Beobachtungen aus Singapore, mit Libellen-Farbfototeil. *Naturk. Reiseber.* 8: ii+109 pp. – (Eichenweg 4, D-22395 Hamburg-Bergstedt).
19 odon. spp. are photographically recorded from various localities in Queensland and in Northern Territory, Australia (pp. 70-75; col. phot. pp. 82-104), and 8 spp. from Singapore (p. 81; col. phot. pp. 105--109).

(10164) KAPPES, E. & W. KAPPES, 1995. Zusammenstellung der Libellen-Beobachtungen im Norden Griechenlands. 26.6-10.7.1982 / 30.6-13.7.1983 / 26.6-16.7.1984. *Naturk. Reiseber.* 1: iv+125 pp. – (Eichenweg 4, D-22395 Hamburg-Bergstedt).
A slightly modified 2nd ed. of the work listed in *OA* 7061. The appendix (Cordulegaster key) is not reprinted.

(10165) KETELAAR, R., 1995. Het verspreidingsonderzoek naar libellen: enkele resultaten. – [The inquire into dragonfly distribution: some results]. *Natura, Utrecht* 92(2): 36-38. (Dutch). – (Zwinstraat 18, NL-7417 CJ Deventer).
A progress report on the current Netherlands Odon. Mapping Project, with brief considerations on some of the forthcoming tasks.

(10166) *LA LETTRE DES SOCIETAIRES* of the Société Française d'Odonatologie, No. 4 (March 15, 1995). – (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois-d'Arcy).
On 6 pp., it contains various management news, incl. Agenda of the 1994 Business Meeting and the 1994 Balance Account of the SFO.

(10167) *LIBELLENNIEUWSBRIEF*, Hilversum, Vol. 3, No. 2 (March, 1995). (Dutch). – (Temporary editorial & subscription address: N. Dingemanse, Rijksstraatweg 132/A, NL-9752 BL Haren).
The following are among the major signed articles: *Lubbers, G.*: Butterfly and dragonfly inventarisation in Noord Limburg, 1993 (pp. 7-9); – *Inberg, H.*: Dragonflies of Gris Nez (Pas de Calais, France) (pp. 10-13); – Orthetrum brunneum soon also in the Netherlands? (p. 14). – Among the various minor notes, the issue also contains the Agenda of the 1995 Colloquium of Dutch Dragonfly Workers (Amersfoort, Apr. 8, 1995), which is to mark briefly the 25th anniversary of this informal association, the direct forerunner of S.I.O., initiated on Feb. 4, 1970, by Dr D.C. Geijskes, Dr B. Kiauta & Dr M.A. Lieftinck, upon the initiative of Dr B. Kiauta, and with the organizational support by Dr J.M. van Brink.

(10168) *LIBELLULA. Mitteilungsblatt der Gesellschaft deutschsprachiger Odonatologen (GdO)*, Vol. 14, No 1/2 (Febr. 1995). – (c/o Mrs U. Krüner, Gelderner Str. 39, D-41189 Mönchengladbach).
Sternberg, K.: Regulierung und Stabilisierung von Metapopulationen bei Libellen, am Beispiel von Aeshna subarctica elisabethae Djakonov im Schwarzwald (Anisoptera: Aeshnidae) (pp. 1-39); – *Ellwanger, G. & S. Zirpel*: Entwicklungsnachweis von Anax imperator Leach in einem Hochmoor in Estland (Anisoptera: Aeshnidae) (pp. 41-48); – *Mauersberger, R.*: Aeshna affinis Vander Linden wieder in Brandenburg (Anisoptera: Aeshnidae) (pp. 49-56); – *Kern, D.*: Die Libellen des Landkreises Diepholz (Insecta, Odonata) (pp. 57-95); – *Jakobs, W.*: Die derzeitige Libellenfauna des NSG "Rietzer-See" (Brandenburg) und seiner näherer Umgebung (pp. 97-104); – *Corbet, P.*: Perspectives in Odonatology: notes from a workshop during the GdO meeting, Höxter, 13 March 1994 (pp. 105-108); – *Kretzschmar, W.*: Erstfund von Cordulegaster bidentatus Selys (Anisoptera: Cordulegastridae) in Sachsen (pp. 109-110); – *König, A. & L. Romero*: "Akustische Odonatologie": Vorstellung einer neuen Betrachtungsweise im Rahmen der GdO--Tagung 1994 (pp. 111-115); – *Gerken, B. & A. König*: Dr. Heiner Steinrücken, ein Nachruf (pp. 116-119); – *Hartung, M.*: Toussaint de Charpentier's Definition für 'Europa' und 'Ausländer' (pp. 121-122); – *Buck, K.*: Libellen im Kreis Steinburg: Erratum (pp.

