

ODONATOLOGICAL ABSTRACTS

1971

- (2501) BAYNES, E.S.A., 1971. Report on migrant insects in Ireland for 1970. *Ir. nat. J.* 17 (2): 32-33. — (*Author deceased*).
At Cloyne, Co. Cork, 6 *Sympetrum striolatum* were observed on a gravel path on Aug. 1, 1970. It was thought possible that this was an indication of a small immigration.

1972

- (2502) ANSELIN, A., 1972. Libellen in de kleiputten van Hoeke. [Dragonflies of the claypits in Hoeke]. *Stentor* 10 (2): 26-30. (Dutch). — (*Diksmuide Heirweg 114, B-8200 Brugge-2*).
Field notes on 6 spp. in the Hoeke area nr. Brugge, Belgium.

1973

- (2503) (Anonymous), 1973. *Natuurgids: libellen*. [Nature Guide: dragonflies]. Arnhemse Courant, Arnhem 1973 (Aug. 31), 1 p. (sep.) (Dutch).
A popular talk on dragonflies in a local daily.
- (2504) LAIRD, M., 1973. Dragonflies versus mosquitoes again. *Mosquito News* 33 (Sept.): 2 pp. (sep.). — (*Res. Unit Vector Pathol., Memorial Univ. Newfoundland, St. John's, Newfoundland, CA*).
A reference is made to the observations recorded by W.H. Hudson (1892, *The naturalist in La Plata*. Chapman & Hall, London) and R.H. Lamborn (1890, *Dragonflies vs. mosquitoes*. Appleton, New York)

according to which "clouds of mosquitoes disappear as if by magic" in the area where a small number of dragonflies would suddenly appear. They have not been devoured by the dragonflies, which are perhaps very few in number, but rather get simply out of their way. It is suggested that it would be worthwhile to examine whether or not the mosquito reaction is due to a kind of a dragonfly pheromone or some other substance which "warns off" mosquitoes. If so, it would be certainly worthwhile to try to analyse and to synthesize it as a basis for a biting fly repellent.

- (2505) PEARLSTONE, P.S.M., 1973. The food of damselfly larvae in Marion Lake, British Columbia. *Syesis* 6: 33-39. — (*Dept. Zool., Biol. Sci. Cent., Univ. Alberta, Edmonton, Alberta, T6G 2E9, CA*).

A population of weed-dwelling *Enallagma boreale* larvae in Marion Lake, B.C., Canada, was sampled at regular intervals (June 30, 1969 - July 28, 1970) for the purpose of obtaining information regarding feeding habits. The larvae sampled were measured and their gut contents were determined. The food consisted mainly of Cladocera and larval Chironomidae, although many types of prey were eaten. Cannibalism was not prevalent in the population. The amount of food eaten per larva varied throughout the yr. Different food items were prominent in the guts of individuals sampled in different habitats of the lake. Large larvae ate the same prey items as smaller ones, but consumed more. It appears that the larvae feed predominantly

during the daylight hours. (Author).

- (2506) POOSCH, H., 1973. Zum Vorkommen und zur Populationsdynamik von Libellen an zwei Kleingewässern in Mittelmecklenburg. Natur und Naturschutz Mecklenburg 11: 5-14. — (DDR-2051 Schorrswow, Kr. Teterow, GDR).

The Odon. fauna of the Nature Reserve Mittelsee and of a moorland lake, both situated nr. Malchin, Province of Mecklenburg, GDR, were recorded for 3 yrs. An extensive description of the vegetation is given for both sites. For the Nature Reserve Mittelsee 22 spp. are listed, including *Aeshna viridis*, which, though *Stratiotes aloides* was missing, was abundant. It oviposited in *Equisetum fluviatile* and *Eleocharis palustris*. 26 spp. are recorded from the moorland lake, among which the autochthonous *Epithea bimaculata* is of interest. Some data on the flight periods of certain spp. are correlated with climate data.

1974

- (2507) ANSELIN, A., 1974. Libellenverslagje Fonteintjes. [Report on the Fonteintjes dragonflies], Roerdomp 15: 5-6. (Dutch). — (*Diksmuide Heirweg 114, B-8200 Brugge-2*). Field notes on 5 spp. encountered at this locality nr. Brugge, Belgium, during 7 excursions, 1971-1973. Of interest is a very late record of *Sympetrum sanguineum* (Nov. 1, 1971).
- (2508) DÉVAI, G., 1974. A biológiai vizminőség-vizsgálatok lehetőségei a szitakötők (Odonata) chorológiai-ökológiai feldolgozása tokrében. — [On the possibilities of water quality research based on chorological-ecological investigations of dragonflies], Kand. Érték. Téz., Kossuth Lajos Univ., Debrecen. 15 pp. (Hungarian). — (*Weszprény u. 4/14, HU-4028 Debrecen*). This is a brief summary of an unpublished PhD thesis of the Kossuth Lajos University, Debrecen, Hungary.

