

## ODONATOLOGICAL ABSTRACTS

### 1971

- (3065) YAMAMOTO, Y., 1971. [Dragonflies of Hozumi-cho, Gifu Pref., Honshu, Japan]. *Kakocho* 23 (89): 119-126. (Japanese, with Latin taxonomic names, and Engl. capture dates). — (*Inafune Bldg, Inafune-dori 1-2, Chigusa-ku, Nagoya City, 464, JA*). An annotated list is given of 28 spp., taken during 1965-1971 in the said area.
- (3066) YAMAMOTO, Y., 1971. [An unusual oviposition behaviour of *Anax parthenope julius* Brauer]. *Kakocho* 23 (89): 139. (Japanese, with Latin name of the sp.). — (*Inafune Bldg, Inafune-dori 1-2, Chigusa-ku, Nagoya City, 464, JA*). A note with a photograph.

### 1972

- (3067) ETTMÜLLER, W., 1972. *Insektenleben am Wasser*. Neujahrsbl. Leseges. Bülach 1972: 58-67. — (*Author's address not stated*). Includes a general talk on dragonflies (pp. 58-59); there is a col. photograph of *Aeshna cyanea*, but no other spp. are mentioned from Bülach, canton Zürich, Switzerland.

### 1973

- (3068) BISHOP, J.E., 1973. Limnology of a small Malayan river Sungai Gombak. *Mon. Biol. (Junk, The Hague)*, Vol. 22, pp. VIII+485. — Price: Hfl. 140.—. — (*Author's address not stated*). The Sungai Gombak is a small river flowing

off the rain-forest-clad main-range highlands of Malaya through transitional foothill areas of plantation to the urban plain in the vicinity of Kuala Lumpur. The monograph is mainly based on 1968-1970 field work. The Odon. are dealt with on pp. 217-221, with references to the Order in various other places. The fauna is analysed and a list is provided of spp. recorded. Special attention is being paid to larval habitat preferences, longitudinal distribution, and to larval drift. Substrate and cover appear to be the principal factors determining larval distribution, although temperature and oxygen availability may be important in limiting the Upper Zone fauna. With the complex biotopic demands of the adults, discussion of distributions based solely on the requirements of the larval stages, is considered imprudent. For a detailed treatment of the odon. fauna and ecology of the Sungai Gombak reference is made to the works of J.I. Furtado (1966, *Studies on Malayan Odonata*, Ph. D. thesis Univ. Malaya, Kuala Lumpur, 280 pp.; — 1969, *Verh. int. Ver. Limnol.* 17: 863-887).

### 1976

- (3069) MACHADO, A.B.M., 1976. Fauna associada a água das folhas de umbelíferas com observações sobre ninfa de *Roppaneura beckeri* Santos (Odonata-Protoneuridae). [Fauna associated with the water contained in the umbelliferan leaf axils, with observations on the larva of *Roppaneura beckeri* Santos (Odonata-Protoneuridae)]. *Cienc.*

Cult. 28 (7): 895-896. (Portuguese). — (*Dept. Morfol., Inst. Cienc. Biol., Univ. Fed. Minas Gerais, C.P. 2486, BR-30000 Belo Horizonte*).

The macrofauna consists of the members of the following groups: Copepoda, Isopoda, Acarina, Odon. (Roppaneura), Blattodea, Nematocera, Homoptera, and Heteroptera. There are 1-9 Roppaneura larvae per plant; they occur in all plants with diameters exceeding 50 cm, and are the most frequent inhabitants of this habitat. Their ecology is briefly stated. — (Cf. the 2 papers listed in *OA* No. 1798).

- (3070) SIEGERIST, H., J. FORSTER & A. KREBS, 1976. Neugeschaffene Nasstandorte (Teiche) zur Erhaltung der Amphibien- und Wasserinsektenfauna in der Stadtgemeinde Winterthur. Winterthur. Jb. 1976: 13-49. — (Third author: *Ankerstr. 3, CH-8406 Winterthur*).

The importance of man-made ponds for dragonfly life is stressed, a few of these from the surroundings of the city of Winterthur, Switzerland, are described, and a brief characterisation of dragonflies is presented (pp. 37-41). No spp. names are stated. — (Cf. also *OA* Nos. 1428, 1449).

- (3071) WILDERMUTH, H., 1976. Kemptertobel (Wetzikon). Exkursionsführer. Quartierverein Kempten, Wetzikon. 92 pp. — (*Mythenweg 20, CH-8620 Wetzikon*).

*Cordulegaster boltoni* is the only odon. sp. recorded (p. 26) from the Kemptner Gorge, canton Zürich, Switzerland.

- (3072) YANG, Tien-Hsing, 1976. Investigation on the insects used for medicine in Chinese pharmacology. PhD thesis, privately published, Taipei. 252 pp. (Chinese, with Engl. s.). — (*P.O. Box 51-97, Taipei, Taiwan*).

The Odon. are dealt with on pp. 11-13, 201-202. The following Chinese terms refer to Anisoptera: 'Ching Ling', 'Ching-ting', 'Ching'ing', 'Tinghsing', 'Fulao', 'Tienchi', 'Chiang-chou', 'Ts'ung', 'Chuch'eng', 'Shay'ang'. The red ones are called 'Ch'ihitsu' and 'K'angyi', while a small yellow sp. is named

'Huli'. In the medicine, those with big blue eyes, intermixed with deep blue and red can be used. They are nonpoisonous and slightly cooling, and are used for strengthening the genitals and for prevention of involuntary ejaculation. The Japanese author, Tokui-chi Shiraki (1932) is referred to instating the applications of the imago of the following 4 spp.: *Sympetrum pedemontanum* (= 'Shen-Shan-Chiang-Ling'): sore throat, removal of fish bones, stopping cough; — *S. darwinianum* (= 'Hsi-Chiang-Ching-Ling'): same as the former, and eye diseases, fever, tonsillitis and all kinds of febrile diseases; — *Crocothemis servilia* (= 'Hsin-Hsin-Ching-Ling'): syphilis; — *Orthetrum albistylum* (= 'Pai-Fu-Ching-Ling'): asthma. Illustrations, along with Chinese names, are provided of *Deielia phaon* (= 'Chuo'i-Fen-Ching-Ling') and *Leucorrhinia dubia* (= 'Pai-Mien-Ching-Ling'). — The Zygoptera are called 'Ching-Fu', 'Fuchan', 'Wukua', 'Tunwo', 'Pumeng', 'Yufu' and 'Yupo'. They are nonpoisonous, warming and bitter, and are used for the nourishing of viscera, strengthening the genitalia, facilitating ejaculation, and to diminish the urine. Illustrations and Chinese names are provided of *Psolodemesus dorothea* (= 'Chien-Chih-She-Ts'ung') and *P. mandarinus* (= 'Pai-Tai-She-Ts'ung'). — The anisopteran larvae are called 'Suei-Ts'ai'. — (For another paper on the Odon. in the traditional Chinese pharmacology cf. *OA* No. 2870). — (*Abstracter's Note: An Engl. translation of the odon. sections, provided by Dr. J.C. Lien, Taipei, is available from the Editors of Odonatologica*).

## 1977

- (3073) NARAOKA, H., 1977. Dragonflies of Aomori prefecture, '77. Published privately by the author, Fukunodu. 120 pp. (Japanese, with Engl. title and Latin taxonomic names). — (37-71, *Aza Motoizumi, Fukunoda, Itayanagi-cho, Kita-gun, Aomori Pref., 038-36, JA*).

This is an exhaustive monograph on the odon. fauna of the Aomori Prefecture, Japan. A brief outline of the history of odon.

research in the prefecture (pp. 3-4) is followed by a general introduction to the Order (pp. 5-11). Aside from general biological aspects the latter includes also a note on the etymology of the Japanese term 'tombo'. Next follows a key to the families and sub-families (pp. 12-14), incl. a pictorial identification table. The main body of the book is concerned with a detailed account on the spp. of the local fauna (76 spp., pp. 15-82). To the chapter is appended a list of 12 additional spp. (3 identified to the genus only; pp. 83-84), which do not belong to the prefectural fauna, but were incidentally recorded there. The concluding chapter (pp. 85-90) deals with considerations on distribution (also vertical), zoogeography, phenology, and seasonal variation of the Aomori dragonflies. A brief list of References (p. 91) is followed by the species index (pp. 92-98; Japanese names only). The last section of the book is a complete bibliography of papers dealing with the Odon. of the Aomori Prefecture (pp. 99-118), listing 183 titles. — (*Abstracter's Note*. The author should be congratulated on this excellent, rounded-off treatment of his native prefecture fauna. It is unfortunate, however, that this privately published book is not readily available in the market. Since, in more than one way, it could serve as a model for other regional faunistic monographs, it would not be out of place to consider the possibility of publication of an updated edition in some 'more commercial' way).

- (3074) WILDERMUTH, H., 1977. Die Pfäffikersee. Ein natur- und heimatkundlicher Führer. Druckerei Wetzikon, Wetzikon. 140 pp. — (*Mythenweg 20, CH-8620 Wetzikon*). This is a small "monograph", directed at the general reader, and with emphasis on animal life, of the Pfäffiker Lake area, canton Zürich, Switzerland. The geology, ecology, archaeology and the nature conservancy aspects are also dealt with. The Odon. are treated on pp. 56-57. The list includes 10 spp., among which *Nehalennia speciosa* is of particular interest.

