

ODONATOLOGICAL ABSTRACTS

1974

- (4718) KENMUIR, D., 1974. Dragon-fly. *Wild Rhodesia* 1974(5): 45. — (Author's address not stated).
A brief, "poetic" description of dragonfly life.
- (4719) SHERFIELD, P., 1974. Impala. *Wild Rhodesia* 1974(5) 45. — (Author's address not stated).
A dragonfly poem.

1977

- (4720) DEHM, R., H. GALL, R. HÖFLING, W. JUNG & H. MALZ, 1977. Die Tier- und Pflanzenreste aus den obermiozänen Riessee-Ablagerungen in der Forschungsbohrung Nördlingen 1973. *Geologica bav.* 75: 91-109, 1 folded tab. excl. (With Engl. s.). — (Last Author: Senckenberg, Senckenberganlage 25, D-6000 Frankfurt/Main, FRG).
Numerous unidentified Anisoptera larvae and 1 wing impression are recorded, and their occurrence is discussed from the point of view of facial ecology of the Upper Miocene lacustrine sediments of the Rieslake in Nördlingen, FRG. The material is in the Bayerische Staatssammlung f. Paläontologie, München.

1979

- (4721) BÖHM, O., 1979. Insektenlarven als Futter und Gefahr für unsere Fische. *Dr. Killifisch Gem. JI* 11(8/9): 118-121. — (Würtzlerstr. 16/34, A-1030 Wien).

The role of dragonfly as predators on, and prey of cyprinodontid aquarium fishes is discussed.

- (4722) OOSTERLOO, W., 1979. *Een hydrobiologisch onderzoek in de Geelmolenbeek en Hartenschemolenbeek op de Oost-Veluwe.* — [*Hydrobiological studies of the Geelmolenbeek and the Hartenschemolenbeek in the Oost-Veluwe*]. M. Sc. thesis, Univ. Utrecht. II + 72 pp., 2 folded maps, 7 graphs, 27 tabs excl. — (Available from: Dept. Zool. Ecol. & Taxon., Univ. Utrecht, Plompstorengracht 9-11, Utrecht, NL).
Macroinvertebrate inventory (incl. Odon.) and a brief analysis of the macroinvertebrate community structure of 2 brooks in the Oost-Veluwe, The Netherlands, are presented, and some suggestions for a tentative management are offered. — (For a review of the regional odon. fauna cf. *OA* 4406).

1981

- (4723) SARKAR, N.K., 1981. On the histopathological changes of the midgut of *Ceriatrigon cerinorubellum* (Brauer) (Insecta: Odonata) due to infection of *Acanthospora bengalensis* Sarkar & Haldar (Apicomplexa: Eugregarinida). *Abstr. Pap. VIth int. Congr. Protozool., Warszawa*, p. 326. — (Dept. Zool., Rishi Bankim Chandra Coll., Naihati-743165, India).
Light microscopic observations on the changes of the midgut epithelium are reported. Loss of protoplasm of midgut epithelial cells is manifested by the formation of "halos" around the parasite during its early intracellular

development. Numerous epithelial cells of the host's midgut have been found destroyed. A heavy infection completely obliterated the lumen of the dragonfly midgut, resulting probably in a serious disruption of the food movement along the midgut.

- (4724) SMITH, C., 1981. Dragonflies (Odonata) of Nepal with particular reference to Kathmandu Valley — Part 3 — Agridae and Gomphidae. *J. nat. Hist. Mus., Kathmandu* 5(1/4): 79-83. (With Nepali s.). — (Present author's address unknown; for reprints try to contact: R.L. Shrestha, Head, Nat. Hist. Mus., Anandakuti, Swayambhu, Kathmandu, Nepal). Additions to and corrections of the papers listed in *OA* 2951 and 2952.

- (4725) YADAV, U.R., S.B. KARKI, T.B. KARKI, S.N. JHA & J. MEHTA, 1981. Studies on the macrofauna of Godavari Khola, Kathmandu Valley, Nepal. *J. nat. Hist. Mus., Kathmandu* 5(1/4): 23-36. (With Nepali s.). — (Zool. Instruction Committee, Kirtipur Multiple Campus, Tribhuvan Univ., Kirtipur, Kathmandu, Nepal). "Sympetrum vulgatum, Gomphus sp., Cordulia aenea and Cordulegaster sp." are listed from the Godavari Khola. — (*Abstracter's Note*: It is highly improbable the records are referable to *Sympetrum decoloratum* and *Cordulegaster brevistigma*. The other 2 taxa do not occur in Nepal).

1982

- (4726) DAVIES, B.R., T. DAVIES, J. FRAZER & F.M. CHUTTER, 1982. *A bibliography of African inland water invertebrates (to 1980)*. South African National Scientific Programmes Report No. 58. X + 418 pp. C.S.I.R., Pretoria. — [ISBN 0 7988 2561 8]. — Copies available from: Cooperative Scientific Programmes, C.S.I.R., P.O. Box 395, Pretoria-0001, RSA). This bibliography is an outcome of the SIL-UNEP Workshop on African Limnology (Univ. Nairobi, Kenya; Dec. 16-23, 1979). The work is divided into sections, covering habitat, general works, man's impact, methods, and

specific invertebrate groups. The Odon. (Nos. 2668-2774) appear on pp. 217-225, covering the 1978-1980 titles, which were not listed in the work given in *OA* 2136. (Cf. also *OA* 4387).

- (4727) FRANCEZ, A.-J., 1982. Quelques données récentes sur la faune des Odonates d'Auvergne. *Revue Sci. nat. Auvergne* 48: 23-30. — (Stn Biol. de Besse en Chandesse, B.P. 45, F-63170 Aubière).

A review is given of the 62 spp. known to occur in the Auvergne, France. The biogeographic composition of the fauna is analysed, and lists of spp., inhabiting 6 main types of habitats, are presented.

- (4728) HAILS, C.J., 1982. A comparison of tropical and temperate aerial insects abundance. *Biotropica* 14(4): 310-313. — (Bot. Gdns, Cluny Rd, Singapore-1025, Singapore).

A comparison is made between suction trap catches from Malaysia and Scotland. Annual fluctuations in Scottish samples are far greater than in the Malaysian ones. Peak biomass in late summer in Scotland is 16 times that of the peak in Malaysia. In the temperate winter a reversal occurs, with Malaysia having up to 22 times the aerial insect biomass of Scotland. — (*Abstracter's Note*: No reference to Odon. is made in the text. According to an author's pers.comm., his small Jonson-Taylor trap would only rarely catch dragonflies, though these formed 8.4% of the diet of Pacific Swallow nestlings, and 40.5% of the diet of Blue-throated Bee-eater nestlings).

- (4729) UTZERI, C. & R. RAFFI, 1982. Alcuni dati sul comportamento di copula di *Coenagrion scitulum* (Rambur) (Zygoptera: Coenagrionidae). [Abstract]. *Boll. Zool.* 49 (Suppl.): 188. — (Dipt. Biol. Anim. & Uomo, Univ. Roma, Viale dell'Università 32, I-00185 Roma).

Intra-male sperm translocation is repeated during 1-4 short interruptions of copulation, while 1-7 longer interruptions without sperm translocation also occur; the latter always preceding the former. This pattern was recorded in all of the over 30 copulations studied. The duration of copulation was

recorded in 10 cases i.e. 31-89 min.