1975

- (2509) BENOIT, P., [Ed.], 1975. Noms français

d'insectes au Canada avec noms latins et anglais correspondants — French names of insects in Canada with corresponding Latin and English names. 4th ed. Dép. Agric. Québec, Montreal. X + 214 pp. — Price: Can. \$4.—. — (*Author's address unknown*). This is the recent, essentially enlarged and updated edition of the work published originally in 1947. The volume is the outcome of the cooperation of close to 50 specialists. The following odon. genera are listed: *Aeshna*, *Argia*, *Calopteryx* (sub *Argion*), *Lestes*, *Libellula*, *Somatochlora* and *Sympetrum*. Some of these are represented by one, the others by several spp. The introductory chapters are bilingual, French and English.

1976

- (2510) CRICH, W.A., 1976. The green dragonfly. *Photogr. Soc. Am. J.* 1976 (June): 22-23, 30. — (*Author's address unknown*). The article gives some technical suggestions for the indoor photography of the emergence of *Anax junius*.
- (2511) MARTENS, K., 1976. Wetenschappelijk verslag zomerkamp Argonne. 4. Libellen. [Scientific report on the summer workshop Argonne. 4. Dragonflies]. *Beenbreek* 8 (7): 19-20. (Dutch). — (*Mastplein 19, B-2710 Hoboken*). An annotated list is given of 24 spp. collected in some ponds and rivulets in the Argonne area, Belgium, July 1-13, 1976.
- (2512) MARTENS, K., 1976. Enkele gegevens over de evolutie van de libellenstand van de Hobokense Polder. [Some data on the evolution of the status of the dragonfly fauna of the Hobokense Polder]. *Beenbreek* 8 (7): 30-32. (Dutch). — (*Mastplein 19, B-2710 Hoboken*). 17 spp. are listed for the Hobokense Polder nr. Antwerpen, Belgium, collected in 1960, 1975-1976, and the diminishing of the fauna, caused by the environmental changes in the polder, is discussed. — (For an up-to-date account of the odon. fauna of this locality cf.

OA No. 2415).

- (2513) VERLINDEN, C.L., 1976. Insekten in Bokrijk: 27 juli - 3 augustus. Libellen. [Insects in Bokrijk: July 27 - August 3. Dragonflies]. *Drekvlieg* 2 (3/4): 9-10. (Dutch). — (*Lombardenstr. 12, B-2000 Antwerpen*).

11 odon. spp. are listed from this locality nr. the city of Antwerp, Belgium. — (*Abstracter's note*: The paper deals with various insect orders; the above pagination refers to the odon. chapter only).

1977

- (2514) (Anonymous), 1977. La véritable histoire de *Pyrrhosoma nymphula*, la petite nymphe au corps de feu. *La Hulotte des Ardennes* 1977 (13): 2-19. (Editorial address: *Journal La Hulotte, La Berlière, F-08240 Buzancy*).

This is a popular, (pen) illustrated account on the biology, behaviour and life history of *P. nymphula*, directed at the young readers.

- (2515) HOFSLUND, P.B., 1977. Dragonfly attacks and kills a Ruby-throated Hummingbird. *The Loon* 49 (4): 238. — (*Biol. Dept., Univ. Minnesota, Duluth, Minn. 55812, USA*).

In the 3rd week of July, 1977 an *Anax junius* was observed to seize and kill an adult male hummingbird. The bird was grasped from below while in flight and the dragonfly buried its head and mandibles in the breast. Locked together, the 2 fell to the ground and after a few ineffective wing vibrations, the bird died either from the bite or from massive shock. The dragonfly then flew away with its prey. A similar attack by a dragonfly was reported by Bent (*Bull. U.S. natn. Mus.* 197, p. 349. Dover Edition), but in that case the bird survived. This is the first known case that the dragonfly actually flew away with the prey.

- (2516) HUTCHINSON, R. & A. LAROCHELLE, 1977. Manuel d'identification des Libellules du Québec. *Cordulia* (Suppl.) 4, 102 pp. — Price: Can \$7. —. — (*Coll. Bourget, C.P. 1000, Rigaud, Que., JOP IPO, CA*).

This is a manual for identification of the 133 odon. spp. known to occur in Quebec, Canada. It has been prepared for the use of young amateur collectors, and has been printed in 100 copies only. The book is well illustrated, though most of the illustrations are not original. — (*Abstracter's note*: (1) The book is out of print, but in case of urgent need copies or xerox are still available from the author. — (2) For a catalogue of and the bibliography on the Odon. of Quebec, by the same authors, cf. OA No. 1901).