## 1978

- (3075) GEORGE, J.J., 1978. The freshwater fauna of Lundy. Rep. Lundy Fld Soc. 29: 46-48. — (*Life Sci., Polytechnic Central London, 115 New Cavendish Str., London, W1M 8JS, UK*).  
A preliminary survey is given of the freshwater invertebrate fauna of the Lundy Island, Bristol Channel, United Kingdom. *Sympetrum striolatum* is the only odon. sp. recorded (from Pondsbury, the largest of the freshwater ponds on the island). (Cf. *OA* No. 3090).
- (3076) GORAYEB, I.S. & R.R. PINGER, 1978. Detecção de predadores naturais das larvas de *Simulium fulvinitum* Cerq e Melo, 1968 (Diptera, Nematocera). (Identification of natural predators of *Simulium fulvinitum* Cerq & Melo, 1968 larvae). *Acta Amazon.* 8 (4): 629-637. (Port., with Engl. s.). — (*Inst. Nac. Pesquisas de Amazonia, Manaus, Amazonas, Brazil*).  
Libellulid larvae are incriminated as predators of *S. fulvinitum* larvae in their natural breeding places in the vicinity of the city of Manaus, Amazonas, Brazil. The other predators are Trichoptera, Lepidoptera, Plecoptera and Neuroptera.
- (3077) PILL, C.J., 1978. Structure and function of mechanoreceptors in anisopteran dragonflies. PhD thesis, Univ. Leeds. VI+197 pp., 56 figs. — (*Dept. Pure & Appl. Zool., Univ. Leeds, Leeds LS2 9JT, UK*).  
Ultrastructural and physiological studies have been carried out on both internal and external mechanoreceptors of *Aeshna cyanea*, *Anax imperator* and *Libellula depressa*. In the larva, abdominal chordotonal organs are innervated by 3 proximal sensory cells whose distal dendrites are each enclosed in a scolopidium. At least 8 sensory cells are present in the tarso-pretarsal organ, distributed between proximal and distal groups. Cuticular sensilla are each innervated by a single bipolar sensory cell whose distal dendrite is divided into an inner and outer segment, the latter terminating in a tubular

body. The ventral cuticular sensilla of larval limbs form distinct distribution patterns of forked and single spines. This is replaced in the adult by 2 single rows of large spines. Proprioceptor activity has been recorded and the role of abdominal stretch receptors and chordotonal organ during various ventilatory behaviours is discussed. The single innervation of the cuticular sensilla is unidirectional. The construction of each sensillum is discussed in relation to function and a comparison drawn between scolopidia and cuticular sensilla, including their probable transducers mechanisms. A description of the ultrastructure of four abdominal muscles of *Libellula* larvae is included in an appendix. The muscles examined were the anterior, respiratory and posterior dorso-ventral and the dorso-ventral oblique muscles. They are all similar in structure, except that mitochondria are far more abundant and the T-system and sarcoplasmic reticulum less well developed in the respiratory dorso-ventral and dorso-ventral oblique muscles.

- (3078) REEVES, D.M., 1978. Dragonflies and butterflies from Hinchinbrook Island. Qld Nat. 22 (1/4): 50-51. — (*Box 1220, G.P.O., Brisbane, Queensland, 4001, AU*).  
*Diphlebia* sp., *Gynacantha rosenbergi*, *Neurothemis s. stigmatizans*, *Orthetrum sabina*, and *Trapezostigma loewi* are recorded (Aug. 10-20, 1975) from the island, Queensland, Australia.
- (3079) TAKASAKI, Y., 1978. [A note on the emergence site of *Epiophlebia superstes*]. *Kakocho* 30 (114): 20. (Japanese). — (*1-14, Fujimori, Meito-ku, Nagoya, 465, JA*).  
 Several times, in the literature, the larvae of *E. superstes* were reported to cover long distances over land before emergence. The bibliographic references are given, and another such case is brought on record (Kamikoshigawa, southern foot of Mt. Hazugatake, Mikura-ten, Ashisuke-cho, Higashikamo-gun, Aichi Pref., alt. 600 m; May 5, 1978). The distance covered was about 12 m, incl. 10 m of a steep slope.
- (3080) YAMAMOTO, Y., 1978. [Two dragonfly species from the Atsumi Peninsula, Aichi Pref., Tokai District, Honshu, Japan]. *Kakocho* 30 (114): 17-19. (Japanese, with Latin taxonomic names). — (*Inafune Bldg., Inafune-dori 1-2, Chigusa-ku, Nagoya City, 464, JA*).  
 A note on *Mnais p. pruinosa* (with photographs of both sexes) and *Tanypteryx pryeri*.
- 1979**
- (3081) AISAKA, K., 1979. [The dragonfly fauna of the Iryu area, Japan]. *Tento-mushi* 5: 1-6. (Japanese, with Latin taxonomic names). — (*Otsu 78-18, Aga, Shikama-ku, Himeji, Hyogo Pref., 672, JA*).  
 56 spp., incl. *Aeshnophlebia anisoptera*, *Anaciaeschna martini*, *Somatochlora clavata*, *S. viridiaenea atrovirens*, and *Tamea virginia*, are recorded from SW Hyogo, central Japan. (Cf. also *OA* No. 3099). — (*Abstracter's Note*: The periodical is published, since 1976, by the Himeji Research Group of Entomology, it is covering all insect orders, and it is edited by S. Kimura, 161, Sugo-dani, Yumesaki-cho, Shikama-gun, Hyogo Pref., 671-23, Japan. It can be ordered from the latter address).
- (3082) ASAHINA, S., 1979. [Preface]. *In*: S. Fujisawa, *Dragonflies of the Shiga Heights*, pp. V-VI. Soc. Shiga Heights Res., Iiyama. (Japanese). — (*Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA*).  
 Cf. *OA* No. 3087.
- (3083) BAUER, S., 1979. *Libellen - Lebensräume, Gefährdung, Schutz. Schriftenreihe Vogelschutz* 1: 14-17. — (*Rossttenstr. 8, D-7761 Möggingen, GFR*).  
 This is a concise, technically well-documented analysis of odon. habitats in the German Federal Republic, with a critical list of factors responsible for the endangering of the odon. fauna. These are: (1) loss of aquatic habitats, (2) artificial changes and disruptions of these, (3) eutrophication, (4) artificial introduction of fish and ducks, and

(5) the use of herbicides. 8 well-specified protective measures are suggested. All of these are, correctly, related to the conservation of habitats and not to that of certain taxa.

- (3084) BRODSKY, A.K., 1979. Proishozhdenie i rannie etapy evolyucii krylovogo apparata nasekomyh. [Origin and the early stages of the evolution of the insect wing apparatus]. Dokl. 30 ezhegod. Chten. Kholodovskogo, pp. 41-78. (Russian). — (*Dept. Ent., Univ. Leningrad, Universitetskaya naberezhnaya 7/9, USSR-199164 Leningrad*).

Various hypotheses of the origin of insect flight are critically analysed. The patterns of wing tracheation in 4 orders (incl. Odon.) are outlined, and the main trends of functional specialisation in insect wings are discussed.

- (3085) CASINI, C.E., 1979. El uso del pentaclorofenol como agente antihongo en las colecciones entomologicas. *Revta Biol. Uruguay 7* (1): 23-24. (With Engl. s.). — (*Dept. Artropodos, Fac. Hum. & Cien., Univ. Republ., Tristan Narvaja 1674, Montevideo, Uruguay*).

A technique of prevention of fungal infestation of entomological collections, based on the use of pentachlorophenol, is described. (Cf. also *OA* No. 2822).

- (3086) CONCI, C., 1979. La più antica figurazione scultorea di una libellula (Odonata). *Natura, Milano 70* (4): 242-246. (With Engl. s.). — (*Mus. Civ. Stor. Nat., Corso Venezia 55, I-20121 Milano*).

A dragonfly sculpture, part of a marble decoration in the yard of the Palazzo d'Arco, Mantova, Italy, is described and illustrated. It is the work of an unknown Renaissance sculptor of the second half of the 15th century, representing probably an *Orthetrum cancellatum*. This is the oldest hitherto known dragonfly sculpture in Europe.

- (3087) FUJISAWA, S., 1979. [Dragonflies of the Shiga Heights. On the dragonflies of Oku-shinano]. *Soc. Shiga Heights Res., Iiyama. XII + 248 pp., 4 col. pls, 10 black-and-white*

pls, incl. author's portrait. (Japanese, with Latin taxonomic names). — Price: Y 3000.—. — (Author and Publishers: 1986 *Iiyama, Iiyama, Nagano Pref., 389-22, JA*).