123-124).

(10169) LOPAU, W., 1995. Beitrag zur Kenntnis der Odonatenfauna der griechischen Inseln Rhodos, Kos, Samos und Chios. Libellenbeobachtungen aus den Sommern 1992, 1993 und 1994 und andere naturkundliche Notizen. *Naturk. Reiseber.* 4: 1-60. – (Kohstedtermoor 26, D-27442 Gnarrenburg).
So far, 58 odon. spp. were recorded from the Greek islands. In the present paper, 46 of these are listed from the isls of Rhodos, Kos, Samos and Chios. The localities and their respective odon. assemblages are described, maps are presented of the odon. localities on the 4 isls, and a commented, bibliographically cross-referenced and annotated list is given of all the recorded spp.

(10170) LOPAU, W., 1995. Die Libellenfauna der Insel Lesbos, Griechenland. *Naturk. Reiseber.* 3: 1-81. – (Kohstedtermoor 26, D-27442 Gnarrenburg).
2nd ed., of the work listed in *OA* 9604.

(10171) MUTH, M., 1995. *Die Libellen des Nationalparks Jasmund (Rügen): faunistisch-ökologische Untersuchungen.* DiplArb. Fak. Biol., Univ. Tübingen. 86 pp. – (Burgusring 41, D-87474 Buchenberg-Ahegg).
28 spp. are listed from the Jasmund National Park, on the Eastsea island of Rügen (Mecklenburg-Vorpommern, Germany), all but 1 were evidenced also by exuviae records. Various minor field observations are of particular interest. For example: larvae of Libellula quadrimaculata survived in great numbers the total drying-up of the breeding habitat in August 1992; the anisopteran exuviae are used by the case-building clubionid spiders.

(10172) *PETALURA. Journal of the Specialist Group for Systematic and Phylogenetic Odonatology, S.I.O.* (Spec. Vol.) 1 (Jan. 27, 1995). – (c/o G. Bechly, Breslauer Str. 30, D-71034 Böblingen).
Bechly, G.H.P.: Morhpologische Untersuchungen an Flügelgeäder der rezenten Libellen und deren Stammgruppenvertreter (Insecta; Pterygota; Odonata) unter besonderer Berücksichtigung der Phylogenetischen Systematik und des Grundplanes der Odonata (pp. 1-341). – Cf. *OA* 10148.

(10173) PILON, J.-G. & D. LAGACÉ, 1995. Analyse comparative de la faune odonatologique des tourbières de Lanoraie avec d'autres biotopes de la zone tempérée froide du Québec, Canada (Odonata). *Opusc. zool. flumin.* 131: 9-18. (With Engl.s.). – (Dépt Sci. Biol., Univ. Montréal, C.P. 6128, Que., H3C 3J7, CA).
During 1991-1992, a thorough odon. survey was undertaken of 2 of the Lanoraie bogs, in the maple-hickory domain of the cold temperate zone of Quebec. A total of 1573 individuals, referable to 43 spp., were evidenced. Of these, 15 spp. commenced the emergence in May, 12 in June, 8 in July, 8 in Aug. and none afterwards. The sampling was adequate, since the a/N slope is flattening after 36 samples. The odon. community has a diversity index of 4,192 and an eveness index of 0.773. The regression analysis, performed on 7 biotopes surveyed in this bioclimatic zone showes that the more diversified an odon. population is, the greater is the rate of eveness attained.