- (2517) LEJEUNE, G., 1977. Libellentrekverslag. [Report on dragonfly migrations]. *Roerdomp* 17 (4): 45-48. (Dutch). — (*Pieter-de-Conincklaan 18, B-8200 Brugge-2*). Observations on migratory flights of *Aeshna cyanea*, *A. mixta*, *Sympetrum danae* and *S. striolatum*, recorded in 1973, 1975 and 1976 in the surroundings of the city of Brugge, Belgium, are listed and briefly discussed.

1978

- (2518) (Anonymous), 1978. *Erasipteron bolsoveri*. *Mine & Quarry* 7 (6): 18.

A general magazine's note on the discovery of the fossil as mentioned in OA No. 2403. — (*Abstracter's notes*: For similar popular notes and articles cf. OA Nos. 2519, 2521, 2544. — The formal description has appeared on June 28, 1979; cf. OA No. 2582).

- (2519) (Anonymous), 1978. Miner finds prehistoric dragonfly. *The Daily Telegraph*, issue of March 10, p. 8.

A daily's note on the discovery of the fossil remains as mentioned in OA No. 2403. (Cf. also OA No. 2518).

- (2520) (Anonymous), 1978. Montgomery honored. *Purdue Agric. Rep.* 7 (4): 14.

A brief biography of Dr. Basil Elwood Montgomery, professor emeritus of the Purdue Univ., Indiana, USA, and one of the outstanding North American odonatologists, on the occasion of his Honorary Doctor of Science promotion, is accompanied by a portrait. — (Cf. also OA No.

- 2275).
- (2521) (Anonymous), 1978. Oldest flying creature was at home in Bolsover. *The Times*, issue of March 10, p. 23.
A daily's note on the discovery of the fossil remains as mentioned in *OA* No. 2403. (Cf. also *OA* No. 2518).
- (2522) CASPERS, N. & B.P. KREMER, 1978. Das Hohe Venn. Europäische Landschaft im Deutsch-Belgischen Naturpark. Rheinische Landschaften 14: 3-31. — (*Kekule Str. 29, D-5300 Bonn-1, GFR*).
The Odon. are dealt with on p. 18 (colour photographs of *Leucorrhinia dubia* and *Somatochlora arctica*) and 20. The nature reserve, Hohe Venn, is situated in the area S of Aachen (German Federal Republic) and at some distance from Liege (Belgium), between the cities of Monschau, Eupen and Malmédy. The odon. fauna is characterized by a high percentage of boreo-alpine faunal elements. The spp. mentioned are *Aeshna juncea*, *A. subarctica* and *Somatochlora arctica*.
- (2523) de ABENANTE, Y.P., 1978. Morfologia externa del tercer estadio larval de *Aeshna* (*Neuroclippa*) *bonariensis* Rambur 1842 (Odonata, Anisoptera). *Revta Fac. Humanid. Cienc., Montevideo (Biol.)* 1 (3): 29-48. (Spanish). — (*Dept. Ent., Fac. Humanid. & Cienc., Univ. de la Republica, Cerrito 73, C. Correo 1240, Montevideo, Uruguay*).
The external morphology of the 3rd instar larva of *A. (N.) bonariensis* is described, illustrated and compared to that of *Anax junius*.
- (2524) DONATH, H., 1978. Bemerkenswerte Libellenfunde in der nordwestlichen Niederlausitz (Odonata). *Ent. nachr.* 22 (10): 163-165. — (*Jahnstr. 6, DDR-796 Luckau, GDR*).
Notes are given on *Erythromma viridulum*, *Nehalennia speciosa*, *Lestes barbarus*, *Anaciaeschna isosceles* and *Orthetrum brunneum* from the northwestern Niederlausitz, German Democratic Republic.
- (2525) DUBITSKIY, A.M., 1978. Biological control of bloodsucking flies in the USSR. *Nauka, Alma-Ata*. 267 pp. (Russian, with Engl. s.). — (Publishers' address: *Ul. Shevchenko 28, USSR-480021 Alma-Ata, Kazakhstan*).
Ischnura elegans, *Anax parthenope*, *Orthetrum brunneum* and *O. cancellatum* are listed as important predators on mosquitoes and horseflies in the USSR. Data on their dispersal, abundance, diet, and seasonal and daily activity are stated.
- (2526) GOGALA, M., 1978. Odonatologica, *Journal of the Societas Internationalis Odonatologica s.i.o. Biol. Vestn.* 26 (1): 77. (Slovene). — (*Inst. Biol., Univ. Ljubljana, Aškerčeva 12, P.O.B. 141/3, YU-61001 Ljubljana*).
Book review of Vols. 1-7 (1972-1978).
- (2527) LAVOIE, J., J.-G. PILON & M.A. ALI, 1978. Étude histologique et morphométrique de la croissance de la partie optique de l'oeil composé d'*Enallagma boreale* Selys (Odonata: Coenagrionidae). *Revue can. Biol.* 37 (3): 157-179. (Fr., with Engl. s.). — (*Dep. Sci. biol., Univ. Montreal, C.P. 6128, Montreal, Que. H3C 3J7, CA*).
The morphology of the optical part of the *E. boreale* compound eye remains unchanged during its post-embryonic development. The cornea, composed of the epi-, exo- and endocornea, is in perfect continuity with the larval cephalic cuticle. Consequently these two structures possess the same three layers and have a similar process formation. But the measurements from cephalic endocuticle and endocornea of the adult differ significantly from each other. The latter has a lamellar aspect. It appears that the cornea reaches its morphometric characteristics as early as the pre-emergence stage. The nuclei of the two primary pigment cells which have maintained their epidermic nature, are located at each side of the apex of the crystalline cone. The nuclei of the secondary pigment cells are uniformly distributed in the optical part of the larval eye. In the adult, the nuclei migrate to the junction of the optical and photosensitive parts. The larval