The book consists of 2 parts. Pt I (pp. 1-150) is a slightly modified reprint of the original edition, published 1957, under the same title, by Shimo-minochi Kyoikukai. Pt 2 (pp. 151-248) is published here for the first time. The preface has been provided by Dr. S. Asahina, and the work is considered an indispensable guide to the Japanese alpine dragonflies. (For another book on this subject cf. *OA* No. 1228). In the first part, the history of odonatology of the Shiga Heights, Nagano Pref., Japan, is outlined, the fauna (35 spp.) is keyed (adults and larvae), the biology of each sp. is dealt with in extenso (pp. 18-108), and feeding habits and habitat distribution, among others, are discussed. In the second part, 5 spp. (recorded 1958-1978) are added to the regional list, and various special topics are dealt with. These include the relations between *Leucorrhinia dubia* orientalis and sphagnum bogs (pp. 158-160), the distribution of this sp. in Japan (pp. 162-165), the Nagano distribution and life history of *Epiophlebia superstes* (pp. 166-175), the life history of *Sympetrum frequens* in the sub-alpine region, and the accounts of odon. faunas of a number of selected regions (pp. 178-220). Some conservancy aspects of the limizu region are also briefly discussed, and a phenological table of the Odon. of the Shiga Heights is provided.

- (3088) FURR, A.K., T.F. PARKINSON, W.D. YOUNGS, C.O. BERG, W.H. GUTENMANN, I.S. PAKKALA & D.J. LISK, 1979. Elemental content of aquatic organisms inhabiting a pond contaminated with coal fly ash. *N.Y. Fish Game J.* 26 (2): 154-161. — (*Off. Occup. Health Saf., Virginia Polytech. Inst. & St. Univ., Blacksburg, Va. 24061, USA*).

Using neutron activation and other methods, 39 elements were determined in various aquatic organisms, incl. larvae of *Plathemid* lydia. The organisms contained several elements, incl. Se, at concentrations markedly

higher than those in controls.

- (3089) GARRISON, R.W., 1979. Population dynamics and systematics of the damselfly genus *Enallagma* of the western United States (Odonata: Coenagrionidae). PhD thesis, Univ. California, Berkeley. II + 256 pp. — (*Calle Iris UU-18B, Borinquen Gardens, Rio Piedras, Puerto Rico 00926, USA*). — Microfilm or xerox copy available (refer to Order No. 8014693) from the University Microfilms International, Dissertation Copies, P.O.B. 1764, Ann Arbor, Mich. 48106, USA. — Prices: microfilm or microfiche: US \$ 15.—; xerox, soft or hard cover: US \$ 28.— or 33.— resp.; postage extra. Before ordering apply for the Order Form, with specified prices; payment must accompany orders from individuals. [Verbatim abstract from Diss. Abstr. 41, 1 (1980)]: The population dynamics and systematics of 9 *Enallagma* spp. of the United States west of the Rocky Mountains are examined. Both adults and larvae of *E. anna* Williamson, *E. basidens* Calvert, *E. boreale* (Selys), *E. carunculatum* Morse, *E. civile* (Hagen), *E. clausum* Morse, *E. cyathigerum* (Charpentier), *E. ebrium* (Hagen) and *E. praevarum* (Hagen) are differentiated and described. Synonymies, distributions and diagnoses are given for all spp. — Quantitative data on population dynamics are given for adults of 4 coexisting spp., *E. carunculatum*, *E. civile*, *E. cyathigerum*, and *E. praevarum*, at Del Puerto Canyon, California. Average distances moved ranged from 11.9 m/day in male *E. praevarum* to 20 m/day for male *E. civile*. Morisita's dispersion indices showed *E. carunculatum*, *E. civile* and *E. praevarum* were more aggregated than *E. cyathigerum*. Average life span estimates ranged from 2.11 days in *E. civile* males to 7.88 days for male *E. praevarum*. *E. carunculatum* and *E. praevarum* were rare compared to the other 2 spp. *E. civile* and *E. cyathigerum* were seasonally separated during Sept. — Dichromatic frequencies in females of *E. civile* and *E. cyathigerum* were analyzed with regard to mate selection by males. Observed ratios of blue to brown morphs conformed to expected genetic ratios involving simple autosomal genes, but the proportion of color morphs was reversed between the two species. Males showed no preference for either morph color. *E. civile* tended to mate at water, while *E. cyathigerum* appeared to mate away from water. Microgeographic separation was observed between the intermediate-sized *E. cyathigerum* and the two most dissimilar in size and behavior, *E. civile* and *E. praevarum*. The data suggest that prezygotic isolating mechanisms other than the lock and key mechanism are operative at Del Puerto Canyon. — Discriminant function analyses were used to distinguish larvae of *E. boreale*, *E. carunculatum*, *E. civile*, *E. cyathigerum* and *E. praevarum*. Use of traditional gill and mentum characters given by previous workers did not separate them satisfactorily. A second set of characters using pharate genitalic characters provided an 85% success rate in identification.
- (3090) GEORGE, J.J. & B.M. STONE, 1979. The flora and fauna of Pondsburry. Rep. Lundy Fld Soc. 30: 20-31. — (*Life Sci., Polytechnic Central London, 115 New Cavendish Str., London, W1M 8JS, UK*). Larval *Sympetrum striolatum* is reported from the Pondsburry pond, the largest freshwater pond on the island of Lundy, Bristol Channel, United Kingdom. (Cf. also *OA* No. 3075).
- (3091) LAGO, P.K., D.F. STANFORD & P.D. HARTFIELD, 1979. A preliminary list of Mississippi damselflies (Insecta: Odonata: Zygoptera). *J. Mississippi Acad. Sci.* 24: 72-76. — (*Dept. Biol., Coll. Lib. Arts, University, Mississippi 38677, USA*). 35 spp. are recorded from Mississippi, USA, 11 of which are new to the state list. The paper is based on 887 specimens, representing 285 collection records from 42 counties.
- (3092) NARUMI, K., 1979. [Odonatological souvenirs from the Southern Islands. Insects of the southwestern islands and southeastern Asia: a book on dragonflies]. Hyokamondai

Kenkyusho, Kagoshima. 192 pp. (Japanese). — Price: Y 1300.—. (Author: 4400-23, *Nishiheppu-cho, Kagoshima, 890, JA*; Publishers: 3-11, *Shin-yashiki-cho, Kagoshima, 890, JA*).

This is a magnificent volume (19 x 26 cm), directed at the general reader, on dragonflies of the island chain between the Japanese mainland and Taiwan, and on those of Taiwan, the Philippines, Malaysia and Java. Though it is not a 'picture book', it contains approx. 150 coloured field photographs, many of which are of outstanding quality, and are showing numerous spp. that were never before photographed. The introductory chapter (taxonomy, habitats, life history, migration; pp. 8-20), is followed by accounts of various faunas, organized geographically. The Japanese islands dealt with are Tanegashima, Yakushima, Tokara Archipelago, Amami Islands, Okinawa, and the Yayeyamas (pp. 21-68). The fauna of Taiwan is divided into 4 geographic districts (pp. 69-124). The Philippines are represented by Luzon and Mindanao (pp. 125-155), Malaysia is represented by the Kuala Lumpur area, the Gombak, and by the Cameron Highlands (pp. 156-180). The last chapter deals briefly with northwestern Java (pp. 181-189). Each chapter is accompanied by a schematic map, showing the topographic situation of the localities visited. In this way the book represents a reliable faunistic document, while many photographs contain valuable evidence on behaviour and ecology. It is unfortunate that only Japanese names are used throughout the book, but a 'taxonomic translation' of figure captions is available from the S.I.O. Office in Japan (K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA) and from the Editors of Odonatologica.

- (3093) ŘÍHA, P., 1979. Katalog der tertiären und quartären fossilen Insekten der Tschechoslowakei. Ent. Probl., Bratislava 15: 13-32. (With Czech and Russ. s's.). — (*Soběslavská 66, CZ-130 00 Praha-3*).

All insects known from the Tertiary and Quaternary deposits of Czechoslovakia are

catalogued (incl. text and figure citation, locality name, stratigraphic specification, bibliography, and various notes, if considered necessary). In all, 5 odon. taxa are known from the Cenozoic of Czechoslovakia, viz. *Libellula doris* Heer, *L. knetti* Handl. (nomen nudum), "*Libellulinae* sp." (imago), "*Libellulinae* sp." (larvae), and *Orthetrum* spp. (imagines).

- (3094) ROOM, P.M., 1979. Parasites and predators of *Heliothis* spp. (Lepidoptera: Noctuidae) in cotton in the Namoi Valley, New South Wales, Australia. J. Aust. ent. Soc. 18 (3): 223-228. — (*Div. Ent., C.S.I.R.O., Long Pocket Lab., Priv. Bag 3, Indooroopilly, Queensl. 4068, AU*).  
Among the predators, 19 spp. of 7 insect orders are listed, incl. the Odon.
- (3095) WATERSTON, A.R., A.V. HOLDEN, R.N. CAMPBELL & P.S. MAITLAND, 1979. The inland waters of the Outer Hebrides. Proc. R. Soc. Edinb. (B) 77: 329-351. — (*Royal Scottish Mus., Edinburgh EH1 1JF, UK*).  
The Outer Hebrides comprise approx. 1.3% of the land area but 15.8% of the area of standing waters of Great Britain. The hydrology, chemistry and biology of the inland waters are summarized; a checklist of taxa is not given. Freshwater faunal elements are sensitive to increasing salinity: *Enallagma cyathigerum*, *Ischnura elegans*, *Libellula quadrimaculata* and *Sympetrum nigrescens* still occur at about 3‰. *E. cyathigerum*, *I. elegans*, *P. nymphula* and *S. nigrescens* breed in the Machair Lochs, and *I. elegans*, *A. juncea* and *S. danae* in 'closed' moor lochs.
- (3096) WATERSTON, A.R. & I.H.J. LYSTER, 1979. The macrofauna of brackish and fresh waters of the Loch Druidiberg National Nature Reserve and its neighbourhood, South Uist. Proc. R. Soc. Edinb. (B) 77: 353-376. — (*Royal Scottish Mus., Edinburgh EH1 1JF, UK*).  
3 main types of Hebridean freshwater lochs occur in the said Reserve, South Uist, Outer

Hebrides, Scotland, United Kingdom. *Enallagma cyathigerum* and *Pyrrhosoma nymphula* are reported from Loch Bee, and *E. cyathigerum*, *Ischnura elegans*, *P. nymphula*, *Aeshna juncea*, *Libellula quadrimaculata*, *Sympetrum nigrescens* and *S. danae* (= "scoticum") from the Loch Druidiberg area.