(10174) PILON, J.-G, D. LAGACÉ, L. PILON & S. PILON, 1995. Faune odonatologique de l'étang Streit à Philipsburg, Comté de Missisquoi, situé dans la zone bioclimacique de l'érablière à caryers du Québec, Canada (Odonata). *Opusc. zool. flumin.* 131: 1-7. (With Engl.s.). – (Dépt Sci. Biol., Univ. Montréal, C.P. 6128, Que, H3C 3J7, CA).
Between May and Nov. (1991/1992), 2485 individuals, referable to 34 spp., were evidenced. Observations extend the known flight period in Quebec of Lestes rectangularis, L. unguiculatus, Enallagma b. boreale, E. ebrium, E. vesperum, Nehalennia irene, Aeshna eremita, A. u. umbrosa, Leucorrhinia intacta and Sympetrum semicinctum. The Shannon index shows that E. ebrium, N. irene, S. vicinum, S. internum, L. intacta, Ischnura verticalis and Coenagrion resolutum had higher frequencies than the other spp., suggesting that they dominate the pond's odon. community.

(10175) *PROGRAMM, KURZFASSUNGEN DER BEITRAGE UND TEILNEHMERVERZEICHNIS zur 14. Jahrestagung der Gesellschaft deutschsprachiger Odonatologen,* 24.-26. März 1995, Alexisbad/Harz. 26 pp. – (c/o Dr J. Müller, Pablo-Neruda-Str. 9, D-39126 Magdeburg).
Informationen (p. 2); – *Programm* (pp. 3-5); – *Bonn, A., M. Gasse, J. Rolff & F. Suhling*: Libellen-Zönosen am Flusssystem des Gardon (p. 6); – *Borris, J. & J. Burkowski*: Die Odonatenfauna nährstoffarmer Feuchtgebiete im Bereich der Borkenberge (Westfälische Bucht) unter besonderer Berücksichtigung

des Vorkommens von Somatochlora arctica (Zetterstedt, 1840) (p. 6); – *Clausen, W.*: Coenagrion ornatum und Coenagrion mercuriale im nördlichen Ostwestfalen (p. 7); – *Clausnitzer, H.-J.*: Libellen in von Mineralbodenwasser durchströmten sauren Mooren der Südheide (pp. 8-10); – *Grabow, K.*: Die Libellen eines westafrikanischen Savannenflusses (p. 11); – *Jödicke, R.*: Emergenz von Orthetrum cancellatum aus einem mediterranen Minimalhabitat (p. 11); – *Leipelt, K.G., R. Sommer & A. Martens*: Zeitliches Territorial-verhalten von Oxygastra curtisi (Anisoptera: Corduliidae) (p. 12); – *Lempert, L.*: Habitat und Fortpflanzungsverhalten von Indocnemis orang (Platycnemididae) in West-Malaysien (p. 12); – *Martens, A.*: Anpassungen von Kleinlibellen an Fliessgewässer, eine Übersicht (p. 12); – *Müller, O.*: Untersuchungen zur Bedeutung von Substrat und Strömung für die Ausbildung von Besiedlungsmustern durch Gomphidenlarven (p. 13); – *Muth, M.*: Die Libellen des Nationalpark Jasmund (Rügen) (p. 13); – *Raab, R.*: Die Besiedlung des March-feldkanals (Niederösterreich) durch Libellen (Odo-nata) (p. 14); – *Reich, M. & U. Arnold-Reich*: Libellenlebensräume in alpinen Wildlusslandschaften: Gefährdungsursachen und Schutzkonzepte (p. 14 . – *Rüppell, G. & D. Hilfert*: Lebensgeschichte und Populationsentwicklung der Fliesswasserlibelle Calopteryx haemorrhoidalis (p. 15); – *Schmidt, E.G.*: Zur Odonatenfauna des NSG "Heidefläche bei Kellinghusen" (Störkatherner Heide), Kr. Steinburg/Holstein (p. 15); – *Schulz, S.*: Eiablage von Enallagma cyathigerum (Coenagrionidae) (p. 16); – *Schutte, G. & M. Reich*: Ausbreitungsdynamik von Calopteryx splendens unter Berücksichtigung von technischen Bauwerken und der Vegetationsstruktur (p. 16); – *Siegert, B.*: Unterschiedlicher Nahrungserwerb der Larven von Enallagma cyathigerum und Platycnemis pennipes (Zygoptera, Odonata) (p. 16); – *Spitzenberg, D.*: FAUNDAT – ein Computerprogramm für Entomologen (p. 17); – *Stöckmann, A. & T. Widdig*: Die Libellenfauna der Ise-Niederung: ein Beitrag zur Kenntnis der Fliessgewässerlibellen Niedersachsens (p. 18); – *Steiner, C.*: Einfluss von Prädatoren auf die Larven von Enallagma cyathigerum und Platycnemis pennipes (p. 19); – *Suhling, F.*: Einfluss biotischer Faktoren auf die Verteilung von Gomphiden-Larven im Fliessgewässer (p. 19); – *Tobias, A.*: Einfluss von Feinsedimentfrachten auf grabende Libellenlarven (Gomphidae) (p. 20); – *Winterholler, M.*: Libellenatlas Bayern: Konzeption und Arbeitsstand (p. 20); – *Bedjanič, M.*: Vorläufiger Bericht über die Libellenfauna des Dravsko Polje und seiner Umgebung (Steiermark, NO Slowenien) (p. 21); – *Ewers, M.*: Zur Biologie und Okologie von Sympetrum depressiusculum (Selys) im NSG Ahlhorner Fischteiche (p. 21). – *Teilnehmerliste* (pp. 22-25).