and adult crystalline cones differ morphometrically. The larval one is longer and narrower and reaches its adult characteristics just before emergence. Statistical tests do not show any significant difference between the dorsal and the ventral parts of the larval and adult compound eyes. (Authors).

- (2528) MAY, M.L., 1978. Energy metabolism and heat exchange in flying dragonflies (Odonata: Anisoptera). *Jl N.Y. ent. Soc.* 86 (4): 307-308. [Abstract only]. — (*Dept. Ent. & Econ. Zool., Cook Coll., Rutgers Univ., New Brunswick, NJ 08903, USA*).
[Verbatim text]: Energy metabolism of dragonflies in flight was estimated from data on body temperature in the field, on flight speed, and on variation in heat loss as a function of flight speed. Ranges of metabolic rate in each of 7 spp. varied from $0.98-2.9 \times 10^{-2}$ W in *Miathyria marcella* to $11.2-20.2 \times 10^{-2}$ W in *Macromia taeniolata*. Mean body mass ranged from 0.2-1.2 g. and energy expenditure increased approximately in proportion to mass. Metabolic rates were comparable to maximum rates in dragonflies during endothermic warm-up. These data were also compared to extensive data from the literature on flight metabolism of other insects. Dragonflies have slightly lower rates of metabolism in flight than most other insects, despite a relatively large mass of flight muscle. The low metabolism correlates with their low wing loading and with the unusual histology of their wing muscles. Data on heat exchange at various wind speeds suggest that heat loss in dragonflies can be roughly described by a simple model of 2 resistances in series and that the degree of thermal insulation may be adapted to thermoregulatory requirements.
- (2529) NATURKUNDLICHE STATION LINZ, 1978. Phänologische Letztbeobachtungen 1978 im Bereich der Naturkundlichen Station. *Apollo* 1978 (53/54): 20. — (*Naturkundl. Station Linz, Rosegger Str. 22, A-4020 Linz*).
In the area of the Nat. Hist. Station of Linz, Oberösterreich, Austria, the last dragonfly was observed on wings in the 1978 season on Oct. 7. The specific name is not stated.
- (2530) NAUMANN, C.M., 1978. Zur Tierwelt des "Grossen Pamir", pp. 201-213, col. figs. 33-42 excl. *In: R. Senarclens de Grancy & R. Kostka, [Eds.], Grosser Pamir. Österreichisches Forschungsunternehmen 1975 in den Wakhan-Pamir/Afghanistan. Akademische Druck- & Verlagsanstalt, Graz. XII + 400 pp. + 86 col. ill. excl. + 5 inserted maps. Price: öS 350.— (Author's address: Inst. Zool., Univ. Bielefeld, Bielefeld, GFR)*.
The author is a mammalogist and the paper mainly deals with the vertebrate and lepidopteran fauna. On fig. 35, however, a large colour field photograph is shown of the adult *Aeshna juncea mongolica* (Ishkashim, Pamir 2500 m; July 26, 1975). This is probably the first photograph of this sp. ever published, and a reference is made to the migrations of this sp. from the valley to higher altitudes. — (Cf. also J. Wojtusiak, 1974, *Odonatologica* 3: 137-142).
- (2531) O'CONNOR, J.P., 1978. Fly-killing aerosol sprays: a useful aid for the freshwater entomologist. *Entomologist's Rej. J. Var.* 90: 297-299. — (*Natn. Mus. Ireland, Killdare Str., Dublin-2, Eire*).
The aerosol spray technique for collecting freshwater insects, incl. Odon., is described.
- (2532) OLBERG, R.M., 1978. Visual and multi-modal interneurons in dragonflies. PhD thesis, Univ. Washington. 146 pp. — (*Schneider Abt., Max Planck Inst. Verhalten Physiol., D-8131 Seewiesen, GFR*). — Microfilm or xerox copy available (refer to Order No. 7820760) at University Microfilm International, Dissertation Copies, P.O.B. 1764, Ann Arbor, Mich. 48106, USA. — Price depends on the country of the customer: US \$7.50-11.50 and 15.00-23.00 resp., library binding of the latter \$3.00 extra. [Verbatim abstract from *Diss. Abstr.* 39, 5 (1978): 2175-B]; (Chapter 1): The properties of large descending interneurons in *Anax junius* were studied by recording extracellularly between the pro- and meso-thoracic ganglia. They were electrically isolated by pulling out fine bundles of axons with a suction

