

ODONATOLOGICAL ABSTRACTS

1975

- (3912) POINAR, G.O., 1975. *Entomogenous nematodes. A manual and host list of insect-nematode associations*. Brill, Leiden. X+317 pp.— Price: Hfl. 92.— (Div. Ent. & Parasitol., Univ. California, Berkeley, Cal. 94720, USA).

Only 1 identified and 2 unidentified mirmithids and 2 spirurids have been hitherto recovered from the larvae of 6 odon. spp., viz. the mirmithid *Amphimermis tinyi* Nickle from *Anomalagrion hastatum* and *Ischnura posita* (cf. *OA* No. 831), unidentified mirmithids from *Leucorrhinia dubia* (A.K. Artyukhovskiy & V.P. Negrobov, 1967, *Trudy Voronezh. gosud. Zap.* 15: 176-178) and *Sympetrum flaveolum* (R.J. Tillyard, 1917, *The biology of dragonflies*, Cambridge Univ. Press), and the spirurids *Ascarops strongylina* (Rud.) from *Anax parthenope* (S. Ono, 1933, *J. Jap. vet. Sci.* 9: 105-117) and *Spiroxys contorta* (Rud.) from a *Sympetrum* sp. (L.R. Hedrick, 1935, *Trans. Am. microsc. Soc.* 54: 307-335). Ono's record is considered "unusual". — (*Abstracter's Note*: The literature coverage is incomplete, missing are particularly the Russian references, e.g. *OA* No. 347).

1976

- (3913) GAMA, V., A. ZAHA, C. DA CRUZ LANDIM & A. FERREIRA, 1976. Ultra-estrutura de espermiogênese e do espermatozóide de *Enallagma cheliferum* Selys, 1875 (Coenagrionidae: Odonata). [The ultra-structure of the spermatogenesis and of the

spermatozoa in *Enallagma cheliferum* Selys, 1875 (Coenagrionidae: Odonata)]. *An. Acad. brasil. Ciênc.* 48(2): 313-324. (Port., with Engl. s.). — (First Author: Dept. Cienc. Biol., Univ. Fed. São Carlos, BR-13.560 São Carlos, SP). Spermatogenesis in *Cyanallagma cheliferum* follows the usual insect pattern. Thus, the Golgi originates the acrosome, the Nebenkern, and the mitochondrial structures that form a long tail with the axonema. The latter has the 9+9+2 configuration, and around the centriole, a centriole adjunct is visible in the immature spermatid. The centriole adjunct differentiates into dense bodies, assuming a crescent shape in the mature sperm.

1977

- (3914) HOSHIDE, K., 1977. Notes on the gregarines in Japan. 8. Three new species of *Eugregarina* from Odonata. *Bull. Fac. Educ. Yamaguchi Univ.* 27(2): 93-125. — (Address not stated; probably c/o Dept Biol., Fac. Educ., Yamaguchi Univ., Yamaguchi, JA). A list is given of the 8 gregarine spp. and their odon. hosts recorded so far in Japan. *Ancyrophora mutabilis* sp.n. (Acanthosporidae; from *Copera annulata*), *Hoplorhynchus miyanensis* sp.n. and *H. polyhamatus* sp.n. (Actinocephalidae, from resp. *Ceriagrion melanurum* and *Mnais strigata*) are described and illustrated. The other 5 spp. are redescribed and their fresh drawings and micrographs are produced.

1979

- (3915) FANFANI, A. & R. GROPPALI, 1979. La

fauna di Montecristo — Arcipelago toscano. *Pubbl. Ist. Ent. Univ. Pavia* 1979(9): 1-54. — (Ist. Ent., Univ. Pavia, Via Taramelli 24, I-27100 Pavia).

A checklist is given of the fauna so far recorded from the island of Montecristo, Toscana Archipelago, Italy. It is based on literature and on unpublished material. The 3 Odon. known from the island (p.18) are Calopteryx h. haemorrhoidalis, Orthetrum coerulescens, and Sympetrum fonscolombi. The latter 2 spp. have not been recorded from the island earlier.

- (3916) HIGLER, L.W.G., 1979. Faunistische gegevens van de Hierdense Beek 1907-1970. — [Faunistic data on the Hierdense Beek, 1907-1970]. *RIN-Rapport* 79(8), 26 pp., figs 1-3 excl. (Dutch). — (St. Res. Inst. Nature Manag., P.O. Box 46, 3956 ZR Leersum, NL).
An annotated review is given of the macroinvertebrate inventory of the rivulet Hierdense Beek, Gelderland Prov., The Netherlands, as brought together during 1907-1970. This includes 8 odon.spp., several of which have a very local distribution in the country.

1980

- (3917) (Anonymous), 1980. Biological control and genetics. *Calif. Agric.* 34(3) [Spec. Rep. Mosquito Res.]: 17. — (Editors: Div. Agric. Sci., Univ. California, Riverside, Calif. 92521, USA). *Bacillus thuringiensis* var. *israelensis* [BTI] produces a substance highly toxic to mosquito larvae, but harmless to non-target organisms. In the laboratory experiments the mosquito larvae clumped together and died soon after the introduction of BTI, while fish and odon. larvae remained unaffected even after prolonged exposure.
- (3918) DA CRUZ LANDIM, C. & V. GAMA, 1980. Inclusões fibrosas em células epiteliais do vaso deferente de libélula (*Enallagma cheliferrum*) (Odonata) / Occurrence of intranuclear fibrous inclusions in the vas deferens epithelial cells of *Enallagma cheliferrum* (Odonata). *Dusenía* 12(4): 135-143. (Port., with Engl.s.). — (First Author: Dept. Biol., Inst. Biociên., Univ. Estad. Paulista, BR-13.500 Rio Claro,

SP).

The morphology of the inclusions is described and discussed.

- (3919) HIGLER, L.W.G., 1980. The presence of caddis flies in the Netherlands and their role in the aquatic system. *Hydrobiol. Bull., Amst.* 14(3): 209-212. — (St. Res. Inst. Nature Manag., P.O. Box 46, 3956 ZR Leersum, NL). The paper contains a tabular review of the numbers of spp. of various insect orders (incl. Odon.) occurring at 13 stagnicolous and running-water localities in the Netherlands. The names of the spp. are not stated.
- (3920) PLATZER, E.G., 1980. Nematodes as biological control agents. *Calif. Agric.* 34(3) [Spec. Rep. Mosquito Res.]: 27. — (Dept. Nematol., Univ. California, Riverside, Calif. 92521, USA). The nematode *Romanomeris culicivorax* is considered a promising biological control agent against mosquitoes. The rearing techniques, life history, and the effectiveness in California habitats are briefly described. Diving beetles, gammarids, odon. larvae (Zyg. and Anisop.), and small crayfish avidly consume the mermithid postparasites.

1981

- (3921) CARPENTER, F.M. & P. WHALLEY, 1981. *Typus Sellards, 1909* (Insecta, Protodonata): proposed conservation under Plenary Powers, *Z.N.(S.)* 2359. *Bull. zool. Nom.* 38(4): 285-286. — (First Author: Mus. Comp. Zool., Harvard Univ., Cambridge, Mass. 02138, USA; — Second Author: Dept Ent., Brit. Mus. (Nat. Hist.), Cromwell Rd, London, SW7 5BD, UK). This is an application to the International Commission on Zoological Nomenclature to conserve the unjustified emendation, *Typus Sellards, 1909*, of the generic name *Tupus Sellards, 1906*, and to place the emended name on the Official List of Generic Names in Zoology and the family name *Typidae Handlirsch, 1919*, on the Official List of Family-Group names in Zoology. — (Cf. also *OA* No. 3933).
- (3922) EGLIN, W. & M. MOOR, 1981. Das

Naturschutzgebiet Reinacherheide (Reinach, Basel-Landschaft). *Tätigkeitsber. naturf. Ges. Baselland* 31: 1-184. — (Naturh. Mus., Augustinerasse 2, CH-4051 Basel).

This is a monograph on the Nature Reserve Reinacherheide, canton Baselland, Switzerland. Only a limited number of insect orders is dealt with, the Odon. are omitted. *Libellula depressa* is the only sp. listed (p.165).

- (3923) GAGNÉ, W.C., 1981. Status of Hawaii's endangered species: insect and land snails. *Elephaia* 42(4): 31-36. — (Dept Ent., Bishop Mus., P.O.Box 19000—A, Honolulu, Hawaii, 96819, USA).

Stream diversion, canalization, drainage and clearance, especially in elevations below 1500 ft have probably resulted in profound changes in aquatic arthropod communities in Hawaii. As an example it is said that (the endemic) *Megalagrion pacificum*, once widespread throughout the main islands at low elevations, has virtually disappeared from former haunts.

- (3924) GAMA, V., C. DA CRUZ LANDIM & A. FERREIRA, 1981. Estudos morfológicos da estrutura dos cinetocores de *Enallagma cheliferum* (Odonata)/Morphological studies on the structure of the kinetochore of *Enallagma cheliferum* (Odonata). *Naturalia, São Paulo* 6: 75-87. (Port., with Engl.s.). — (First Author: Dept. Cienc. Biol., Univ. Fed. São Carlos, BR—13.560 São Carlos, SP).

The ultrastructure of the chromosomes of *Cyanallagma cheliferum* was examined with special reference to the nature of the kinetochores. It is shown, electronmicroscopically, that the chromosomes of this sp. are polycentric, i.e. possessing more than one localized centromere.

- (3925) HECKMAN, C.W., 1981. Long-term effects of intensive pesticide applications on the aquatic community in orchard drainage ditches near Hamburg, Germany. *Arch. enviroinm. Contam. Toxicol.* 10: 393-426. — (Inst. Hydrobiol., Univ. Hamburg, Zeiseweg 9, D—2000 Hamburg-50, FRG).

The results of an ecological investigation carried out to determine the structure of an

aquatic community in orchard drainage ditches were compared with the results of a similar study conducted about 25 yrs earlier, before the full impact of modern pesticides had been felt. Comparisons of the community structures and abundances of the various spp. indicate that many spp. have become completely resistant to the agricultural chemicals to which they are exposed, while others have been completely eliminated from the habitat. Certain spp. have apparently benefited from the disappearance of predators. Odon. seem to be particularly hard-hit. Out of 14 spp. recorded during 1951-1957, at present only the larvae of *Coenagrion puella* and *C. pulchellum* are abundant.

- (3926) ISHIBASHI, N. & S. ITOH, 1981. Effects of herbicide benthocarb on fauna in paddy field. *Proc. Assoc. Plant. Prot. Kyushu* 27: 90-93. (Jap., with Engl.s.). — (Fac. Agric., Saga Univ., Saga, 840, JA).

In studies in Japan on the effects on the fauna in the soil and the water of rice-fields treated 3 times with the herbicide thiobencarb (benthocarb), it was found that shortly after each treatment, population of various groups, including chironomid and mosquito larvae, decreased markedly. However, the longer-term effect was an increase in populations of these larvae to levels higher than in the untreated control rice-fields because the recovery of populations of predacious species (hydrophilids, odon. larvae and copepods) was slow.

- (3927) MAZOKHIN-PORSHNJAKOV, G.A. & V.I. KAZJAKINA, 1981. K stroeniyu organov zreniya vzroslyh senoedov (Psocoptera)/ On the structure of the organs of vision in adult Psocoptera. *Ent. Obozr.* 60(2): 252-259. (Russ., with Engl.s.). — (Dept. Ent., Lomonosov St. Univ., Moscow, USSR).

A microscopic study of the dorsal ocelli compound eyes of 5 psocopteran spp. was carried out. It is concluded that the organs of vision of Psocoptera, although similar to those in the other Hemipteroidea, show some resemblance to Orthopteroidea and Odonata in their compound-eye structure.