(10176) SATO, Y. & T. USUI, 1995. [*Colour album of Sympetrum (Aka tombo) and Mnais (Kawa tombo) dragonflies*]. Seibundo-shinkosha, Tokyo. 32 pp. – ISBN 4-416-29511-1. – Price: ¥ 2200.- net. (Jap.). – (Publishers: Yayoi-cho 1-13-7, Nakano-ku, Tokyo, 164, JA; – Second Author: 454-3 Itchome, Ageo, Saitama, 362, JA).

The splendid picture book is directed at young people, and it was published in memory of the first Author. It deals with the morphology and behaviour of the Japanese members of the 2 genera. T. Usui selected the photographs from several thousands of Sato's transparancies. – (*Abstracter's Note*: Yuko Sato was a graduate of the Tokyo Univ. of Agriculture & Technology, a passionate and excellent dragonfly photographer, and died in 1991. Most of his work was devoted to Calopteryx, Mnais and Sympetrum. His books are listed in *OA* 110, 2431, 4336 and 5287. For some of his papers cf. *OA* 3169, 3789, 3790, 3894, 4077, 4704, 6662).

(10177) SCHORR, M., 1995. *Beiträge zur Bewertung von Fliessgewässerökosystemen mit Hilfe von Libellenuntersuchungen.* Faunistisch-ökol. Arbeitsgem., Trier. 86 pp. – (No copies are available from the Author; – Publishers: Auf der Redoute 12, D-54296 Trier-Kernscheid).

Basically, this is a bibliography (1465 titles) on the European rheophile odon., crossreferenced with 20 spp. and with close to 70, mainly ecological topics. A concise review of the main problems relative to the assessment of the fluviatile habitats on the basis of their odon. assemblages (pp. 81-86) is of particular interest.

(10178) STERNBERG, K., 1995. Influence of oviposition date and temperature upon embryonic development in Somatochlora alpestris and S. arctica (Odonata: Corduliidae). *J. Zool., Lond.* 235: 163-174. – (Schillerstr. 15, D-76297 Stutensee).

Egg diapause was facultative. With advancing season, the proportion of diapause eggs increases from 0 to 37% in S. alpestris and from 0 to 18% in S. arctica. Eggs needed at least 17 to 38 days for devel-

opment. Hatching curves were temperature-independent in nearly all experiments but developmental rate increased at higher ambient temperature. In S. arctic, responses of developmental rate to temperature differed in eggs laid on different dates. In S. alpestris, duration of egg development decreased as season progressed. The duration of egg development of non-diapause eggs and proportion of diapause eggs in S. alpestris and possibly in S. arctica may also both be a function of female age at the time of oviposition. The ecological significance of the different development patterns is discussed.