1983

- (4730) BUCHWALD, R., 1983. Ökologische Untersuchungen an Libellen im westlichen Bodenseeraum. *Natur- Landschaftsschutzgeb. Bad.-Württ.* 11: 539-637. — (Oberlinden 4, D-7800 Freiburg/Br., FRG).
Monographic treatment of the odon. synecology of Mindelsee, Buchensee and Durcenbergried, western Bodensee area, FRG (41 spp.), with special reference to the relationships between the vegetation and the odon. populations.
- (4731) CHAO, H.-f., 1983. Geographical distribution of Chinese dragonflies of the family Gomphidae (order Odonata). *Wuyi Sci. J.* 3: 97-109. (Chin., with Engl. s.). — (Biol. Control Res. Inst., Fujian Agric. Coll., Fuzhou, Fujian, P.R. China).
A tabular review is given of the occurrence of the 122 hitherto known spp. (referable to 30 genera) in 28 geographic districts into which the Chinese territory is divided (incl. the Hainan Island, Taiwan and Tibet). The classification used is that introduced by the same author in *Odonatologica* 13(1984): 71-80. The affinities between the faunas of Fujian and Taiwan are emphasized, the nature of the holarctic distribution of *Stylurus*, *Stylogomphus* and *Hagenius* is discussed in detail, and the affinities between the Himalayan and the Japanese faunas are analyzed.
- (4732) DONATH, H., 1983. Die Libellen am Briesener See im Kreis Lüben. *Natur Landschaft Bez. Cottbus* 5: 63-71. — (Jahnstr. 6, DDR-7960 Luckau, GDR).
Annotated list (39 spp.) with a discussion on the odon. fauna of the Briesen Lake, Lübben, GDR.
- (4733) FRANCEZ, A.-J. & E. KREJCI, 1983. Espèces d'Odonates nouvelles pour l'Auvergne. *Cah. Naturalistes, Paris* (NS) 39: 13-14. — (First Author: Stn Biol. de Besse en Chandesse, B.P. 45, F-63170 Aubière).
5 spp. are listed and discussed that were not earlier recorded from the Auvergne, France. *Erythromma viridulum*, *Coenagrion scitulum* and *Somatochlora arctica* are of particular interest.
- (4734) GÜNZL, H., 1983. Das Naturschutzgebiet Federsee. Geschichte und Ökologie des größten Moores Südwestdeutschlands. *Führer Natur- Landschaftsschutzgeb. Bad.-Württ.* 7: 1-115. — (Lehrstuhl Zool., Inst. Biol. III, Univ. Tübingen. Auf der Morgenstelle 28, D-7400 Tübingen-1, FRG).
4 common odon. spp. are reported (pp. 39-42) from this well-known lake nr Bad Buchau, Baden-Württemberg, FRG.
- (4735) MIOTK, P., 1983. Das Eriskircher Ried. Ein Führer durch das bedeutendste Naturschutzgebiet am nördlichen Bodenseeufer. *Führer Natur- Landschaftsschutzgeb. Bad.-Württ.* 6: 1-188. — (Podbielskistr. 47, D-3000 Hannover-1, FRG).
16 odon. spp. are listed (pp. 16, 140-141) from the Eriskircher Ried nature reserve, Bodensee, FRG. Highly interesting are the records of *Anax parthenope* and *Hemianax ephippiger*, and noteworthy are those of *Lestes barbarus*, *Sympetrum fonscolombei*, and *S. meridionale*.
- (4736) NIRMALA KUMARI, K.R. & N.B. NAIR, 1983. Satiation time and predatory behaviour of the dragonfly nymph *Urothemis signata signata* (Rambur). *Proc. Indian natn. Sci. Acad.* (B) 49(3): 210-216. — (First Author: M.S. Home Sci. Coll., Angamaly South P.O., Ernakulam, Kerala-683573, India).
The larva satiated after predated 7.06 fish fry in 40 min, and after predated 23 mosquito larvae in 50 min. The larvae deprived for 6, 12, 18, 24, 36 and 42 h, consumed 2.17, 3.00, 4.33, 7.00, 7.17 and 7.17 fish fry resp. The maximum appetite returned after 36 h deprivation. Increase in prey density and in particle size decreased the satiation time leading to the consumption of an equal amount of food. (Authors). — (*Abstracter's Note*: The name of the first author is often spelled as "Nirmalakumari" or "Kumari, N.", that of the second author could be also "Balakrishnan Nair").

- (4737) OSCHKE, G., 1983. Gamsen und Gebirgs-schrecken. *NaturMag. Draussen* 29 (Süd-schwarzwald): 35-45. — (Author's address not stated).
Aeshna coerulea, A. subarctica, Somatochlora alpestris and S. arctica are recorded from Feldberg, Schwarzwald, FRG (p. 44).
- (4738) POI DE NEIFF, A., 1983. Observaciones comparativas de la mesofauna asociada a Pistia stratiotes L. (Araceae) en algunos ambientes acuaticos permanentes y temporarios (Chaco, Argentina). *Physis* (B) 41(101): 95-102. (with Engl. s.). — (Centro Ecol. Aplic. Litoral, C.C. 291, AR-3400 Corrientes).
Seasonal changes in the distribution and abundance of invertebrates were studied in temporary and permanent ponds at Chaco, Argentina. Telebasis willinkii, Aeshna sp. and Miathyria marcella are listed.
- (4739) SMITH, K.G.V. & V. SMITH, 1983. *A bibliography of the entomology of the smaller British offshore islands*. XII + 115 pp., 24 maps incl. Classey, Faringdon. [ISBN 0 860960 20 X]. — Price: £ 7. — (Publishers: E.W. Classey, P.O. Box 93, Faringdon, Oxon., SN7 7DR, UK).
A definitive, island-wise bibliography, based on more than 20 years literature scanning and island visits by the authors. It contains very numerous odonatol. references.
- (4740) UBUKATA, H., 1983. Behavior of Nehalonia speciosa (Charp.) in Kushiro Marsh. *Sylvicola* 1: 27-31. (Jap., with Engl. s.). — (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ., Kushiro, 085, JA).
The territorial behaviour, mating and oviposition are recorded (Sept, eastern Hokkaido). Males hold the "resting type" territories. Upon the arrival of a female in the territory copulation, lasting up to 27 min, takes place. Thereafter the male leaves the territory, and the solitary female immediately commences ovipositing on the spot. The oviposition is endophytic (Carex, etc.), and lasts at least 20 min. — (Abstracter's Note: *Sylvicola* is an entomol. journal, published annually by Kushiro Konchū Dōkōkai, c/o I. Nakamura, Sumiyoshi-cho 2-6-12, Kushiro, 085, JA. Most papers are in Jap.).
- (4741) UBUKATA, H., 1983. Geographic distribution of the boreal dragonfly species inhabiting Japan. *Sci. Rep. Kushiro City Mus.* 279: 7-11. (Jap., with Engl. translation of the title). — (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ., Kushiro, 085, JA).
Distribution maps of 19 spp. are presented, based mainly upon the works of Asahina, Belyshev, Eb. Schmidt and Walker & Corbet, and their distribution patterns in Japan are discussed.
- (4742) ZEEGERS, T., 1983. *De Stulp. Inventarisatie-verslag Flora & Fauna 1980-1982. De Stulp. Fauna and flora inventarisatie report, 1980-1982*. 64 pp. M.Sc. th., Univ. Amsterdam (Dutch). — (Author's address not stated).
De Stulp is a locality nr Baarn, Utrecht prov., The Netherlands. 16 odon. spp. are listed and discussed (pp. 38-44).

1984

- (4743) ASAHINA, S., 1984. The Himalayan dragonflies of the genus Sympetrum (Odonata, Libellulidae). *Bull. natn. Sci. Mus., Tokyo* (A) 10(3): 121-133. — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
The endemic Himalayan taxa are revised. S. commixtum is considered conspecific with S. striolatum, S. haematoneura is a vicariant of the Japanese S. speciosum, while S. hypomelas and S. orientale are endemic to the region. The female of S. haematoneura is described and figured here for the first time.
- (4744) [ASAHINA, S.], [Ed.], 1984. [*Biography and bibliography of S. Asahina*]. Published and circulated privately, Tokyo. 46 pp. — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
The original reprints of pp. 187-232 (*Odonatologica* 13/2; 1984) are provided with a bilingual (Eng./Jap.) cover, and with an additional note and acknowledgements (Jap.).
- (4745) ASAHINA, S. & G. IMADATE, 1984. [In

memoriam S.L. Tuxen]. *Nature & Insects* 19(11): 16-18. Jap.) — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).

A passing reference is made to a homology error in the odon. chapter (by F.C. Fraser) in the 1956 ed. of the Tuxen's *Glossary of insect genitalia*, corrected by S. Asahina in the revised (1970) ed. of this work.

