

ODONATOLOGICAL ABSTRACTS

1981

- (8921) ZAK, M. & W. ZAK, 1981. Wazki (Odonata) regionu chrzanowskiego. — Dragonflies of the region of Chrzanów. *Studia Ośrodka Dokumentacji fizjograficznej* 8: 223-231. (Pol., with Engl.s.). — (Authors' current address unknown).
A commented list of 48 spp.; Chrzanow, Poland.

1984

- (8922) KIM, D.H., H.C. PARK & C.E. LEE, 1984. [On the chromosomes of *Calopteryx atrata* Selys (Zygoptera: Odonata)]. *Nature & Life* 14(1): 13-17. (Korean). — Engl. abstract in *Insecta koreana* (Suppl.) 3[1993]: 52. — (Authors' addresses unknown).
The original publication is not available for abstracting. From the linguistically very poor abstract, no precise information can be extracted. The chromosome number of the Korean material studied is given as n ♂ = "12 or 13", XO. A "chromosome fragment" was noticed at metaphase II.

1985

- (8923) BAYNE, D.M., 1985. New Records for the Azure Damselfly. *Glasg. Nat.* 21(1): 107-108. — (Nat. Conservancy Council, Univ. Stirling, Stirling, FK9 4LA, Scotland, UK).
Coenagrion puella is reported from 3 localities in Scotland, and the status of *Cordulia "linaeana"* at Dubh Loch is briefly commented; Scotland, UK.

- (8924) KIM, D.H. et al., 1985. A phylogenetic study on some Korean damselflies. *Nature & Life* 15(1): 23-28 (Korean). — Engl. abstract in *Insecta koreana* (Suppl.) 3[1993]: 52-53. — (The names of joint authors not stated in the abstract; the addresses unknown).
The original publication is not available for abstracting. As apparent from the abstract, chromosome conditions were examined in 6 spp. (taxa not stated), and "some phylogenetic considerations" are based on this evidence.

- (8925) KNILL-JONES, R.P., 1985. The dragonfly *Somatochlora arctica* (Zett.) near Oban. *Glasg. Nat.* 21(1): 108-109. — (Author's address unknown).
A freshly emerged ♂ is reported from a Sphagnum-rich bog nr Oban, Scotland, UK (6-VII-1985). *Brachytron pratense* is also said to occur at the same locality (Black Lochs SSSI).

1988

- (8926) LEE, J.W. et al., 1988. A cytotaxonomic study of five species of the Korean Libellulidae (Odonata). *J. nat. Sci. Yeungnam Univ.* 8: 175-184. — Abstract in *Insecta koreana* (Suppl.) 3 [1993]: 53. — (The names of joint authors not stated in the abstract; addresses unknown).
The original publication is not available for abstracting. The abstract is indicative rather than informative, and *Orthetrum albistylum speciosum* is the only sp. mentioned.

1990

- (8927) PECKARSKY, B.L., P.R. FRAISSINET, M.A.

PENTON & D.J. CONKLIN, 1990. Odonata. *In*: B.I. Peckarsky et al., Freshwater macroinvertebrates of northeastern North America, pp. 41-57, Comstock Publishing Associates (Cornell Univ. Press), Ithaca-London. — ISBN 0-8014-2076-8 (alk. paper) and 0-8014-9688-8 (pbk). — (Senior Author: Dept Ent., Cornell Univ., Ithaca, NY, USA; — Publishers: Cornell Univ. Press, 124 Roberts Place, Ithaca, NY 14850, USA).

The order is briefly reviewed, and a generic key to the larvae of the regional fauna is presented. — (*Abstracter's Note*: The exact authorship of the odon. chapter is not apparent from the text. As stated in the Senior Author's Acknowledgements, the manuscript has been thoroughly reviewed and modified by Drs S.W. Dunkle and M.J. Westfall.

1991

- (8928) ANDREW, R.J. & D.B. TEMBHARE, 1991. Effect of starvation and cauterization of cerebral medial neurosecretory cells on the midgut protease activity in the larvae of *Tramea virginia* (Insecta: Odonata). *Proc. natn. Symp. current Status gen. & comp. Endocrinol.*, pp. 101-102, Dept Adv. Stud. Zool., Univ. Delhi, Delhi. — (Dept Zool., Nagpur Univ., Nagpur-44010, India).
The midgut protease activity of 12 days old ultimate larvae was determined under normal and experimental (starvation and cauterization of medial neurosecretory cells) conditions in terms of optical density at 280 nm under optimal conditions, according to the methods of Y. Birk et al. (1962, *J. Insect Physiol.* 8: 417) and I. Ishaaya et al. (1971, *ibid.* 17: 945). The results are summarized in 2 tabs and they indicate that MPA decreases with successive prolongation of starvation, but upon feeding it resumes the normal level. In the MNC-cauterized larvae, the protease activity ceases.
- (8929) ASAHINA, S., 1991. Report on the survey and conservation of the Odonata of the Nansei Islands. *In*: Study of essential factors for preservation of wildlife in Nansei Islands, pp. 261-277 [other bibliogr. data not stated]. (Jap., with Engl.s.). — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
The known occurrence of 106 spp. in the archipelago is reviewed and the biogeographic composition of the fauna is analysed. About 30 indigenous, endemic or locally rare spp. are all associated with hill forests and running waters, therefore the conservation of wooded valleys throughout the archipelago is considered essential.
- (8930) BÖHMER, J., W. VOLLMER & H. RAHMANN, 1991. Amphibien und Insekten als mögliche Bioindikatoren für hohe Säure- und Aluminiumbelastungen im Nordschwarzwald. *VDI Berichte* 901: 967-983. — (Authors' addresses not stated).
37 stagnant water habitats were examined in the Black Forest (=Schwarzwald), Germany. 11 odon. spp. were evidenced in the weakly acid or neutral lakes, while only 7-8 spp. were recorded from the pH 4.9-4.4 habitats. However, since the abundance in the latter group was higher, there was no significant quantitative difference in odon. population densities between the lakes of different acidity.
- (8931) LIU, Z., 1991. Description of two new species of the genus *Anisogomphus* from China (Odonata: Gomphidae). *Contr. Shanghai Inst. Ent.* 10: 129-134. (Chin., with exhaustive Engl.s.). — (Shanghai Inst. Ent., Acad. Sinica, Chungkin Rd (S) 225, Shanghai-200025, P.R. China).
A. chaoi sp.n. (holotype ♂, allotype ♀: Zhangting Co., Fujian prov., 4/3-V-1959, resp.) and *A. jinggangshanus* sp.n. (holotype ♀: Jinggangshan, Jiangxi prov., 8-V-1981) are described, illustrated, and compared with the allied spp. All type specimens are deposited in the Author's institution.
- (8932) MIHIČIĆ, A.V., 1991. *Prividi i slutnje*. Katedra čakavskog Sabora Cres-Lošinj, Beli. 205 pp. — ISBN none. (Croatian). — (c/o Dr M. Franković, Dept Anim. Physiol., Univ. Zagreb, P.O. Box 933, CRO-41001 Zagreb, Croatia).
A collection of poems, by a well-known Croatian poet, with 2 dragonfly poems on pp. 33 and 67, resp.
- (8933) PRASAD, M., 1991. On some aspects of reproductive behaviour in *Brachythemis contaminata* (Fabricius) (Anisoptera: Libellulidae). *Ann.*

Ent. 9(1): 1-3. — (Zool. Surv. India, M. Block, New Alipore, Calcutta-700053, India).

A few notes on territorial and reproductive behaviour at a Calcutta pond. During oviposition, the ♀ is always defended by the ♂.

- (8934) [YANG, X. & H. SUN], 1991. Odonata. In: X. Yang & H. Sun, [Eds], Catalogue of the type specimens in the Insect Collection of the Institute of Zoology, Academia sinica, Beijing, China, pp. 1-3, Agric. Publ. House, Beijing. 56 odon. taxa are listed along with bibliographic references.

1992

- (8935) *AESCHNA*. Published by the Tombo Kenkyukai [= Dragonfly Research Group], Osaka, No. 26 (Dec. 15, 1992). (Jap., some papers with Engl. titles). — (c/o A. Muraki, 476-2-4-1312, Kano, Higashi-Osaka, 578, JA).
Matsuki, K. & K. Kitagawa: Bornean Odonata taken by Dr Ueda. 1. Anisoptera (pp. 1-6); — *Itoh, S.*: New records of *Orthetrum triangulare melania* from Tokashiki Island and Aka Island, Kerama group of Ryukyus (p. 22); — The issue also contains 15 minor scientific notes, in Japanese.
- (8936) ASAHINA, S. & K. KITAGAWA, 1992. A new addition to the odonate fauna of Thailand. *Proc. Jpn Soc. syst. Zool.* 47: 33-36. (With Jap.s.). — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 169, JA).
Hylaeothemis clementia Ris is recorded from Fang, N Thailand (1 ♂, 22-V-1988). The specimen is described, illustrated and compared with a ♂ from Sabah, N Borneo.
- (8937) ASQUITH, A. & R.H. MESSING, 1992. Annotated insect distribution records for the island of Kauai. *Proc. hawaii. ent. Soc.* 31: 151-156. — (Second Author: Dept Ent., Kauai Agric. Res. Stn, Univ. Hawaii, 7370-A Kuamoo Rd, Kapaa, HA 96747, USA).
 The New World *Orthemis ferruginea* is recorded from a stream nr Wailua Agric. Stn, Kauai, Hawaii. The sp. has been previously known only from Oahu (cf. J.J. Beardsley, 1980, *Proc. hawaii. ent. Soc.* 23: 183).
- 8938) BERGEY, E.A., S.F. BALLING, J.N. COLLINS, G.A. LAMBERTI & V.H. RESH, 1992. Bionomics of invertebrates within an extensive Potamogeton pectinatus bed of a California marsh. *Hydrobiologia* 234(1): 15-24. — (Dept Ent., Univ. California, Berkeley, CA 94720, USA).
Enallagma carunculatum, *E. civile* and *Ischnura cervula* are recorded, and their (cumulative) mean densities in 14 sample units (Coyote Hills Marsh, Alameda Co.) are stated.
- (8939) BHARDWAJ, A.C. & N. TYAGI, 1992. On the pH in the alimentary canal of *Pantala flavescens* (Odonata). *Ann. Ent.* 10(1): 53-55. — (P.G. Dept Zool., Sanatam Dharm Coll., Muzaffarnagar-251001, India).
 The pH values of gut tissues and gut contents were identified in various parts of the adult alimentary canal. The increasing tissue (contents) alkalinity was found as follows: stomodaeum 7.00-7.38 (7.60-7.80), mesenteron 7.80-7.90 (5.20-6.77), proctodaeum 8.70-8.90 (7.74-7.80), indicating that solely the mesenteron secretion exhibits a feable acidic pH. The role of anions and cations, and the difference between the tissue and the contents pH are discussed.
- (8940) BOULAHBAL, R., 1992. *Contribution à l'étude de la diapause estivale chez les genres Sympetrum et Aeshna (odonates) dans le Nord-Est Algérien*. Mém. Fin d'Etudes, Univ. Anaba, Vol. 1 (text): vi+87 pp., Vol. 2 (figs): ii+17 pp. (incl. 32 col. phot.). — (c/o Prof. Dr B. Samraoui, 4 rue Hassi-Beida, Annaba, Algeria).
 In an exhaustive study, a summer diapause is evidenced in the Algerian *Sympetrum meridionale* (3 months), *S. striolatum* and *Aeshna mixta* (both 4 months). The diapause is combined with a migration to the hills. The return flight to the reproduction sites takes place in autumn.
- (8941) BULET, P., S. COCIANCICH, M. REULAND, F. SAUBER, R. BISCHOFF, G. HEGY, A. VAN DORSSELAER, C. HETRU & J.A. HOFFMANN, 1992. A novel insect defensin mediates the inducible antibacterial activity in larvae of the dragonfly *Aeschna cyanea* (Palaeoptera, Odonata). *Eur. J. Biochem.* 209(3): 977-984. — (Last Author: Lab. Biol. Gén., Univ. Louis Pasteur, 12 rue de l'Université, F-67000 Stras-

bourg).