electrode. 2 populations of neurons are compared which differed in their responses to visual stimulation. One population (target units) responded only to movements of relatively small contrasting objects (targets). The other population (background units) responded best to the movements of larger visual patterns, such as fields of stripes (gratings). Rapid response decrement with repeated stimuli was a consistent characteristic of target units. The response recovered when the moving target stimulus was presented in a different part of the receptive field of the unit. The background units did not share this decremental response property, but responded consistently to repeated presentations of the same stimulus. Rotation of the animal in a lighted laboratory environment elicited visual response of the background units, but not of the target units. All of the background units and most of the target units were directionally selective, i.e., they responded maximally to movement in a certain direction specific for each unit. For most of the background units, movement in the opposite direction was inhibitory. Target and background unit responses to various moving stimulus patterns were compared. Target units responded only when the length of the advancing edges was very short (less than 16° , visual angle). Increasing the advancing edge length increased the background unit responses slightly, but increasing the number of advancing edges resulted in greatly increased responses. It is proposed that target units extract information about small object movement within the visual sphere of the animal whereas the background units extract information about rotations and the animal itself. A possible role of the target units in prey capture is considered. — (Chapter 2): Background units were of 8 classes, based upon their preferred directions and sizes and locations of their receptive fields. Units of 6 of the 8 classes responded visually to both yawing and pitching rotations of the animal. The other 2 classes responded exclusively to yaw. In 2 recordings units were found, but not extensively studied, whose only responses were to roll. Although their velocity ranges varied, all of

the background units responded to increased stimulus pattern velocity with increased spike frequency and decreased latency. The lowest velocity threshold measured was between 0.5 and $1.0^\circ/\text{sec}$. Within the range of $8^\circ/\text{cycle}$ to $22^\circ/\text{cycle}$, the responses of the background units to patterns of varying stripe width were nearly constant both in average spike frequency and in response latency, except at high velocities, where responses were greater to patterns of wide stripes. The background units responded to single light-dark borders moving in the units' preferred directions. In all cases tested, the units responding to pitch were much more responsive to borders where the light field was above the dark field than vice versa. It is likely that the background units are part of an optomotor pathway. Their ability to accurately code animal rotations in a variety of behavioral situations is discussed. — (Chapter 3): The background units were found to respond to mechanical as well as visual stimuli. All but one of the units responded to air puffs to the front of the head and to the neck region and to rotations of the head with respect to the body. In addition, three of the units responded to abdominal flexion. Each of these multimodal units was directionally selective within each of its sensory modalities. The directional preferences among the various sensory modalities were aligned in a consistent way. Shifts in wind direction onto the head also produced multimodal unit responses which were directionally selective. In most cases, inhibition produced via one modality of sensory stimulation, reduced the excitatory response to a stimulus of another modality. A flight orientation model is proposed, based upon the response properties of the multimodal interneurons and especially on directional preferences among the various types of input to each unit. — (Chapter 4): Axons were penetrated and their electrical activity monitored in the pro-mesothoracic connectives. Target and background units were identified by their response properties as above. Slow depolarizations preceded spiking in some of the background neurons. They increased in

magnitude when the cell was hyperpolarized, and they were present even in the absence of spikes. This is taken as evidence that the slow depolarizations are large compound EPSPs and that the recording site is electrically close to the spike initiating zone. Electrical stimulation produced slight but consistent asymmetric changes in wing position and/or orientation in all of the multimodal neurons except those that were spontaneously active. Electrical stimulation of 2 of the 3 target units penetrated evoked large amplitude wing movements including fluttering of the forewings, which continued for the duration of the stimulation. Wing movements were studied in response to a variety of sensory stimuli-rotation of a surrounding striped cylinder, frontal air puffs and air puffs to the neck. They were strongly direction-dependent and were of greater amplitude than those evoked by single cell stimulation.