- (4746) BECKER, H., 1984. Libellen — Flugwunder vor dem Kameraauge. *Leica Fotografie* 36(5): 22-25. — (Author's address not stated). 8 colour photographs, with technical data, in an international journal for macrophotography. — (*Abstracter's Note*: The consecutive numbering of figs is wrong, and *Sympetrum flaveolum* should read *S. sanguineum*).
- (4747) BELLE, J., 1984. Phyllogomphoides litoralis, a new species from Panama (Odonata: Gomphidae). *Ent. Ber., Amst.* 44(11): 174-175. — (Onder de Beumkes 35, 6883 HC Velp, NL). The new sp. is described and figured after a single male from Chiriqui, deposited in the Paris Mus. It is referable to the semicircularis group.
- (4748) BELLE, J., 1984. Progomphus maculatus, a new species from Venezuela (Odonata: Gomphidae). *Ent. Ber., Amst.* 44(11): 185-186. — (Onder de Beumkes 35, 6883 HC Velp, NL). *P. maculatus* sp. n. is described and illustrated after a single male specimen (Rio Mawarinuma, 140 m, T.F. Amazonas, Venezuela; 2-12-II-1984). The holotype is in the Inst. Zool. Agric., Maracay, Venezuela.
- (4749) BOCHAROVA-MESSNER, O.M. & A.E. DMITRIEV, 1984. Morfo-funkcional'nyy analiz zhilkovaniya kryl' ev strekoz. [Morpho-functional analysis of dragonfly wing venation]. *Tez. Dokl. IX S'ezd vsesojuz. ent. Obshch.* 1: 65. [Abstract]. (Russ.). — (A.N. Severceev Inst. Evol. Morphol. & Animal Ecol., USSR Acad. Sci., Moscow, USSR). The role of venation in the "deformation" of the wing during dragonfly flight is briefly outlined.
- (4750) CHOWDHURY, S.H. & E. RAHMAN, 1984. Food preference and rate of feeding in some dragonfly larvae (Anisoptera: Odonata). *Annls Ent., New Delhi* 2(1): 1-6. — (Dept Zool., Chittagong Univ., Chittagong, Bangladesh). The food preference and rate of feeding were studied in 4 common spp. under laboratory conditions. The chironomid larvae were the most preferred food when given a choice between mosquito larvae and pupae, chironomid larvae and oligochaetes. This was true for all four species, irrespective of whether they were benthic or epiphytic in habit. *Diplacodes trivialis* was the most voracious, consuming 1.04 mg of food per mg of body weight in 24 h. *Brachydiplax* sp. was the last voracious and consumed 0.57 mg of food per mg of body-weight in 24 h. *Pantala flavescens* and *Rhodothemis rufa* occupied intermediate positions consuming 0.66 mg and 0.77 mg of food per mg of body-weight over the same period respectively. (Authors).
- (4751) CONTACTBLAD NEDERLANDSE LIBELLENONDERZOEKERS - [Newsletter of the Dutch Dragonfly Workers], No. 8 (Oct., 1984). — (Dutch). — (Orders to: M. Verdonk, Floralielaan 47, 1402 NJ Bussum, NL; — for order conditions cf. OA 3214). In addition to various announcements, there is a report on the Ninth Colloquium of Dutch Dragonfly Workers, Nijmegen, May 26-27, 1984 (*M. Wasscher*, pp. 3-4). Of considerable interest is the list of noteworthy 1981-1984 faunistic records in The Netherlands (*anonymous*, pp. 4-7). 2 book reviews (pp. 8-9) were contributed by *P. Schoorl* and *M. Wasscher*, a list of odonatol. papers in the 1984 issues of *Natuurhistorisch Maandblad* was provided by *M. Verdonk* (pp. 9-10), who also supplied a review of papers, pertaining to the Netherlands fauna and published in *OA* during 1981-1983 (pp. 10-12). A complete and updated membership list concludes the issue (pp. 12-15).
- (4752) CROFTS, D.A., 1984. The dragonflies (Odonata) of Harrow on the Hill. *Bull. amat. Ent. Soc.* 43(344): 128-129. — (Cairnryan, Harrow Park, Harrow-on-the Hill, Middx HA1 3JE, UK).

- 10 spp. are listed from this Middlesex locality, and brief annotations on abundance are provided for some of them.
- (4753) DE JONG, R., 1984. Entomologen in Griekenland, opgepast / Entomologistes en Grèce, attention! *Bull. belg. lepidopt. Kring* 13(4/5): 53-54. (Dutch & Fr.). — (Rijksmus. Nat. Hist., P.O.B. 9517, 2300 RA Leiden, NL). This is a reprint (and Fr. translation) of a note, published originally in *Ent. Ber. Ver. Nieuws, Amst.* 1984(4): 9. By a (Greek) Presidential Decree, published in "*Publ. Gaz. No. 23/A*" (Jan. 30, 1981; Feb. 18, 1981), 69 insect spp. are put "under protection" in Greece, and their collecting is prohibited. Among these are 2 odon. spp.: *Anax imperator* and *Hemia-nax ephippiger*. The author is a prominent lepidopterologist, and analyzes, critically various aspects of this Decree. — (*Abstracter's Note*: The list of "protected" spp. is entirely incomprehensible. It includes some exceedingly common taxa, e.g. *Gonepteryx rhamni*, and some other that can not possibly occur in Greece, e.g. *Thymelicus hamza* [Both examples by the original author]. The 2 odon. spp. are almost cosmopolitan in the Old World, while any of the Greek endemic taxa are missing. It goes without saying that no individual protection of any odon. sp. is needed or desirable in Greece. One cannot avoid the impression, that the authors of this document have just put down a few names incidentally known to them of larger, familiar, or more "spectacular" spp. So far Greece has not yet produced a single odonatologist; the available, fragmentary information on the Greek odon. fauna is entirely due to the incidental collections brought together by foreign entomologists during the past 150 years. One would expect, therefore, that the Government would encourage and support collecting and inventarisation of the fauna rather than frustrating it by legal restrictions, based on a total miscomprehension of the conservation principles. For further comments cf. OA 3112. It should be emphasized that the nonsensical conservancy legislation and or "field-collecting attitude" in some central European countries are already causing an ever in-
- creasing hindrance to a reliable inventarisation, monitoring and subsequent adequate conservation of the local faunal elements).
- (4754) DONATH, H., 1984. Zur Libellenfauna der Kleinen Elster Niederlausitz. *Ent. Nachr. Ber.* 28(1): 5-8. (With Engl. & Russ.s's). — (Jahnstr. 6, DDR-7960 Luckau, GDR). 15 spp. are recorded from the brook "Kleine Elster", district Calau, GDR. The composition of the fauna is briefly discussed.
- (4755) EDA, S., 1984. Unusual occurrences of dragonflies in Japan. *Nature & Insects* 19(10): 13-17. (Jap., with Engl. title). — (3-4-25 Sawamura, Matsumoto, Nagano, 390, JA). *Anax guttatus*, *Sympetrum depressiusculum*, *S. cordulegaster*, *Tramea virginia*, *T. transmarna euryale*, and *Tholymis tillarga* are dealt with. For each sp. the bibliography of local faunistic literature is given (71 titles).
- (4756) EL AMIN EL RAYAH, [M.] & N. EL ZUBEIR, 1984. On the dragonfly fauna of Khartoum (Sudan). *Ent. mon. Mag.* 120 (1440/1443): 153-160. — (Dept. Zool., Fac. Sci., Univ. Khartoum, Khartoum, Sudan). 19 spp., recorded at 4 sites during 1979-1980, are listed, and the fauna is briefly discussed.
- (4757) FISCHER, C., 1984. Libellen Schleswig-Holsteins. Ein Bildbestimmungsschlüssel für Jedermann zur problemlosen Bestimmung der Arten. *Mitt. zool. Mus. Univ. Kiel* (Suppl.) 2: 1-44. — (Postfach 1148, Schulweg 1, D-238 Schleswig, FRG; — Orders to: Goecke & Evers, Dürerstr. 13, D-4150 Krefeld, FRG). A dichotomous pictorial key to the adults, with brief biological characterisations of all spp. known to occur in Schleswig-Holstein, FRG.
- (4758) FISCHER, C., 1984. *Sympetrum pedemontanum* (Allioni) und *Tjederina gracilis* (Schneider) in Schleswig-Holstein (Insecta: Odonata, Neuroptera). *Drosera* 84(1): 51-52. (With Engl. s.). — (Bissenweg 1, D-238 Schleswig, FRG). *S. pedemontanum* is reported from Schleswig-Holstein, FRG, for the first time (Alster R., N

of Hamburg, 31-VIII-1983).