The injection of low doses of bacteria into the larvae induces the appearance in their haemolymph of a potent antibacterial activity. The Authors have isolated a 38-residue peptide from this hemolymph which is strongly active against Gram-positive bacteria and also shows activity against one of the Gram-negative bacteria which was tested. The peptide is a novel member of the insect defensin family of inducible antibacterial peptides, which had so far only been reported from the higher insect orders believed to have evolved 100 million years after the Paleoptera. *Aeshna defensis* is more potent than defensin from the dipteran *Phormia*, from which its structure differs in several interesting aspects, discussed in the paper.

- (8942) CARPENTER, F.M., 1992. *Treatise on invertebrate paleontology*, part R: *Arthropoda* (4), vol. 3: *Hexapoda*. Geol. Soc. Am. & Univ. Kansas, Boulder. Bound in 2 parts: xxii + 1-278 pp., ii + 279-656 pp. — ISBN 0-8137-3019-8. — [Protodonata & Odonata: pp. 59-89, 524-525; cumulative bibliography: pp. 529-615]. — (Available, at US \$ 87.50 net. from Geol. Soc. Am., 3300 Pentros Place, P.O. Box 9140, Boulder, CO 80301, USA).

This is a comprehensive and authoritative, yet compact statement of the current knowledge concerning fossil insects, comparable to the milestone works of S.H. Scudder (1891), A. Handlirsch (1906-1908) and B.B. Rohdendorf (1962, Engl. ed. 1991). Professor Carpenter, who is publishing in the field of paleoentomology (most particularly also on fossil Odon.) since 1928, has been working on the preparation of this volume for almost 30 years; the result is a monumental treatise, which is certainly to remain the absolute basis in this field for many years to come. The literature is covered comprehensively up to approx. 1983, and less systematically up to 1992. — The work gives a review and concise descriptions of all the known genera and higher taxa, phylogenetic considerations, and a tab. of stratigraphic distribution of the families. — The Protodonata (Meganeuridae, Paralogidae) and the Odonata are considered separate orders, since the former lack the pterostigma and nodus and possess a well-developed arculus. In the Odon., 6 suborders are recogni-

zed, viz. Protanisoptera Carp. 1931; Archizyoptera Handl., 1906; Triadophlebiomorpha Prit., 1981; Anisozyoptera Handl., 1906; Anisoptera Sel., 1854; and Zygoptera Sel., 1854. The present geological record covers 42 families, of which 31 are extinct (mostly known from the Mesozoic), but the phylogenetic position of some is uncertain. — (*Abstracter's Note*: It is not possible to mention here the numerous, highly relevant suggestions and views contained in this work. However, since L.N. Pritykina's 1980 reclassification of the order (cf. *OA* 3716) escaped the notice of most workers, Carpenter's paragraph on the systematic position of Epiophlebia (p. 73) should be quoted here: "... As our knowledge of the Jurassic Anisozyoptera advanced, it became increasingly clear that Epiophlebia is not a member of that suborder [...]. Pritykina concluded that it is a derivative of an ancient aeshnoid line (Anisoptera) and placed it in a new superfamily, Epiophlebioidea." Consequently, no Anisozyoptera had survived the Cretaceous.

- (8943) CARVALHO, A.L., 1992. Aspectos de biologia de *Coryphaeschna perrensi* (McLachlan, 1887) (Odonata, Aeshnidae), com ênfase no período larval. *Revta bras. Ent.* 36(4): 791-802. (With Engl.s.). — (Depto Zool., Inst. Biol., Univ. Fed. Rio de Janeiro, C.P. 68044, BR-21944-970 Rio de Janeiro, RJ).
Based on field and laboratory observations, adult and larval habits are described. Larval development takes ca 10 months, with 15 instars (prolarva excl.). The adult period covers 7 months, with the peak in Feb.
- (8944) CHAO, H.-f., 1992. List of Yunnan Odonata. *Proc. Yunnan ent. Soc.* 1992 (Nov.): 3 pp. [reprint; no pagination]. (Chin.). — (Biol. Control Res. Inst., Fujian Agric. coll., Fuzhou, Fujian-350002, P.R. China).
A checklist of 96 spp., brought together (1955-1957) by a joint Chinese-Soviet research team. It is based on 1683 specimens, but does not contain any locality data or comments. The list was prepared in 1961, and remained then unpublished.
- (8945) FOOTE, D., C.P. STONE & L.W. CUDDIHY, 1992. The impact of alien pigs on native arthro-

pods in Hawaii Volcanoes National Park. *Bull. ecol. Soc. Am.* (Suppl.) 73(2): 176-177 [abstract only]. — (Hawaii Volcanoes Natn. Park, P.O. Box 52, Hawaii National Park, HA 96718, USA).

[Verbatim]: Estimates of population sizes and species diversities of groups of native arthropods are being used to evaluate the impact of feral pigs in wet forests of Hawaii Volcanoes National Park. Fenced ungulate exclosures that have existed for up to 10 yr are being compared with forests that are actively being used by pigs. Work is focusing initially on species assemblages of native *Drosophila* and Odon. whose host plants are known to be sensitive to disturbance by ungulates. Population densities and assemblage diversities are measured using bait-trapping and surveys of larval habitat. These data are used in conjunction with estimates of host plant densities and size distributions in order to measure the initial impacts of feral pigs and the subsequent effect of their removal. The results of this study will be used to develop long-term monitoring protocols for native invertebrates and their host plants in the park.

(8946) GAEDIKE, R., 1992. Bibliographie der Bestimmungstabellen europäischer Insekten (1985-1990). *Beitr. Ent.* 42(1): 55-195. (With Eng.s.). — (Deutsches Ent. Inst., Schicklerstr. 5, D(O)-1300 Eberswalde-Finow). Lists 15 odonatol. titles. — For the previous parts of this series cf. *OA* 1621, 3729, 5805, 7747.

(8947) GARDINER, B.O.C., 1992. Abundance of butterflies, moths and dragonflies in Cambridge in 1991. *Ent. Rec. J. Var.* 104(1/4): 77-79. — (2 Highfield Ave., Cambridge, CB4 2AL, UK). 5 odon. spp. are recorded from Author's garden, and 1991 is considered a good dragonfly year in the Cambridge area, UK.

(8948) GARRISON, R.W., 1992. Using ordination methods with geographic information: species resolution in a partially sympatric complex of neotropical *Tramea* dragonflies (Odonata: Libellulidae) *In*: J.T. Sorensen & R. Footitt, [Eds], *Ordination in the study of morphology, evolution and systematics of insects: applications and quantitative genetic rationals*, pp. 223-240, El-

sevier, Amsterdam-London-New York-Tokyo. — ISBN 0-444-89801-8. — (1030 Fondale St., Azusa, CA 91702-0821, USA).

2 forms of *T. binotata* are generally distributed over southern Florida, Mexico, the Antilles, and S through southern South America. A red morph, called *T. insularis*, known from allopatric populations in peninsular Florida, the Bahamas and Cuba, is similar to a more wide ranging black morph, known from Mexico, south through South America. The black and red morphs are sympatric only in Puerto Rico, Jamaica and Hispaniola. Analysis of seven mensural characters using principal components analysis (PCA) and discriminant function analysis (DFA) revealed differences in relation to geography, which support treating the two forms as separate species. PCA showed differing patterns of covariance for the allopatric OTUs in attribute space, suggesting differentiation among the character suites for the traits analyzed. In DFA, allopatric populations, used as "knowns", were employed to assign individuals, as "unknowns", from the areas of sympatry, with a 68% rate of correct classification in relation to color phena. A PCA on a large sample of Puerto Rican specimens from one locality resulted in a bipolar cluster, consistent with their assignment to red or black phenotypes.

(8949) GORHAM, C.T. & D.S. VODOPICH, 1992. Effects of acid pH on predation rates and survivorship of damselfly nymphs. *Hydrobiologia* 242(1): 51-62. — (Second Author: Biol. Dept, Baylor Univ., Waco, TX 76798, USA). The effects of low pH on mortality, survivorship, predation rate, respiration rate, and caloric content were examined in larvae of *Enallagma civile*. It was hypothesized that acid stress would increase mortality and decrease predation rate among surviving individuals, and that respiration rate and caloric content (as measures of physiological condition) would decrease in acid-stress conditions. Individual early instar larvae were cultured in the laboratory with a controlled diet of mosquito larvae. The dragonflies were reared to final instar in pond water and artificially reconstituted soft water (RSW) adjusted to pH 3.5, 4.5, 5.5, and ambient conditions of the collection site. Predation rate was significantly lower in RSW than in pond water

in treatments of equivalent H^+ concentrations. This indicated stress from differences in dissolved solids in RSW compared with pond water. Acid conditions significantly affected predation rates in pond water, but only at pH 3.5 and only for the largest instar. Mortality increased and survivorship decreased at low pH. Early-instar mortality and survivorship were particularly susceptible to acid stress. Treatments of pH 4.5, 5.5 and ambient did not significantly alter respiration rate or caloric content. However, respiration rate and caloric content increased at pH 3.5. *Enallagma* larvae tolerated pHs as low as 4.5 without significant changes (including predation rate). However, the effects of pH 3.5 were significant and greatly lowered the predation and fitness of the larvae.