- (3097) YASUMATSU, K., H. HASHIMOTO & Y.D. CHANG, 1979. Chironomid fauna of Korea and their role in the rice agroecosystem. *Int. Rice Res. Newsl.* 4 (4): 17-18. — (*Ent. & Zool. Div., Dept. Agric., Bangkhen Bangkok-9, Thailand*).  
A summer (1975) survey showed that 9 chironomid spp. occur in the rice-fields of South Korea. Most of them breed in dead organic matter and adults emerge in large numbers. *Zygoptera* are reported among the predators.

## 1980

- (3098) (Anonymous), 1980. Homenaje postumo. [Posthumous homage]. *Noticiencias, Univ. Centr. Venezuela, Caracas* 1980 (55): 2. (Spanish).  
The highest class of the Order of José Maria Vargas has been posthumously conferred upon the late Prof. J. Racenis by the Council of the Faculty of Science, Universidad Central de Venezuela, Caracas. (Cf. *OA* No. 3126).
- (3099) AISAKA, K., 1980. [Insects of Himeji City, Japan]. *Tento-mushi* 6: 10-20. (Japanese, with Latin taxonomic names). — (*Otsu 78-18, Aga, Shikama-ku, Himeji, Hyogo Pref., 672, JA*).  
The paper deals with *Lepidoptera* and *Odon.* (pp. 15-20). In all, 70 *odon. spp.*, incl. *Platynemis foliacea sasakii*, *Aeshna nigroflava*, *Anaciaeschna martini*, *Somatochlora clavata*, *S. viridiaenea atrovirens*, *Libellula angelina*, *Sympetrum depressiusculum* and *S. maculatum*, are listed from the city of Himeji, in the vicinity of Iryu (cf. *OA* No. 3081), SW Hyogo, central Japan.
- (3100) ANSELIN, A., 1980. Tien dagen in "l'Entre Sambre et Meuse", een natuurhistorisch verslag van het Zoka te Nismes (Couvin) augustus 1979. [Ten days in the "l'Entre Sambre et Meuse": a natural history report on the workshop at Nismes (Couvin), August, 1979]. *Stentor* 16 (1): 2-29. (Dutch). — (*Lab. Anim. Ecol., Zoogeogr. & Nature Manag., Univ. Gent, Ledeganckstr. 35, B-9000 Gent*).  
On pp. 22-24 a list is given of 16 *odon. spp.* collected Aug. 7-17, 1979 at various localities in the area of Nismes, nr. Couvin, Namen prov., Belgium.
- (3101) ASAHINA, S., 1980. Notes on the Philippine Odonata in the collection of the National Science Museum, Tokyo, part I. *Bull. natn. Sci. Mus. Tokyo (A)* 6(2): 77-100. — (*Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160 JA*).  
19 taxa of the families Gomphidae, Cordulegasteridae and Corduliidae are dealt with. 3 of these are new, viz. *Gomphidia platerosi* sp.n. (♂ holotype: St. Bernard, South Leyte; 2-1-1970; paratype from Mindanao), *Hemicordulia apoensis* sp. n. (♂ holotype: Lake Benado, Mindanao; 15-1-1978; paratypes of both sexes from Mindanao), and *H. mindana nipponica* ssp. n. (♂ holotype, ♀ allotype: Shogayama, Tanegashima, Japan; resp. 3-VI and 30-V-1960).
- (3102) BAUDOIN [the King of the Belgians] & M. GALLE [Minister of Flandres], 1980. Arrêté royal relatif aux mesures de protection, applicables dans la Région flamande, en faveur de certaines espèces animales indigènes vivant à l'état sauvage, et ne tombant pas sous l'application des lois et arrêtés sur la chasse, la pêche et la protection des oiseaux. *Belgisch Staatsblad/Moniteur Belge*, 31 oct. 1980. pp. 12639-12641. (Dutch and French).  
This is the official text of the Flemish Animal Conservation Act, dated Sep. 22, 1980, in operation in Flandres, Belgium, since Oct. 1, 1980 (Art. 7). All *Odon.* are placed under total protection; it is forbidden to capture and collect them, keep them in captivity, to transport and trade them, etc. (Art. 1/1,3).



and also to disturb or intentionally damage their habitats (Art. 5). The existing private collections (not those owned by educational and research institutions) have to be registered within 3 months of the date the Act became operative (Art. 2). Exemptions will be granted in economic cases, and for educational and research purposes (Art. 5). — (*Abstracter's Note*: As far as the dragonflies are concerned, the Act does not seem to deviate essentially from that operating in the German Federal Republic; most of the objections put forward in *OA* No. 3112, therefore, are applicable to the Belgian legislation as well. The Art. 1/2, however, is a Belgian peculiarity. If it were to be adhered to, and in view of the fact that dragonflies are among the most common and widespread aquatic insects, the spirit of the Act would result in an almost total protection of the Flemish freshwater basins. Since, for obvious reasons, this is neither practical nor possible, it is feared that the Act will solely affect the activities of local amateur entomologists, and will both cause a decline of the interest (at the moment considerable) in the Order, and hinder local faunistic inventarisations, that have been so far of significant importance for local nature conservancy objectives).

- (3103) BILLE, R.-P., 1980. Les libellules de Finges. L'École Valaisanne, Sion 25 (2): 34-37. — (Editors: *ODIS*, Gravelone 5, CH-1950 Sion).  
The article, directed at the general reader, is discussing the odon. fauna of Finges, canton Valais (= Wallis), Switzerland. Out of 16 spp. mentioned, *Calopteryx virgo* and *Leucorrhinia albifrons* are of some local interest.
- (3104) BOUDREAUX, H.B., 1980. Proventricular acanthae and their phylogenetic implications. *Ann. ent. Soc. Am.* 73 (2): 189-196. — (*Dept. Ent., La. Agric. Exp. Stn., La. St. Univ., Baton Rouge, Louisiana 70803, USA*).  
Proventricular acanthae, or microspines, have been described in fleas and scorpion-

flies and a sp. of rhynchophorine beetle. Here they are described from various other insect orders, incl. *Anax junius*. It is hypothesized that the presence of acanthae is not indicative of a closer relationship.

- (3105) BURCKHARDT, D., W. GFELLER & H.U. MÜLLER, 1980. Geschützte Tiere der Schweiz. Schweizerischer Bund für Naturschutz, Basel. 224 pp. — Price: sFr. 26.—. — (Publisher's address: *Postfach 73, CH-4020 Basel*).  
This is a kind of handbook on animal conservation in Switzerland, directed at the general reader. It has simultaneously appeared also in a French edition. The introductory chapter, "Animal preservation in a changing landscape" (pp. 9-31), is followed by an "album" of photographs, arranged partly per main taxonomic groups, partly per some characteristic habitats (pp. 32-192). The chapter on "legislative nature conservation measures" (pp. 193-215) is of particular professional relevance. As apparent from a tabular review of protected taxa, the Odon. (without spp. specification) enjoy legal protection solely in the cantons of Schaffhausen and Vaud (p. 112). In the sections "Gravelpit" and "Stream", photographs of resp. *Coenagrion puella* (copula, p. 168) and *Calopteryx virgo* (♀, p. 178) are included. — (*Abstracter's Note*: The volume gives a good impression of the general situation in the field of animal conservation in Switzerland. As far as the Odon. are concerned, however, the illustrative material could have been more carefully chosen. While the decline of *Calopteryx* populations in Switzerland is evident (cf. *OA* No. 3012), one would welcome also a figure of one of the *Cordulegaster* spp. The gravelpit fauna would be much better illustrated by *Ischnura pumilio*, and the regionally utmost important and characteristic highland moors (*Nehalennia speciosa*, *Leucorrhinia albifrons*, *L. caudalis*) and alpine habitats (*Aeshna coerulea*, *A. subarctica*, *Somatochlora alpestris*, *S. arctica*) are completely omitted).