- (3928) MISRA, S.D., S.C. BHARGAWA, G.R. JAKHER & T. DEY, 1981. The macrobenthic fauna of Balsamand lake. *Proc. Symp. Ecol. Anim. Popul. zool. Surv. India* 2: 35-46. — (Dept Zool., Univ. Jodhpur, Jodhpur, India). The Balsamand lake is a man-made, rainfed lake, N of Jodhpur, India. The Odon. are said to occur sparsely, contributing little to the lake community. Among the aquatic vegetation, 13—52 spec./m² were recovered at various stations during the winter months. The spp. are not listed.
- (3929) NILSSON, B.-I., 1981. Susceptibility of some Odonata larvae to fish predation. *Verh. int. Ver. Limnol.* 21(3): 1612-1615. — (Dept. Zool., Univ. Göteborg, P.O.Box 250 59, S-400 31 Göteborg).
Due to the acidification of numerous Swedish westcoast lake ecosystems, fish have been recently eliminated there, and the populations of Leucorrhinia larvae increased significantly. It has been shown experimentally that due to their behaviour Leucorrhinia larvae are more susceptible to fish predation than any other odon. spp. coexisting with fish in the non-acidified lakes in Sweden.
- (3930) PECILE, L., 1981. Una nuova stazione italiana di *Nehalennia speciosa* (Charp.). *Gortania* 2: 173-180. (With Engl.s.). — (Mus. Friul. Stor. Nat., Via Grazzano I, I-33100 Udine).
N. speciosa is reported from Brazzacco, a locality situated in the morainic cluster of Friuli Venezia Giulia, northern Italy (alt. 185 m). This is the 3rd record of this sp. in Italy. The locality is described, and its odon. fauna (10 spp.) is enumerated and briefly discussed.
- (3931) PRITYKINA, L.N., 1981. Geologicheskaya istoriya i osnovnye momenty filogeneza strekoz. — [Geological history and the highlights of dragonfly phylogeny]. In: I.V. Vasil'ev & L.I. Hozackiy, [Eds], *Zhizn' na drevnih kontinentah, ee stanovlenie i razvitie*, pp. 141-146, Nauka, Leningrad. (Russ.). — (Palaeontol. Inst., USSR Acad. Sci., Profsoyuznaya 113, USSR-117321 Moscow). This is an extended version of the paper listed in *OA* No. 3811.
- (3932) RIBI, W.A. & M. SCHEEL, 1981. The 2nd and 3rd optic ganglia of the worker bee (*Apis mellifera*): Golgi studies of the neuronal elements in the medulla and lobula. *Cell Tissue Res.* 221(1): 17-43. — (Max-Planck-Inst. Kybernetik, Spemannstr. 38, D-7400 Tübingen, FRG).
The gross morphology and the fine-structural characteristics of neurons of the 2nd and 3rd optic ganglia were investigated light microscopically on the basis of Golgi (selective silver-) and reduced silver preparations. The lobula in hymenopterans appears, in contrast to Diptera, Odon. and Lepidoptera, as a single neuropilic mass. A short review of the electrophysiological data concerning these 2 ganglia is tentatively correlated with some of the anatomical data.
- (3933) SEALY, D.L.F., 1981. Comment on proposed conservation of the generic name *Typus* Sellards, 1909 (Insecta, Protodonata) Z.N. (S.) 2359. *Bull. zool. Nom.* 38(4): 286-287. — (Dept. Palaeontol., Brit. Mus. (Nat. Hist.), Cromwell Rd, London, SW7 5BD, UK).
The conservation, as proposed in the paper listed in *OA* No. 3921, is opposed on two grounds, viz. (1) The name *Typus* should not be conserved because *Tupus* Sellards, 1906 has priority, was validly proposed, is not preoccupied and is objectively synonymous, (2) The name *Typus* is objectionable in that the word is a technical term in zoological nomenclature. It is requested to place the genus-group name *Typus* Sellards, 1909 on the Official Index of Rejected and Invalid Generic Names in Zoology, and to place on the Official Index of Rejected and Invalid Family-Group names in Zoology the name *Typidae* Handlirsch, 1919.
- (3934) WELLINGHORST, R., 1981. Libellen — geschichte Flieger mit dunkler Zukunft. *Osnabrücker Land* 1981: 228-232. — (Nr. 105, D-4574 Gross Mimmelage, FRG).
A general article on dragonflies, directed at the general reader.

1982

- (3935) (Anonymous), 1982. Professori Tarvo Oksala — [Professor Tarvo Oksala]. *Helsingin sanomat* 1982 (307): 14, issue of Nov.14. (Finnish).
Obituary for Tarvo Anopoika Oksala (born: Feb. 24, 1915, Jyväskylä, Finland; deceased: Nov. 3, 1982, the same place), Professor of Genetics of the University of Turku, Finland, and one of the principal early students of the odon. cytogenetics. A brief general biography and a portrait are provided. For his odonatol. bibliography cf. *OA* No. 3428.
- (3936) AKKERMANN, R., 1982. Möglichkeiten und Zielsetzungen für eine Regeneration von Hochmooren — zoologisch betrachtet. *Inf. Natursch. Landschaftspf., Wardenburg* 3: 151-163. — (Fachber. Biol., Univ. Osnabrück, Postfach 1349, D-2848 Vechta, FRG).
The odonatol. aspects of artificial regeneration of peat bogs are considered on pp.153-154.
- (3937) ASAHINA, S., 1982. A list of the Odonata from Thailand. Part I. Agrionidae. *Kontyu* 550(3): 454-466. — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
The history of odonatol. research in Thailand (from 1877 onwards) is briefly stated, and an annotated list is given of 35 coenagrionid spp. *Agriocnemis lacteola*, *Ischnura rufostigma annandalei*, *Cercion malayanum*, and *Percinemis sticta* are new to the Thai fauna. *Mortonagrion binocellata* Fraser is redescribed and figured. The status of "*Pseudagrion siamense* Fraser" has not been ascertained.
- (3938) ASAHINA, S., 1982. A new local aberrant form of *Rhyothemis fuliginosa* Selys. *New Ent.* 31(3): 65-66. (Jap., with Engl.s.). — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
In populations of *R. fuliginosa* from southernmost Kyushu and Shikoku, Japan some individuals have the apical 5 mm in the forewing distinctly darkened. This form is here named *R. fuliginosa* f. *noshime* nov. It is emphasized that the name has no status under the Code, and that "melanistic" individuals co-occur with hyaline-winged and intermediately black-tipped individuals.
- (3939) ASAHINA, S., 1982. A revision of the Himalayan dragonflies of the genus *Neallogaster* (Odonata, Cordulegasteridae). *Bull. natn. Sci. Mus., Tokyo* (A) 8(4): 153-171. — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
The Himalayan members of the genus are described, figured and keyed, viz. *hermionae* (Fraser), *latifrons* (Sel), *ornatus* nom.nov. (for *Allogaster parvistigma* Fraser), and *schmidti* sp.n. (♂ holotype, ♀ allotype: Achmede Dewane, 2700 m, Nuristan, eastern Afghanistan; 23-VII-1952; ex coll. Er. Schmidt). A female of a fifth, unnamed sp. from eastern Nepal is also described and figured. Some field observations on the adults are added.
- (3940) ASAHINA, S., 1982. *Epiophlebia superstes*. *Insectarium, Tokyo* 19(4): 23. (Jap., with Engl. title). — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
A note, with a photograph of a larva.
- (3941) ASAHINA, S., 1982. [Preface]. *In*: I. Sonehara, [Life history of *Epithecia bimaculata sibirica* of Mount Yatsugatake], pp. 1-2. Sinano Kyoikukai Corporation, Nagano, (Jap.). — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
By the doyen of the Japanese odonatologists, in his capacity as President of the International Odonatological Society (S.I.O.).
- (3942) ASAHINA, S., 1982. The Odonata of the Ozegahara Moor. *In*: *Ozegahara: Scientific Researches of the Highmoor in Central Japan*, pp. 321-330. [Names of Editor and Publisher not stated on the reprint]. — (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
An annotated list is given of the odon. fauna (44 spp.) of the Ozegahara Moor, Honshu, Japan, and its features are discussed.
- (3943) AUF DER MAUR, F. [text], A. KREBS & H. WILDERMUTH [figs], 1982. *Libellen: Akrobaten der Lüfte. Brückenbauer, Gossau* 1982 (44): 9 (issue of Nov.5). — (Third Author:

Mythenweg 20, CH-8620 Wetzikon).

A general note on dragonflies, in a popular Swiss weekly, with 5 col. photographs. — (*Abstracter's Note*: Fig. 1 shows an emerging *Anax imperator* rather than *Cordulia aenea*, as erroneously stated).

- (3944) BAUMBAUER, D., 1982. Libellen werden immer seltener. *Das Tier* 1982 (12): 33. — (Author's address not stated).

A general note, with reference to the negative effects of the Rhine R. pollution on the local odon. fauna.

- (3945) [BÄUMER, H.O., Minister of Food-Supply, Agriculture and Forestry], 1982. *Schützt die Libellen!* Minister für Ernährung, Landwirtschaft und Forsten des Landes Nordrhein-Westfalen, Düsseldorf. 12 pp. — (Free copies available from: Landesanstalt f. Ökologie, Landschaftsentwicklung u. Forstplanung Nordrhein-Westfalen, Leibnizstr.10, D-4350 Recklinghausen, FRG).

The booklet is an official governmental appeal for dragonfly conservation in the Federal State of Northrhine-Westfalia, Fed.Rep.Germany, containing numerous col. photographs and a pictorial key for generic identification. A general description of the biology is followed by lists of taxa encountered in various aquatic habitats. Factors threatening local dragonfly populations and protective measures are also enumerated, and instructions for the construction of artificial dragonfly ponds are provided. It is interesting that collecting is not listed among threats, but its total prohibition is stated among the protective measures.

- (3946) BAUSCHMANN, C., 1982. NSG "Im Grenzstock von Gettenau". *Beitr. Naturk. Wetterau* 2(2): 106-116. — (Wetterastr. 22, D-6360 Friedberg-Dorheim, FRG).

10 common odon. spp. are listed for the Nature Reserve "Im Grenzstock von Gettenau", nr Gettenau, Hessen, Fed. Rep. Germany.

- (3947) BELLAS, T.E., 1982 Insects as a cause of inhalent allergies. A bibliography. *Rep.Div. Ent. C.S.I.R.O., Canberra* 25: 1-60. — (Free copies from: Publications Officer, Div. Ent.,

C.S.I.R.O., P.O. Box 1700, Canberra City, A.C.T. 2601, AU).

This publication lists all papers (up to end of 1981) that have dealt with insects as a cause of inhalent allergies and indicates which spp. were responsible for the problem. In addition, a species index, cross-indexed with the bibliography, is also provided. The Odon. listed are *Calopteryx maculata* and *Plathemis lydia*, based on R.D. Wiseman, W.G. Woodin, H.C. Miller & M.A. Myers, 1959, *J. Allergy* 30: 191-197.

- (3948) BEYER, H. & H.O. REHAGE, 1982. Wasserinsekten in neuen Gewässern im NSG Vinter Moor. *Natur & Heimat, Münster* 42(4): 113-119. — (First Author: Processionweg 403, D-4400 Münster, FRG; — Second Author: Biol. Stat. "Heiliges Meer", D-4534 Recke, FRG).

The nature Reserve 'Vinter Moor' is situated in the districts of Steinfurt and Osnabrück, resp. Northrhine-Westfalia and Lower Saxony, Fed. Rep. Germany. 4 odon. spp. are listed, 3 of these were collected (larvae), *Leucorrhinia dubia* was photographed (imago).