- (4759) FRANTSEVICH, L.I. & P.A. MOKRUSHOV, 1984. Zritel'nye stimuly, vyzhyvayushchie ataku territorial' nogo samca u strekoz. — [Visual stimuli releasing attack of a territorial male in dragonflies]. *Tez. Dokl. IX vsesojuz. ent. Obshch.* 2: 212. [Abstract]. (Russ.). — (Schmalhausen Inst. Zool., Acad. Sci. UkrSSR, Lenin Str. 15, USSR-252000 Kiev-30).

This is an abbreviated Russian version of the abstract of the paper in *Odonatologica* 13(1984): 335-350.

- (4760) FRASERIA. Newsletter of the S.I.O. National Office in India, Pondicherry, No. 7 (Dec. 1, 1984). For order conditions cf. OA 3425. — (c/o B.K. Tyagi, Vector Control Res. Cent., I.C.M.R., Medical Complex, Indira Nagar, Pondicherry-605006, India).

In addition to various news items, there are the following articles: *Varadaraj, G.*: Dragonfly folklore in Tamil Nadu (India) (p. 29); — *Tyagi, B.K.*: Male specimens of *Epiophlebia superstes* (Selys) in the Indian Agriculture Research Institute (IARI), New Delhi (pp. 29-30); — *Kumar, A.*: The eggs of *Burmagomphus sivalikensis* Laidlaw (Odonata: Gomphidae) (p. 30).

- (4761) GARRISON, R.W., 1984. *Revision of the genus Enallagma of the United States West of the Rocky Mountains and identification of certain larvae by discriminant analysis (Odonata: Coenagrionidae)*. Univ. Calif. Publs Ent. 105: X + 130 pp., Univ. Calif. Press, Berkeley-Los Angeles-London. [ISBN 0-520-09954-0 (pbk.)]. — Price: US \$ 11.50. — (Author: 1030 Fondale St., Azusa, CA 91702-0821, USA; — Publishers: 2120 Berkeley Way, Berkeley, CA 94720, USA).

This monograph revises 9 spp. of *Enallagma* (Charp.) from the western United States. Synonymies, keys, and diagnoses are presented for *E. anna* Wllmsn, *E. basidens* Calv., *E. boreale* Sel., *E. carunculatum* Morse, *E. civile* (Hag.), *E. clausum* Morse, *E. cyathigerum* (Charp.), *E. ebrium* (Hag.), and *E. praevarum* (Hag.). Adults of 3 poorly described spp. are

fully redescribed: *E. anna*, *E. basidens*, *E. praevarum*; and the previously unknown larva of *E. anna* is described. Lectotypes are designated for *E. calverti* Morse, *E. carunculatum*, *Agriion civile*, *E. clausum*, *Agriion ebrium*, *E. plebeium* Sel., *Agriion praevarum*, and *E. simile* Sel. *Enallagma simile* is synonymized with *E. civile*. Larvae of all spp. are diagnosed using new characters, the pharate caudal appendages (cerci) on abdominal segment 10. Female larvae of *E. boreale*, *E. carunculatum*, *E. civile*, *E. cyathigerum*, *E. praevarum*, and male larvae of *E. boreale* and *E. cyathigerum* are analyzed by discriminant analysis because traditional taxonomic characters are largely useless to identify them. Several characters of the cerci and a few characters of the gills were most useful in discriminant analysis. A special key using discriminant analysis enables workers with scant familiarity in the taxonomy of Odon. to identify larvae of these spp. Detailed distribution maps and figs of all taxonomic characters for adults and larvae are included. (Author).

- (4762) GOMPHUS. Mededelingblad van de Belgische libellenonderzoekers — Feuille de contact des odonatologues belges, Vol. 1, Nos 2 (May), 3 (July), 4 (Sept., 1984). (Dutch & Fr.). — For subscription cf. OA 4676. — (c/o Editors, N. Michiels, Renier Smiedersstr. 73, B-2300 Turnhout).

Nos 2 and 4 are simple information sheets, without cover, and differ in size from the other issues. — No. 3 contains various information items and 2 papers, viz. *Goffart, P.* (60 rue du Réservoir, B-1330 Rixensart): Observations de *Crocotthemis erythraea* et *Anax parthenope* en Belgique durant l'été 1983 (pp. 1-3); and *Van Mierlo, M.* (Steenweg op Mol 52, B-2300 Turnhout): Verslag libellenekskursie Antwerpse Kempen, 9 juni 1984 [Report on the dragonfly field trip to the Antwerpse Kempen, 9 June 1984] (pp. 3-4).

- (4763) GOODYEAR, K.G., 1984. A new British record for autumnal Odonata. *Ent. mon. Mag.* 120(1440/1443): 150. — (26 Twynham Avenue, Christchurch, Dorset BH23 1QU, UK).

In 1982, at West Avon Common, Dorset, UK, *Sympetrum danae* was recorded as late as Nov. 1, and *S. striolatum* was still on the wing until Nov. 21.

- (4764) HÄNGGI, A. & R. WEGMÜLLER, 1984. Kein Schutz ohne Pflege. *Uni Press, Bern* 1984(43): 29-32. — (Second Author: Jura Str. 29, CH-3013 Bern.)
The problems of the wetland nature reserve conservation management are briefly outlined, using the example of the Grosse Moos nr Murten, canton Bern, Switzerland. A substantial part of the paper deals with the bioindicative role of dragonflies, and with the role of the man-made topographic features in the local odon. dispersal.
- (4765) HARITONOV, A. Yu., 1984. Opyt ocenki ekologicheskoy roli strekoz v poymennykh vodoemakh i okolovodnykh biocenozah. — [An attempt at the evaluation of the dragonfly role in aquatic and wetland biocenoses]. *Tez. Dokl. IX Sezd vsesojuz. ent. Obshch.* 2: 217. [Abstract]. (Russ.) — (Inst. Biol., Siberian Section USSR Acad. Sci., Ul. Frunse 11, USSR-630091 Novosibirsk.)
The Odon. constitute a significant component in the aquatic systems of 5 chosen rivers in the Urals, Soviet Central Asia, Western Siberia, and in the Kamchatka. The larval abundance may amount up to 80 spec/m².
- (4766) HIGUMA, S., 1984. The Odonata fauna of Niigata Prefecture, Japan. *Nature & Insects* 19(11): 12-15. (Jap., with Engl. title). — (Author's address not stated.)
97 spp. are listed, and some are briefly discussed. Only Jap. nomenclature is used.
- (4767) HUMPEsch, U.H., 1984. Egg development of exopterygote insects in freshwater. *Abstr. Vol. XVIIIth int. Congr. Ent., Hamburg*, p. 323. — (Inst. Limnol., Oester. Akad. Wiss., Gaisberg 116, A-5310 Mondsee.)
Quantitative information is now available on the hatching of several European spp. of Ephemeroptera, Plecoptera and Odon. Differences in the occurrence and life cycles of these freshwater insects can partly be explained by variations in hatching success and hatching times at different temperatures.
- (4768) JACKSON, B.S., 1984. Dragonflies and damselflies. *Can. Geographic* 104(3): 62-66. — (Oxen Pond Park, Memorial Univ., St. John, Nfld, CA.)
The article is directed at the general reader, and the emphasis is on the numerous col. photographs.
- (4769) JURZITZA, G. & J. RÁCENIS, 1984. *Telebasis lacustris* sp. n. aus der Bolivien-Ausbeute von Herrn Dr. W. Forster, München. *Spixiana* 7(3): 251-252. — (Bot. Inst., Univ. Karlsruhe, Kaiserstr. 12, D-7500 Karlsruhe, FRG.)
T. lacustris sp. n. (♂, ♀, numerous paratypes of both sexes) is described and figured from Espiritu, Rio Yacuma, Dep. Beni, Bolivia (17-VII-1950). The holotype is in the Zool. Staatssamml., München. The late Dr Rácenis is the author of the name.
- (4770) KAISER, H., 1984. Mating strategies in dragonflies. *Abstr. Vol. XVIIIth int. Congr. Ent. Hamburg*, p. 451. — (Lehrstuhl Biol. V, RWTH Aachen, Kopernikusstr. 16, D-5100 Aachen, FRG.)
[Verbatim]: Male and female dragonflies meet at distinct places for mating, usually at rivers or ponds where the females deposit their eggs. The problem examined is how a dragonfly male searches for females such as to maximize his chances of meeting a receptive female, whilst at the same time minimizing competition with other males. Field studies revealed that in dragonflies there exist different modes of partitioning the mating place by intraspecific aggression, e.g. spatial partitioning (territorial behaviour) and temporal partitioning; these are correlated with different ecological situations. In simulation experiments based on field data the mating success of males searching with different strategies was examined. The results indicate that it depends on the spatial structure of the mating place and on the behaviour and the number of competitors which searching strategy is optimal.