- (8950) HOERSCHELMANN, U., 1992. Ökologie und Produktionsbiologie benthischer Makroinvertebrata des Belauer Sees (Schleswig-Holstein) unter besonderer Berücksichtigung der Hydrachmidia (Acari). *Faun.-ökol. Mitt.* (Suppl.) 14: 1-100. (With Engl.s.). — (Steinstr. 7, D(W)-2300 Kiel-1).

Species composition, abundance and aspects of production biology are given for 5 invertebrate groups/orders, incl. *Coenagrion pulchellum* and *Ischnura elegans* (Belauer See, Schleswig-Holstein, N Germany).

- (8951) HOSTETTLER, K., 1992. Die Libellenfauna im Hudelmoos (1981-1990). *Mitt. thurg. naturf. Ges.* 51: 215-226. — (Schulstr. 7, CH-8590 Romanshorn).

A commented list of 29 spp. is presented, and some conservation and management measures are suggested and briefly discussed (Hudelmoos, canton Thurgau, Switzerland).

- (8952) [ISHIDA, K.], 1992. Tombo (Odonata). In: A handbook of the Lake Biwa zoobenthos, 2: Aquatic insects, pp. 18-23, Lake Biwa Res. Inst., Ohtsu. — ISBN none. (Jap.). — (Author: Zool. Lab., Fac. Agric., Meijo Univ., Tempaku-ku, Nagoya, 468, JA).

6 spp. are listed, their distribution on the lake is mapped, and col. phot. of adults and larvae are included.

- (8953) JACQUEMIN, G., 1992. Les odonates des val-

lées des Vosges du Nord face à la déprise agricole. *Anns scient. Rés. Bios. Vosges Nord* 2: 69-79. (With Engl. & Germ. s's). — (Lab. Biol. Insectes, Univ. Nancy-I, B.P. 239, F-54506 Vandoeuvre-lès-Nancy).

During 1989-1990, the effects of the agricultural decline on odon. populations were studied in 6 valleys in the Northern Vosges Biosphere Reserve, France. The biotopes considered harbour a noteworthy odon. community, incl. some very sensitive spp., the status of which is generally in decline in W Europe (*Gomphus vulgatissimus*, *Ophiogomphus cecilia*, *Onychogomphus forcipatus*), and some others that are uncommon in France (*Aeshna grandis*, *Cordulegaster boltonii*, *Somatochlora metallica*). The highest abundance and species diversity are met with in the "wild" sections of the brooks, comprising various fallow areas of different age, etc.

- (8954) JOHANSSON, A. & F. JOHANSSON, 1992. Effects of two different caddisfly case structures on predation by a dragonfly larva. *Aquatic Insects* 14(2): 73-84. — (Dept Anim. Ecol., Univ. Umea, S-90187 Umea).

Aeshna juncea larvae preyed on 2 spp. of cased caddis larvae, viz. *Limnephilus pantodapus* with long cylindrical cases, and *L. rhombicus*, with "hedgehog" cases. Direct observations revealed that dragonfly larvae had a significantly shorter reaction time and a significantly longer handling time when preying on *L. pantodapus* larvae. Number of attacks, captures and ingestions by *A. juncea* were not significantly different between the two caddis larva. Capture success and ingestion efficiency did not differ significantly. Captures of *L. pantodapus* larvae were made through the case wall, while *L. rhombicus* larvae were captured from the front end of the case. In functional response experiments, *A. juncea* showed a higher attack rate and a longer handling time with *L. pantodapus*. In a mixed prey situation, a fixed preference for *L. pantodapus* larvae was apparent, and consequently no indication of switching was found. Observational experiments corroborated data from the functional response experiments.

- (8955) KHALIQ, A. & M. YOUSUF, 1992. Coenagrionidae (Zygoptera: Odonata) of Pakistan. I. Subfa-mily Agriocnemidinae. *Pakistan J. Zool.*

- 24(4): 287-291. — (First Author: Dept Ent., Univ. Coll. Agric., Rawalakot, AK, Pakistan; — Second Author: Dept Ent., Univ. Agric., Faisalabad, MY, Pakistan).
In Pakistan, the subfam. is represented solely by 4 Agriocnemis spp., viz. dabreui Fraser, nana (Laidlaw), pygmaea (Ramb.) and splendidissima Laidlaw; with the exception of pygmaea, these are listed here for the first time for the national fauna. The adults of both sexes are keyed and described, and the locality data are stated.
- (8956) KLASBERG, M., 1992. Het libellenproject. — [The Dragonfly Project]. *Stridula* 16(2): 82. (Dutch). — (Parklaan 29B, NL-9724 AR Groningen).
Refers to the same project as listed in OA 8752.
- (8957) KÖNIG, A., 1992. *Die Libellen des Wurzacher Riedes: 39 Steckbriefe mit Angaben zur Biologie, Verbreitung und Gefährdung*. Begleitheft zur Wanderausstellung, Teil 2, 44 pp. Naturschutzzentrum, Bad Wurzach. — (Author & Publisher: Mühltorstr. 3, D(W)-7954 Bad Wurzach).
40 concise "species monographs" of the Wurzacher Ried odon.; Baden-Württemberg, Germany. — Cf. also OA 7905.
- (8958) KÖNIG, A., 1992. *Libellen - Edelsteine der Lüfte*. Begleitheft zur Wanderausstellung, Teil 1, 28 pp. Naturschutzzentrum, Bad Wurzach. — (Author & Publisher: Mühltorstr. 3, D(W)-7954 Bad Wurzach).
This is an excellently styled brief outline of dragonfly biology, intended as a "guide" for the visitors of the exhibit, as listed in OA 8418. Also included are 4 dragonfly poems, viz. "Die Freude" by J.W. von Goethe, "Die Libelle" by H. Erhardt, "Indianisches Gebet" by H. Old Coyote and "Liebeserklärung an die Libellen" by A. König.
- (8959) LADET, A., 1992. *Les odonates de la vallée de l'Ardèche et de ses affluents*. viii+54 pp., Syndicat Intercommunal Vallée Ardèche & Féd. Rhône-Alpes Protect. Nat., Aubenas. — (Author: FRAPNA Ardèche, Le Village, St-Etienne-de-Fontbellon, F-07200 Aubenas).
A monographic treatment of the fauna (47 spp.), with emphasis on local distribution, and with concise comments on each sp.
- (8960) LEFF, L.G., J.V. McARTHUR, J.L. MEYER & L.J. SHIMKETS, 1992. Exchange of bacteria among stream habitats: the role of invertebrates and flow rate. *Bull. ecol. Soc. Am. (Suppl.)* 73(2): 245-246 [abstract only]. — (First Author: Dept Biol., Univ. Georgia, Athens, GA 30602, USA).
[Verbatim]: Exchange of bacteria among stream habitats (sediments, water column, and leaves) was examined in laboratory microcosms. Marked bacteria exhibiting resistance to antibiotics were introduced into one habitat and their movement into the other habitats was monitored. Contribution of bacteria derived from the source habitat to the receiving habitat was calculated based on Acridine Orange direct counts and counts on plates containing antibiotics. The role of macroinvertebrates was determined by including either dragonfly, mayfly, stonefly nymphs of shrimp in microcosms. There was no statistically significant effect of invertebrates on exchange of bacteria between leaves and water. To simulate the influence of flow rate on exchanges stirring speeds were varied. Exchanges between sediment and water were significantly higher at medium stirring speeds than at higher or lower speeds. However, movement of bacteria from leaves to water did not differ significantly.
- (8961) McCOLLUM, S.A., 1992. Non-lethal consequences of dragonfly predation on *Hyla chrysoscelis* tadpoles. *Bull. ecol. Soc. Am. (Suppl.)* 73(2): 266 [abstract only]. — (Dept Biol., Duke Univ., Durham, NC 27706, USA).
[Verbatim]: The morphology and behaviour of tadpoles vary depending on whether or not dragonfly larvae are preying on them. Tadpoles were reared experimentally with and without stimuli associated with dragonfly predation, generating 2 types of tadpoles. Tadpoles from these 2 groups were then placed in tanks with dragonflies for short periods to determine if they differed in susceptibility to predation. Fewer of the tadpoles reared with the dragonfly stimuli were eaten. Reduced susceptibility to predation may result from learned predator avoidance, physiological conditioning or direct consequen-

ces of morphology.