- (3949) BOYE, P., G. IHSEN & H. STOBBE, 1982. *Bestimmungsschlüssel für die Libellen der Bundesrepublik Deutschland*. Deutscher Jugendbund für Naturbeobachtung, Hamburg. 11+50 pp. — Price: DM 3.—. (Orders to: DJN Bundesmaterialverwaltung, c/o G. Kappes, Auf den Wöörden 26, D-2000 Hamburg-67, FRG).

This is the 6th (and revised) edition of the work listed in *OA* No. 3300. — (*Abstracter's Note*: The peculiar development of the "dragonfly conservation" ideas through the 6 editions of this popular standard identification key, directed at the German youth, is of some interest: (1st ed., 1970): no reference to conservation; the "problematic" specimens should be sent to the author for identification; — (2nd ed., 1976; *OA* No. 1482): the need of habitat conservation is stressed; — (3rd ed., 1979; *OA* No. 2655): from this ed. onwards, conservancy and collecting are dealt with in (a) separate chapter(s); the desirability of habitat vs. species conservation is emphasized. Al-

- though local inventories are advocated, it is stated that, in terms of documentation, regional collections are scientifically uninteresting ("Regionalsammlungen mit Belegen als Artnachweise sind wissenschaftlich uninteressant"), and that hardly any grounds could be found for setting up a private scientific collection ("die Anlage einer wissenschaftlichen Privatsammlung entbehrt nahezu jeglicher Grundlage"). Instructions are provided for the laboratory breeding of larvae; — (4th ed., 1980; unchanged reprint); — (5th ed., 1981; *OA* No.3300): statements concerning regional and private collections are taken verbatim from the 1979 ed. It is recommended that one should refrain from any collecting ("sollte auf jegliches Sammeln verzichtet werden"). Instructions for breeding are still given; — 6th ed., 1982; present): here one learns that specimen documentation of records is scientifically worthless ("wissenschaftlich wertlos"!!), and that there are no grounds whatsoever for setting up a private collection. Any instructions for breeding are lacking. The records obtained with the advocated "scientific methods" should be reported to the Authorities — no doubt expecting that they will be eager to implement expensive habitat conservation measures on the ground of undocumented "sightings" by young amateurs. — It should be emphasized that, in accordance with a Recommendation, passed by the VIth Int. Symp. Odonatol., Chur 1981, and published in *Notul. odonatol.* 1:125-126; 1981, the International Odonatological Society does not recognize any undocumented or inadequately documented faunistic records. If the instructions of the present booklet are to be followed up, odon. faunistics in Germany will certainly lose all credibility, and the damage inflicted to the national odon. conservancy may become irreparable).
- (3950) BURMEISTER, E.G., 1982. Kiauta, B.: Annotated catalogue and bibliography of taxa introduced in Odonata [...]. *Spiixiana* 5(3): 335. (German). — (c.o Zool. Staatssammlung, Maria-Ward Str.1 b, D-8000 München-19, FRG).
Book review of the item listed in *OA* No. 3153.
- (3951) CARLE, F.L., 1982. The wing vein homologies and phylogeny of the Odonata: a continuing debate. *Soc. int. odonatol. rapid Comm.* 4: X+66 pp. — (146 Mountain View Rd, Warren, NJ 07060, USA) — Orders to be sent to the Editors of *Odonatologica*, Dept Anim. Cytogenet. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL. — Price: Hfl. 35.— net.
Development of the various homology and nomenclatural systems applied to the longitudinal wing veins of the Odonata are reviewed with special reference to apparent ambiguities. The protracheation theory and various wing-vein systems based on theories such as that of Comstock & Needham are considered invalid as demonstrated by several authors. The process of vein loss is evaluated in the Palaeoptera and a new system of wing-vein homology proposed for the Odonata. The odonate wing mechanism is analyzed and an important but heretofore overlooked component, the discal brace, is characterized and considered a suitable key character for recent Odonata. The absence of the discal brace and considerable basal fusion of CuP and the anal vein in *Kennedyia* and its allies shed considerable doubt on the wing-vein and phylogenetic schemes proposed by Tillyard & Fraser. With *Kennedyia* removed from the direct ancestry of recent Odonata the intercalated nature of Tillyard's IR₃ is without support; in the new system IR₃ is considered to be MA. New fossil evidence could support either system, although the new system is more consistent with evidence from phylogeny as determined from other morphological characteristics and the process of vein fusion and reduction throughout the Palaeoptera. (Author).
- (3952) CASPERS, H. & C.W. HECKMAN, 1982. The biota of a small standing water ecosystem in the Elbe flood plain. The role of districts free from pesticide sprays as havens for endangered aquatic species. *Arch. Hydrobiol.* (Suppl.) 61(3): 227-316. (With Germ.s.). — (Inst. Hydrobiol. u. Fischereiwiss., Univ. Hamburg, Zeisenweg 9, D-2000 Hamburg-50, FRG).
On pp. 271 (tab.) and 302, a comparison is

- made between the odon. fauna of the pasture land (free of pesticides) and that of the orchard areas where insecticides are used. It is stated that it is improbable that breeding populations of any odon. spp. other than *Coenagrion puella*, *C. pulchellum* and perhaps *Lestes sponsa* occur in the orchards. A brief discussion on the spp. locally at risk in the Alte Land is provided.
- (3953) CHAO, H.-f., 1982. Classification of Chinese dragonflies of the family Gomphidae (Odonata). VII. *J. Fujian agric. Coll.* 1982(2): 11-13. (Chin., with Engl.s.). — (Dept. Plant Prot., Inst. Biol. Cont., Fujian Agric. Coll., Fuzhou, Fujian, P.R. China).
Macrogomphus guilinensis sp.n. (♂ holotype, ♂ paratype: Liang-fen, Giulia Co., Yunnan Prov., P.R. China; 14/15-VI-1952) is described and illustrated. The type (Cat.No. 014) is deposited in the Lab. Biol. Cont., Fujian Agric. Coll., Fuzhou). The new sp. is similar to *M. annulatus* (Sel.) and *M. montanus* (Sel.). The affinities to the genus are discussed, and it is concluded that *Macrogomphus* is most closely allied to the genera *Fukienogomphus* and *Trigomphus*.
- (3954) DE MARMELS, J., 1982. Resultados odonotologicos preliminares de la expedicion del Instituto de Zoologia Agricola al Estado Tachira, del 20 al 24 de abril de 1982. *Resum. VII Jornadas internas Inst. Zool. agric. Univ. central Venezuela*, p. 4. — (Dept. & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay-2101-A, Venezuela).
 32 spp. were collected, among these 1 sp. is new to South America, and 2 spp. are new to Venezuela. The list of taxa is not given.
- (3955) DE MARMELS, J., 1982. Sobre el censo de Odonata de la Quebrada Pasaquire (Avila) Miranda. *Resum. VII Jornadas internas Inst. Zool. agric. Univ. central Venezuela*, p. 4. — (Dept. & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay-2101-A, Venezuela).
 The monthly status of the odon. fauna has been studied on the trajet, Cotamil-Quebra-
- da Pasaquire, Venezuela, from Sept. 1980 onwards. More than 30 spp. were recorded, and the hitherto undescribed larval stages of 8 spp. were discovered. The list of taxa is not given.
- (3956) DE MARMELS, J., 1982. Resultados preliminares de la revision del genero *Nehalennia* Selys (Odonata, Zygoptera: Coenagrionidae). *Resum. VII Jornadas internas Inst. Zool. agric. Univ. central Venezuela*, p. 5. — (Dept. & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay-2101-A, Venezuela).
 The Japanese *Nehalennia arakawai* Matsu-mura is probably conspecific with *N. speciosa* (Charp.). *N. atrinuchalis* Sel. does not pertain to this genus, and the genera *Agriallagma* Calv. and *Nehalennia* Sel. are synonymised.
- (3957) DE MARMELS, J., 1982. Los Odonata de la region del Auyantepui y de la Sierra de Lema. *Resum. VII Jornadas internas Inst. Zool. agric. Univ. central Venezuela*, p. 5. — (Dept. & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay-2101-A, Venezuela).
 This is a brief abstract of the paper published in *Odonatologica* 12(1): 5-13, March 1, 1983. — (*Abstracter's Note*: As appears from the above, the name *Progomphus racenisi* sp.n. was at the time of publication of this note a nomen nudum).
- (3958) DE MARMELS, J., 1982. *Oxyagrion* fluviatile especie nueva de Venezuela (Zygoptera: Coenagrionidae). *Resum. VII Jornadas internas Inst. Zool. agric. Univ. central Venezuela*, p. 6. — (Dept. & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay-2101-A, Venezuela).
 A brief preliminary description of *O. fluviatile* sp.n. is given, without locality data, type designation, and figs. The affinities of the new sp. are briefly stated.
- (3959) DICKERSON, J.E., J.V. ROBINSON, J.T. GILLEY & J.D. WAGNER, 1982. Inter-male aggression distance of *Plathemis lydia* (Drury) (Odonata: Libellulidae). *SWest. Nat.* 27(4): 457-458. — (First Author: 1st Dept Ent., Univ.

California, Davis, Calif. 95616, USA).

The distances below which aggressive behaviour ensued between conspecific *P. lydia* males were determined during a 25 day period in April. These distances averaged 0.34 m at the beginning of the study and became progressively greater as the investigation proceeded, finally reaching a plateau of approximately 1.25 m. The study took place in a small Texas pond within which a grid of vertically placed plastic soda straws were uniformly distributed every 0.5 m to provide a homogeneous set of perching sites. No dominance hierarchy among males was observed and the authors suggest that the increase in aggressive distances reflected an increase in male density at the pond.

- (3960) [DIEHL, B.], 1982. *Tabel voor de libellen van België en de omliggende landen*. [A dragonfly identification key for Belgium and the adjacent countries]. De Wielewaaljongeren, Turnhout. X+46 pp. (Dutch). — Price: bFr 100.— net. — (Orders to: WJ-Insektenwerkgroep, Reniersniederstr. 73, B-2300 Turnhout). This is a Dutch version of the work listed in *OA* No. 3300. The original German text has been considerably revised and adapted for use in the Belgian faunal area. The lay-out is better than that of the original edition, and the Dutch vernacular names (cf. *OA* No. 3667, Wasscher) are stated for all spp.
- (3961) DIEHL, B. & M. RASPER, 1982. Libellen auf dem Sommerlager Neusiedler See 1981. *Naturk. Beitr. DJN* 9: 14-21. — (First Author: Diekkamp 17, D-2000 Hamburg-67, FRG). Brief annotations on 30 spp., collected July 11-25, 1981 at 7 localities in the Neusiedler See area, Austria.
- (3962) DOMMANGET, J.-L., 1982. La conservation des couleurs chez les libellules (Odonates) destinées à la collection. *Bull. Soc. Sci. nat. Compiègne* 1982(35): 7-9, 1 pl. excl. — (7 rue Lamartine, F-78390 Bois d'Arcy). Further to his earlier accounts on the preparation of odon. specimens for collection (cf. *OA* Nos 2292, 3415), various methods of colour preservation are discussed, and the acetone method, as used by the Author, is described in detail.
- (3963) DREYER, H. & W. DREYER, 1982. *Im Reich der Wasserjungfern. Ein Sommer bei Libellen*. Television film (colour, 45 min), broadcast by the Western German ARD Broadcasting Corporation, Sept. 1, 1982. Video tape and text (28 pp.) deposited in the SIO Archives. — (Second Author: Lehrstuhl Ökol., Zool. Inst., Univ. Kiel, Olshausenstr. 40-60, D-2300 Kiel-1, FRG). A general review of structural, physiological, ecological and behavioural features of dragonflies, based on the European fauna. Although directed at the general public, the film is particularly suitable for university students, and contains a number of scenes of considerable interest to professional odonatologists.
- (3964) [DREYER, W.], 1982. [Die Eiablage von *Anax parthenope*]. *Europa Foto Bilder Ztg. Herrsching* 1982 (July): 24. — (Lehrstuhl Ökol., Zool. Inst., Univ. Kiel, Olshausenstr. 40-60, D-2300 Kiel-1, FRG). A large-scale colour photograph of in-tandem oviposition.
- (3965) DREYER, W., 1982. *Erfolgreiche Naturfotografie*. Knülle, Herrsching/Ammersee [ISBN 3-88369-042-2]. 133 pp., numerous col. pls. — (Lehrstuhl Ökol., Zool. Inst., Univ. Kiel, Olshausenstr. 40-60, D-2300 Kiel-1, FRG). Booklet of a well-known German dragonfly photographer, containing on pp. 82-92 the verbatim text (and figs) of the chapter on "The birth of a dragonfly", as listed in *OA* No. 2407. — (*Abstracter's Note*: The same chapter and illustrations have appeared also on pp. 70-73 of the book: Kaeppler, H.J. et al., 1981, *Erfolgreich fotografieren*, Vol. 1, Knülle, Herrsching).
- (3966) EVANS, H.E., M.A. EVANS & A. HOOK. 1982. Observations on the nests and prey of *Bembix* sand wasps (Hymenoptera: Sphecidae). *Aust. J. Zool.* 30(1): 71-80. — (Dept Zool. & Ent., Colorado St. Univ., Fort Collins, Colorado 80523, USA). Observations on the nests and prey of 5 spp. that have not been studied previously are