- (4771) KOMNICK, H. & J. KUKULIES, 1984. The absorptive pathway of triglyceride through the larval midgut epithelium of *Aeshna cyanea*. *Abstr. Vol. XVIIth int. Congr. Ent., Hamburg*, p. 106. — (Inst. Cytol., Univ. Bonn, Ulrich-Haberland-Str. 61a, D-5300 Bonn-1, FRG).
[Verbatim]: Triolein is hydrolyzed in the midgut lumen, and the lipolytic products enter the absorptive cells by direct membrane transport presumably by simple diffusion. Ingestion of ^{14}C -oleic acid is followed by acylglycerol synthesis and esterification up to triglyceride in the enterocytes. Triglyceride resynthesis leads to the accumulation of matrix lipid droplets that are devoid of a triple-layered bounding membrane. Lipid was never identified in ER cisternae, dictyosomes and exocytotic vesicles. Hence, the absorptive route does not utilize lipid compartmentalization by membranes but is exclusively in the groundplasm. Discharge into the hemolymph involves partial lipolysis into diglyceride and fatty acid which are released in morphologically invisible form, probably by direct membrane transport.
- (4772) KUKULIES, J., W. NAIB-MAJANI & H. KOMNICK, 1984. Organization of actin filaments in the cytoskeleton of *Aeshna cyanea* enterocytes. *Abstr. Vol. XVIIth int. Congr. Ent., Hamburg*, p. 104. — (Inst. Cytol., Univ. Bonn, Ulrich-Haberland-Str. 61a, D-5300 Bonn-1, FRG).
[Verbatim]: Thin filaments measuring 6 nm across constitute a characteristic framework in the larval enterocytes. Components of this framework are (1) the core bundles in the microvilli of the brush border and their rootlets that intermingle with (2) the filament network of the terminal web; (3) the arrays of intercisternal filaments on the subapical stacks of smooth ER, and (4) the cortical filaments along the basolateral plasma membranes. Treatment of semithin cryosections with rhodamine-phalloidin, a fluorescent probe specific for F-actin, leads to distinct labelling of the brush border, the terminal web region, the site of ER stacks, and the basolateral cell outlines. This indicates that the above-
- mentioned filaments represent actin filaments.
- (4773) KUMAR, A., 1984. On the life history of *Pantala flavescens* (Fabricius) (Libellulidae: Odonata). *Annls Ent., New Delhi* 2(1): 43-50. (Envir. Monitoring Wing, Zool. Surv. India, 111 Santhome High Rd, Madras-600028, India).
Life history was studied in the field and in the laboratory. Specimens were reared from egg to adult. All instars are described and figured, and notes on the phenology are provided.
- (4774) LIBELLULA. *Mitteilungsblatt der Gesellschaft deutschsprachiger Odonatologen (GdO)*, Vol. 3, No. 3/4 (Oct., 1984). Most papers with Engl. s's. — (Subscription Orders / Membership Applications to: Prof. Dr R. Rudolph, Abt. Biol. Didaktik, Univ. Münster, Fliednerstr. 21, D-4400 Münster, FRG).
Donath, H.: Libellen als Bioindikatoren für Fließgewässer (1-5); — *Klein, R.*: Einfluss der Gewässergüte und der Wasservegetation auf Vorkommen und Abundanz von *Calopteryx splendens* Harris, *Platycnemis pennipes* Pall. und *Ischnura elegans* v.d. L. an sauerländischen Fließgewässern (7-17); — *Blanke, D.*: Zur Lebensweise von *Cordulegaster bidentatus* Selys in Südniedersachsen (18-22); — *Huber, C.*: Beobachtungen zum Verhalten des Kleinen Blaupfeils *Orthetrum coerulescens* F. (23-27); — *Lempert, J.*: Tagesaktivität und Verhalten am Schlafplatz von immaturren *Sympetrum flaveolum* L. auf Wangerooze (29-34); — *Schmidt, E.*: *Gomphus vulgatissimus* L. an einem belasteten Havelsee, dem Tegeler See (Insel Scharfenberg) in Berlin (West) (35-51); — *Aeshna isosceles* ♀ subadult im Braunkohlenrekuultivierungsgebiet der Ville bei Brühl (S Köln) am 22.6.1984 (52); — *von Hagen H.*: Ein Teich-Abflussschacht in Bochum als Libellenfalle, mit Beobachtungen zum Verhalten von *Aeshna cyanea* Müll. und anderen Anisopteren in diesem Schacht (53-58); — *Gerken, B.*: Die Sammlung von Libellen-Exuvien: Hinweise zur Methodik der Sammlung und zum Schlüpfort von Libellen (59-72); — *Löhr, P.-W.*: Untersuchungen der Mentum- und Seitenloben-Borsten auf Fang-

- masken von *Sympetrum danae* Sulz. (73-77); — *Anselin, A.*: First results of the new mapping-program of Odonata in Belgium (79-88); — *Lempert, J.*: *Anax parthenope* Selys im Braunkohlenrekultivierungsgebiet südlich von Köln — Erstfund für Nordrhein-Westfalen (89-90); — *Rudolph, R.*: Ergänzungen zur Libellenfauna deutscher Nordseeinseln (91-92); — *Benken, T.*: Grossräumige Verbreitung der Libellen in Niedersachsen unter besonderer Berücksichtigung West-Niedersachsens (93-100); — *Buchwald, R., B. Gerken, K. Siedle & K. Sternberg*: Übersicht über die Libellenvorkommen in Baden-Württemberg mit kurzer Charakteristik des Fortpflanzungsgebiets und Angaben zur Verbreitung (101-110); — *Schorr, M. & M. Jürging*: Vergleichende Kartierung der Naturschutzwürdigkeit von Gewässern am Beispiel der Erfassung von Libellen, Tagfaltern und Amphibien im Bereich der Stadt Burgdorf (Niedersachsen) (111-125); *Gerken, B.*: Bemerkungen zum 2. Entwurf einer Roten Liste der Libellen in Baden-Württemberg (127-135). — On various pp. appears a number of dragonfly photographs, that apparently do not go with any of the papers. The photograph on p. 126 shows a *Coenagrion hastulatum* rather than *C. lunulatum*, as erroneously stated in the caption.
- (4775) MAIBACH, A., 1984. Biochemical taxonomy and systematic review of the genus *Calopteryx* Leach (Zygoptera, Odonata) in Europe. *Abstr. Vol. XVIIth int. Congr. Ent., Hamburg*, p. 65. — (Mus. Zool., Place Riponne 6, CH-1005 Lausanne).
[Verbatim]: A systematic review of West-European spp. of *Calopteryx*, based on new morphological and biochemical data, is presented. Vertical electrophoresis on starch gel offers a new possibility of research in the taxonomy of Odonata. It allows the establishment of the taxonomical level of each species and subspecies. Identity (I) and genetic distance (D) matrix is given, as well as a dendrogram showing the different levels of speciation related to these forms. In the view of these results, a new approach of this group was discussed.
- (4776) MAUSS, V., 1984. Norderstedter Ohmoor 1982/83. *Naturk. Beitr. DJN* 12: 20-36. — (Winfridweg 39, D-2000 Hamburg-54, FRG). 23 odon. spp. are listed from this nature reserve, situated on the outskirts of Hamburg, FRG. At least 17 spp. are autochthonous, incl. *Sympetrum pedemontanum*, of which no breeding sites were hitherto known from Schleswig-Holstein.
- (4777) McVEY, M.E. & B.J. SMITTLE, 1984. Sperm precedence in the dragonfly *Erythemis simplicicollis*. *J. Insect Physiol.* 30(8): 619-628. — (First Author: 5030 Wintersong Lane, Wersterville, Ohio 43081, USA).
Females of *E. simplicicollis* store enough sperm to fertilize 6-13 clutches of eggs laid on consecutive days. Nonetheless, they usually mate one or more times per day. Males wait for females at ponds containing surface vegetation on which the females lay eggs. Some male defend vegetation while other act as satellites. After mating, both types of males attempt to guard females against takeover by other males. Sperm precedence by male *E. simplicicollis* was studied using sterility produced by gamma irradiation to label sperm. After a dose-response analysis, males receiving a dose of 25 kiloröntgens (> 99.9% sterile) were returned to their home pond as territory residents and satellites. Both types of males fertilized an average of 99.5% (range 97.3-100%) of the female's remaining clutch. After mating with a sterile male, females were isolated in a large cage, and eggs collected for several consecutive days. These clutches revealed that sperm mixing in the bursa of the females is essentially complete after 24 to 48 h and that the last male to mate had replaced an average of more than 57-75% of the sperm stored by female from previous matings. Thus, the last sperm in is the first sperm out fertilizing essentially all of the eggs laid soon (5-6 min) after the mating. Sperm from the most recent mating competes for fertilizations with sperm stored from previous matings only if the female oviposits on the following day without remating. (Authors).
- (4778) MEELDIJK, M., 1984. *C-banding* bij