- (8962) MULLER, S., G. HOUPERT, G. JACQUEMIN, R. LEBORGNE, Y. MULLER, A. PASQUET & J.-C. WEISS, 1992. Les modifications floristiques et faunistiques consécutives à la déprise agricole dans les vallées des Vosges du Nord: synthèse des résultats et application au maintien de la biodiversité. *Annls scient. Rés. Bios. Vosges Nord* 2: 109-124. (With Engl. & Germ. s's). — (Third Author: Lab. Biol. Insectes, Univ. Nancy-I, B.P. 239, F-54506 Vandoeuvre-lès-Nancy).
The discontinuation of traditional pastoral agriculture in the valleys of northern Vosges, France, appears to exercise a negative effect on flora and species diversity in some groups, such as e.g. the Lepidoptera. The effect, however, is positive in e.g. the Arachnida, Carabidae and in the odon. The occurrence of 16 odon. spp. in various types of habitats is stated and briefly discussed. — For details cf. OA 8953.
- (8963) NEL, A. & F. ESCUILLIÉ, 1992. Présence du genre *Stenolestes* Scudder, 1895 dans les laminites oligocène du Revest-des-Brousses (Lubéron, France). *Entomologiste* 48(6): 337-349. (With Engl.s.). — (First Author: 8 ave. Gasson, F-13600 La Ciotat).
A specimen of *S. couletti* Nel & Papaz. (cf. OA 5749), from the Stampien deposits of Revest-des-Brousses (Alpes-de-Haute-Provence, France) is described and illustrated. The Sieblo-siidae are placed in the Lestoidea, and the affinities of various genera are discussed.
- (8964) NEL, A. & J.-C. PAICHELER, 1992 [published Feb. 1993]. Les Odonata fossiles: état actuel des connaissances. Huitième partie: les Calopterygoidea fossiles (Odonata, Zygoptera). *Bull. Soc. ent. Fr.* 97(4): 381-396. (With Engl.s.). — (First Author: 39 rue Stendhal, F-75020 Paris).
A revised review of the hitherto known taxa. Systematic affiliation of the Upper Jurassic taxa is uncertain. The Tertiary spp. are good indicators of warm climate.
- (8965) NISHIDA, G.M., [Ed.], 1992. *Hawaiian terrestrial arthropod checklist*. Bishop Mus., Honolulu, viii+262 pp.
The biogeographic status and distribution are indicated for the 39 odon. spp. so far known from the archipelago.
- (8966) NOMAKUCHI, S., 1992. Male reproductive polymorphism and form-specific habitat utilization in the damselfly *Mnais pruinosa* (Zygoptera: Calopterygidae). *Ecol. Res.* 7(2): 87-96. — (Department of Biology, College of Liberal Arts, Saga University, Saga, 840, JA).
M. pruinosa has 2 ♂ forms with different reproductive behaviour. The 'esakii' (orange-winged ♂) were territorial around oviposition sites, while the 'strigata' (hyaline-winged ♂) were non-territorial, often sneaking into the esakii's territory or loitering on the foliage of vegetation along stream banks. The place in the stream in the study area where females frequently appeared was covered by reeds and had abundant oviposition sites. It was difficult for the territorial esakii to stay there because the crowded reeds prevented them from defending their territory and discovering the females. Furthermore, there was competition for the limited territorial space with another species, *M. nawai*. *strigata* males concentrated in this place in direct proportion to the number of females. Females frequently mated with *strigata* males and probably deposited eggs fertilized by *strigata* sperm rather than *esakii* sperm. The density of *strigata* was higher than that of *esakii* in this study area. If the average reproductive success of *esakii* and *strigata* males is equal, this may indicate that the equilibrium point between the 2 ♂ forms is biased toward *strigata*.
- (8967) *ODONATOLOGICAL LIBRARY NEWS*. Published by the Kansai Research Group of Odonatology, Osaka, No. 10 (March 29, 1992), No. 11 (Dec. 1, 1992). (Jap., with Engl. title). — (Distribution outside Japan: K. Inoue, 5-9, Fumino-sato 4-chome, Abeno-ku, Osaka, 545, JA).
In the 2 issues, 363 titles from Japanese periodicals are listed.
- (8968) ÖKOKONZEPT, [Publ.], 1992. *Rote Liste Kalender 1992. Libellen: vom Aussterben bedroht*. — (Publishers: Postfach 15 02 34, Am Hackenbruch 85, D(W)-4000 Düsseldorf-1).
A 29 x 34 cm monthly wall calendar, with a col. phot. (22 x 21 cm) of an odon. sp., consid-

- ered in Germany "endangered" (category 1), or "vulnerable" (category 2). The vernacular and taxonomic names are stated along with a brief habitat characterisation, etc. for each sp. There are also a frontispiece photograph and 2 pp. of text, which continues throughout the calendar and gives a good general outline of the German dragonfly world, with emphasis on its conservation. — All photographs are available also as postcards.
- (8969) PAPAŽIAN, M., 1992. Inventaire des odonates de Camargue: essai de cartographie et constitution d'une collection de référence. *C. r. scient. Réserve Camargue* 1992: 103-109. — (23 bd de Roux Prolongé, F-13004 Marseille).
A commented list of 38 spp. known from the Camargue, France, with a phenology graph for the 29 spp. evidenced in 1992.
- (8970) POLHEMUS, D.A., 1992. Megalagrion damselflies in Hawaii: are they really as endangered as we think? *Bull. ecol. Soc. Am.* (Suppl.) 73(2): 306 [abstract only]. — (Bishop Mus., Honolulu, HI 96817, USA).
[Verbatim]: Damselflies of the genus *Megalagrion* are endemic to the Hawaiian Islands, although closely related to (and possibly congeneric with) the widespread Palearctic genus *Pseudagrion*. There has been a long standing perception among Hawaiian entomologists that *Megalagrion* spp. are becoming progressively rarer, and that some may be extinct or nearly so. From 1990 onward it was decided to investigate this assertion by initiating a systematic survey for *Megalagrion* in inland waters throughout Hawaii. The null hypothesis was that all *Megalagrion* spp. were extinct on all islands; this hypothesis could then be disproved for a given sp. by finding populations still extant. To date, every sp. that has been diligently searched for has eventually been rediscovered. Certain areas, such as west Maui, sections on windward Molokai, and the Ninole Hill streams of Kau still await detailed surveys, but these are relatively pristine areas that are likely to retain their original *Megalagrion* faunas. Although it thus appears that no sp. of *Megalagrion* known to science has gone extinct, it is clear that many spp. are less abundant than formerly, particularly on Oahu. The reasons for this decline are speculative, but center on predation or competition from introduced spp., rather than habitat loss.
- (8971) RANDOLPH, S., 1992. *Dragonflies of the Bristol region*. 86 pp., Bristol Museums and Art Gallery & Avon Reg. Environ. Records Centre, Bristol. — ISBN 0-900199-39-3. — Available from the Author at £ 4.95 net. — (2 Burghley Rd, St Andrews, Bristol, BS6 5BN, UK).
Unlike most of the earlier published British regional dragonfly books, the present volume does not deal with a politically defined county. In addition to Avon, the "Bristol Region", as treated in this work, includes the entire area covered by the Bristol Regional Environmental Records Centre, thus also southern Gloucestershire (cf. OA 7842) and eastern Somerset. Within this territory, 25 spp. are known to breed. Save for *Cordulegaster boltinii* (which was added in the proof!), these are dealt with species-wise in concise "monographs", outlining their regional distribution and habitat preferences, and for each of which a regional distribution map is provided. The chapter, "Specific problems and questions", with the appended table showing the national and regional status of all British spp., is mainly directed at the future recorders and will certainly greatly facilitate their work. — The presentation of the enormous wealth of information is excellent, the style of (decorative) artwork is most refreshing (though unexpected in this kind of publications) and the beautiful cover design makes the outward appearance of the book also "commercially" attractive.
- (8972) REINHARDT, K., 1992. Beobachtungen von Libellen an Fließgewässern in Georgien (Odonata). *Ent. Nachr. Ber.* 36(4): 243-248. (With Engl. & Fr. s's). — (Hauptstr. 38, D(O)-9109 Oberlichtenau).
7 spp. from stagnant, and 13 from running water habitats in the Republic of Georgia are recorded and discussed in considerable detail. *Gomphus schneideri* is new to Georgia.
- (8973) REISS, T., 1992. Die Libellenfauna der Petite Camargue Alsacienne. *Mitt. ent. Ges. Basel* 42(4): 136-142. — (Welschmattstr. 23, CH-4055 Basel).

- A commented list of 40 spp. from nature reserve "Petite Camargue Alsacienne", dép. Haut-Rhin, France.
- (8974) RIEXINGER, W.-D., D. FOOTE & C.P. STONE, 1992. Comparative population ecology of *Megalagrion* damselflies inside and outside feral pig exclosures in wet forests of Hawaii Volcanoes National Park. *Bull. Ecol. Soc. Am.* (Suppl.) 73(2): 323 [abstract only]. — (First Author: Bachstr. 54, D(W)-7107 Bad Friedrichshall; — Park: Box 52, Hawaii Natn. Park, HI 96718, USA).
[Verbatim]: Larval habitats of 2 *Megalagrion* spp. were surveyed along transects within and adjacent to a 150 ha ungulate exclosure in order to assess the impact of feral pigs on these endemic odon. Larvae of *M. peles* were predicted to occur at higher frequency within the exclosure because these semiterrestrial larvae complete their development in host plants that are used as forage by pigs. Alternatively, *M. microdemas* was predicted to occur at higher frequency in fresh puddles created by active pig rooting outside the exclosure. These predictions were evaluated by estimating the density of pigs, host plants and naiads in disturbed and protected sites along transects. The results support the conclusion that different levels of disturbance by feral pigs in wet forests simultaneously enhances habitat for one endemic damselfly at the cost of decreasing habitat quality for the other sp.
- (8975) SAMRAOUI, B., G. DE BELAIR & S. BENYACOUB, 1992. A much-threatened lake: Lac des Oiseaux in northeastern Algeria. *Environ. Conserv.* 19(3): 264-267, 276. — (Inst. Nat. Sci., Univ. Annaba, B.P. 12, El Hadjar, Annaba, Algeria).
The paper includes a checklist of 23 odon. spp. and a brief discussion on the composition of the odon. fauna. *Enallagma cyathigerum* is reported from Algeria for the first time; in northern Africa the sp. has been hitherto known from Morocco only. Of particular interest is the relic occurrence of the afrotropical *Acisoma panorpoides* ascalaphoides.
- (8976) SPAHR, U., 1992. Ergänzungen und Berichtigungen zu R. Keilbachs Bibliographie und Liste der Bernsteinfossilien. Klasse Insecta. *Stuttgart. Beitr. Naturk.* (B) 182: 1-102. (With Engl.s.). — (Staatl. Mus. Naturk., Rosenstein 1, D(W)-7000 Stuttgart-1).
Additions to and corrections of the work listed in OA 3980, with additional literature up to 1991. The copal inclusions, not considered by Kailbach, as well as a synopsis of fossils from other than Baltic amber are added.
- (8977) STALLIN, P., 1992. Pour un catalogue des insectes aquatiques du Pays d'Auge. *Entomologiste* 48(2): 65-78. (With Engl.s.). — (33 rue Jean Mermoz, F-76320 Caudebec-les-Elbeuf). The annotated catalogue contains also 20 odon. spp. (E Calvados, Normandy, France).
- (8978) TEMLIN, M., 1992. Rdeči rubin ob jezeru življenja. — [Red ruby at the lake of life]. *Moj mali Sver* 24(11): 24. (Slovene). — (Author's address not stated).
A brief note, with a few photographs, but without locality and spp. names. For *Sympetrum* (?) *sanguineum* the Author creates a vernacular name "rubinji kačji pastir" (= "ruby-like dragonfly").
- (8979) TENNESSEN, K.J., 1992. First record of *Gomphaeschna furcillata* and *Anax longipes* in Wisconsin (Odonata: Aeshnidae). *Great Lakes Ent.* 25(4): 305-306. — (1949 Hickory Ave., Florence, AL 35630, USA).
The 2 new records are NW range extensions for each sp., viz. *G. furcillata*: 2 ♂, Sawyer Co., 10-VI-1992 (ca 650 km NW of the nearest Michigan record), and *A. longipes*: 2 ♂, Waushara Co., 27-VI-1978 and 4-VII-1978, resp. (so far reported only from Indiana and Illinois, an earlier record from Wisconsin was erroneous).
- 8980) TÓTH, S., 1992. A Béda-Karapanksa Tájvédelmi Körzet szitakötő (Odonata) faunája. — The dragonfly fauna of the Béda-Karapancsa nature conservation area (Odonata). *Dunántúli Dolg. Term. tud. Sorozat* 6: 53-62. (Hung., with Engl. & Germ. s's). — (Rákóczi tér 1, HU-8420 Zirc).
31 spp. are evidenced and the composition of the fauna is discussed.
- (8981) TRÖSTER, G., 1992. Fossile Insekten aus den

mitteleozänen Tonsteinen der Grube Messel bei Darmstadt. *Mitt. int. ent. Ver.* 17(4): 191-208. — (Sekt. Messel, Forschungsinst. Senckenberg, Senckenberganlage 25, D(W)-6000 Frankfurt/Main).