- (2533) PFITZNER, G., 1978. Zur Schlüpfynamik der Blaugrünen Mosaikjungfer (*Aeschna cyanea*). *Apollo*, Linz 1978 (53/54): 13-15. — (*Naturkundl. Station Linz, Rosegger Str. 22, A-4020 Linz*).

The dynamics is described of the emergence of *A. cyanea*, as observed in a pond in the city of Linz, Austria.

- (2534) [PFITZNER, G.], 1978. Jurzitza, G., "Unsere Libellen". *Apollo*, Linz 1978 (53/54): 15. — (*Naturkundl. Station Linz, Rosegger Str. 22, A-4020 Linz*).

A brief book review of the volume listed in OA No. 2121.

- (2535) SCHIESS, H., 1978. Gedanken zum Naturschutz an Zürich- und Obersee. *Jber. Verb. z. Schutze d. Landschaftsbildes am Zürichsee* 52 (1978): 11-37. — (*Brüglenstr. 1, CH-8344 Adetswil*).

This is a general paper on the nature conservation aspects of the Zürich Lake, Switzerland. Odon. are dealt with on pp. 20, 21 (figs.). It is stated that close to 20 spp. are so far recorded from the lake, incl. the locally rare taxa such as *Aeshna mixta*, *Anax parthenope*, *Brachytron pratense* and *Sympetrum pedemontanum*. A complete list

of spp. is not given.

- (2536) SEDALISHCHEV, V.T. & G.T. BELIMOVI, 1978. Materialy po ekologii zhivorodnyashchei yashchericy (*Lacerta vivipara* Jacquin) Yakutii. [On the ecology of *Lacerta vivipara* Jacquin of Yakutia]. *Biol. Nauki* 10 (178): 59-65. (Russian). — (*Dept. Biol., Yakutsk Univ., Lenin Ave. 33, USSR-677007 Yakutsk*).

40 adult and larval odon. specimens were found in the *Lacerta* stomachs examined. It is stated that in the same area 26 spp. of Lestidae and Libellulidae occur, but a list of these is not given.

- (2537) SKUFIN, K.V., 1978. Nasekomye yugovostoka chernozemnogo centra. [Insects of the southeastern chernozem centre]. *Voronezh*, 164 pp. (Russian). — (*Dept. Biol., Voronezh Univ., Universitetskaya Square 1, USSR-394000 Voronezh*).

Observations on the predatory behaviour and on the changes that have occurred in the odon. fauna as a consequence of human activities are given. The role of dragonflies in the control of blood-sucking flies is emphasized. The lepidopteran *Bupalus pinarius* (L.) is being actively exterminated by *Cordulia aenea*. It is suggested that restrictions should be introduced for the collecting of larger anisopterans.

- (2538) SOUTHERLAND, D.W.S., [Ed.], 1978. Common names of insects and related organisms. (1978 revision). *Ent. Soc. Am., College Park*. II + 132 pp. — Price: US \$4.—. — (Publishers' address: *Ent. Soc. Amer., 4603 Calvert Rd., Box AJ, College Park, Maryland 20740, USA*).

Anax junius ("common green darner"), *A. strenuus* ("giant Hawaiian dragonfly") and *Nesogonia blackburni* ("Blackburn dragonfly") are the only odon. spp. listed.

- (2539) THEISCHINGER, G., 1978. Libellenstudien in Australien. *Naturk. Jb. Stadt Linz* 23 (1977): 79-89. — (*Abt. Biol. II, Oberösterreichisches Landesmus., Postfach 91, Museumstr. 14, A-4010 Linz*).

This is an autobiographic account of

author's odonatological work in Australia (1966-1970, 1976), incl. his bibliography on the Australian Odon. (11 titles). Among the illustrations there are drawings of 2 undescribed gomphomacromiid larvae and a photograph of an undescribed *Austroaeschna* sp.