Syrphidae en Odonata. — [C-banding in *Syrphidae and Odonata*]. M. Sc. thesis, Univ. Utrecht. IV + 34 pp. (Dutch). — (Dept Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL).

Lestes sponsa and *Aeshna juncea* were mainly used. Various methods are described and discussed. Positive results were obtained by application of a slightly modified simultaneous Ag-NOR and C-banding technique of J.S. Rufas et al. (1983, *Cell Biol. int. Rep.* 7: 275-281).

- (4779) MEIER, C., 1984. *Libellen-Inventar der Kantone Zürich und Schaffhausen*. Zürcher Libellenforum, Werrikon. 128 pp. — (Author & Publisher: Riedweg, CH-8606 Werrikon). This is a preliminary report on the inventarisation (1980-1983) of the odon. habitats (688; 111 without records excl.) and their fauna (67 spp.) in cantons Zürich and Schaffhausen, Switzerland, sponsored by the Nature Conservancy of canton Zürich. The team consisted of 17 standing members (incl. -H. Schiess, H. Wildermuth, M. Wolf), assisted by 8 incidental collaborators. The objective was to identify biotopes, valuable for conservation, the possible legal protection and adequate management of which are to be subject of legal and technical considerations by the responsible political authorities at a later stage. The records are based in part on exuviae, some are documented photographically, but a substantial part refer to sight recordings only. For philosophical reasons, the team refrained from specimen collecting (pp. 9-10), but special identification training courses were organized for the junior collaborators (author's pers. comm.). — The book consists of 18 pp. text, 12 pp. locality lists (with statements on the local occurrence of the national "Red List" spp.), 13 pp. computer-generated graphs (showing the occurrence of 14 spp. in 27 defined types of habitats), but the main part is represented by distribution maps, for each sp. separately, and without locality names, in which the records are specified for the periods, 1860-1949, 1950-1974, and 1975-1983. The literature records, old collection material and numerous unpublished notes, deposited in various archives,

were thoroughly considered (though neither the source, nor the locality data are stated). — (*Abstracter's Note*: The author's efficiency in organizing the enormous amount of field observations within the span of a few months is almost incredible. There are some minor errors (e.g. the spelling, "Aeschna" for *Aeshna*), but the main problem remains the reliability of sight recording. Misleading is also the statement on the availability of the supplementary locality list (180 pp.) to go along with the distribution maps. From the text on p. 9 one would assume this is available from the author, hence the (apparently erroneous) statement in *Selysia* 13(1984): 20. As it appears from the author's pers. comm., the locality list is under the embargo of the Zürich Nature Conservancy; neither the SIO Library and the Editor of *OA*, nor the Chairman of the German Odonatological Society and the Editor of *Libellula* were able to obtain a copy from the author).

- (4780) MICHIELS, N., 1984. *Inleidende ecologische studie van drie coëxisterende Sympetrum-soorten (o. Odonata, fam. Libellulidae) in Den Diel, Mol.* — [Introductory inquiry into the ecology of three coexisting *Sympetrum* species (ord. Odonata, fam. Libellulidae) in Den Diel, Mol]. M. Sc. thesis, Univ. Antwerpen. VI + 161 pp. (Dutch). — (Author: Renier Sniedersstr. 73, B-2300 Turnhout; — Publishers: Universitaire Instelling Antwerpen, Universiteitsplein 1, B-2610 Wilrijk). Ecology, population dynamics, and territorial and reproductive behaviour were studied in great detail (Mol nr Antwerp, Belgium) in the coexisting *S. danae*, *S. pedemontanum* and *S. depressiusculum*. Special attention is being paid to coexistence mechanisms. A high degree of intraspecific aggressiveness is peculiar to *S. pedemontanum*. The other 2 spp. are aggressive interspecifically, i.e. towards each other.
- (4781) MIELEWCZYK, S., 1984. Quantitative investigations on Odonata, Heteroptera and Coleoptera in a drainage channel near the village of Turew (Poznań region). *Acta Hydrobiol., Krakow* 25/26(1): 89-100. (With Polish s.) — (Dept Agrobiol. Fores., Pol.

Acad. Sci., ul. Swierczewskiego 19, PO-60-809 Poznan).

The dominance structure and changes in the density and biomass of Odon., Heteroptera and Coleoptera in the vegetative season (May-Sept., 1979) are described for 2 sectors of a channel (through meadows and woods). In the grassland section the fauna was quantitatively and qualitatively richer than in the woodland tract.

- (4782) MOORE, N.W., 1984. Dragonflies as indicators of environmental health. *Newsl. Spec. Survival Commission, IUCN* 1984(4): 7-8. — (Farm House, Swavesey, Cambridge CB4 5RA, UK).

Although the Ephemeroptera and Plecoptera are more sensitive to pollutants, dragonflies are large and diurnal, therefore easily observed and, consequently, they are particularly useful indicators in those situations where it is not possible to make intensive biological surveys. Lack of breeding spp. in tropical and temperate zones is almost always due to harmful changes directly or indirectly caused by man, notably: (1) clearance of forest in the river's headwaters, (2) pollution by nutrients, and (3) pollution by pesticides and industrial chemicals. The subject is discussed with reference to the work of the Odon. Specialist Group of the IUCN Species Survival Commission, headed by the author.

- (4783) NIRMAŁAKUMARI, K.R., N.B. NAIR & N.K. BALASUBRAMANIAN, 1984. Mode of feeding in three different orders of predatory aquatic insects. *Arch. Hydrobiol.* 101(4): 587-593. — (First Author: M.S. Home Sci. Coll., Angamaly South P.O., Ernakulam, Kerala-683573, India).

The "beneficial" and "harmful" aspects of the feeding rates and modes of the larval Odon., aquatic Hemiptera and Coleoptera are discussed. The maximum fish fry was consumed by *Urothemis s. signata*. The other odon. spp. considered are *Pantala flavescens* and *Rhodothemis rufa*. — (For a note on the inconsistency of the spelling of the names of the first 2 authors cf. OA 4736).

- (4784) PINHEY, E., 1984. A survey of the dragonflies (Odonata) of South Africa. Part 1. *J. ent. Soc. sth. Afr.* 47(1): 147-188. — (Wye View Villa, Gloucester Rd, Tutshill, Chepstow, Gwent NP6 7DH, UK).