- presented. In general, these are predators on flies, but 1 sp. also uses Neuroptera, and *B. allunga* uses Neuroptera and Odon. in addition to flies.
- (3967) FOSTER, A.P., 1982. A sighting of *Agrion virgo* (Linn.) (Odonata: Agrionidae) in Central London. *Ent. Rec. J. Var.* 94(11/12): 246. — (c/o Nature Conservancy Council, 19-20 Belgrave Sq., London, SW1X 8PY, UK).
A solitary *Calopteryx virgo* (♂) was seen flying south along Queensway W2, towards Kensington Gardens, Sept. 4, 1982.
- (3968) FRANTSEVICH, L.I., 1982. Vzaimodeystvie opticheskikh klyuchevykh stimulov vyzvyvayushchih u strekoz ataku i begstvo — Interaction of the visual key stimuli evoking the attack and retreat in dragonflies. *Zh. evol. Biohim. Fiziol.* 18(2): 150-154. (Russ., with Engl.s). — (Dept. Insect Ethol., Inst. Zool., Acad. Sci. Ukrainian SSR, Lenin Str.15, USSR-252000 Kiev-30).
The activity of visual neurones, sensitive to small moving objects was recorded in the connectives of *Leucorrhinia rubicunda*, *Libellula quadrimaculata*, *Sympetrum danae*, *S. flavolum*, *S. sanguineum*, and *S. vulgatum* in response to movements of an adequate stimulus presented separately or in combination with a large black disc. These visual stimuli evoke in dragonflies respectively either an attack on the prey, or a retreat from the dangerous object. Transient decrease in the reaction of the mentioned neurones was observed during movement of the black disc. In field experiments, made under weather conditions favourable for hunting, the visual stimulus simulating the dangerous object exhibited the highest behavioural efficiency (95%). Stimulus, simulating the prey, evoked start and attack in 40-50% of the insects. During the combined presentation of both stimuli, the attack was not suppressed completely (residual probability of the attack is equal to 18%), and the prey interception, once started, was not cancelled usually by movement of the dangerous object. Competition of the two behavioural forms is based presumably on the interaction of neural detectors. (Author).
- (3969) FRASERIA. Newsletter of the S.I.O. National Office in India, Ukai, No.3 (Dec. 1, 1982) — For the order conditions cf. *OA* No. 3423. — (c/o Dr. B.K. Tyagi, Malaria Res. Cent., I.C.M.R., UGH 61-70/Sect.VI, Ukai-394680, Distr. Surat, Gujarat, India).
The issue contains an announcement of the First All-India Conference of Odonatol. (early 1984), various organizational and personal news items, odonatol. bibliographies of S.K. Sangal and S. Mathavan, and the following articles, all authored by *B.K. Tyagi*, though most of them not signed: — Notes on dragonflies from the Dehradun Valley (Uttar Pradesh, India) (9-10); — Indian dragonfly folk names (10); — Book review of the paper listed in *OA* No. 3223 (12).
- (3970) GERKEN, B., 1982. Probeflächenuntersuchung in Mooren des Oberschwäbischen Alpenvorlandes. Ein Beitrag zur Kenntnis wirbelloser Leitarten südwestdeutscher Moore. *Telma* 12: 67-84. (With Engl.s). — (Lehrst. Geobot., Univ. Freiburg, Schänzlerstr. 1, D-7800 Freiburg/Br., FRG).
In the "rised bogs" of the prealpine region in Baden-Württemberg, Fed. Rep. Germany 6 odon. communities could be distinguished in different micro habitats. Two types of spring-water bogs harbour a community characterized by the occurrence of 2 *Cordulegaster* spp.
- (3971) GLOYD, L.K., 1982. The original definition and purpose of the term "Allotype". *Syst. Zool.* 31(3): 334-336. — (Div. Insects, Mus. Zool., Univ. Michigan, Ann Arbor, Mich. 48109, USA).
The term "allotype" has been originally introduced and defined by R.A. Muttkowski in his Catalogue of the Odonata of North America (1910, Bull. public Mus. Milwaukee 1: 1-207) "for the sex not designated by the holotype". The subsequent modifications of the definition are discussed and it is recommended that the odonatologists continue to adhere to the original definition.
- (3972) GRACILE (Newsletter of Odonatology). Published by the Kansai Research Group of Odonatology, Osaka, No. 30 (June 1, 1982).

- (Jap., with Engl. translation of the titles). — Annual subscription/membership for 1982: Y 3000.—. — (c/o K.Tani, 129 Jizo-cho, Nara 630, JA).
- Inoue, K. & M. Fukui (5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA): On a small collection of dragonflies of USSR (1-9); — Muraki, A. & Y. Tanimura (3-25-3-306, Takadono, Asahi-ku, Osaka, 535, JA): Odonate fauna of Shukuno, nose-cho, Osaka Prefecture and some observation notes on the behaviour (10-14); — Muraki, A. & Y. Nakano (address First Author cf. above): Dragonflies of Ashu Forest, Kyoto Prefecture at the beginning of August (15-17); — Terado, Y. (1053 Kanno-cho Saijo, Kakogawa, Hyogo Pref., JA): A case of heterospecific tandem between *Libellula quadrimaculata* asahinai and *L. angelina* and a case of emergence of *L. quadrimaculata* asahinai f. *praenubila* (18-19); — Two species of Odonata found at Aonogahara, Ono, Hyogo Prefecture (19-20); — Miyakawa, K. (Imafuku 1024, Kawagoe, Saitama Pref., 356, JA): About *Calopteryx japonica* Selys dealt with by Barteneff (1914) (21-22); — Tani, K. (address cf. above): Report on the survey trip for *Stylurus ocellatus* and *S. annulatus* and on the 20th anniversary dinner (23-25); — Ichii, H. (2-8, Kyuhoji-cho, Higashi-ku, Osaka, 540, JA): On the oviposition of *Brachydiplax chalybea flavovittata* (25); — Kimura, T. (1-204, 1-ban, Fujisakamachi, Hirakata, Osaka Pref., 573-01, JA): Report on the survey trip for *Sympetrum cordulegaster* and *S. depressiusculum* (26-27); — Anaze, & T. Takamatsu (Takara 529, Yukawa-cho, Gobo, Wakayama Pref., 644, JA): A survey trip for *Trigomphus melampus* in Minachi, Hongû-chô, Wakayama Pref. (27-28).
- (3973) GROSS, H., 1982. Zur exogenen Steuerung der Jahresperiodik im Beutefangverhalten der Larven von *Aeshna cyanea* Müller (Odonata: Anisoptera). *Verh. dt. zool. Ges.* 1982: 310. (With Engl. title). — (Abt. Verhaltensbiol., Inst. All. Zool., Freie Univ. Berlin, Haderslebener Str. 9, D-1000 Berlin-41, West Berlin). Extensive informative abstract on the external control of the annual rhythm of prey-catching behaviour in the larvae of *Aeshna cyanea*.
- (3974) HARZ, K., 1982. Massenhafter Paarungsflug von Libellen (Odonata, Anisoptera). *Articulata* 2(1): 6-7. — (Endsee 44, D-8801 Steinsfeld, FRG).
On Aug. 12, 1982, a migration of anisopterans was observed (11.00-11.45 hr) at the Oggauer Heide, Neusiedler See, Burgenland, Austria. While the aeshnids did not keep the general flight direction, *Sympetrum vulgatum* were migrating in NW-SE direction, i.e. towards the lake. It is peculiar that all *Sympetrum* were in tandem. The width of the trek was at least 40 m, and approx. 675 pairs were counted during the 45 min of observation.
- (3975) HAYAMA, F., 1982. [Japan as a Kingdom of Dragonflies... Outstanding activities of amateur odonatologists. (An interview with Mr Kiyoshi Inoue, the Representative of Japan in SIO)]. *Sankei Shimbun*, issue of Aug. 22, p. 14 (Jap.). — (c/o K.Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
Daily's interview with one of the leading Japanese odonatologists and the (permanent) National Representative of Japan on the Council of the International Odonatological Society. It is speculated that the "proverbial" interest of the Japanese people in dragonflies may have its background in the culture of rice cultivators. Mr. Inoue himself (whose portrait is also included) started his odonatol. work during his university years encouraged by the doyen of Japanese odonatologists, Dr Asahina. The discovery of *Aeshna juncea* and *A. nigroflava* at Mt Koya was his first major achievement.
- (3976) HOULE, P. & D. DE OLIVEIRA, 1982. Composition et abondance relative de l'entomofaune d'une prairie en friche dans la vallée du Haut-Richelieu. *Annls ent. Soc. Quebec* 27(2): 100-110. (With Engls.). — (Dép. Sci. Biol., U.Q.A.M., C.P. 8888, Montréal, Qué., H3C 3P8, CA).
The area studied is situated in the Iberville district, Quebec, Canada. The Odon. were considered, but a list of spp. is not given.