- (2540) TOBOKAEV, M.M. & N.T. CHIBICHENKO, 1978. Trematody fauny Kirgizii. Trematodes of the Kirghiz fauna. Ilim, Frunze, 233 pp. (Russian). — (Publishers' address: *Lenin Ave. 265a, USSR-720000 Frunze*).
The *Sympetrum* spp. larvae are mentioned as intermediate hosts of the metacercariae of *Plagiorchis elegans*, and those of *Lestes dryas* of the metacercariae of *Notocotylus attenuatus* in the Kirghiz SSR, USSR.
- (2541) TOTH, S., 1978. Sztatokötök — Odonata. [Dragonflies — Odonata]. In: A. Bankovics, Ed., *A Bakony természeti képe, [Natural landscape of the Bacony Mountain]*, Bakonyi Természettudományi Múzeum, Zirc, pp. 43-44. (Hungarian). — (*Bakonyi Termész. Muz., Rákoczi tér 1, HU-8420 Zirc*).
Pyrrhosoma nymphula, *Sympetma fusca*, *Calopteryx virgo*, *Ophiogomphus serpentinus*, *Aeshna mixta*, *Anax imperator* and *Sympetrum pedemontanum* are listed, along with their Hungarian vernacular names.
- (2542) TYAGI, B.K., 1978. New dragonfly records from India and the Dehra Dun Valley (northern India). *Curr. Sci., India* 47 (18): 315. — (*Dept. Zool., D.A.V. Coll., Dehra Dun-248001, U.P., India*).
9 spp. collected during 1974-1978 are brought on record as new for the Dehra Dun Valley, Uttar Pradesh, northern India. 3 of these, viz. *Tetrathemis irregularis* Brauer ssp., *Crocothemis servilia* Drury ssp. and *Zygonyx torrida* (Kirby) ssp. are said to be new for the Indian fauna. Material was identified by Dr. M.A. Liefinck (Rhenen, the Netherlands).
- (2543) VARADERAJ, G. & G. SUNDARA RAJULU, 1978. Differences in the mode of hardening of the cuticle in the larvae and the adults of a dragonfly *Anax immaculifrons* Rambur. *Natn. Acad. Sci. Lett. (India)* 1 (2): 79-80. — (*Dept. Zool., Chikkaiah Naicker Coll., Univ. Madras, Erode-638004, India*).
Staining and histochemical studies on the cuticle of larval and adult *A. immaculifrons* have revealed that in the former disulphide linkages are responsible for the cuticle hardening, while in the latter phenolic tanning is rendering the cuticle hard. The results are discussed in relation to the evolution of the Odonata. (Authors).
- (2544) WHALLEY, P., 1978. Derbyshire's darning needle. *New Scientist* 87: 740-741. — (*Dept. Ent., Brit. Mus. nat. Hist., Cromwell Rd., London, SW7 5BD, UK*).
A general talk on dragonflies, with special reference to the recently discovered Bolsover remains. A brief description of the Upper Carboniferous environment and a general paragraph on the origin of insects are also forming a part of the article. (For other titles on the "Bolsover dragonflies" cf. *OA* Nos. 2403, 2518, 2519, 2521).
- (2545) WIGGINS, G.B. & R.J. MACKAY, 1978. Some relationships between systematics and trophic ecology in nearctic aquatic insects, with special reference to Trichoptera. *Ecology* 59 (6): 1211-1220. — (*Dept. Ent., Royal Ontario Mus., Toronto, Ontario, CA*).
Based on general premise that the genus represents an ecological, as well as a morphological type, a number of generalizations are developed concerning the use of food resources in fresh waters by Trichoptera, Ephemeroptera, Plecoptera and Odon. The nearctic odon. fauna consists of 84 genera, of which 10 inhabit cool lotic habitats, 36 warm lotic, and 56 lentic habitats.
- (2546) WISE, K.A.J., 1978. A preliminary report on the terrestrial invertebrate fauna of the Lau Group of Fiji, collected during the South Pacific Expedition, 1977. *Bull. R. Soc. N. Z.* 17: 53-61. — (*Auckland Inst. & Mus., Auckland, NZ*).
General results are reported on the collecting

of arthropod and other fauna from the islands of Lakeba and Moce (incl. the Karoni islet) in the Lau Group, Fiji (June 20 - July 9, 1977) along with a brief description of the topography of the islands. Several odon. spp. (Anisoptera and 1 zygopteran) were taken on Lakeba, and 1 anisopteran was seen on Moce. The names of spp. are not stated.

1979

- (2547) (Anonymous), 1979. Thuner Libellen fliegen aus. 10 Jahre intensiver Arbeit, die sich gelohnt hat. Thuner TagBl. 1979 (Apr. 21), 1 p.

A daily's article, written on the occasion of the start of a 22-months tour (1979-1981) along a number of the principal Swiss cities of O.R. Strub & I.E. Siegenthaler's exhibition of dragonfly photographs. "The dragonfly year", furnished with German and French commentaries. The exhibition will be shown for the last time in Switzerland at the Sixth International Symposium of Odonatology, Chur, late summer 1981, whereupon it is scheduled for a tour along a number of Nat. Hist. Museums and galleries in Western Europe and overseas. (Cf. also *OA* No. 2563). — (*Abstracter's note*: The book, by the same authors and under the same title, has been listed in *OA* No. 1563; it is still available, at the price of sFr. 26.—, from Filmstudio 2S Thun, Seestr. 26 J, CH-3600 Thun. — For the description of the material exhibited cf. *Notul. odonatol.* 1 [1979]: 40-42; — for the references to various press reports on earlier exhibitions cf. *OA* Nos. 2202, 2280).