- (3106) CLEMENT, S.L. & R.P. MEYER, 1980. Adult biology and behavior of the dragonfly *Tanypteryx hageni* (Odonata: Petaluridae). *J. Kansas ent. Soc.* 53(4): 711-719. — (*Dept. Ent., O.A.R.D.C., Wooster, Ohio 44691, USA*).  
The paper is based on observations made in California, USA, 1976 (cf. also *OA* No. 2608). Males establish territories over spring-fed bogs and aggressively defend them against encroaching conspecific males, and non-conspecific dragonflies of both sexes. Females enter the bog for oviposition. The relative age distribution of the male population was characterized by recording colour changes in the integument and wings of individuals captured throughout the flight season; a mixed age distribution exists during much of the flight season. The adaptive significance of male territoriality in this sp. is discussed.
- (3107) DE ABENANTE, Y.P., 1980. Morfología externa del adulto de *Aeshna* (N.) *bonariensis* Rambur, 1842. Odonata: Anisoptera. II contribucion. *Revta Fac. Hum. Cienc., Montevideo (Biol.)* 1 (10): 105-149, 15 pls incl. (With Engl.s.). — (*Dept. Artropodos, Fac. Hum. & Cien., Univ. Republ., Tristan Narvaja 1674, Montevideo, Uruguay*).  
The external morphology of the adult A. (*Neuroclippa*) *bonariensis* is described, with emphasis on illustrations. — (*Abstracter's Note*: The subtitle is misleading; pt I deals with the larval stage; cf. *OA* No. 2523).
- (3108) DONATH, H., 1980. Meliorationsgräben als Lebensraum für Libellen (Odonata). *Ent. Nachr., Dresden* 24 (6): 81-90. (With Engl. and Russian s's.). — (*Jahnstr. 6, DDR-7960 Luckau, GDR*).  
Observations on 4 localities in the Districts of Potsdam and Luckau, German Democratic Republic, revealed that the percentage of mediterranean faunal elements ("Refugialfauna"), inhabiting melioration ditches, is significantly above the regional average. — (*Abstracter's Note*: It is a well-known fact that artificial melioration ditches and gravel pits play an important role in the recent range extension of numerous mediterranean faunal elements among the central European dragonflies. This fact is but seldom pointed out in the local odon. literature, which tends to be overconcerned with regrettable negative influences of civilisatory interferences with the landscape and odon. habitats in industrialised countries).
- (3109) DONATH, H., 1980. Zoogeographische Analyse der Libellenfauna der nordwestlichen Niederlausitz. *Biol. Stud. Kreis Luckau* 9: 30-36. — (*Biol. Arbeitskreis "Alwin Arndt", Jahnstr. 6, DDR-7960 Luckau, GDR*).  
The odon. fauna (53 spp.) of the northwestern Niederlausitz, Luckau District, German Democratic Republic, is zoogeographically analysed. *Coenagrion lunulatum* and *Cordulegaster boltoni* are for the first time recorded from the area. (Cf. also *OA* No. 2524).
- (3110) DUNSON, W.A., 1980. Adaptations of nymphs of a marine dragonfly, *Erythrodiplax berenice*, to wide variations of salinity. *Physiol. Zool.* 53 (4): 445-452. — (*Dept. Biol., Pennsylvania St. Univ., University Park, Penn. 16802, USA*).  
Larvae of *E. berenice* are common on rocky mangrove flats in the lower Florida Keys, USA, at salinities 36-48 ppt. *E. berenice* appears to be the only true marine dragonfly, and the larvae tolerate wide salinity variations. Hemolymph osmotic pressures for larvae freshly captured in seawater or held in artificial seawater were 358-412 mOsm. There was little further variation at salinities between freshwater and 260‰ seawater (2.612 mOsm). In 300‰ seawater, hemolymph osmotic pressure rapidly increases to about 1,000 mOsm, and death ensues. The transition point between hyper- and hypo-osmotic regulation occurred at approximately 350 mOsm seawater. Freshwater- and seawater-acclimated larvae differ little in body water content (about 80%), but Na content is elevated from 50 to 89  $\mu\text{mol g wet wt}$ , respectively. In 35 ppt seawater, Na influx and efflux were approximately

balanced near 400  $\mu\text{mol}/100\text{g.h.}$  In freshwater (1 mM Na), these fluxes decline to about 100  $\mu\text{mol}/100\text{g.h.}$  The time for complete turnover of body Na increases from 0.9 day in seawater to 21 days in freshwater. On rapid transfer from water of 470 mM Na to water of 1 mM Na, the Na efflux in 1 mM was only slightly higher than expected for freshwater-acclimated larvae. At a water Na level of 0.25 mM, Na efflux increases greatly, and there is a large net loss of Na. Water influxes of those in distilled water or 35 ppt seawater were similar (33 and 40  $\mu\text{l}/\text{g.h.}$ , respectively); complete turnover of body water occurs in about 0.8 day. Larvae of *E. berenice* rival the better-known dipterans in osmoregulatory abilities and should be studied further to compare mechanisms of hypoosmotic regulation that have presumably evolved independently in these two orders (Auhor).

- (3111) EITSCHBERGER, U., 1980. Dr. C.B. Williams 90 Jahre alt. *Atalanta* 11 (4): 237-254. — (*Humboldtstr. 13, D-8671 Marktleuthen, GFR*).  
A brief biography (incl. a portrait), evaluation of work, and a complete bibliography (1913-1975; 305 titles) are given of Dr. C.B. Williams, founder of the insect migration studies (born: Oct. 7, 1889, Liverpool; at present living in Kirkcudbright, Scotland). Many of his papers are partly or entirely devoted to odon. migration. His collections, library and card files are deposited at the Univ. of Oxford.
- (3112) ERTL, J. [Federal Minister of Food, Agriculture and Forestry], 1980. Verordnung über besonders geschützte Arten wildlebender Tiere und wildwachsender Pflanzen (Bundesartenschutzverordnung — BArtSchV). *Bundesgesetzblatt* (I) 1980 (54): 1565-1601.  
This is the official text of the (German Federal Republic) Federal Species Conservation Act (BArtSchV), dated Aug. 25, 1980, published and in force Aug. 30, 1980. All native ('einheimische') odon. spp., without exception, are put under protection, and, in

addition, the following are 'specially emphasised' ('besonders hervorgehoben'): *Aeshna coerulea*, *A. viridis*, *Ceriagrion tenellum*, *Coenagrion armatum*, *C. ornatum*, *Cordulegaster bidentatus*, *Gomphus vulgatissimus*, *Leucorrhinia albifrons*, *Onychogomphus uncatus*, *Ophiogomphus serpentinus*, *Orthetrum brunneum* (Art. 1 and Appendix). It is forbidden to collect, keep specimens, disturb, etc. all spp. (Art. 3/2-2), but this does not affect measures needed in connection with game- and fishery activities, provided the specimens so obtained are not passed on or traded to a third party (Art. 3/2-3). This Act applies to the territory of West Berlin as well (Art. 11). — (*Abstracter's Notes*: After Japan and India, this is the third case of Odon. being included in a national conservancy legislation, and the first time the whole Order is placed under total protection throughout a national territory. The German fauna does not include any endemic taxa, and the so called "rare" spp. are solely so due to the local paucity of adequate habitats, or because of the marginal situation of the German territory in relation to the geographic range of the taxa concerned. The criteria, therefore, adopted in the compilation of the appended list of "specially emphasised spp.", are not clear. These cannot include such aspects as e.g. "rarity" (e.g. *Epithea bimaculata* is missing), nor the "extreme range limit" (should probably include *Platycnemis latipes*, *Crocothemis erythraea*, "habitat specificity", or "extinction threat". — The following are a few, out of many, objections that could be brought up against the Act: (1) From the nature conservancy credibility point of view it is awkward placing under legal protection a whole order, many members of which are among the most common, widespread and familiar aquatic insects of the national countryside. The more so since, — (2) There is not a single case known in the world that an odon. sp. or population would be threatened by overcollecting. Due to their amphibic life history, mostly non-synchronous emergence, and the topographic distribution of teneral/mature adults, it is

technically practically impossible to remove a significant number of individuals (adults, larvae, eggs) from a population by means of mere mechanical collecting. (According to the S.I.O. evidence, there were, in 1980, less than 100 amateur and professional odonatologists and dragonfly collectors in the Federal Republic — in a total population of close to 62 millions). The few recently extinct taxa (all in Israel), and countless populations were invariably destroyed by the destruction of habitats. The Act does not include any stipulations in this aspect, thus not providing for effective conservation of any sp. or population at any place. Instead, it explicitly permits killing caused by measures conditioned by "economic" requirements. The latter circumstance, aside from rendering the Act useless for the achievement of the set objective, also brings up — (3) the legal problem of the "equality before the law" e.g. a hobby angler is allowed to keep his fishing water free from vegetation hindering the fishing, thereby killing millions of odon. larvae and eggs, while an (amateur) entomologist is committing a legal offense by collecting a single specimen of a common sp. at the same water. — (4) The Act will greatly discourage the amateurs, who have hitherto, in countless cases, warned the authorities about the status of certain spp. in certain areas, rendering thereby an invaluable service to nature conservancy. The argument that local spp. lists could be compiled by sight recording (incl. photography) can, in most cases, not be taken seriously. Although much depends on the qualification of the recorder, certain taxa simply cannot be identified without collecting, and a reliable specimen documentation is imperative in any serious faunistic work. — (5) The administrative burdens caused by the Act will inevitably result in a general decrease of interest in the Order among the youth. They will also diminish the role dragonflies, as the largest easily accessible and common insects, play in biology-teaching schemes on all levels. Research projects using odon. material are likewise to tend to replace the latter, when possible, by some other, legally

more easily available organisms. Consequently, it is feared that the significant role German workers have played in odonatology for nearly 2 centuries, will be endangered. — (6) Last but not least, it should be stressed that during the various stages of the preparation of the Act, not a single qualified German odonatologist has ever been notified, let alone been consulted on the technical aspects and editing of the text).