- (3977) HOUTMAN, G., 1982. Libellen-Odonata. In: W.M. Docters van Leeuwen, Gallenboek: overzicht van door dieren en planten veroorzaakte Nederlandse gallen, p. 85, Thieme, Zutphen. (Dutch). — (Draafsingel 36, 1623 LB Hoorn, NL).
Procecidiae of *Lestes viridis* are reported from willow, apple, pear and plum trees, and from alder, ash bird cherry. Bibliographic references on the subject are produced, and a fig. is given on p. 139.
- (3978) INOUE, K., 1982. [A visitor from the southern countries... *Pantala flavescens*]. *Mainichi Shimbun*, issue of Aug. 18. (Jap.). — (5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
A local newspaper note on *P. flavescens*, written upon Editor's invitation. A portrait of the Author is also provided.
- (3979) KARSTKAREL, P., 1982. De hoogste verfijning uit een decadente periode. — [The highest art of a decadent period]. *Trouw*, *Amsterdam* 40(11741): 4 (issue of Dec. 29). (Dutch). — (Author's address not stated).
Daily's considerations on the Art Nouveau exhibit in the Wallraf-Richartz Museum, Köln, Fed. Rep. Germany, devoted mainly to the works of the famous Emile Gallé and Eugène Kremer. In the Art Nouveau, the dragonfly was one of the most frequently used motifs. Photographs of 2 "dragonfly works" of the said artists are included, dated resp. 1884 and 1884-1889 (both approx.).
- (3980) KEILBACH, R., 1982. Bibliographie und Liste der Arten tierischer Einschlüsse in fossilen Harzen sowie ihrer Aufbewahrungsorte. *Dt. ent. Ztschr. (NF)* 39(1/3): 129-286. — (Sekt. Biol., Ernst-Moritz-Armdt Univ., Johann-Sebastian-Bach Str. 11-12, D-2200 Greifswald, GDR).
This is a catalogue of the animal fossils recovered from amber, providing a systematic index, annotated bibliography, the synonymy, and statements on the deposition of the material. The following Odon. are listed: "*Platycnemis antiqua*" (Pictet & Hagen, 1856, *in*: G.C. Berndt, Die im Bernstein befindlichen organischen Reste der Vorwelt, 11/2), "*Agrion spec.*" Hagen, 1856, as above, "*Platycnemididae spec. A* and *spec. B*" Pfau, 1975, *Beitr. Naturk. Stuttgart (A)* 270: 1-7, "*Gomphus larva*" Hagen (*in*: Berndt, as above), "*Gomphus resinatus*" Pictet, 1856 (*in*: Berndt, as above), "*Gomphoides occultus*" Hagen, 1856 (*in*: Berndt, as above).
- (3981) KUUSINEN, J., 1982. *Päijät-Häme en sudenkorennot*. [Dragonflies of Päijät-Häme], 8 pp. Published by the amateur entomologists' club "Thecla" of the nature conservation society "Salpausselän luonnonystävät r.y.", Lahti. (Finnish). — (Hist. museo, Lahdenkatu 4, SF-15110 Lahti-11, Finland).
The pamphlet provides 10x10 km grid distribution maps for the 42 spp. known to occur in Päijät-Häme (surroundings of the city of Lahti, southern Finland). The maps are brought up to the status of May 1982. (For the earlier state of this district mapping cf. *OA* Nos 2985, 3033).
- (3982) LEGRAND, J., 1982. Deux nouveaux Acia-grión du Gabon (Odonata, Zygoptera, Coenagrionidae). *Revue fr. Ent. (NS)* 4(4): 161-164. (With Engl.s.). — (Lab. d'Ent., Mus. Natn. Hist. Nat., 45 rue de Buffon, F-75005 Paris).
A. balachowskyi sp.n. (♂ holotype: Mbess nr Makokou, 23-XI-1976) and *A. brosetti* sp.n. (♂ holotype: nr Makokou, V-1972) are described and illustrated. The types and paratypes are in the Mus. Natn. Hist. Nat., Paris. The latter sp. is known from Congo as well. Notes on the habitats are also provided.
- (3983) LEHMANN, G., 1982. Die libellenkundliche Erforschung Nordtirols, Stand 1982 (Insecta: Odonata) *Ber. nat.-med. Ver. Innsbruck* 69: 79-86. (With Engl.s.). — (Stimmerfeldstr. 17, A-6330 Kufstein).
The history of odonatol. research in North Tyrol, Austria is traced from 1950 to present, portraits are given of the well-known local workers, Carl Ausserer (1844-1930) and Fritz Prens (1878-1964), and an annotated list is provided of the 60 spp. so far recorded from the Province. The regional bibliography is considered to be complete (44 titles).

- (3984) MANDAHL-BARTH, G., 1982. *Småkräp i sötvatten*. — [*The freshwater invertebrates*]. Fältbiologerna, Sollentuna. 50 pp. (Swed.). — (Publishers: P.O. Box 6022, S-191 06 Sollentuna).
On pp. 26-30, a simplified key is given to the families, genera and (some) spp. of Swedish odon. larvae.
- (3985) MAY, M.L., 1982. Heat exchange and endothermy in Protodonata. *Evolution* 36(5): 1051-1058. — (Dept Ent. & Econ. Zool., Cook Coll., Rutgers Univ., P.O.Box 231, New Brunswick, NJ 08903, USA).
Many extinct Protodonata were much larger than modern Odon., although structural similarities between the 2 groups are marked. Many extant dragonflies are endothermic, and in general their reliance on endothermy increases with increasing size. It is hypothesized that large Protodonata were strongly endothermic and used mechanisms similar to those of Odon. to modulate heat production and loss. Based on known and inferred dimensions, and on the assumptions that heat production and heat loss scaled with size and ways that were similar to living Odon., it is possible to estimate the excess of thoracic temperature over air temperature. In *Meganeura monii* it could have been as great as 74°C if these were insulated as well as dragonflies. Even if they were uninsulated, the excess might have exceeded 50°C. It seems inescapable that the larger spp. must have reduced the heat input by crepuscular activity, gliding, or augmented heat loss, perhaps by circulation of haemolymph to the abdomen. Since thoracic temperature must nevertheless have been high during flight, they probably had to elevate their temperature by wing-shivering before flight.
- (3986) MILLER, P.L., 1982. Temporal partitioning and other aspects of reproductive behaviour in two African libellulid dragonflies. *Ent. mon. Mag.* 119 (1420/1423): 177-188. — (Dept Zool., Univ. Oxford, South Parks Rd, Oxford, OX1 3PS, UK).
Reproductive behaviour is described in *Nesciothemis farinosum* and *Brachythemis lacustris*, observed at the same habitat at Hunter's Lodge, 160 km SE of Nairobi, Kenya. The former sp. was sexually active for short periods throughout the day, the latter only between 16.00-18.30 hr. The mean duration of copulation was 28 sec in *Nesciothemis*, and 39 sec in *Brachythemis*. Guarding during oviposition occurs in both spp., but it is brief in *Nesciothemis*. The activities of both sexes throughout the day are outlined.
- (3987) MOORE, N.W. & W.C. GAGNÉ, 1982. *Megalagrion pacificum* (McLachlan) — A preliminary study of the conservation requirements of an endangered species. *Rep. Odon. Specialist Group Int. Un. Conserv. Nat.* 3, 5 pp. — (First Author: The farm House, Swavesey, Cambridge CB4 5RA, UK; — Second Author: Dept Ent., Bishop Mus., P.O. Box 19000-A, Honolulu, Hawaii 96819, USA).
The Hawaiian endemic genus *Megalagrion* exhibits a most unusual range of adaption to freshwater and terrestrial habitats. One of its lowland species, *M. pacificum*, has declined catastrophically in recent years. A search was made in taro fields in the Islands of Kauai, Hawaii and Maui, July-Aug. 1982. Individual imagines were found by 2 small pools in the Pua'alu'u Gulch on Maui. Their habitat is described. Observations made in 1982 support the hypothesis that the sp. has been reduced by the introduction of insectivorous fish to the Hawaiian Islands. Requirements for its conservation are discussed. (Authors).
- (3988) MÜNCHBERG, P., 1982. Zur Parasitierung der Flügel von *Sympetrum meridionale* und *fonscolombi* Selys (Odonata) durch die Larven von *Arrenurus* (A.) *papillator* (Müll.) (Hydrachnellae, Acari) und zugleich zur Spezifität und den Voraussetzungen dieses Parasitismus. *Arch. Hydrobiol.* 95(1/4): 299-316. (With Engl.s.). — (Windmühlenweg 93, D-4770 Soest/Westf., FRG).
In Europe, the larvae of almost all *Arrenurus* spp. are adapted in their host-choice to Odon. In Africa and South America, the hexapode stages of some *Megaluracarus* spp. are also restricted to dragonflies. This parasitic specificity can be conditioned either by external or by

internal parameters, such as e.g. syntopy, concurrent development cycles and phenology. The extent to which the host is attacked depends on the abundance of both the partners within the biotope. These external conditions are responsible for the search for and the discovery of the host. The effective host-choice of the larva, on the other hand, seems to be triggered by the direct contact between the parasite and the host, combined with immediate excitation processes. Experimental research, using dummies, would be necessary to demonstrate whether the gustatory excitation of the host, or the tactile sensitivity of the parasite is responsible for the host-parasite specificity.

- (3989) NAGEL, R., 1982. Über "lebende Hubschrauber" und andere Sensationen aus Gulliver-Sicht. *Objektiv, Stuttgart* 82(2): 14-15 — (Author's address not stated; journal issue available, at DM 4.-, from Robert Bosch GmbH, Geschäftsbereich Photokino, Beim Inselkraftwerk 10, D-7000 Stuttgart-60, FRG). A general article on dragonflies, with colour photographs of flying *Enallagma cyathigerum*, *Calopteryx splendens*, and *Sympetrum vulgatum*.
- (3990) *NOTULAE ODONATOLOGICAE*. Semiannual bulletin of the International Odonatological Society. Published by the Societas Internationalis Odonatologica (S.I.O.), Utrecht. Vol. 1, No. 10 (Dec. 1, 1982) — Annual subscription Hfl. 25.- net. — (c/o Dept Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL).
Martens, K. (Inst. Zool., Univ. Gent, Ledeganckstr. 35, B-9000 Gent): New localities for *Epitheca bimaculata* (Charp.), with a review of its status in western Europe (Anisoptera: Corduliidae) (157-159); — *Williams, C.E.* (704 Foster Str., Marlin, Texas 76661, USA): The dragonflies of McLennan County, central Texas, United States (160-161); — *De Marmels, J.* (Dept. & Inst. Zool. Agric., Fac. Agron., Apto 4579, Maracay 2101-A, Venezuela): On the status of *Enallagma ypsilon* Needham, 1942 (Zygoptera: Coenagrionidae) and *Micrathyrta carlota* Needham, 1942 (Anisoptera: Libellulidae) (161-163); — *Hämäläinen, M.* (Dept Agric. & Forest Zool., Univ. Helsinki, SF-00710 Helsinki): The identity of *Argia saalasi* Valle, 1942 (Zygoptera: Coenagrionidae) (163); — *Kiauta, B & M. Kiauta* (Dept Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL): The chromosome numbers of eleven dragonfly species from Singapore (164-165); — *Mielewczyk, S.* (Abt. Agrobiol., Pol. Akad. Wiss., Swierczewskiego 19, PO-60-809 Poznan): Flug der *Sympetrum fonscolombei* (Sel.) über dem Atlantischen Ozean (Anisoptera: Libellulidae) (165-166); — *Nielsen, P.* (Dept. Ent., Mus. Zool., Universitetsparken 15, DK-2100 København): The fate of the Odonata of the National Pusa Collection, New Delhi (166); — *Paulson, D.R.* (Washington St. Mus., Univ. Washington, Seattle, Wash. 98195, USA): *Tramea calverti* Muttkowski in northern Argentina (Anisoptera: Libellulidae) (166-167); — *Steinen, A.* (Dept. Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL): Meiotic activity and the karyotype of *Brachytron pratense* (Müll.) (Anisoptera: Aeshnidae) (167-168); — *Uizeri, C.* (Ist. Zool., Univ. Roma, Viale dell'Università 32, I-00100 Roma): On dragonflies that touch the water in flight (168). — The Index for Vol. 1 (1978-1982) goes separately with this issue.
- (3991) O'DONNELL, C.F.J., 1982. Food and feeding behaviour of the Southern Crested Grebe on the Ashburton Lakes. *Notornis* 29: 151-156. (c/o 198 Blenheim Rd, Christchurch-4, NZ).
 On p.153, the Author observes that a wide variety of invertebrate larvae was readily available to *Podiceps cristatus australis* (Ashburton Lakes, South Islands, New Zealand). The most abundant taxa are listed, incl. *Xanthocnemis zealandica* and *Procordulia grayi*, but the study revealed no direct evidence of Odon. in the diet.
- (3992) PAASIVIRTA, L., 1982. Saarijärven Pyhä-Häkin kansallispuiston ja sen lähiympäristön metsäjärvien koskikorento-, sudenkorento-, kaislakorento-, verkkosiipis- ja sääskilajisto.