An anisopteran larva is recorded (and shown in a col. phot.) from the Lutetian of Messel, nr Darmstadt, Germany.

- (8982) VAN BUSKIRK, J., 1992. Crowding and cannibalism in the dragonfly *Aeshna juncea*. *Bull. ecol. Soc. Am.* (Suppl.) 73(2): 372 [abstract only]. — (Dept Zool., North Carolina St. Univ., Raleigh, NC 27695-7617, USA).

Text identic with that in *OA* 8593.

- (8983) VON DER DUNK, K., 1992. Beobachtungen von Insektenvorkommen im Nürnberger Reichswald. *Galathea* 8(4): 148-156. (With Engl.s.). — (Ringstr. 62, D(W)-8551 Hemhofen).

3 odon. spp. are listed from "Reichswald", Nürnberg, Germany.

- (8984) WEN, D.-y., 1992. Odonata. In: J. Peng et al., [Eds], Iconography of forest insects in Hunan, China, pp. 1-16, Hunan Natural Sci & Technol., ISBN 7-5357-1068-9. (Chin., with Engl.s.). — (Central-South Forestry Coll., Hunan, P.R. China).

Descriptions and figs are given of 52 spp. from Hunan, China.

1993

- (8985) ASHTON WATER DRAGONFLY SANC-TUARY, [Publ.], 1993. [*Dragonfly calendar 1993*]. — (Publishers: Ashton Wold, Ashton nr Oundle, Peterborough, PE8 5LZ, UK).

A 29 x 38 cm monthly wall calendar, with a col. dragonfly photograph (16.5 x 24 cm) for each month. The vernacular and taxonomic names are stated for each sp.; there is no other text.

- (8986) BEDJANIČ, M., 1993. *Gradivo za razstavo "Škodljive in koristne žuželke v Sloveniji": Kačji pastirji (Odonata)*. — [Guide to the exhibit, "Harmful and beneficial insects of Slovenia": *Dragonflies (Odonata)*]. 3 pp. (stencil). Circulated by the Author, Fram (Slovene). —

(Fram 117/A, SLO-62313 Fram, Slovenia).

This is a brief general presentation of the order, with special reference to the fauna of Slovenia (69 spp.). The public exhibit, in the "Križanke" Hall, Ljubljana, Slovenia, has been mainly prepared by the students of the Faculty of Agriculture, University of Ljubljana. General Organizer: S. Gomboc (Gančani 110, SLO-69231 Beltinci, Slovenia). In his Opening Address (5 Feb. 1993), Dr J. Carnelutti (Slovene Academy of Sciences and Arts), characterized it as one of the best insect exhibits yet organized in Slovenia.

- (8987) BELLMANN, H., 1993. *Libellen beobachten-bestimmen*. Naturbuch Verlag, Augsburg, 274 pp. — ISBN 3-89440-107-9. — (Available at the SIO Central Office, Biltoven, at Hfl. 68.-net.).

A revised and updated edition of the work listed in *OA* 6111.

- (8988) BRIDGES, C.A., 1993. *Catalogue of the family-group, genus-group and species-group names of the Odonata of the world*. Charles A. Bridges, Urbana, IL. xxxiv+774 pp., col. frontispiece, hardcover (22 x 28.5 cm). — ISBN none. — Price from the US: US \$ 110.- net. — Available also from the SIO, Biltoven, at Hfl. 250.- approx., postage excl.

This is the second, revised, significantly improved and updated edition (dated Feb. 1) of the monumental work, as described in *OA* 7953.

- (8989) *BULLETIN OF THE HOKKAIDO ODONATOLOGICAL SOCIETY*, Vol. 6 (Jan. 30, 1993) (Jap., some papers with Engl. titles and s's). — (c/o Prof. Dr H. Ubukata, Dept Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Shiroyama 1, Kushiro, 085, JA).

Sato, M.: The discovery of *Indolestes peregrinus* in the Hidaka district (p. 1); — Damselflies collected in the southern part of Rumoi district (p. 2); — *Sympetrum croceolum* taken in Kamikawa district (p. 2); — Four dragonflies collected in Hidaka district (p. 3); — Two new damselflies for Tokachi (p. 4); — *Fukumoto, A.*: Lestes sponsa new to the fauna of the Rishiri Island (p. 4); — *Itoh, S.*: Dragonflies of Hidaka Province, Hokkaido (pp. 5-11); — A case of *Macromia amphigena masaco* inhabits a stream (p.

- 12); — *Ubukata, H.*: Some dragonflies collected from Akan National Park and adjacent areas during 1971-1989 (pp. 13-15); — The usage of the Japanese vernacular name for *Libellula quadrimaculata asahinai* (pp. 16-17); — *Harauchi, Y.*: Some dragonfly records from Rumoi (p. 18); — *Tachibana, M.*: Dragonfly fauna of the Shimukappu village, Kamikawa district (pp. 19-21); — *Fukumoto, A.*: Some dragonflies from Atsuma, Iburi district (pp. 22-23); — The distribution of *Calopteryx cornelia* in Hokkaido (pp. 24-27); — Dragonflies of Lake Hangetsu, at the foot of Mt Yohteï (pp. 28-29); — *Copera annulata* taken in Rumoi district (p. 29); — *Boyeria maclachlani* in the southern parts of the Sarochi district (pp. 30-31); — *Wataji, M., Y. Takeuchi, H. Sato & T. Kawaguchi*: Relative abundance and phenology of dragonflies in the Tonnesu pond (pp. 32-35); — *Iwasa, M.*: The discovery of *Copera annulata* in Tokachi (p. 36); — [*Fukumoto, A.*]: A district-wise distribution table of the Hokkaido dragonflies (8) (pp. 37-39; vernacular nomenclature); — Distribution table of dragonflies of the islets off the Hokkaido island (6) (pp. 40-42; vernacular nomenclature); — *Ubukata, H. & A. Fukumoto*: Review of the local odonate literature (p. 43). — The list of the H.O.S. members, the correspondence from the membership, various management notes and reports, and the editorial postscript are concluding the issue. — (*Abstracter's Note*: At present the Society has over 70 members; President: Prof. T. Koyama, Secretary: K. Hiratsuka, Editor: A. Fukumoto. The Society's address: c/o Prof. H. Ubukata, cf. above).
- (8990) COLLECTION OF PAPERS ON INSECT DIVERSITY IN KOREA, 1. *Insecta koreana* (Suppl.) 3: iv+182 pp. Published Feb. 10, 1993. The odon. section appears on pp. 51-53. It contains bibliographic data and brief abstracts of 19 papers (1936-1990) related to the fauna of Korea, and published in Japanese and Korean periodicals. The titles are stated in Engl. translation only.
- (8991) d'AGUILAR, J., 1993. Notes de bibliographie entomologique. 4. Identification des sujets zoologiques du "Recueil de cent planches, fleurs et insectes, sur vélin en miniature, 1624, par Daniel Rabel". *Entomologiste* 49(1): 39-41. — (7, rue Adrien-Lejeune, F-93170 Bagnolet). *Onychogomphus forcipatus* and *Anax imperator* are identified among 100 insect and plant illustrations on vellum, prepared (1624) by the 17th century French designer D. Rabel for the library of Louis XIII, and published recently as a book (Rabel, D., 1991, *Recueil de cent fleurs et insectes*, Anthèse, Paris).
- (8992) DUMONT, H.J. & M.M. AL-SAFADI, 1993. Further additions to the dragonfly fauna of the Republic of Yemen (Odonata). *Opusc. zool. flumin.* 109: 1-8. — (First Author: Dept Animal Ecol., Univ. Gent, Ledeganckstraat 35, B-9000 Gent).
24 spp. were collected during a cool and rainy period in Feb., 1993. Winter spp. were dominant, with *Aeshna yemenensis* Waterston a prominent example, while summer spp. had not, or were only beginning to emerge. In addition to *Anax parthenope* Sel. and *Tramea limbata* (Desj.), the oriental, brackish-water *Macrodiplax cora* (Br.) and the afrotropical *Orthetrum abbotti* Calv. are new to Yemen.
- (8993) EDA, S., 1993. Annual review on entomology for 1992 in particular insect groups. Dragonflies. *Gekkan-Mushi* 266: 24-29. (Jap., with Engl. title). — (3-4-25 Sawamura, Matsumoto, Nagano, 390, JA).
This is a sequel in a series (cf. OA 8544), but the title is misleading. The review covers solely a selection of works of the Japanese authors, whether or not related to the fauna of Japan.
- (8994) EDA, S., 1993. Chronicle of Japanese odonatology in 1992, with supplemental notes of 1991. *Nature & Insects* 28(3): 17-24. (Jap., with Engl. title). — (3-4-25 Sawamura, Matsumoto, Nagano, 390, JA).
Sequel in the series, the last paper of which is listed in OA 8404.
- (8995) GERBER, J.-C., 1993. Création d'étangs à Grandval près de Moutier (BE, Suisse) et premiers résultats de leur colonisation par les odonates. *Bull. romand Ent.* 11(1): 41-51. — (Fin l'Epine 4, CH-2640 Moutier).
The odon. succession in the man-made (1988) wetland area nr Moutier, Jura, W Switzerland (alt. 620 m) has been monitored systematically

during 1989-1992. In all, 23 spp. were evidenced (of which 18 certainly autochthonous) as follows: 8 spp. in 1989, 16 in 1990, 23 in 1991, and 20 spp. in 1992. Prior to the creation of the artificial habitats, only 3 spp. were recorded from the area.

duals from Kyushu, Tanega-shima and Yakushima are referable to ssp. *mariannae*, and those from Amami-oshima and from the islands S of it to the nominate ssp. Herewith the original hypothesis is confirmed, and the Authors consider the distinct subspecific status of the Japanese karyomorph justified.