(10179) STOBBE, H., 1995. Griechenland 1985: Libellenbeobachtungen in Griechenland im Sommer 1985. *Naturk. Reiseber.* 2: vi+56 pp. – (Holthusenstr. 4 a, D-22359 Hamburg-Volksdorf).
This is the report on a collecting trip (28 July-28 Aug. 1988) to (mainly) N and NW Greece. It consists of 2 parts. First, the species assemblages are listed from the localities visited (Thiamis Delta, Pindos Range, Prespa lakes, Aliakmon, Vodas/Vegoritis, Limni Volvi, NE Greece, Thassos, Meteora, Amvrakikos, Aheron). In the second part, an annotated, species--wise list is presented of all the records.

(10180) STOBBE, H., 1995. Libellen-Frühlingsfunde in Florida 1993. *Naturk. Reiseber.* 7: 1-69. – (Holthusenstr. 4 a, D-22359 Hamburg-Volksdorf).
Early spring records (March 4-23, 1993) are presented for 48 spp. in Florida, USA. These include new county records for 15 spp., and flight period extensions in Ariogomphus pallidus (4-III-1993), Libellula incesta (7-III-1993) and L. vibrans (4-III--1993). – Cf. also *OA* 9726.

(10181) VAN DER NEUT, J., 1995. Rivieren worden schoner, beken vuiler, vindt beekjuffer. *NRC HandelsBl.* (Wet. Onderw.) 25(160): 2. (Dutch).
Article, in the leading Dutch daily, on the occasion of the publication of the Netherlands dragonfly distribution atlas.

(10182) VESTERGAARD, D.A., 1995. [Bijzondere vangsten]. – [Unusual catches]. *Ent. Ber., Amst.* 55(4): ix. (Dutch). – (Van Goyenlaan 158, NL-3764 XM Soest).
Gomphus pulchellus, Jekerdal, the Netherlands; 25--V-1993.

(10183) WASSCHER, M., 1995. Libel & mythe. – [Dragonfly & myth]. *Infusis, Leiden* 69: 24-25. (Dutch). – (Minstraat 15 bis, NL-3582 CA Utrecht).
Some superstitions about dragonflies are explained from the background of Germanic mythology.

(10184) WASSCHER, M. & R. KLEUKERS, 1995. *Verspreidingsgegevens van de Nederlandse libellen (Odonata). Overzicht van de Nederlandse gegevensbestanden (stand eind 1994).* – [*Distribution data of the dragonflies in the Netherlands (Odonata). A review of the Netherlands databank inventories (status end 1994)*]. European Invertebrate Survey – Nederland, Leiden. ii+83 pp. (Dutch). – (Publishers: EIS-Nederland, P.O. Box 9517, NL-2300 RA Leiden).
This is an internal report, not intended for general circulation, and containing ca 50.000 records, as available in the databanks of the Europ. Invert. Survey (EIS), the Neth. Youth Federation of Nature Friends (NJN, JNM) and the Neth. Association of Dragonfly Workers (NLO). For each of the 69 spp. known to occur in the Netherlands, a brief statement is given on its current status, and 3 maps are presented (UTM grid, 5 x 5 km), showing the pre-1950, 1950-1990, and the post-1990 records, resp. In addition, in the same style, but group-wise, the trends are indicated in the distribution of the rheophilous spp., and of those prevailing in the moderately eutrophic and in eutrophic habitats, resp. In a separate chapter, the inadequately surveyed regions, and the spp. that would require (for various reasons) particular attention in the future are emphasized.

(10185) WILDERMUTH, H., 1995. Libellen. *In*: P. Voser & U. Kobe, Naturschutzgebiet Glatt-Hochfelden: die ersten 15 Jahre eines neu angelegten Auenreservates. *NeujahrsBl. naturf. Ges. Zürich* 1995(10): 47-50, 56-57 (cumulative references). – (Haltberg 43, CH-8630 Rüti).
A brief description of the odon. fauna (25 spp.) of the Glatt-Hochfelden Nature Reserve, canton Zürich, Switzerland.

(10186) ZEEGERS, T., 1995. [Odonata van de Millingerwaard]. *Veelpoot* 6(1): 4. (Dutch). – (Weegschaalstraat 207, NL-7521 CH Enschede).
A checklist of 7 spp.; Millingerwaard, Gelderland prov., the Netherlands; 28-V-1994.