- [Notes on aquatic insects in Pyhä-Häkki National Park, central Finland]. *Jyväskylän yliopiston Biologian laitoksen Tiedonantoja* 29: 40-49. (Finnish). — (Dept Biol., Univ. Jyväskylä, Yliopistonkatu 9, SF-40100 Jyväskylä-10, Finland).
10 spp. were recorded from lakes and ponds in the National Park or its vicinity.
- (3993) PFAU, H.K., 1982. Die Drehbewegungen des Libellenflügels um die Längsachse — funktionelle Anatomie und Mechanorezeption. *Verh. dt. zool. Ges.* 1982: 284 (With Engl. title). — (Inst. Zool., Univ. Mainz, Saarstr. 21, D-6500 Mains, FRG).
Extensive informative abstract on the functional anatomy and mechanoreception of wing-twisting in the Odon.
- (3994) ROBERTSON, R.M., K.G. PEARSON & H. REICHERT, 1982. Flight interneurons in the locust and the origin of insect wings. *Science* 27(4555): 177-179. — (Dept Physiol., Univ. Alberta, Edmonton, Alberta, T6G 2H7, CA).
Interneurons involved in the generation of motor activity for flight in the locust were found in the first 3 abdominal ganglia as well as in thoracic ganglia. The evidence that sets of homologous flight interneurons occur in abdominal and thoracic ganglia supports theories that insect wings originated from movable appendages which were serially distributed along the thorax and abdomen and which were under central nervous control. (Authors). — No specific references to Odon. are made.
- (3995) SCHMIDT, E., 1982. Libellen. In: G. Preuss, [Ed.], *Naturschutz-Handbuch*, Bd. 1. Geschützte Tiere in Rheinland-Pfalz, pp. 160-185, 27 col. figs incl. Ministerium für Soziales, Gesundheit & Umwelt, Pfalz. — (Sem. Biol. Didaktik, Univ. Bonn, Römerstr. 164, D-5300 Bonn-I, FRG).
A brief essay on the general problematics of odon. conservation is followed by concise and informative accounts on 29 selected spp. For each of these, a brief morphological characterisation, information on biology, larval habitats and distribution and a statement on the status in the province of Rheinland-Pfalz, Fed. Rep. Germany are given. High-quality photographs are provided of most of the taxa dealt with. The Author is one of the leading German odonatologists, and habitat conservation is considered the sole adequate conservancy measure for the Odon.
- (3996) SCHNEIDER, W & H. ACHENBACH, 1982. *Cordulegaster bidentatus* Selys, 1843 — erster Larvennachweis für die Pfalz (Odonata: Anisoptera: Cordulegasteridae). *Ent. Z. Frankfurt/M* 92(23): 338-340. (With Engl.s.). — (Inst. Zool., Univ. Mainz, Saarstr. 21, D-6500 Mainz, FRG).
A larva was recovered from the upper section of the Wiesbach, nr. Oberwiesen, June 21, 1982. This is the first record of the breeding of *C. bidentatus* in the Palatinate. Fed. Rep. Germany. For the first record of an adult specimen cf. *OA* No. 2847. The conservation measures for the habitat are suggested.
- (3997) SHELLY, T.E., 1982. Comparative foraging behavior of light- versus shade-seeking adult damselflies in a lowland neotropical forest (Odonata: Zygoptera). *Physiol. Zool.* 55(4): 335-343. — (Dept Biol., Univ. California, Los Angeles, Cal. 90024, USA).
Heteragrion erythrogastrum and *Argia difficilis* selected markedly different perching sites within the same forest. *H. erythrogastrum* perched only in deep shade and exhibited thoracic temperatures that were within 1.0° C of ambient. Conversely, *A. difficilis* perched in the most brightly lit areas and on sunny days exhibited thoracic temperatures between 4.4 and 8.4° C above ambient. During sunny conditions *A. difficilis* foraged approximately five times more frequently than *H. erythrogastrum* and made longer foraging flights as well. Subsequent observations of *A. difficilis* under varying conditions of light, however, revealed that thoracic temperature, foraging rate, and foraging flight distance all varied directly with incident light level. Thus, during overcast conditions *A. difficilis* exhibited thoracic temperatures and foraging behavior much like *H. erythrogastrum*. These results suggest that, for these ectothermic predators, foraging rate

primarily reflects the energy demand associated with a particular body temperature and rate of energy metabolism. The relative advantages of basking versus shade seeking are briefly discussed. (Author).

- (3998) SILFVERBERG, H., 1982. *Sympetrum striolatum* (Charp.) (Libellulidae) i Houtskär. [*Sympetrum striolatum* (Charp.) (Libellulidae) at Houtskär], *Notul. entomol.* 62 (4): 152. (Swed.). — (Zool. Mus., Univ. Helsinki, P. Rautatiekatu 13, SF-00100 Helsinki-10, Finland).

S. striolatum was collected in Houtskär island in the Turku Archipelago, between Åland and the Finnish mainland. This is the first Finnish record of this sp. outside Åland.

- (3999) SIMMONS, P.J., 1982. The operation of connexions between photoreceptors and large second-order neurones in dragonfly ocelli. *J. comp. Physiol.*(A)149(3): 189-198. — (Dept Zool., Univ., Newcastle upon Tyne, NE1 7RU, UK).

Photoreceptors and large second-order neurones (L-neurones) of dragonfly ocelli (*Aeshna brevistyla*, *Hemianax papuensis*, *Hemicordulia tau*) have been penetrated simultaneously with microelectrodes to study the operation of the synapse between them. The response of L-neurones to changes in illumination are of opposite polarity and are more phasic than those of photoreceptors. — (1) When pulses of light are superimposed on a constant background illumination, the phasic nature of L-neurone responses is often enhanced. Sometimes, during a light stimulus, an L-neurone is depolarised relative to its resting potential. With rapidly repeated short pulses of light, responses of L-neurones decrement markedly, although the full response of photoreceptors is maintained. — (2) Passive membrane properties of L-neurones cannot contribute significantly to the cutback in the hyperpolarising response of these neurones to light on. — (3) When depolarising or hyperpolarising currents are injected into a photoreceptor, responses in an L-neurone it synapses with are of opposite polarity and markedly phasic. The voltage gain of the connexion between one photo-

receptor and an L-neurone can be as great as nine. — (4) No evidence for feedback connexions from L-neurones to photoreceptors has been found. — (5) Conductance measurements on some L-neurones indicate that synaptically-induced currents may make a small contribution to the cutback in the hyperpolarising response to light on. — (6) Some L-neurones make rapidly decrementing inhibitory connexions with other L-neurones. — (7) A variety of neurones which respond to changes in illumination by alterations in spike rate have been found. Some of these connect with L-neurones. — (8) Possible mechanisms for the cutback in the hyperpolarising response of an L-neurone at light on include intrinsic properties of the pre- or postsynaptic terminals, and excitatory synapses made by small second-order neurones on L-neurones. (Author).

- (4000) SIOJA. [Information Bulletin of the SIO National Office in Japan], Osaka, 1982. No. 1 (Apr. 4), No. 2 (Dec. 5). (Jap.). — (c/o K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).

The bulletin is circulated among the Japanese SIO membership only; it does not have the function of a journal. Among the various organizational news items, there is a list of some currently available SIO periodicals, an outline of the SIO Library Xerox Service, and a notification of the Seventh International Symposium of Odonatology, Calgary, Canada, 1983. (Cf. also *OA* No. 3558).

- (4001) SONEHARA, I., 1982. [*Life history of Epitheca bimaculata sibirica* of Mount Yatsugatake]. Sinano Kyoikukai Corporation (Shinshu Shizenkagaku Series No.2), Nagano. VI+204 pp., 8 col. pls excl. (Jap.). — Price: Y 1200.-. — (Author: Tazawa 5035, Toyoshima-machi, minamiazumi-gun, Nagano Pref., 399-82, JA).

The author, one of the most illustrious Japanese odonatologists, is presenting in this monograph the results of more than 2 decades of his field- (Mt Yatsugatake and the adjacent areas, Nagano Pref., Japan) and laboratory work on *E.b.sibirica* (pp. 4-153), adding the

- account of his observations on the life histories of *E.marginata*, *Aeshna mixta*, *Sympetrum danae* and *Ictinogomphus clavatus* (pp. 154-200). The Preface was contributed by Dr S. Asahina (pp.1-2), and an account of the morphology of *E.b.sibirica* is given in the Appendix (pp. 201-203). A note on the Author and his portrait are also provided (p. 204). — (*Abstracter's Note*: This work represents one of the most monumental and meticulous treatments yet produced on a single corduliid sp. As such, it is unique in the odonatology literature, and is so far the first commercially available book on a corduliid dragonfly. — An Engl. translation of the chapter headings and fig. captions is available from the Editors of *Odonatologica*).
- (4002) STARK, W., 1982. Rote Liste gefährdeter und seltener Libellenarten des Burgenlandes (Ins., Odonata). *Natur Umwelt Burgenland* 5(1/2): 21-23. — (Abt. Biol., Burgenländisches Landesmus., Museumgasse 5, A-7000 Eisenstadt). A classified list is given of 30 spp. considered at risk in Burgenland, Austria. This figure represents 60% of the odon. spp. known from this province (cf. *OA* Nos 3140, 3327).
- (4003) STERNBERG, K., 1982. Libellenfauna (Odonata) in Hochmooren des Südschwarzwaldes. *Telma* 12: 99-112. (With Engl.s.). — (Sedanstr. 24, D-7800 -Freiburg/Br, FRG). The odon. fauna of 18 oligotrophic peat bogs of southern Black Forest, Fed.Rep.Germany is discussed, with special reference to autecology of *Aeshna caerulea*, *A. juncea*, *A. subarctica elisabethae*, *Somatochlora alpestris*, *S. arctica*, and *Leucorrhinia dubia*.
- (4004) *STRIDULA* Libellenthemannummer [Special dragonfly issue], Vol.6, No.3, 37 pp. (Dec., 1982). Edited by M.Wasscher, available, at Hfl. 3.-, from L. Beukeboom, Van Royenlaan 23 b, 9721 EX Groningen, NL. (Dutch). *Beukeboom, L.* (address above): Libellenformulieren [European Invertebrate Survey Dragonfly Blanks] (3-6); — *Van Mierlo, M.* (Steenweg op Mol 52, B-2300 Turnhout): Waarnemingen van de Zuidelijke Bronlibel in Belgisch Lotharinga [Records of Cordulegaster bidentatus in the Belgian Lotharingia] (6-8); — *Larner, S.* (St. Hubertusstr.20, B-1850 Grimbergen): Libellen in de streek even ten noorden van Brussel [Dragonflies of the region North of Brussels] (8-9); — *Maes, T.* (Brusselse straatweg 389, B-9230 Melle): Biotoopbeschrijving van enkele libellevindplaatsen rond Melle [Biotope descriptions of some dragonfly localities in the Melle area] (9-11); — *Wasscher, M. & N. Michiels* (First Author: I.B.Bakkerlaan 117-II, 3582 XP Utrecht, NL): Libellen op een zomerkamp in de belgisch-nederlandse Kempen [Dragonfly observations during a workshop at Kempen] (11-24); — *Wasscher, M.* (address above): Libellentabel voor België [book review] (25); — *Verbakel, W.* (Prof.Buysstr.32, 5142 CK Waalwijk, NL): Libelleninventarisatie in de Leemkuilen bij Udenhout [Dragonfly inventarisation of the Leemkuilen nr Udenhout] (26-27); — *Lam, E.* (Van Lemplaan 6, 1217 NC Hilversum, NL): Libellen van de Schaatsvijver bij kalkterrein Hilversum [Dragonflies of the Schaatsvijver nr the "kalkterrein" of Hilversum] (28-29); — *Van Poelgeest, B.* (O. van Noortstr.83, 1212 AP Hilversum, NL): Sympecma's in het Gooi [Sympecmas in the Gooi] (30-31); — *Wasscher, M.* (address above): Nieuwe vindplaats van *Leucorrhinia albifrons* in Twente [A new locality of *Leucorrhinia albifrons* in Twente] (32-34); — *Beukeboom, L.* (address above): Libellen in het Fochteloër veen [Dragonflies in the Fochteloer Venn] (34-35); — *Sullock Enzlin, R.* (Postbus 842, 9700 AV Groningen, NL): Libellen bij een-sloot in Veendam [Dragonflies of a pond in Veendam] (36-37).
- (4005) *TOMBO. ACTA ODONATOLOGICA*. Published by the Society of Odonatology, Tokyo. Vol.25, Nos 1/4 (Dec.30, 1982). — For data on subscription and membership cf. *OA* No. 3563. — (Mostly Engl., Jap. papers with Engl.s's). — (c/o Editor: Dr S.Asahina, Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA). *Edu, S.* (3-4-25 Sawamura, Matsumoto, Nagano, 390, JA): A female *Epiophlebia superstes* laying eggs into the thallus of *Conocephalum conicum* [frontispiece col. phot.] (1); — *Asahina, S. & S. Eda* (address above): Further observations on bryophyte oviposition by