- (8996) *GRACILE*. [Newsletter of Odonatology]. Published by the Kansai research Group of Odonatology, Osaka, No. 49 (March 21, 1993). (Jap., with Engl. titles). — (Distribution outside Japan: c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
Inoue, K.: On scientific names of dragonflies. 2. Origins and meanings of scientific names (pp. 1-5); — *Aoki, T.*: Report of the survey trip on odonate fauna of North Hyogo (8) in late summer, 1992 (pp. 6-9); — Report of the survey trip on the odonate fauna of North Hyogo (9) in late autumn, 1992 (pp. 10-12); — Records of *Sympetrum depressiusculum* and *S. cordulegaster* in North Hyogo and North Kyoto (p. 13); — *Fujimoto, K.*: A record of *Sympetrum striolatum imitoides* at Mizorogaike pond confirmed (pp. 13-14); — *Mori, T. & Y. Mori*: Odonate fauna of Kamyoji Ponds in Nagaokakyo City, Kyoto prefecture, 1 (pp. 14-17); — *Okada, S.*: Let's fabricate hand-made dragonflies (pp. 18-19).
- (8997) HIGASHI, K. & H. KAYANO, 1993. The distribution of distinct karyomorphs of *Crocothemis servilia* Drury (Anisoptera, Libellulidae) in Kyushu and the south-western islands of Japan. *Jap. J. Ent.* 61(1): 1-10. — (First Author: Dept Biol., Coll. Liberal Arts, Saga Univ., Honjyomachi 1, Saga, 840, JA).
 On the basis of karyotypic morphology, B. Kiauta (1983, *Odonatologica* 12: 381-388) separated the Japanese mainland *C. servilia* as a distinct subspecies, *mariannae*, and suggested its contact zone with the nominate ssp. "must be somewhere in the area of the southern Japanese island chain, between Taiwan and the Japanese mainland". In order to test this hypothesis, the chromosome cytology has now been examined in 6 Kyushu populations, and in those from the following islands connecting Kyushu with Taiwan: Tanega-shima, Yaku-shima, Amami-oshima, Okinawa, Ishigaki-jima, Iriomote-jima, and Yonaguni-jima. As it appears, the individuals from Kyushu, Tanega-shima and Yakushima are referable to ssp. *mariannae*, and those from Amami-oshima and from the islands S of it to the nominate ssp. Herewith the original hypothesis is confirmed, and the Authors consider the distinct subspecific status of the Japanese karyomorph justified.
- (8998) HOESS, R., 1993. Libellen Floridas. *Nouvelles Cent. suisse Cartogr. Faune* 5: 18. — (Normannenstr. 35, CH-3018 Bern).
 Brief impressions from an odonatological vacation trip to Florida, USA.
- (8999) INOUE, K. & K. TANI, 1993. *Tombo monoshiri-cho*. — [*Dragonfly handbook*]. 22 pp. Sewerage Sect., Osaka Prefect. Govern., Osaka. (Jap.). — (Available from: K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
 This is a general "introduction" to dragonflies, directed at a general reader, and giving good information on morphology, biology and behaviour, with phot. of adults (mainly by S. Kondoh) and drawings of larvae (by T. Nagata) of the characteristic Japanese genera.
- (9000) *JOURNAL OF THE BRITISH DRAGONFLY SOCIETY*, Vol. 9, No. 1 (Apr., 1993). — (c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR8 4AG, UK).
Brooks, S.J.: Review of a method to monitor adult dragonfly populations (pp. 1-4); — *Leyshon, O.J. & N.W. Moore*: A note on British Dragonfly Society's survey of *Anaciaeschna isosceles* at Castle Marshes, Barnby, Suffolk, 1991-1992 (pp. 5-9); — *Jödicke, R.*: Crepuscular flight of *Aeshna mixta* Latr. (Anisoptera: Aeshnidae) (pp. 10-12); — *Jones, S.*: Variations of the blue markings on segments 7, 8 & 9 in *Ischnura elegans* (p. 13); — *Miller, P.L.*: Maladaptive guarding in the Common blue damselfly (*Enallagma cyathigerum*) (pp. 14-16); — *Silsby, J.*: A final thought on distinguishing between Odonata and Anisoptera when using the English word "dragonfly" (p. 17); — *Holmes, J.D.*: A probable sighting of *Aeshna affinis* in Avon (pp. 17-18); — *Paine, A.*: Notes and observations (Behaviour; Odonata as prey, ... as predators, ... and as both; Expansion migration etc.; First dates, Last dates) (pp. 19-22); — *Tagg, D.*: Book review (p. 23); — Recent odonatological publi-

cations (p. 24).

- (9001) KETELAAR, R., 1993. Wanneer begint de vuurjuffer *Pyrrhosoma nymphula* te vliegen? — [When commences the adult season of *Pyrrhosoma nymphula*?] *Amoeba*, *Amst.* 67(1): 27-28. (Dutch). — (c/o NJN/JNM-Libellenproject, Bokkingshang 1, NL-7411 GG Deventer).
A peculiar "international inquiry" re the earliest dates of emergence is described. The information required is: date, locality, number of mature/teneral individuals noticed, type of habitat, water colour and size of the basin. Although it is emphasized the emergence is probably related to water temperature (in the Netherlands particularly so after 21 March), no temperature statement is required in the questionnaire.
- (9002) KIAUTA, B. & C. SOLÈR, 1993. Die rätoromanischen Namen für die Libellen Graubündens: ein Diskussionsvorschlag (Odonata). *Opusc. zool. flumin.* 110: 1-8. (With Engl. & Raeto-Roman s's). — (First Author: SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven; — Second Author: Lia Rumantscha, Plessur Str. 47, CH-7001 Chur).
The sole widespread and generally used Raeto-Roman expression for "dragonfly" in the canton of Grisons is "libella", though the appellations "mustgacavagl", "mazza-cavals" and "catschegls" are listed for the Sursilvan dialect (R. Vieli & A. Decurtins, 1980, *Vocabulari romontsch: tudestg-sursilvan*, Ligia Romontscha, Cuera), and "guta tgavagl" is apparently used occasionally in the Sutsilvan speech (C. Mani, 1977, *Pledari sutsilvan: rumantsch-tudestg, tudestg-rumantsch*, Leia Rumantscha, Cuira). It goes without saying, there are no vernacular names referable to particular species, save for a few constructed incidentally for the sake of some general, popular Raeto-Roman texts (viz. G.A. Caviezel, 1988, *Radioscola*, Cuira 3: 10-22). Consequently, the Raeto-Roman nomenclature is missing in the standard "Atlas" of the Swiss Odonata (A. Maibach & C. Meier, 1987, *Docum. faun. Helv.* 4: 1-230). In the present paper, this is preliminarily proposed (in Rumantsch grischun) for the species known, or expected to occur in the canton (cf. H. Schiess & J. Demarmels, 1979, *Jber. naturf. Ges. Graubünden* 98: 67-91). — As far as the Ladinic area is concerned, the expression "dragonfly" does not occur in the 1763 *Catalogus multorum verborum* of S.P. Bartolomei (cf. J. Kramer, 1976, *Veröff. tirol. Landesmus. Ferdinandum* 56: 65-115); most of the Friulian folk names were published by B. Kiauta (1969, *Atti Mus. civ. Stor. nat. Trieste* 26: 177-247).
- (9003) KIMMINSIA. Newsletter of the United Kingdom National Office of the International Odonatological Society (SIO), Vol. 4, No. 1 (May 1, 1993). — (c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR8 4AG, UK).
A brief obituary for the late Prof. Dr J.M. van Brink and the announcement of the 13th Int. Symp. Odonatol. (p. 1) are followed by the traditional sections, "News from members" (pp. 1-2), "Conservation news" (pp. 2-3), "Late 1992 visitors to Natural History Museum" [= BMNH] (p. 3), and "News from universities" (pp. 3-4), and by the following signed articles: Richards, S.: Dragonflies of the Stars [Papua New Guinea] (p. 4); — Parr, M.: Whitegate Pond — update (p. 5); — Silsby, J.: Witnessing reproduction in Chlorolestes (p. 5); — Butler, S.: In search of Greek cordulegasters, pt 3 (p. 6); — Vick, G.: Taxonomy of the Cordulegastridae [a review of the paper listed in OA 8725] (pp. 6-7); and — Thompson, R.: A trip to the Camargue (p. 7). — Various offers from, and requests by the members conclude the issue (p. 8).
- (9004) KOTARAC, M., 1993. Delo odonatološke skupine — [Biology students' research camp "Raka '92": the work of the odonatology group]. In: M. Guček, [Ed.], Tabor studentov biologije Raka '92, pp. 14-15, Zveza organizacij za tehnično kulturo Slovenije (Gibanje Znanost mladini), Ljubljana. (Slovene). — (Marohovih 11, SLO-62000 Maribor, Slovenia).
An annotated checklist is given of 29 spp., evidenced (Aug. 3-7, 1992) at 17 localities in the Raka area, eastern Slovenia. — Cf. also M. Kotarac, 1993, *Notul. odonatol.* 4: 1-4.
- (9005) LEGRAND, J., 1993. A propos de *Phyllogomphus helenae* Lacroix, 1921 (Odonata, Anisoptera, Gomphidae). *Revue fr. Ent.* (N.S.) 15(1): 30. (With Engl.s.). — (Lab. Ent., Mus. Nat. Hist. Nat., 45 rue Buffon, F-75005 Paris).