- (3113) EVANS, M.A. & H.E. EVANS, 1980. Swarming of *Leucorrhinia hudsonica* (Selys) (Odonata: Libellulidae). *Pan.-Pacif. Ent.* 56 (4): 292. — (*Dept. Zool. & Ent., Colorado St. Univ., Fort Collins, Colorado 80523, USA*).  
 July 10, 1980 the swarm was observed along a partially shaded dirt road near the Yellowstone and Grand Teton National Parks, USA. "Several hundred" of dragonflies (mostly ♂♂) were flying up and down in such a way that the space above the road seemed undulating. The swarm extended about 200 m along the road, and up to a height of 3-4 m. No other odon. sp. was observed, and all individuals collected were mature. — (*Abstracter's Note*: In view of the size of the swarm and of the impression of "undulating", the estimate of the number of individuals at "several hundred" seems much too low).
- (3114) EVANS, P.D., 1980. Biogenic amines in the insect nervous system. *Adv. Insect Physiol.* 15: 317-473. — (*Dept. Zool., Univ. Cambridge, Downing Str., Cambridge CB2 3EJ, UK*).  
 The subject is monographically reviewed and on p. 332 a reference is made to biogenic amine cell localization in *Aeshna cyanea* and *A. viridis* (Cf. also *OA* No. 2479).
- (3115) FARAGHER, R.A., 1980. Life cycle of *Hemicordulia tau* Selys (Odonata: Corduliidae) in Lake Eucumbene, N.S.W., with notes on predation on it by two trout species. *J. Aust. ent. Soc.* 19 (4): 269-276. — (*New South Wales Fisheries, 211 Kent Str., P.O. Box N189, Sydney, N.S.W., AU*).

From larval samples collected over a 23 month period it was found that *H. tau* is a univoltine summer sp. in Lake Eucumbene, N.S.W., Australia. The emergence takes place from Dec. to April. Measurements of larvae from the diet of rainbow trout (*Salmo gairdneri*) and brown trout (*S. trutta*) indicate size selective predation, with a fish selecting the larger larvae from the population.

- (3116) FERRERAS ROMERO, M., 1980. Los odonatos de Sierra Morrena central. PhD thesis, Univ. Sevilla, Córdoba. III+221 pp., 1 col. pl. incl., 19 pls excl. — (*Dept. Zool., Fac. Cienc., Univ. Córdoba, Córdoba, Spain*).  
The odon. fauna (41 spp.) of the central Sierra Morena, Córdoba, Spain, is outlined and the ecology of the habitats is described in detail. *Trithemis annulata* is recorded as new to Spain, and its larva is illustrated. 15 spp. were not previously recorded from Andalusia. For each sp. the usual collection data of the material studied are given along with its biological, autecological and zoogeographical characterisation. The local phenology of the adults is analysed and discussed in terms of the observations in other regions. Some aspects of the ecology of the fauna are outlined. — (*Abstracter's Note*: The first Spanish record of *T. annulata* was published in 1979 by M.A. Lieftinck; cf. *OA* No. 2986).
- (3117) FRANZ, H.P., 1980. Limnologische Untersuchung des Gewässersystems Dhron (Hunsrück). *Decheniana* 133: 155-179. (With Engl. s.). — (*Inst. Landwirt. Zool., Melweg 42, D-53 Bonn-1, GFR*).  
Larvae of *Calopteryx splendens*, *C. virgo* and *Cordulegaster boltoni* are recorded from the Dhron R. and some of its tributaries, Hunsrück Hills (S of the Meuse), German Federal Republic.
- (3118) GLOYD, L.K., 1980. The taxonomic status of the genera *Superlestes* and *Cyptolestes* Williamson, 1921 (Odonata: Lestidae). *Occ. Pap. Mus. Zool. Univ. Mich.* 694: 1-3. — (*Mus. Zool., Univ. Michigan, Ann Arbor, Mich. 48109, USA*).  
The monotype genera *Superlestes* Williamson, 1921 and *Cyptolestes* Williamson, 1921, originally primarily defined in venational terms, are synonymised, on other structural grounds, with *Archilestes* Selys, 1862. The ranges of the 5 *Archilestes* spp. are briefly outlined. — (*Abstracter's Note*: For *Cyptolestes tuberculatus* read *C. tuberalatus*).
- (3119) IRSCH, W., 1980. Wassersport im Feuchtgebiet? *Kosmos* 76 (6): 450-458. — (*Author's address not stated*).  
11 odon. spp. are recorded from the large wetland between Remerschen and Wintzingen on the Meuse R., Luxembourg. The German vernacular names are stated only. This is the largest wetland area (275 ha) of Luxembourg, and it is endangered by various construction projects, incl. a planned super-highway.
- (3120) JESCHKE, L., G. KLAFS, H. SCHMIDT & W. STARKE, 1980. Handbuch der Naturschutzgebiete der Deutschen Demokratischen Republik. I. Bezirke Rostock, Schwerin und Neubrandenburg. *Urania*, Leipzig. 337 pp. numerous pls & map excl. — Price: M 27.—. — (*Authors' addresses not stated*).  
This is a revised ed. of the first of the 3 vols of the handbook of nature reserves in the German Democratic Republic. For 3 reserves in the district of Neubrandenburg some odon. data are furnished.
- (3121) KENNEDY, M.J., 1980. Host-induced variations in *Haematoloechus buttensis* (Trematoda: Haematoloechidae). *Can. J. Zool.* 58 (3): 427-442. (With Fr. s.). — (*Encovicoon Ltd., 1400-777 Hornby St., Vancouver, B.C., V6Z 1S4, CA*).  
The life cycle of *H. buttensis* was maintained in the laboratory by using the usual natural hosts: *Rana pretiosa*, *Physa nuttalli*, and *Ischnura perparva*. Morphological variations in important taxonomic characters of the fluke were studied and compared with those found when one of the usual hosts was replaced by a sympatric, but usually

uninfected, host. In all, 12 spp. of the latter were used, incl. *Ischnura cervula* and *Aeshna palmata*.

- (3122) KOMATSU, A., 1980. Synaptic input driving respiratory motoneurons in dragonfly larvae. *Brain Res.* 201: 215-219. — (*Dept. Physiol., Tokyo Women's Med. Coll., Shinjuku-ku, Tokyo, 162, JA*). Intracellular recordings were made from respiratory motoneurons in *Anax parthenope julius*. Current injection into a motoneuron did not affect other respiratory motoneuron activity. Long-lasting hyperpolarizing current injection revealed that both inspiratory and expiratory motoneurons receive excitatory and inhibitory synaptic input with a reverse phase.
- (3123) ŁABEDZKI, A. & L. SAWKIEWICZ, 1980. Metoda indywidualnego znakowania wazek (Odonata) podczas wylęgu. (Method of individual marking of dragonflies (Odonata) during hatching). *Wiad. ekol.* 25 (4): 47-49. (Polish, with Engl.s.). — (First author: *Inst. Ochrony Lasu, Akad. Rolnicza, ul. Wojska Polskiego 71 C, PO-60-625 Poznan*; — Second author: *ul. Lenartowicza 8/2, PO-41-902 Bytom*). A short review of frequently applied methods for dragonfly marking is presented. In order to observe dragonflies immediately after moulting, a marking method where the wings are dyed immediately after being formed is discussed. Observations of marked imagines are conducted, and wing drawings of Zygoptera and Anisoptera, indicating the marked spots, are analyzed.
- (3124) LAROCHELLE, A., 1980. Le monde merveilleux des libellules. *Bull. Invent. Ins. Québec* 2 (3/4): 71-72. — (*Collège Bourget, C.P. 1000, Rigaud, Que. J0P 1P0, CA*). The article is a list of 26 statements of various noteworthy facts about dragonflies. Apparently, it is directed at secondary school pupils. — (*Abstracter's Note*: This is the last article in the issue concluding the second volume of this periodical. According to the editorial statement circulated to the subscribers with the same issue, the publication of the journal is herewith suspended until further notice. The same applies to the quarterly *CORDULIA*, edited by the same editor. The latter completed 6 volumes; the last issue was published in Dec. 1980. The 2 journals were throughout covered by *OA*, and the Editors of *Odonatologica* greatly regret that, due to the unforeseen circumstances, the 2 useful periodicals are forced to cease publication).
- (3125) LEGRAND, J., 1980. Nouvelles additions aux représentants afrotropicaux du genre *Elatoneura*; groupe *acuta-vrijdaghi* (Odonata, Protoneuridae). *Revue fr. Ent. (NS)* 2 (4): 153-161. (With Engl. s.). — (*Lab. d'Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris*). 2 new taxa are described and illustrated, viz. *E. acuta lindleyi* ssp. n. (♂ holotype, ♀ allotype: Bouar, Central African Republic, 3-IV-1975; various paratypes of both sexes from Central African Republic), and *E. girardi* sp. n. (♂ holotype, ♀ allotype, in copula: Lamoto, Ivory Coast; V-1968; various paratypes of both sexes from Ivory Coast and Nigeria). The types are in Mus. Natn. Hist. Nat., Paris. — *E. henrardi* Fraser, 1954 is synonymised with *E. acuta* Kimmins, 1938, and *E. tsiasmae* Aguesse, 1966 with *E. vrijdaghi* Fraser, 1954. — For the sake of convenience, and based on the distribution of black and light patches in both sexes, the *acuta-vrijdaghi* group is proposed, embracing *acuta*, *girardi* and *vrijdaghi*. — R. Lindley's 1976 key (*Odonatologica* 5: 153-164) is modified.
- (3126) MACHADO ALLISON, C., 1980. Janis Racenis Petersen [recte Peterson]. *Noticias, Univ. Centr. Venezuela, Caracas* 1980 (55): 1. (Spanish). — (*Author's address not stated*). A brief obituary and biographic sketch of the late Prof. Dr. J. Racenis. (For a more exhaustive biography, odonatol. bibliography, list of odon. taxa described by him, and for the evaluation of his odonatol. work cf. *Odonatologica* 9 [1980]: 125-129, portrait