- Epiophlebia superstes* (2-6); — *Asahina, S.*: Who is the first collector of *Epiophlebia superstes* larva? (6); — Studies on the Chinese dragonflies of the genus *Cephalaeschna* and its allies in the collection of the Leiden Museum [new taxa described: *C. chaoi*, *C. klotsi*, *Petaliaeschna liefstincki*, *P. corneliae*] (7-15); — A new *Somatochlora* from Nepal (*Corduliidae*) [*S. nepalensis* sp.n.] (15-18); — *Matsuki, K. & J.C. Lien* (3-75-17, Nakadori, Tsurumi-ku, Yokohama, 230, JA): Descriptions of the larvae of two *Macromia* species of Taiwan (19-22); — *Shiraishi, T.* (address unknown): Discovery of *Epiophlebia superstes* in Amakusa-Kamishima Island, Kumamoto Prefecture (22); — *Higashi, K., S. Nomakuchi, Y. Okame & M. Harada* (Dept Biol., Fac. Lib. Arts, Saga Univ., Saga, 840, JA): Length of maturation period and daily food consumption of immature damselfly, *Mnais pruinosa pruinosa* Selys (*Zygoptera: Calopterygidae*) (23-26); — *Anonymous*: Seventh International Symposium of Odonatology, Calgary, Canada. Second and final circular (26); — *Miller, P.L.* (Dept Zool., Univ. Oxford, South Parks Rd, Oxford OX1 3PS, UK): Post-copulatory 'resting' in *Nesciothemis farinosum* Foerster (27-28); — *Anaze, N.* (Takare 529, Yukawa-cho, Gobo, Wakayama Pref., 644, JA): New records of *Trigomphus melampus* (Selys) from Wakayama Prefecture (28-29); — *Yamaguchi, M.* (Kasuga-cho 2-13, Nerima-ku, Tokyo, 176, JA): Dragonflies inhabiting a spring-fed pond in Kotoku-Temple, Itsuka-ichi, Tokyo (30-31); — *Ichii, H.* (2-8, Kyuhoji-cho, Higashi-ku, Osaka, 540, JA): First record of *Sympetrum maculatum* from Shiga Prefecture (31); — *Miyakawa, K.* (Imafuku 1024, Kawagoe, Saitama Pref., 356 JA): Notes on the behaviour of adult *Oligoaeschna pryleri* (Martin) (32-33); — *Calopteryx atrata* Selys arrested by a cucurbitaceous plant, *Sicyos angulatus* L. (33-34); — *Ishikawa, K.* (address unknown): Interspecific tandem connection in *Sympetrum* species. (Second report) (35-36); — *Ishikawa, H. & N. Ito* (addresses unknown): *Epithecica marginata* and *E. bimaculata sibirica* at the lake Yamanaka-ko (36); — *Obana, S. & K. Inoue* (3-4-10 Kinryo-cho, Sakai, Osaka Pref., 590, JA): Larval breeding of *Sympetrum depressiusculum* and *S. cordulegaster* with some notes on the second generations (37-41); — *Obana, S., K. Inoue & O. Tabata* (address above): Colour variation in the anterior part of metathoracic poststernum of *Mnais pruinosa* (41-42); — *Inoue, K. & K. Nagase* (5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA): A good habitat of *Mnais pruinosa* nawai ♂-f. *kadowakii* found in Kagawa Pref. (42-43); — *Ukai, S.* (address unknown): A gynandromorphic specimen of *Cercion calamorum* (44); — *Eda, S.* (address above): Annual meeting of the [Tokyo] Society of Odonatology, 1982 (44-45).
- (4006) TSUDA, S., 1982. [The honorable dragonfly king...*Anotogaster sieboldii*]. *Mainichi Shimbun*, issue of Aug.12. (Jap.). — (7-17-9, Habikigaoka, Habikino, Osaka Pref., 583, JA).
A local newspaper note, written upon Editor's invitation. A portrait of the Author is also provided.
- (4007) ULVINEN, A., 1982. Harvinainen sudenkoriento (*Libellula fulva*) Vehkalahti. [A rare dragonfly, *Libellula fulva*, from Vehkalahti, SE Finland]. *Kymenlaakson Luonto* 23(2): 10. (Finnish). — (Kulosaaren puistotie 44 A 1, SF-00570 Helsinki-57, Finland).
An observation made by the late L. Tiensuu is reported. *L. fulva* was found to occur in hundreds on a stream in Vehkalahti in June 1964, but no specimen has been found there since then. Earlier the sp. had been found only in 2 localities in Finland. — (*Abstracter's Note*: At present the sp. is known to occur steadily only along one river system on the eastern border of the country. The single specimen captured in SW Finland has probably been a temporary wanderer).
- (4008) URABE, K., Y. SEKIJIMA, T. IKEMOTO & C. AIDA, 1982. Studies on *Sympetrum frequens* (Odonata: Libellulidae) nymphs as natural enemies of the mosquito larvae, *Anopheles sinensis*, in the rice fields. 1. Evaluation on an utilization of the electrocytotoxicity for the quantitative study of the prey-predator relationships. *Jap. J. sanit. Zool.* 33

- (1): 55-60. (Jap., with Engl.s.). — (Saitama Inst. Public Health, 639-1 Kamiokubo, Urawa, Saitama, 338, JA).
- A precipitin test using the electrosyneresis (ES method) was evaluated for the purpose of detecting mosquito larvae (*A. sinensis*) from the gut of the dragonfly larvae (*S. frequens*), during studies of prey-predator relationships in rice fields. Antiserum was obtained from rabbits immunized by intramuscular injections of saline extracts of *A. sinensis* (4th-instar larvae). This antiserum showed strong cross-reaction between *A. sinensis* and *Culex tritaeniorhynchus*, and *Chironomus* sp. which might be fed on by the dragonfly larvae in the census fields. The specific antiserum to *A. sinensis* larvae was prepared by absorbing the antiserum with saline extracts of *Culex tritaeniorhynchus*. Using the specific antiserum and the ES method, it was confirmed that the 4th-instar larva of *A. sinensis* in the gut of the 9th-instar larvae of *S. frequens* could be detected up to 33 h after feeding in all cases and up to 54 h in 1 case. The ES method was useful and applicable to the quantitative study of their prey-predator relationships.
- (4009) UTZERI, C. & C. BELFIORE, 1982. Efemerotteri e odonati delle valli del Farma e del Merse (Toscana). *Atti Acad. Sci. Siena* (XIV)11 [1979]: 117-120, tabs 1-2 excl. (With Engl.s.). — (Ist. Zool., Univ. Roma, Viale dell'Università 32, I-00100 Roma).
26 odon. spp. are recorded from Toscana, central Italy. Among these, *Onychogomphus uncatu*s is new for the province.
- (4010) UTZERI, C. & E. FALCHETTI, 1982. Notizie sulla corologia di alcuni odonati italiani. *Boll. Ass. romana Ent.* 35: 9-14. (With Engl.s.). — (Ist. Zool., Univ. Roma, Viale dell'Università 32, I-00100 Roma).
New Italian records are given for 12 spp., incl. *Lestes dryas* (Saccione R, Foggia, alt. 40 m), *Onychogomphus uncatu*s (new for Toscana and Calabria), and *Oxygastra curtisi* (new for Lazio).
- (4011) VALTONEN, P., 1982. Eri sukuihin kuuluvat sudenkorennot parittelemassa / *Cordulia aenea* (♂) and *Somatochlora flavomaculata* (♀) captured in copula. *Luonnon Tutkija* 86(5): 196. (Finn., with Engl.s.). — (Dept. Electr. Eng., Tampere Univ. Technol., P.O. Box 527, SF-33101 Tampere-10).
This interspecific copulation was noticed in Sahalahti, Ta., Finland. At the moment of observation, the flight period of *C. aenea* females was over, and none were present at the spot.
- (4012) VALTONEN, P., 1982. Havaintoja *Lestes sponsa* (Odonata, Lestidae) toukkakehityksen pituudesta Suomessa. — [Observations on the life cycle of *Lestes sponsa* (Odonata, Lestidae) in Finland]. *Notul. entomol.* 62: 151. (Finnish). — (Dept. Electr. Eng., Tampere Univ. Technol., P.O. Box 527, SF-33101 Tampere-10).
Generally, *L. sponsa* is univoltine in Finland. A case is shown here of a bivoltine development. It is argued that the phenomenon may be due to the exceptional weather conditions.
- (4013) WALTHER, R., 1982. Die Bieler haben ein neues Kunstmuseum. *Berner Ztg*, issue of Dec.9, 1 p. — (Author's address not stated).
A local daily's article on the opening of the Musée Robert in Biel, Switzerland. The family Robert, originating from La Chaux-de-Fonds, produced, in various generations, 6 artists, incl. the well known "dragonfly watercolourist" Paul-André Robert (1901-1977). The botanical and zoological paintings of the Roberts are the main subject of the museum's exhibitions. (Cf. also *OA* No. 3902).
- (4014) WARINGER, J., 1982. Beitrag zur Kenntnis der Libellenfauna des Hafnersees (Kärnten). *Carinthia* (II) [172] 92: 355-360. (With Engl.s.). — (Salzburggasse 16/4, A-1140 Wien).
The odon. fauna (16 spp.) of Hafnersee, Carinthia, Austria is enumerated and briefly discussed.
- (4015) WARINGER, J., 1982. *Der Einfluss der Wassertemperatur auf die Dauer der Embryonal- und Larvalentwicklung von Coenagrion puella L. aus einem Tümpel bei Herzogenburg (N.Ö.)*. PhD thesis, Univ. Vienna, Wien.