- A lectotype is designated for the single ♀ specimen, preserved in MNHN, Paris, and previously considered as lost. Upon the comparison with ♀ *P. aetiops* Sel., 1857, and the examination of the vulvar scales of both taxa, *P. helenae* is considered a valid sp.
- (9006) MAIBACH, A. & C. MEIER, [Eds], 1993. Bericht Basel [5. Tagung der Schweizerischen Libellenkundler]. *Nouvelles Cent. suisse Cartogr. Faune* 5: 16-18. — (First Author: Le Bourg, CH-1610 Oron-la-Ville; — Second Author: Postfach 252, CH-8636 Goldingen).
Contains abstracts of papers, presented at the 5th Colloquium of Swiss odonatologists (Basel, Nov. 28, 1992), viz.: *Hoess, R.*: Emergenzphänologie von 21 im gleichen Biotop vorkommenden Libellenarten (p. 16); — *Küry, D., J. Christ & T. Reiss*: Vorkommen und Ökologie der beiden Quelljungferarten *Cordulegaster boltonii* und *Cordulegaster bidentata* in der Region Basel (2. Teil) (p. 16); — *Mulhauser, B.*: Recensement des libellules de la Grande Carrière (rive sud du lac de Neuchâtel) (p. 16); — *Schaub, M.*: Besitzen Männchen der Torfmosaikjungfer *Aeshna juncea* Reviere? (p. 16); — *Schorr, M.*: Informationen und fragmentarische Anmerkungen zur aktuellen odonatologischen Forschung in Deutschland (pp. 16-17); — *Buchwald, R.*: Die Späte Adonislubelle *Ceragrion tenellum* in der Schweiz: Verbreitung, Habitatswahl, Gefährdung (p. 17); — *Oertli, B. & D. Cambin*: Cycle de vie de *Coenagrion puella* dans un étang du canton de Genève (p. 17); — *Eigenheer, K.*: Die Flusslibellen der Region Solothurn (p. 17); — *Labhardt, F.*: Fragen zum Übernahmungsverhalten von Libellen und zum Phänomen der Gruppenbildung bei *Sympetrum depressiusculum* (p. 17); — *Hostettler, K.*: Habitate von *Sympetma braueri*, *Lestes sponsa*, *Erythromma viridulum*, *Anax parthenope* und *Sympetrum depressiusculum* (p. 17); — *Gerber, J.-G.*: Création d'étangs dans la vallée de Moutier et premiers résultats (p. 17); — *Hoess, R.*: Libellen Floridas — Dias aus den Sommerferien (p. 18). — The 6th Colloquium will be convened at Yverdon-les-Bains, Nov. 6, 1993.
- (9007) MARTINIA. Bulletin des odonatologues de France. Vol. 9, No. 1 (Apr. 1993). — (c/o J.-L. Dommanget, 7 rue Lamartine, F-78390 Bois-d'Arcy).
Dommanget, J.-L.: Editorial (p. 1); — *de Vischer, M.-N. & G. Balança*: Le peuplement odonatologique de la vallée de l'Hérault (pp. 3-15); — *Le Calvez, V.*: Capture d'un odonate par le Gaillet gratteron (*Galium aparine* L.) (pp. 15-16); — *Grand, D.*: A propos de *Leucorrhinia albifrons* (Burmeister, 1839) et d'*Aeshna subarctica elisabethae* (Walker, 1908) [sic!] dans les monts du Jura (Départements du Doubs et du Jura) (pp. 19-20); — *Dommanget, J.-L.*: Les libellules figurées sur vélin par Daniel Rabal en 1624 (pp. 21-22); — Rubrique bibliographique (p. 22-26); — *Machet, P.*: Rubrique philatélique (pp. 26-28).
- (9008) MATSUKI, K., 1993. Description of the larval exuvia [sic!] of *Oligoaeschna kunigamiensis* (Ishida) (Aeshnidae, Odonata). *Gekkan-Mushi* 26(3): 15-17. (Jap. with Engl. title and fig. captions) — (Hasama-cho 3-1575-14, Funabashi-shi, Cgiba, 274, JA).
The exuviae from Okinawa is described, morphological features illustrated, and compared with *O. pryleri*.
- (9009) MOORE, N.W., 1993. *Dragonflies: an action plan for their conservation*. 48 pp. Odonata Specialist Group, Species Survival Commission, IUCN, Cambridge/UK. — (Author: Farm House, Swavesey, Cambridge, CB4 5RA, UK). This is a discussion paper for the 8th IUCN/SSC Odonata Specialist Group Meeting, Osaka, Japan, Aug. 1, 1993. It consists of the following chapters: "Introduction", "The means of conserving dragonflies", "Priorities", "Action proposals", "Monitoring the effectiveness of the Action Plan", "General conclusions", and "Recommendations to IUCN". Several Appendices are added.
- (9010) (mü), 1993. Wichtiges Warnsignal für die Umwelt. Jahrestagung mit 200 Libellenkundlern. *Rheinpfalz* 1993 (March 25): 1. — (c/o Dr J. Ott, L.A.U.B., Rudolf-Breitscheid Str. 15, D(W)-6750 Kaiserslautern).
A regional press report on the 12th Annual Meeting of the German Odonatological Society (GdO), Kaiserslautern, March 19-21, 1993, with emphasis on the addresses by P.S. Corbet, B. Gerken and J. Ott. — For the abstracts of papers

- cf. OA 9021.
- (9011) NARAOKA, H., 1993. The emergence of *Symptetrum depressiusculum* Selys (Odonata). *Gekkan-Mushi* 265: 11-13. (Jap., with Engl. title). — (Fukunoda, Itayanagi-machi, Kitatsugaru-gun, Aomori, 038-36, JA).
[Abstract not available].
- (9012) *NEWSLETTER [OF THE] BRITISH DRAGONFLY SOCIETY*, No. 23 (Spring, 1993). — (c/o Mrs J. Silsby, 1 Haydn Ave., Purley, Surrey, CR8 4AG, UK).
The Editorial, devoted to the 10th anniversary of the BDS, is followed, on 12 pp., by 32 news items, concluded by the Society's 1991/1992 Balance Account. The new feature, introduced with this issue, is a Children's section. — From among the numerous, highly interesting items only a few could be mentioned here. Of particular importance are *P.S. Corbet's* views on the BDS editorial policies and publication programme (pp. 3-4), various reports on dragonfly conservation by *N.W. Moore* (pp. 4-5); and the addresses of the 26 BDS Local Groups (pp. 6-7). *P.L. Miller's* report on the 1992 Indoor Meeting (with brief "abstracts" of the presented papers, stands witness of the high scientific standards of the Society (pp. 1-2).
- (9013) O'CARROLL, D., 1993. Feature-detecting neurons in dragonflies. *Nature, Lond.* 362: 541-543. — (Dept Zool., Univ. Cambridge, Downing St., Cambridge, CB2 3EJ, UK).
Since the earliest descriptions of the compound eye, the popular impression has prevailed that insects and mammals view the world differently. Recent work, however, underscores marked evolutionary convergence between the visual systems of vertebrates and insects at both optical and early processing levels. Here several classes of cells from the third optic ganglion of *Hemipteridia tau* that respond selectively to different target classes are described. Several physiological properties of these cells are remarkably similar to those of cells from areas 17, 18 and 19 of the mammalian visual cortex. One class of bar-sensitive, orientation-biased cells could mediate discrimination of the orientation of low spatial frequency components of patterns. The existence of neurons functionally similar in many respects to those in the mammalian cortex suggests that evolutionary convergence in visual processing is not limited to early pathways. Insects, like mammals, seem to possess mechanisms for extracting spatial features from visual scenes.
- (9014) *ODONATOLOGICAL LIBRARY NEWS*. Published by the Kansai Research group of Odonatology, Osaka, No. 12 (March 21, 1993). (Jap., with Engl. title). — (Distribution outside Japan: K. Inoue, 5-9, Fuminosato 4-chome, Abenoku, Osaka, 545, JA).
Lists 160 titles from Japanese, and 1 from a Chinese periodical.
- (9015) OERTLI, B., 1993. Inventaire des odonates du canton de Genève: premiers résultats. *Nouvelles Cent. suisse Cartogr. Faune* 5: 19-21. — (4 rue Zurlinden, CH-1207 Genève).
A checklist of 36 spp., evidenced in the canton of Geneva (1991-1992), Switzerland.
- (9016) PAPAZIAN, M., 1993. Note sur les anomalies morphologiques d'origine accidentelle observées chez les odonates adultes. *Entomologiste* 49(2): 67-78. — (23, blvd de Roux Prolongé, F-13004 Marseille).
Various teratological abnormalities in adult European Platycnemididae, Aeshnidae, Corduliidae and Libellulidae are described, illustrated and discussed.
- (9017) *PETALURA*. Annual periodical of the Specialist Group for Systematic and Phylogenetic Odonatology (SGSPO), Böblingen, Vol. 1 (Suppl.) (May 1, 1993). — ISSN 0944-0453. — Annual subscription: US \$ 10.- net (prepayment). Edited by, and available from G. Bechly (Breslauer Str. 30, D-71034 Böblingen).
This is an "advance" issue of the new periodical, containing an annotated address list of the SGSPO Charter Members (G. Bechly, S.J. Brooks, C. Cook, R.W. Garrison, Y.-c. Hong, P. Janssens, B. Kiauta, J. Lempert, H. Lohmann, M. McPeck, R. Novelo-Gutiérrez, G. Peters, V.K. Srivastava, J. Trueman, W. Zessin). — The journal (14x21 cm, printing surface ca 11.5x15.0 cm) will published original research papers, summarizing reviews and short communications in all fields of systematic odonatology;