- incl.). Cf. also *OA* No. 3098.
- (3127) MIKKOLA, K., 1980. Bericht über die Insektenwanderungen im Jahre 1979 in Finnland. *Atalanta* 11 (3): 176-180. — (*Inst. Zool., Univ. Helsinki, P. Rautatiekatu 13, SF-00100 Helsinki-10*).  
In May, 1979 massive occurrence of dragonflies took place on the southern coasts of Finland, though a proper large-scale migration was not observed. On May 25, the density was about 1 individual per min., migrating eastwards. The spp. involved were *Libellula quadrimaculata* and *Leucorrhinia rubicunda*. — For the 1978 spring migrations in Finland cf. *OA* No. 2974.
- (3128) MILNE, L. & M. MILNE, 1980. The Audubon Society field guide to North American insects and spiders. Knopf, New York. 992 pp., 702 col. figs. incl. — Price: US \$ 9.95. — (Authors: *Univ. New Hampshire, Durham, New Hampshire, USA*).  
This general and popular 'field guide' is listed here because of the 36 odon spp. it includes, col. photographs (figs 343-378) of many of which are not frequently found in literature, though quite a few anisopterans were apparently photographed in narcotized condition and are shown in unnatural positions. The overall quality of the illustrative material is considerably below the standard of similar works in Europe (e.g. *OA* No. 2121) and Japan (e.g. *OA* No. 2703). An attempt has been also made to provide vernacular names for all spp. There are but few genuine specific dragonfly names, therefore most of them had to be artificially constructed. Some of them are most unfortunate, particularly those combining the taxonomic name with an Engl. adjective (e.g. 'Dark Lestes', 'Small Western Gomphid'). Some well-known and widespread names (e.g. 'Green Jacket' for *Erythemis simplicicollis*) are replaced by new 'synonyms'. In the text section, the notes on food seem rather superfluous, and the information given under the heading 'Life Cycle' (for each sp.) is often not optimally organized.
- (3129) MÜLLER, J., 1980. Libellenfunde (Insecta, Odonata) in Naturschutzgebieten des Bezirkes Magdeburg, DDR. *Arch. Naturschutz & Landschaftsforsch.*, Berlin 20 (3): 145-153. (With Russ. & Engl. s's.). — (*Pablo-Neruda-Str. 9, DDR-3034 Magdeburg, GDR*).  
For 4 nature reserves in the district of Magdeburg, German Democratic Republic, annotated lists of the odon. faunas are presented. *Coenagrion ornatum*, *Erythromma viridulum*, *Ischnura pumilio*, *Lestes barbarus*, *Orthetrum brunneum*, *O. coerulescens* and *Sympetrum pedemontanum* are the most notable spp.
- (3130) ORMON, T., 1980. Trout and salmon sport in New Zealand. An angling anthology. Reed, Wellington. 190 pp. — (*Author's address not stated*).  
Pp. 156-161 comprise a chapter, by various authors, on artificial fly innovations. The original patterns of the Green Marabou designed by G. Kemsley, Taupo, New Zealand, was tied to imitate the dragonfly larva ("mudeye"). It is said to fish extremely well in shallow or still water. (Cf. *OA* No. 2962).
- (3131) PWC, 1980. The conservation of dragonflies. [By D. Chelmick, C. Hammond, N. Moore & A. Stubbs]. *Bull. Amat. ent. Soc.* 39 (329): 185.  
A book review of the volume listed in *OA* No. 2925.
- (3132) REICHHOLF, J., 1980. Massenansammlung der Keiljungfer *Gomphus vulgatissimus* (Linnaeus 1758) am Neusiedler See. *Mitt. zool. Ges. Braunau* 3 (10/12): 291-292. (With Engl. s.). — (*Author's address not stated*).  
An aggregation of many thousands of adults of this sp. was observed, May 25, 1978, in a woodland plot near the village of Illmitz on the Neusiedler lake, Austria. The aggregation was obviously caused by strong northeastern winds, which made the dragonflies take shelter in the low vegetation and bushes of the nearby woodland.
- (3133) REIMCHEN, T.E., 1980. Spine deficiency

and polymorphism in a population of *Gasterosteus aculeatus*: an adaptation to predators? *Can. J. Zool.* 58 (7): 1232-1244. (With Fr. s.). — (*Drizzle Lake Ecol. Reserve, Box 297, Port Clements, Queen Charlotte Islands, Brit. Columbia, VOT 1R0, CA*).

A population of *G. aculeatus* from a muskeg lake on the Queen Charlotte Islands, British Columbia, Canada, shows a spine polymorphism, with 80% lacking the second dorsal spine and 68% lacking the pelvic spines. Females were more prevalent among phenotypes with greater spine number, and males were more common among those with fewer spines. Adult females, as well as juveniles of both sexes with pelvic spines, were more frequent in the limnetic habitat, whereas adult males and juveniles without pelvic spines were more common in the littoral region. *Aeshna* spp. larvae consumed juvenile fish in predation experiments and in the lake proper. Larvae were common in the littoral zone, where submerged debris provided substrate for foraging. It is proposed that spine loss in this population of *G. aculeatus* is an adaptation to the hunting technique of *Aeshna*, whereby reduced external structures such as spines minimize frictional contact for a grappling predator. Experimental data and other *Gasterosteus* populations are discussed with reference to this hypothesis.

- (3134) RETTIG, K., 1980. Das Vorkommen einiger Insektenarten in Ostfriesland. Teil IV. Privately published by the author, Emden. 4 pp. + 15 pp (with 84 distribution maps). — Price: DM 3.—. — (*Danziger Str. 11, D-297 Emden, GFR*).
- The 1980 records and distribution maps are presented for 8 anisopterans in Eastern Frisia, German Federal Republic. — (For earlier parts of the series cf. *OA* Nos. 2679, 2731, 3043).
- (3135) REYNOLDS, S.E., 1980. Integration of behaviour and physiology in ecdysis. *Adv. Insect Physiol.* 15: 475-595. — (*Sch. Biol. Sci., Univ. Bath, Claverton Down, Bath BA2 7AY, UK*).

The subject is monographically reviewed. The only reference to Odon. is on p. 531, referring to the destruction of the neurosecretory cells of the anterior protocerebrum, blocking ecdysis in *Aeshna cyanea* otherwise 'ready' to proceed. (Cf. *OA* No. 1611).

- (3136) ROWE, R.J., 1980. Records of the dragonfly *Pantala flavescens* in New Zealand, with notes on *Tramea transmarina* a possible immigrant (Odonata: Libellulidae). *N.Z. Ent.* 7 (2): 139-141. — (*Dept. Zool., Univ. Canterbury, Christchurch-1, NZ*).
- Notes are presented on the New Zealand records of the 2 spp. The temperature requirements of the larvae make it unlikely that either sp. will become resident in New Zealand.
- (3137) RUDOLPH, R., 1980. Die Ausbreitung der Libelle *Gomphus pulchellus* Selys 1840 in Westeuropa. *Drosera* 80 (2): 63-66. (With Engl. s.). — (*Abt. Biol. Didaktik, Univ. Münster, Fliegerstr. 21, D-4400 Münster, GFR*).
- The 1840-1980 records of *G. pulchellus* in western Europe are analysed. It is shown that the centre of its distribution is in France, from where, in the past 100 yrs, the sp. has invaded the western and northern regions of Germany, and Switzerland and the Netherlands.
- (3138) SCHIESS, H., 1980. Die Insektenfauna des Hochmoores bei Hasle, Kanton Luzern. IX. Odonata (Libellen). *Ent. Ber. Luzern* 1980 (4): 23-24. — (*Brüglenstr. 1, CH-8344 Adetswil*).
- 5 spp., earlier recorded from Balmoos, Hasle, canton Luzern, Switzerland, (cf. *OA* No. 2698) are discussed. In view of the occurrence of *Somatochlora arctica*, the locality is considered of some conservancy interest.
- (3139) SCHMIDT, E., 1980. Zur Libellenfauna holsteinischer Seen und Teiche. *Bombus* 2 (67): 266-267. — (*Biol. Didaktik, Univ. Bonn, Römerstr. 164, D-5300 Bonn-1, GFR*).



Lists are presented of odon. spp. recorded incidentally at 10 lakes and ponds in the province of Holstein, German Federal Republic.