- VIII+69 pp. — (Salzburggasse 16/4, A-1140 Wien).
 The effect of temperature on egg and larval development was studied in detail in the laboratory and in the field. At temperatures below 10°C the eggs did not hatch, at 12°C 15% of the eggs hatched, the optimal temperature was 16°C (85%), and 48% of eggs hatched at 28°C. Time required for embryonic development decreased from 80 days at 12°C to 12 days at 28°C. At all temperatures hatching took place during a period of approx. 8 days. There was good agreement between laboratory experiments and field record. — Detailed studies were made on larval development. Dyar's rule was found applicable. From 1st to 7th instar moult intervals decrease with temperature (29 days at 12°C, 7 days at 28°C), from the 8th instar onwards they were constant (30-48 days). — In the laboratory the logistic growth model was obtained. Minot's rule was found applicable. Growth rate has a peak at 20°C, water temperature being the main controlling factor. — Before the onset of oviposition, females contained 300-400 eggs. Without counting the prolarva, 11 larval instars occurred in the laboratory, but only 10 appeared in the field. — In the study area (Lower Austria), the sp. is univoltine, and it is considered a "summer species" (sensu Corbet).
- (4016) WELLINGHORST, R. & W. MEYER, 1982. Untersuchungen zur Struktur von flachen Kleingewässern als Larvalbiotope für Odonaten. *Zool. Jb. Syst.* 109: 545-568. (With Engl.s.) — (Second Author: Inst. Zool., Tierärztliche Hochschule, Bischofsholer Damm 15, D-3000 Hannover, FRG).
 7 biotopes of odon. larvae (incl. 5 shallow ponds and 2 streams) were studied in northern Germany. The evidence indicates that the spp. abundance of Odon. in shallow waters is conditioned by the frequency of drought periods and by the availability of oviposition substrates rather than by water chemism and the peculiarities in the temperature regime.
- (4017) WILLE, H.-G., 1982. Bachstelze (Motacilla alba) attackiert Grosslibelle (Anisoptera). *Vogelwelt* 103(6): 231. — (Dannenwalder Weg 196, D-1000 Berlin-26, West Berlin).
 A White Wagtail was seen fighting a large anisopteran, identified here as "Cordulegaster sp.". Neither the reason for, nor the outcome of the clash were ascertained.
- (4018) WINTER, R., [Ed.], 1982. Die Netz- und Geradflügler sind von Klimaschwankungen bedroht. Den Libellen wird das Wasser abgegraben. *Geo, Hamburg* 1982 (5, Special issue: "Bedrohte Tiere"): 18-19. — Price: DM 12.80. — (Publishers: Geo, Postfach 302040, D-2000 Hamburg-36, FRG).
 Out of 80 odon. spp. known to occur in the Federal Republic of Germany, 50% are considered at risk. The reasons for this situation are briefly outlined, and 12 col. photogr. by well-known dragonfly photographers are included.
- (4019) WOJTERSKI, T. & J. DEDNORZ, 1982. Pobrzeze Słowińskie i Kaszubskie. — [The Słowińskie and Kaszubskie Littoral]. *Wiedza Powszechna, Warszawa*. 224 pp., pls excl. (Polish). — Price: Zł. 95.-. — (Authors' addresses not stated).
 This is a general monograph on the natural history of Baltic littoral of the 2 provinces, Poland. On pp. 147 and 163, 7 odon. spp. are listed, among which *Cordulegaster boltonii* is of particular interest.
- (4020) WORMELL, P., 1982. The entomology of the Isle of Rhum National Nature Reserve. *Biol. J. Linn. Soc.* 18: 291-401. — (Nat. Conservancy Coun., Ledaig, Connel, Argyll, UK).
 The insect fauna of the Isle of Rhum, Inner Hebrides, United Kingdom is discussed, and a checklist of recorded taxa is presented. The Odon. are represented by 10 spp., among which the occurrence of the larvae of *Cordulegaster boltonii* is of particular interest. (For the Odon. of the Outer Hebrides cf. *OA* Nos 3095, 3096).
- (4021) WYSS, M., 1982. Libellen stechen nicht. *Vögel d. Heimat, Einsiedeln* 53(4/5): 102-103. — (Grauholzstr.66, CH-3063 Ittigen).
 A general note on dragonflies, with reference to some Swiss taxa. It is emphasized that due

to various antropogenic vectors, all rheobiontic spp. are threatened in Switzerland.

- (4022) ZESSIN, W., 1982. Durchsicht einiger liasischer Odonatopteroidea unter Berücksichtigung neuer Funde von Dobbertin in Mecklenburg. *Di. ent. Ztschr. (NF)* 29(1/3): 101-106, pls 6-10 excl. — (E.Thälmann Str.30, DDR-2700 Schwerin, GDR).

The anisozygopterans *Liadothemis insignis* sp.n. (Archithemistidae) and *Magnasupplephlebia kallweita* gen.n., sp.n. (incertae sedis) are described and illustrated. *Heterophlebia megapolitana* Handlirsch is redefined, and *H.geinitziella* Handlirsch is shown junior synonym of the former. In addition, 2 *Protomyrmeleon* (?) and 1 *Camperophlebia* (?) previously unknown spp. are described, illustrated, but left unnamed. The type material is in the author's collection.

- (4023) ZHOU, Wenbao, 1982. The male of *Nihonogomphus shaowuensis* Chao. *Entomotaxonomia* 4(3): 162. (Chin., with Engl. title). — (Zhejiang Mus., Hang Zhou, Zhejiang, P.R. China).

The penis and the terminalia are figured, with data on provenience, but without description. — (*Abstracter's Note*: Dr H.-f. Chao is on the Editorial Board of this beautifully produced and important journal).

- (4024) ZIEBELL, S. & T. BENKEN, 1982. Zur Libellenfauna in West-Niedersachsen (Odonata). *Drosera* 82(2): 135-150. (With Engl.s.). — (First Author: Habbrügger Weg 21, D-2875 Ganderkesee-1, FRG).

Data are presented in distribution, habitats, abundance and phenology of 51 spp. in western Lower Saxony, Fed.Rep.Germany. Of particular interest are the records of indigenous populations of *Sympetma paedisca*, *Aeshna isosceles*, *A. viridis*, *Libellula fulva* and *Sympetrum depressiusculum*.

1983

- (4025) CARCHINI, G., 1983. A key to the Italian odonate larvae. *Soc. int. odonotol. rapid Comm. (Suppl.)* 1: VI + 101 pp., 40 pls incl. —

(Ist. Zool., Univ. Roma, Viale dell'Università 32, I-00100 Roma). — Orders to be sent to the Editors of *Odonatologica*, Dept Animal Cytogenet. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL. — Price Hfl. 20,- net.

The key covers all but 4 spp. known to occur in Italy. Almost all of nearly 180 figs are original drawings, based on material of Italian provenience, showing structural features of all the spp. considered. This pocket-size booklet (14.5 X 20.5 cm) will be certainly very useful for work with non-Italian material as well.

- (4026) KNAPP, E., A. KREBS & H. WILDERMUTH, 1983. Libellen, *Neujahrsbl. naturf. Ges. Schaffhausen* 35, 90 pp., pls incl. [Published in Nov., 1982]. — Price: sFr. 24.- net. — (Orders to: P.Meili, Am Fronwagplatz, CH-8200 Schaffhausen).

In the Preface it is stated that in Switzerland the interest in dragonflies has recently greatly increased. Without exaggeration one can assume that particularly the third Author is to a considerable extent responsible for this situation; his booklet, listed in *OA* Nos 3336, 3337, is but seldom missing on the book shelves even of the most remote homes in the high valleys of the Swiss Alps. The popularization of dragonflies and odonotol. research by means of exhibits, public talks, articles in the local daily press, etc. in Switzerland has achieved proportions and intensity that could not be compared to any other European country. This fact is clearly illustrated also by the circumstance that at the moment no fewer than 4 Swiss dragonfly books are commercially available, 2 of them in German and French editions. The Swiss odonotol. research is at present mainly focused on conservation problems of the local fauna; there is a small, rather informal odonotol. club in Zürich, publishing an informal newsletter (cf. *OA* Nos. 2858, 3152, 3237), and the publication of local and cantonal faunal inventories has been greatly intensified throughout the country. — The present booklet is clearly intended as an "introduction to dragonflies" for amateur entomologists. No doubt it will perfectly serve this aim, and the original approach to often difficult biological phenomena is refreshing.

The 20 chapters, dealing mainly with biology, behaviour, ecology, and conservation are followed by a tabular review of the Swiss fauna, and by an excellent set of 66 colour- and black-and-white photographs. Of particular interest will be the brief but well-balanced discussions on the faunas of the main types of Swiss habitats. If it would be possible to include a brief identification key to regional species (a pictorial key to the families is provided), the volume could serve as a complete vademecum for young odonatologists, secondary-school biology teachers, and for aquatic biologists in general.

- (4027) KUKULIES, J. & H. KOMNICK, 1983. Plasma membranes, cell junctions and cuticle of the rectal chloride epithelia of the larval dragonfly *Aeshna cyanea*. *J. Cell Sci.* 59(1): 159-182. — (Inst. Zytol., Univ. Bonn, Ulrich-Haberland-Str. 61 a, D-5300 Bonn-1, FRG). The cell membranes and cell junctions of the rectal chloride epithelia were examined in thin sections and by freeze-fracture. These epithelia function in active ion absorption and maintain a high concentration gradient between the haemolymph and the fresh-water environment. Freeze-fracturing reveals fine-structural differences in the intramembraneous particles of the luminal and contraluminal plasma membranes of these epithelia, reflecting the functional diversity of the two membranes, which are separated by the junctional complex. The particle frequency of the basolateral plasma membranes is reduced after transfer of the larvae into high concentrations of environmental salinity. — The junctional complex is located in the apical region and composed of three types of cell junctions: the zonula adhaerens, seen in freeze-fracture as a nearly particle-free zone; the extended and highly convoluted pleated septate junction and randomly interspersed gap junctions of the inverted type. Gap junctions also occur between the basolateral plasma membranes. They provide short-cuts in the diffusion pathway for direct and rapid co-ordination of the interconnected cell process. — Colloidal and ionic lanthanum tracer solutions applied in vivo from the luminal side penetrate through the cuticle via epicuticular depressions, but invade only the apical portion of the junctional complex. This indicates that the pleated septate junction constitutes a structural control of the paracellular pathway across the chloride epithelia, which are devoid of tight junctions. The structure of the pleated septate junctions is interpreted as a device for the extension of the diffusion distance, which is inversely related to the net diffusion. A conservative estimate of the total length of the junction, and the number and extension of septa reveals that the paracellular route exceeds the transcellular route by a factor of 50. (Authors).
- (4028) RETTIG, K., 1983. Neue Verbreitungskarten über Insektenarten in Ostfriesland. *Ber. Beitr. Vogel- Insektenwelt Ostfriesland* 13: 9-19. — (Danziger Str.11, D-2970 Emden, FRG). With reference to the paper listed in *OA* No. 3786, distribution maps (East Friesland, Fed. Rep. Germany) are given for 9 odon. spp.
- (4029) SMIT, P., 1983. Libellen op Vlie. [Dragonflies of the Vlieland island]. In: P. Smit, [Ed.], *Kampverslag Vlieland 1982*, pp. 12-16. NJN, Enschede. (Dutch). — (Pollenbrink 140, 7544 AT Enschede, NL). Annotations are given on 13 spp., collected July 7-17, 1982 at the Northsea island of Vlieland, The Netherlands. Among these, 5 were not previously known from the island.
- (4030) STEINBORN, G., 1983. Die Libellen im Kreis Höxter. *Jb. Kreis Höxter* 1983: 83-94. — (Lindenweg 1, D-3470 Höxter-Godelheim, FRG). An annotated list is given of 24 spp. recorded from the District of Höxter, Westfalia, Fed. Rep. Germany. The local status and ecology of each sp. are briefly stated.