- in Engl. only. All manuscripts will be refereed, and have to be submitted in camera-ready form. — The SGSPQ is an informal, non-profit association of workers interested in odon. systematics and phylogeny, with special reference to cladistic studies. Membership is open to all bona-fide workers; applications are accepted by the Editor/Chairman-Elect (cf. address above). Regular meetings are scheduled in conjunction with the Int. Symp. Odonatol.
- (9018) PILON, J.-G. & D. LAGACÉ, 1993. Additions à la faune odonatologique du Lac Martin et de son émissaire. *Faberies* 18(1): 33-34. — (Dép. Sci. biol., Univ. Montréal, C.P. 6128, Montréal, Que., H3C 3J7, CA).
Checklists are given of the spp. recorded at Lake Martin (31 spp.) and at its affluent (13 spp.), Quebec, Canada. — For earlier records from this locality cf. *OA* 6774, 8146.
- (9019) PILON, J.-G. & D. LAGACÉ, 1993. Pantala hymenea (Say) aux Iles-de-la-Madeleine (Odonata: Libellulidae). *Faberies* 18(1): 11-12. — (Dép. Sci. biol., Univ. Montréal, C.P. 6128, Montréal, Que., H3C 3J7, CA).
A ♀ is reported from the Havre Aubert Is. (8-VIII-1992) in the Magdalen Isls, Quebec, Canada. This is only the third record from Quebec and represents an interesting local eastward extension of the range. — For a review of the odon. fauna of the archipelago cf. *OA* 8413.
- (9020) PILON, J.-G., S. PILON & D. LAGACÉ, 1993. Cycle vital de *Lestes eurinus* Say dans la zone tempérée froide du Québec, Canada (Odonata: Lestidae). *Opusc. zool. flumin.* 108: 1-8. (With Engl.s.) — (Dép. Sci. biol., Univ. Montréal, C.P. 6128, Montréal, Qué., H3C 3J7, CA).
Field studies in 1985-1986 indicate the sp. is in the region semivoltine and requires approx. 11 months to complete a generation. Larval growth is rapid from July to Nov. and retarded during the winter months. The population overwinters in 4 stages preceding the ultimate instar, the diapause apparently takes place in the penultimate instar, normal growth is resumed the following spring. Emergence occurs in June, it is rather synchronized and it seems temperature dependent. Oviposition occurs in July, in emerged and dry Nuphar only. The life history pattern in Quebec is compared with that evidenced from South Carolina, USA (P.E. Lutz, 1968, *Ecology* 49: 576-579).
- (9021) PROGRAMM UND KURZFASSUNGEN DER VORTRÄGE. 12. Jahrestagung Gesellschaft deutschsprachiger Odonatologen GdO e.V., Kaiserslautern/Rheinland-Pfalz, 19.-21.3.-1993. 24 pp. Edited by J. Ott. — (Available from SIO Central Office, Biltoven, at Hfl. 20.-net).
Allgemeine Information (pp. 1, 18); — Programm zur 12. Jahrestagung Gesellschaft deutschsprachiger Odonatologen e.V. in Kaiserslautern 19.3-21.3.1993 (pp. 2-5). — Kurzfassungen der Vorträge: Weinhaber, N.: Saisonale Veränderungen der Körpergewichte von *Calopteryx haemorrhoidalis* (Odonata: Calopterygidae) (p. 6); — Langenbach, A.: Zeitpunkt des Fabwechsels bei Weibchen von *Ischnura pumilio* (Charpentier) (Zygoptera: Coenagrionidae) (p. 6); — Schmidt, E.: Die ökologische Nische von *Sympetrum depressiusculum* in Münsterland (pp. 6-7); — Jödicke, R.: Neue Aspekte zur diurnalen Flugrhythmik bei *Anax imperator* Leach (p. 7); — Trockur, B.: Neues zum *Epithea* Vorkommen im Saarland (pp. 7-8); — Schmidt, B.: Die Sibirische Winterlibelle *Sympetma paedisca* im südwest-deutschen Alpenvorland: Verbreitung, Habitatwahl, Minimalbiotop, Gefährdung (pp. 8-9); — Wildermuth, H.: Populationsbiologie der Grossen Moosjungfer *Leucorrhinia pectoralis* (p. 9); — Gerken, B. & M. Wienhöfer: Biozöologische Betrachtungen an Libellen im Rahmen des Tierökologischen Geländepraktikums in einer französischen Flussau (pp. 9-10); — Stuckas, H.: Die Libellenfauna des Kreises Bad Liebenwerda (p. 10); — Müller, J.: Zur Odonatenfauna des Niedermoor-Naturparks Drömling im Naturschutzgrossprojekt von gesamtstaatlich repräsentativer Bedeutung (pp. 10-11); — Heitz, S.: Neufunde von *Gompus similimus* für die BRD am Hochrhein (p. 11); — Schmidt, E.: Libellen-Biotoperfassungen und -bewertungen in der Dialektik von Arbeitsökonomie und ökologischer Relevanz (pp. 11-12); — Corbet, P.S.: Are Odonata useful as bioindicators? (pp. 12-13); — Hoess, R.: Emergenzphänologie von 21 syntopen Libellenarten (p. 13); — Ott, J.: Was ist eine Libellenpopulation? (pp. 13-14); — Zes-

- sin, W.: Die Flügelgeäder der Libellen: Entwicklung und Terminologie im Spiegel paläontologischer Befunde (p. 14); — *Mauersberger, R.*: Zur wirklichen Verbreitung von *Orthetrum coerulescens* Fabricius und *O. ramburi* Selys = *O. anceps* Schneider in Europa und die Konsequenzen für deren taxonomischen Rang (pp. 14-15); — *Schütte, C.*: Frühe Larvenstadien und Ei-Entwicklung von *Onychogomphus uncatus* (Odonata: Gomphidae) im Freiland und Labor (p. 15); — *Suhling, F.*: Prädationswirkung von zwei Fischarten auf die Larven von *Onychogomphus uncatus* (Gomphidae) (p. 15); — *Martens, A.*: Experimente zur Eiablageplatzwahl von *Platycnemis pennipes* an *Nuphar lutea* (p. 16); — *Böcker, L.*: Grössenspezifische Verteilung der Larven von *Cordulegaster boltoni* und *C. bidentatus* über den Bachlauf-Untersuchungen an allo- und sympatrischen Bächen im Giesener Raum (p. 16). — Poster: *Müller, O.*: Gomphidenemergenz an der Mittleren Stromoder (p. 17); — Beobachtungen zum Beutefangverhalten der Larven von *Ophiogomphus cecilia* (Fourcroy, 1758), *Gomphus flavipes* (Charpentier, 1825) und *Gomphus vulgatissimus* (Linné, 1758) (p. 17). — [Addresses of the participants] (pp. 20-23). — For a regional press report cf. OA 9010.
- (9022) RAMLI ABD SAMAD, O., 1993. Papatung papatung Malaysia. — [The dragonflies of Malaysia]. *Wings of Gold* 1993 (Apr.): 56-59. (Malay). — (Author's address not stated).
A nicely illustrated feature article, characterising the order, with a reference to the Malaysian fauna, in the inflight monthly of Malaysia Airlines.
- (9023) SELYSIA. Newsletter of the Societas Internationalis Odonatologica and of the U.S. National Office. Vol. 22, No. 1 (March 1, 1993). — (c/o Dr D.M. Johnson, Dept Biol. Sci., East Tennessee St. Univ., Johnson City, TN 37614-0703, USA).
In addition to a dozen of "Short notices" [= a new style of communications introduced with the present issue], 3 requests from the readers, some editorial texts, informative communications, and a few haiku, the issue contains the following signed articles: *Mahato, M.*: Epiophlebia laidlawi — a living ghost (p. 2); — *Kotac-
rac, M.*: Founding of Slovene Section of S.I.O. (p. 3); — *Kiauta, B.*: Jean Belle appointed knight [of the Order of Bailleul] (p. 3); — *Schorr, M.*: Dr Klaus Sternberg awarded "Karlson-Preis" (p. 3); — *Michalski, J.*: Our trip to Thailand with Brother Amnuay Pinratana (pp. 4-5); — *Franković, M.*: Odonatology in Croatia (p. 6); — *Cordero, A.*: Studying sperm competition in Zygoptera (p. 6); — *Calabrese, D.M.*: Dragonflies in unexpected places: poems and our own backyard (p. 7); — *Dunkle, S.W.*: Research plans (p. 7); — *Cannings, R.*: Odonatological research: highlights and plans (p. 8).
- (9024) SUTTON, P., 1993. Cape May dragonfly news. *New Jersey Audubon* 19(1): 6. — (Author's address not stated).
A general note, with a brief description of a migration (8 spp.). 11-IX-1992; Cape May, NJ, USA. The details are available from Dr M.L. May, Dept Ent., New Jersey Agric. Exp. Stn, Cook Coll., Rutgers Univ., New Brunswick, NJ 08903, USA.
- (9025) SYMPETRUM, KOBE Published by the Hyogo Society of Odonatology, Kobe, Vol. 1 (March 1993). Edited by S. Nishi (247, Shonomoto, Gunge, Mikage-cho, Hagashinada-ku, Kobe, 658, JA). (Jap., with Engl. titles). — (Distribution outside Japan: K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
On Jan. 24, 1993 the Society had 31 members. The very nicely made-up journal (12 pp., high-quality paper, col. frontispiece, several col. phot.) is named in memory of the well known poet, R. Miki, the author of the famous "Akatombo" (= Sympetrum frequens) song, who was born in Hyogo Prefecture. — Contents: *Nishu, S.*: Establishment of the Hyogo Society of Odonatology and foundation of a periodical "Sympetrum" (p. 3); — Mortonagrimon hirosei discovered at the northern part of Hyogo prefecture (pp. 4-7); — *Inoue, K.*: Notes on the distribution of Mortonagrimon hirosei (pp. 8-9); — [Nishu, S.]: Prospectus of the Hyogo Society of Odonatology (p. 10); — Constitution of the Hyogo Society of Odonatology (p. 10); — Address list of the members of the Hyogo Society of Odonatology (p. 11); — [Editorial] Postscript (p. 11); — [5 col. phot. by C. Tsukamoto, A. Sugitani and N. Nisiura] (p. 12); — (Abstrac-

rer's Note: The Society is informally considered the Hyogo Branch of the Kansai Research Group of Odonatology, Osaka).

nour (elected in 1983, Calgary), Treasurer-General (1971-1993) of the SIO, Managing Editor of *Odonatologica* (1972-1993), etc., etc.

- (9026) TSCHUDIN, M., 1993. Spezielle Libelle. *Coop Ztg, Basel* 1993(14): 14. — (Author's address not stated).
A general note, with reference to the 1957 occurrence of *Coenagrion ornatum* at the Lobsingensee, canton Bern, Switzerland.
- (9027) TSUDA, K., 1993. Distribution of the dragonfly *Nannophya pygmaea* in Kagoshima prefecture and problems of its conservation. *Nature & Insects* 28(5): 43-47. (Jap., with Engl. title). — (Author's address not stated).
[Abstract not available].
- (9028) [VAN BRINK, J.M.], 1993. [Obituary notice]. *NRC/Handelsblad* Rotterdam, 23(152): 8; issue of March 30. (Dutch). — (c/o SIO Central Office, P.O. Box 256, NL-3720 AG Bilthoven).
The family obituary notice for Prof. Dr J.M. van Brink (born: 5 May 1923, Rotterdam; deceased: 28 March 1993, Bilthoven), Emeritus Professor of Cytogenetics (Univ. Utrecht), Charter Member (Ghent, 1971), Member of Honour (elected in 1983, Calgary), Treasurer-General (1971-1993) of the SIO, Managing Editor of *Odonatologica* (1972-1993), etc., etc.
- (9029) ZEEGERS, T.W.P., 1993. Verslag van de 147e zomervergadering van de Nederlandse Entomologische Vereniging, 12-14 juni 1992, te Ansen (Dr.). *Odonata-Libellen*. — [Report on the 147th Outdoor Meeting of the Netherlands Entomological Society, 12-14 June 1992, at Ansen (Drenthe prov.)]. *Ent. Ber., Amst.* 53(5): xv; cumulative list of localities pp.xiv-xv. (Dutch). — (Weegschaalstraat 207, NL-7521 CH Enschede).
An annotated list of 10 spp., from 2 localities in the Drenthe prov., the Netherlands. The large populations of *Ceriagrion tenellum* at Dwingeloo and Uffelte are of regional interest.
- (9030) ZIMMERMANN, W. & D. MEY, 1993. Rote Liste der Libellen (Odonata) Thüringens. 2. Fassung, Stand 1992. *NatSchutz Rep. 5* (Rote Liste Thüringens): 59-62. — (First Author: von-Hoff-Str. 31, D(O)-5800 Gotha).
In various categories, 28 spp. are listed in the Thüringen 1992 Red List (E Germany). — For the 1991 Red List cf. *OA* 8287.