A detailed check-list, with references to genera and species, is presented of the Zygoptera known in the region south of the Limpopo River, and including South West Africa/Namibia. The region embraces the Republic of South Africa, Swaziland and Lesotho. Previous papers on this area are reviewed, together with check-lists by the author for territories north of the Limpopo. A total of 162 species has been recorded from this region. A selection of data on specimens many Institutions and some private collections is given, as well as type depositions and brief notes on ecology and distribution. This paper completes the series of surveys of southern African territories (with the exception of Angola), from the Cape Province to Zambia and Malawi. The region reviewed here is of particular interest for several reasons: there is a remarkable number of species described from the region; there are relict Gondwana elements; the number of species of Zygoptera is unusually close to that of the Anisoptera. (Author).

- (4785) PLACHTER, H., 1984. The structure of pioneer animal communities in man-made habitats and consequences for species conservation. *Abstr. Vol. XVIIth int. Congr. Ent., Hamburg*, p. 536. — (Bayer, Landesamt Naturschutz, Rosenkavalierplatz 3, D-8000 München-81, FRG).

Within man-made habitats of early successional stages in southern Germany the structure of animal communities was investigated with regard to substratum (sand, clay, gravel), ground structure, humidity, plant communities, vegetation coverage and others. More than 400 species of dragonflies, grasshoppers, bees, waterbugs, beetles, amphibians, reptiles and small mammals were taken into account but most of the quantitative conclusions refer to carabid beetles. Typical component communities from bare riverbanks, marshland, sanddunes and not intensively cultivated

agricultural landscapes immigrate into those secondary habitats. Consequences for species conservation and habitat management are discussed.

- (4786) RIEK, E.F. & J. KUKALOVÁ-PECK, 1984. A new interpretation of dragonfly wing venation based upon Early Upper Carboniferous fossils from Argentina (Insecta: Odonatoidea) and basic character states in pterygote wings. *Can. J. Zool.* 62(6): 1150-1166. (With Fr. s.). — (Second Author: Dept Geol., Carleton Univ., Ottawa, Ont. K1S 5B5, CA). The oldest known odonatoid wings are described from the Namurian of Argentina (nr Malanzán, Cuesta de la Herradura, La Rioja): *Eugeropteron lunatum* sp. n., gen. n. and *Geropteron arcuatum* sp. n., gen. n., for which the *Eugeropteridae* fam. n. is erected in Meganisoptera (= Protodonata). The author of all new taxonomic names is E.F. Riek. The wings are generalized and support a reinterpretation of the venation of living Odon. as being fully homologous to the other pterygotes, and closely related to Ephemeropteroidea, but different from Neoptera, deviating thus from the Tillyard-Fraser venational system. Therefore, Palaeoptera is a valid phylogenetic unit, and Odonatoidea and Ephemeropteroidea are sister groups.
- (4787) RÜPPELL, C., 1984. Slow-motion analysis of free-flying dragonflies. *Abstr. Vol. XVIIth int. Congr. Ent., Hamburg*, p. 100. — (Kleikamp 5, D-3301 Lagesbüttel, FRG). [Verbatim]: The movements of the wings of dragonflies are too fast for direct observation. So free-flying dragonflies were filmed with a frequency up to 500 f/s. *Aeshna cyanea* is hovering compensating instabilities by turning the thorax. The flight of *Calopteryx splendens* has two functions: locomotion and communication. Approaching a female the male beats fore- and hindwings alternately in all other cases nearly synchronously. Egg-laying in the genus *Sympetrum* is done mostly in tandem-flight. Thereby the male is leading and doing the main flight-work. Frogs are specialized in feeding on egg-laying tandems.
- (4788) SCHMIDT, E., 1984. 6. Ord. Odonata, Libellen. In: M. Schaefer, [Ed.], *Paul Brohmer Fauna von Deutschland*, 16th ed., pp. 184-190. Quelle & Meyer, Heidelberg. — (Biol. Didaktik, Univ. Bonn, Römerstr. 164, D-5300 Bonn-1, FRG).
The references to earlier editions cf. *OA* 3796. New is the family key to the larvae.
- (4789) SCHNEIDER, W., 1984. Das Weibchen von *Enallagma somalicum* Longfield 1931 (Odonata: Zygoptera: Coenagrionidae). *Articulata* 2(5): 106-109. (With Engl. s.). — (Inst. Zool., Univ. Mainz, Saarstr. 21, D-6500 Mainz, FRG).
The hitherto unknown female of *E. somalicum* is described and figured.
- (4790) *SELYSIA*. Newsletter of the Societas Internationalis Odonatologica. Vol. 13, No. 2 (Sept. 1, 1984). Compiled by M.J. Westfall & M.S. Westfall, Dept Zool., Univ. Florida, Gainesville, Fla). — (c/o Dr M.J. Westfall, Jr, Dept Zool., Univ. Florida, Gainesville, Fla 32611, USA).
Dunkle, S.W.: North American Odonata Collectors Meeting (18-19); — *Corbet, P.S.*: Dr M.A. Liefinck's 80th birthday celebrated (19); — *Inoue, K.*: A. celebration party for Asahina issue held (19-20); — *Westfall, M.J.*: Tony Watson receives award (20); — *Westfall, M.J.*: S.I.O. bank account [in the USA] opened (20); — *Bick, G.H.*: Endangered US [odonate] species (21); — *Parr, M.J.*: Reproductive behaviour of *Pantala flavescens* over running water (21-22); — *Westfall, M.J.*: Dragonfly T-shirts still available (23-24); — *Westfall, M.J.*: Copies of 1955 Manual still available (24); — Dr William H. Cross killed in Mexico (24-25); — Prof. Dr Septima Cecilia Smith dies (25). — The issue also contains various anonymous news items, publication notices, and additions and changes to the S.I.O. membership list.
- (4791) STEINMANN, H. & L. ZOMBORI, 1984. *A morphological atlas of insect larvae*. Akademia Kiado, Budapest. 403 pp., 1069 figs incl. [ISBN 963 05 34177]. — Price: Hfl. 138,-.
The book contains structural drawings and a

Latin-Engl. and Engl.-Latin index, without any other text. The Odon. are dealt with on pp. 70-80 (figs 160-194).

- (4792) TEMBHARE, D.B. & W. KHAN, 1984. Cephalic neuroendocrine system of *Pantala flavescens* (Fabr.) larvae. *Abstr. Vol. XVIIth int. Congr. Ent., Hamburg*, p. 136. — (Dept Zool., Nagpur Univ., Nagpur-440010, India). [Verbatim]: The neurosecretory cells in the brain are located in the pars intercerebralis, the ventrolateral region of the protocerebrum, the tritocerebral lobes and at the root of the optic lobes. They are classified into A₁, A₂, B and C cells. The axons of the neurosecretory cells of different groups form independent neurosecretory axonal pathways and that of the medial, lateral and ventral neurosecretory cells of each hemisphere emerges out of the brain as a single fine nerve, the nervus corporis cardiaci, innervating the epsilateral corpus cardiacum (CC). The CC are fusiform glistening white ventral bodies and appear as the principal, while the aorta functions as the secondary neurohaemal organ. The intrinsic neurosecretory cells are intermingled with extrinsic axonal endings throughout the substance of CC. The corpora allata (CA) are elongated, oval or cylindrical bodies, situated anterolaterally to the CC and are innervated by the nervi corporis allati (NCA) I from the CC and the NCA II leading to the suboesophageal ganglion. The CA undergo cyclic activity and often change from cellular to syncytial structure.
- (4793) TYAGI, B.K., 1984. Some considerations on the distribution of chromosome type numbers and centromere types in the insect orders, with a note on the phylogenetic significance of the chromosome numbers among insect orders. *Abstr. Pap. VIth All-India Congr. Zool., Gwalior*, p. 139. — (Vector Control Res. Cent., ICMR, Medical Complex, Indira Nagar, Pondicherry-605006, India). The Odon. are also briefly considered.
- (4794) UBUKATA, H., 1984. Heterospecific mating and tandem oviposition between male *Sympetrum frequens* and female *S. infuscatum*. *Sylvicola* 2: 4-5. (Jap., with Engl. translation of the title). — (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ., Kushiro, 085, JA). The oviposition type was that of *S. frequens*, i.e. "contact oviposition into mud or water". A photographic record is also provided (Mukawa, Hokkaido).
- (4795) UBUKATA, H., 1984. Intra-male sperm translocation and copulatory behavior in the dragonfly, *Cordulia aenea amurensis* Selys (Odonata: Corduliidae). *J. Hokkaido Univ. Educ.* (II B) 35(1): 43-52. (With Jap. translation of the title). — (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ., Kushiro, 085, JA). Intra-male sperm translocation takes place while the insects are engaged in non-sexual activities (e.g. patrolling flights, etc.). The copulatory behaviour of both sexes is described in detail, and it is discussed from the points of view of reproductive success and sperm competition.
- (4796) UBUKATA, H., 1984. The Odonata collected at Mt Taisetsu in July, 1983. *Sylvicola* 2: 6. (Jap., with Engl. translation of the title). — (Dept Sci. Educ., Kushiro Coll., Hokkaido Univ., Kushiro, 085, JA). *Enallagma boreale*, *Sympetrum pedemontanum elatum*, and *Leucorrhinia dubia orientalis* are recorded (July 12-16).
- (4797) VÖLKER, R., V. MAUSS, C. SCHLORF, M. SCHLORF & K. LUTZ, 1984. Kollau-niederung Nord 1982. *Naturk. Beitr. DJN* 12: 37-52. — (First Author: An der Lohe 10, D-2000 Hamburg-61, FRG). 14 spp. are listed from the Kollau-niederung, on the outskirts of Hamburg, FRG.
- (4798) WARINGER, J.A. & U.H. HUMPEsch, 1984. Embryonic development, larval growth and life cycle of *Coenagrion puella* (Odonata: Zygoptera) from an Austrian pond. *Freshw. Biol.* 14: 385-399. — (Abt. Limnol., Inst. Zool., Althanstr. 14, A-1090 Wien). (1) Newly-laid eggs of *C. puella* from a pond near Herzogenburg (Lower Austria) were kept at constant water temperatures (range c. 3.5° C