- (3140) STARK, W., 1980. Ein Beitrag zur Kenntnis der Libellenfauna des nördlichen Burgenlandes (Insecta: Odonata). Burgenländische Heimatblätter, Eisenstadt 42 (2): 49-68. (With Engl. s.). — (*Burgenländisches Landesmus., Museumgasse 5, A-7000 Eisenstadt*).  
An up-to-date survey is given of the odon. fauna (48 spp.) of the Burgenland province, Austria, with special reference to the Neusiedler Lake region. Phenology, ecology and biological observations are discussed in detail.
- (3141) TÓTH, S., 1980. A Bakony hegység szitakötő faunája (Insecta: Odonata). (Die Libellen-Fauna des Bakony-Gebirges [Insecta: Odonata]). Resultat. Investigat. Rerum nat. Montium Bakony 13: 1-134. (Hungarian, with German s.). — (*Bakonyi Termész. Muz., Rákoczi tét 1, HU-8420 Zirc*). This is a voluminous monograph on the odon. fauna (51 spp.; 88% of the Hungarian fauna) of the Bakony Mts., a part of the Transdanubian Highlands, Hungary. The work is primarily based on over 10,000 collected specimens, though all literature records are also considered. For each sp. its Hungarian vernacular name, brief general characterization and a detailed account of the material are stated, and its regional distribution is mapped. Phenology graphs for the adults are provided, and a detailed analysis is given of the faunal composition and of the local abundance of all spp.
- (3142) URVANCEVA, G.A. & N.B. ZHOHOVA, 1980. Izuchenie belkov gemolimfy lichinok nekotoryh vidov strekoz metodom elektroforeza v poliakrilamidnom gele. [An inquiry into the proteins of the haemolymph of the larvae of some dragonfly species by means of polyacrylamide gel electrophoresis]. V.I.N.I. T.I., No. UDK-577.1. 9 pp. (Russian). — (*Yaroslavl St. Univ., Yaroslavl, USSR*; — detailed address not stated).  
Spp. studied are *Cordulia aenea*, *Libellula quadrimaculata*, *Orthetrum cancellatum*, *Sympetrum danae* and *S. flaveolum*. It is concluded that the protein spectre is peculiar both on the larval instar and on the species levels.
- (3143) VALTONEN, P., 1980. Die Verbreitung der finnischen Libellen (Odonata). Notul. entomol. 60: 199-215. (With Engl., Finn. & Swed. s's.). — (*Rantakuja 1 D 28, SF-36240 Nattari, Finland*).  
Distribution maps (10 x 10 km, Finnish E27° grid) and province tables are presented for the 51 odon. spp. known to occur in Finland.
- (3144) VERHOEVEN, J.T.A., 1980. The ecology of *Ruppia*-dominated communities in Western Europe. II. Synecological classification. Structure and dynamics of the macroflora and macrofauna communities. Aquat. Bot. 8: 1-85. — (*Dept. Landsc. Ecol. & Nature Manag., Univ. Utrecht, Opaalweg 20, Utrecht, NL*).  
The odon. larvae are reported from France (Camargue), the Netherlands (various localities; not specified), and Finland (Tvärminne). *Ischnura elegans* is the sp. most frequently recorded (France, the Netherlands). *Sympetrum nigrescens* from Tvärminne is for the first time reported from Finland (cf. OA No. 3143). The other *Ruppia*-associated spp. are: *Orthetrum* sp. and *Sympetrum striolatum* in France, and *Aeshna grandis* and *Orthetrum cancellatum* in Finland. The material was identified by Dr. D.C. Geijskes, Leiden, and is deposited in the Nat. Hist. Mus. Leiden, the Netherlands.
- (3145) WATSON, J.A.L., 1980. Apocordulia macrops, a new crepuscular gomphomacromiine dragonfly from south-eastern Australia (Odonata: Corduliidae). J. Aust. ent. Soc. 19 (4): 287-292. — (*Div. Ent., C.S.I.R.O., P.O. Box 1700, Canberra City, A.C.T. 2601, AU*).  
*Apocordulia* gen. n. is described. The type sp. is *A. macrops* sp. n. (♂ holotype with

associated larval skin: Kiewa R., Killara; collected 11/12-I-1978, emerged 18-X-1978: ANIC Type No. 9884; — various paratypes of both sexes from the same locality). The description and figures of the new sp. are supplemented with notes on its biology. The larval stage is not described.

- (3146) WEAVER, J.S., III & T.R. WHITE, 1980. A rapid steam bath for relaxing dry insects. *Ent. News* 91 (4): 122-124. — (Second author: *Dept Ent. & Econ. Zool., Clemson Univ., Clemson, South Carolina 29631, USA*).  
The steam-saturated environment of the described modified steam bath apparatus provides a safe and reliable method for relaxing dry specimens within 10-15 mm.
- (3147) WILDERMUTH, H., 1980. Die Libellen der Drumlinlandschaft in Zürcher Oberland. *Vjschr. naturf. Ges. Zürich* 125 (3): 201-237. — (*Mythenweg 20, CH-8620 Wetzikon*).  
The odon. fauna (32 spp., of which 23 with certainty autochthonous) of the "Drumlinlandschaft Zürcher Oberland", Canton Zürich, Switzerland, was studied during 1969-1978 (216 field trips). Detailed field observations are furnished for each sp. and special attention is being paid to the local phenology, data on reproductive activity, and to observations on the relationships between the habitat features and faunal diversity. Due to the relatively high number of spp. (incl. *Coenagrion hastulatum*, *Nehalennia speciosa*, *Calopteryx virgo*, *Leucorrhinia pectoralis*) the area is considered of particular odonatol. interest. The history of the local odon. biotopes is described, the conservancy problematics is pointed out, and various odon. conservancy measures are suggested. — (*Abstracter's Note*: The technical treatment of the subject is significantly superior to that in many similar papers appearing recently in the central European local literature).
- (3148) WINSTANLEY, W.J., 1980. A preliminary account of the habitat of *Antipodochlora braueri* (Odonata: Corduliidae) in New Zealand. *N.Z. Ent.* 7 (2): 141-148. — (*Zool. Dept., Victoria Univ., Private Bag, Wellington, NZ*).  
The microhabitats utilised by the larva and adult of this crepuscular, forest inhabiting sp. are discussed, and observations of the behaviour of adult and immature stages in their habitats are recorded.
- (3149) WINSTANLEY, W.J., 1980. Odonata in the Urewera National Park. *N.Z. Ent.* 7(2): 148-149. — (*Zool. Dept., Victoria Univ., Private Bag, Wellington, NZ*).  
9 spp. are recorded from the Urewera National Park, North Island, New Zealand, Feb. 5-9, 1979. (Cf. also *OA* Nos 2907, 2975).
- (3150) WRIEDT, S., & M. SCHÖN, 1980. Zur Kenntnis der Libellenfauna eines Weiher bei Preetz. *Heimat, Kiel* 87: 433. — (*Pohnsdorfer Str. 7, D-2308 Preetz, GFR*).  
A list is given of 20 spp. evidenced during 1979-1980 at a pond near Preetz, 10 km SE of Kiel, German Federal Republic. Of some interest is the occurrence of *Coenagrion hastulatum* and (as a guest) *Calopteryx splendens*.
- (3151) YAMAMOTO, Y., 1980. [Dragonflies from Ochiguchi, Toba City, Mie Pref., Honshu, Japan]. *Hirakura* 24 (2): 18-30. (Japanese, with Latin taxonomic names, and Engl. capture dates). — (*Inafune Bldg., Inafune-dori 1-2, Chigusa-ku, Nagoya City, 464, JA*).  
An annotated list is given of 50 spp., taken during 1967-1978 in the said area.
- (3152) ZÜRCHER LIBELLENFORUM. Compiled by H. Schiess (*Brüglenstr. 1, CH-8344 Adetswil*). Nos. 3, 4 (December, 1980).  
The 2 issues are concerned entirely with work on the Odon. mapping scheme of the Canton Zürich, Switzerland (cf. *OA* No. 2858). No. 3 contains information on the funds received from the Zürich Ent. Soc. (sFr. 500.—), some technical information on the progress of the scheme, and a list of new records of 11 spp. considered of particular

interest. — No. 4 contains the address list of the members of the club.

### 1981

- (3153) KIAUTA, B., 1981. Annotated catalogue and bibliography of taxa introduced in Odonata from 1971 to 1980. *Societas Internationalis Odonatologica*, Utrecht. 63 pp. — Price Hfl. 20.— net. — (Orders to be sent to the Editors of *Odonatologica*, c/o Dept. Anim. Cytogenet. % Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL).  
Between Jan. 1, 1971 and Dec. 1, 1980 (the December 1980 period is not covered), 47 authors, in 126 papers, have introduced 249 new taxonomic names (emendations and level changes excl.). These include 1 subfamily, 6 genera, 3 subgenera, 196 spp., 31 ssp., and 12 'morphs', 'forms' and 'aberra-

tions' of no status under the Code. This includes the fossil taxa as well. — The booklet, published in the framework of the Sixth International Symposium of Odonatology, consists of a Catalogue (pp. 9-44) and of a Bibliography (pp. 45-62). In the Catalogue all new taxa and other names introduced in the Order during the said period are listed in alphabetic sequence within the respective families, along with text and figure citations, collection, condition and deposition data on the holotypes, and locality data on the first described specimen of the opposite sex ('allotype'). Where necessary, brief notes on synonyms, nomina nuda, on the status under the Code, etc. are also provided. The Catalogue is cross-referenced with the annotated Bibliography.