- to c. 28° C) in the laboratory. Hatching success varied with temperature; no eggs hatched below 12° C and nearly all hatched at c. 16° C. Hatching time decreased with increasing temperature and the relationship between the two variables within the range 12-28° C was well described by a power law. The length of the hatching period was less than 12 days. Hatching times estimated from the power-law equations and those obtained in the field experiments were similar. Therefore both the hatching time and the length of the hatching period in the field could be estimated from the laboratory data for the range 12-28° C. — (2) The maximum number of instars from egg to imago was 11; the average body length increment (mm) per moult was proportionately constant at c. 26% and Dyar's rule was applicable. The interval between moults decreased with increasing temperature up to the seventh instar and the relationship between the two variables within the range 12-28° C was well described by a power law. The moulting interval for instars 8-11 ranged from 23 to 48 days and was relatively independent of temperature. No moulting occurred at temperatures below 12° C. — (3) Larval growth was logistic in the laboratory and variations in mean logistic growth rate (range 0-2.5% length day⁻¹) were related to mean temperature with no growth at temperatures < 12° C. Larval growth rates in pond experiments were similar to those estimated from laboratory data, and therefore the regression equations obtained from the laboratory experiments are probably applicable to larval growth in the field. — (4) Information on the life cycle of *C. puella* is briefly reviewed and it is concluded that *C. puella* from the pond near Herzogenburg has an univoltine life cycle. (Authors).
- (4799) WASSCHER, M., 1984. Winterswijk ziet ze vliegen. — [Observations on dragonfly flight activity at Winterswijk]. *Trias* 13(3): 5-7. (Dutch). — (Minstr. 15 bis, 3582 CA Utrecht, NL).
The flight activity in *Coenagrion pulchellum*, *Erythromma najas*, *Aeshna cyanea*, *Cordulegaster bidentatus* and *Sympetrum danae* were studied. The factors, responsible for the individual and interspecific differences, are outlined and discussed.
- (4800) WASSCHER, M. & H. SCHOBLEN, 1984. Onderzoek naar libellen op het hemelvaartskamp. — [Some spring observations on dragonflies]. *Nika, Castricum* 1(3): 7-21. (Dutch). — (First Author: Minstr. 15 bis, 3582 CA Utrecht, NL).
Lists are given of the records (May 30-June 3, 1984) at Weerribben (Overijssel prov.) and the Vledderveld (Drenthe), The Netherlands. A local population structure and morphological variation of *Coenagrion pulchellum* are described, notes are presented on the occurrence of *Hydracarina* on *C. pulchellum* and *C. lunulatum*, brief observations are recorded on the behaviour of *C. pulchellum*, and the composition of a *Zygopt.* larval population at a bog nr Vledder is discussed.
- (4801) WATANABE, M. & N. OHSAWA, 1984. Flight activity and sex ratios of a damselfly *Platycnemis echigoana* Asahina (*Zygoptera*, *Platycnemididae*). *Kontyu* 52(3): 435-440. — (First Author: Dept Biol., Fac. Educ., Mie Univ., Kamihama, Tsu-shi, Mie, 514 JA).
There are some 20 known populations (all in Honshu, Japan) of this woodland sp. The male defends a sunlit spot (30x30 — 100x100 cm) on the forest floor, where the sexes encounter and copulation takes place. The attended female deposits endophytically some 170 eggs immediately after copulation. In all plots studied, there were fewer females than males.
- (4802) WATSON, J.A.L. & G. THEISCHINGER, 1984. The Australian *Protoneurinae* (Odonata). *Aust. J. Zool.* (Suppl.) 98: 1-51. — (First Author: Div. Ent., CSIRO, P.O. Box 1700, Canberra City, ACT-2601, AU).
The synonymy of *Notoneura* Tillyard with *Nososticta* Hagen *in Selys* is established. 6 new spp. are described, viz. *N. baroalba* sp. n. (Baroalba Creek, N.T.), *N. kalumburu* sp. n. (Drysedale River, W. Aust.), *N. koolpinyah* sp. n. (Black Jungle, N.T.), *N. koongarra* sp. n. (Baroalba Creek, N.T.), *N. liveringa* sp. n. (Ord River, W. Aust.), and *N. taracumbi* sp. n. (Taracumbi Falls, N.T.). The 5 other known

Australian spp. are redescribed, and the 11 spp. are compared and keyed.

- (4803) WESTFALL, M.J., Jr, 1984. Odonata. In: R.W. Merritt & K.W. Cummins, Eds, An introduction to the aquatic insects of North America, pp. 126-176. Kendall & Hunt, Dubuque, Iowa. [ISBN 0-8403-3180-0]. — (Author: Dept Zool., Univ. Florida, Gainesville, Fla 32611, USA; — Publishers: 2460 Kerper Blvd, Dubuque, Iowa 52001, USA). This is the second and substantially enlarged edition of the work listed in *OA* 2243. The author is the leading authority on the North American Odon., with an absolutely unparalleled knowledge on the immature stages. It is for this reason that the generic keys to the adults and larvae, published here for the first time, are particularly precious. (For other details cf *OA* 2243.
- (4804) WILMOT, B., 1984. Dragonflies of Botswana, Christmas 1983 issue: eye-catching but inaccurate. *Sth. Afr. Philatelist* 60(5): 127-128. — (Albany Mus., Somerset Str., SA-6140 Grahamstown).
- Odonatologist's comments on the dragonfly stamps, issued by the Botswana postal authorities: — (*Abstracter's Note*: The paper was accorded the 1984 Congress Award of the Philatelic Federation of Southern Africa).
- (4805) WINSTANLEY, W.J., 1984. *Synthemis serendipita* sp. nov. (Odonata: Synthemistidae) from New Caledonia. *N.Z. J. Zool.* 11: 9-12. — (11 Bennett Str., Motueka, NZ). Described from a unique male, reared from larva (nr Col d'Amieu, emerged Feb. 26, 1982). The holotype and exuviae are deposited in Brit. Mus. (Nat. Hist.).
- (4806) ZINGG, R., 1984. Die Amphibien und Libellen im unteren Reusstal. *Jber. Stiftung Reusstal* 1983: 24-31. — (Zool. Inst., Univ. Zürich, Winterthurerstr. 190, CH-8057 Zürich-Irchel). The odon. fauna of the Lower Reusstal, canton Aargau, Switzerland is recorded (35 spp.) and briefly discussed. The occurrence of *Ophiogomphus serpentinus* and *Orthetrum albistylum* is noteworthy. (For the fauna of the Upper Reusstal cf. *OA* 4202).