- (2548) ABSTRACTS OF PAPERS read at the Fifth International Symposium of Odonatology, Montreal, 1979. Edited by J.-G. Pilon. Issued by the Societas Internationalis Odonatologica (S.I.O.), Montreal, 40 pp. — Price: US \$6.—. — (c/o. Prof. Dr. J.-G. Pilon, Dép. Sci. biol., Fac. Arts & Sci., Univ. Montreal, C.P. 6128, Montreal, Que. H3C 3J7, CA).
Bick, G.H. & J.C. Bick (1928 S.W. 48th Ave. Gainesville, Fla 32608, USA): A bibliogra-

phy of reproductive behavior in nearctic Zygoptera (6); — *Cannings, R.A., S.G. Cannings & R.J. Cannings* (103-964 Heywood Ave., Victoria, BC V8V 2Y5, CA): The distribution of the genus *Lestes* (Odonata: Lestidae) in a saline lake series in central British Columbia (7); — *Compte-Sart, A.* (Inst. Esp. Ent., José Gutierrez Abascal 2, Madrid-6, Spain): Rehabilitation of the *Cornigomphus* Martin, 1907, genus (Gomphidae) (8); — *Crowley, P.H.* (T.H. Morgan Sch. Biol. Sci., Univ. Kentucky, Lexington, Ky 40506, USA): Components of predation by zygopteran nymphs: strike volume (9); — *Czapliński, C.* (Wrześnińska 65 m. 7, PO-91-045 Łódź): Center of faunistic documentation for the Łódz Highland [title only] (9); — *Deacon, K.J.* (Dept. Zool., Univ. Canterbury, Christchurch-1, NZ): Seasonality of *Xanthocnemis zealandica* (Coenagrionidae), a New Zealand dragonfly (10-11); — *Doerksen, G.* (Tahsis, BC V0P 1X0, CA): Notes on mating and oviposition of *Enallagma cyathigerum* (Charpentier) (Odonata: Zygoptera: Coenagrionidae) (12); — *Dunkle, S.W.* (Ent. Dept., Univ. Florida, Gainesville, Fla 32611, USA): Aspects of the ecology of Tachopteryx thoreyi (Anisoptera: Petaluridae) (13); — *Huichinson, R. & A. Larochelle* (Coll. Bourget, Rigaud, Que, J0P 1P0, CA): A history of odonatology in the Province of Quebec, Canada (14); — *Jensen, A.* (Ludvig Jensensej 3, DK-3460 Birkerød): karyotype analyses of New Zealand Odonata [title only] (14); — *Johnson, D.M. & P.H. Crowley* (Biol. Sci., East Tennessee St. Univ., Johnson City, Tn 37601, USA): Habitat segregation among coexisting odonate larvae (15); — *Kennedy, J.H. & E.F. Benfield* (Dept. Biol., Virginia Polytechn. Inst. & Univ., Blacksburg, Va 24061, USA): Odonata drift in a large warm water Appalachian river (16); — *Kiauta, B. & M.A.J.E. Kiauta* (Dept. Animal Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL): Cytotaxonomy of the genus *Argia* Rambur (Zygoptera: Coenagrionidae) (17-19); — *May, M.L.* (Dept. Ent. & Econ. Zool., Rutgers Univ., New Brunswick, New Jersey 08903, USA): Notes on the ecology of *Micrathyrina* in Panama (20-21); — *Moens,*

- J. (Dept. S.B.M., Limburgs Univ. Centr., Univ. Campus, B-3610 Diepenbeek): Ultrastructure study of different epithelial elements in the ileum and colon of larvae of anisopterous dragonflies (Odonata: Anisoptera) [title only, text of the abstract available on a separate sheet] (21); — Mouze, M. (Lab. Biol. anim., Univ. Sci. & Techn. Lille, F-59650 Villeneuve d'Ascq): Description au niveau ultrastructural de la formation des ommatidies — étude préliminaire chez *Aeshna cyanea* (Müll.) (22-23); — Nicholls, S. (Dept. Zool., Univ. Bristol, Woodland Rd., Bristol, UK): Osmoregulation in the larva of *Libellula quadrimaculata* (Odonata: Anisoptera) (24); — Norling, U. (Dept. Syst., Zool. Inst., Helgonavägen 3, S-223 62 Lund): Structure and development of the larval tracheal gills of *Epallage fatime* Charp. (25-26); — Parr, M.J. (Dept. Biol., Univ. Salford, Salford M5 4WT, UK): Territorial behaviour of the African libellulid *Orthetrum julia* Kirby (27); — J.-G. Pilon (Dép. Sci. biol., Univ. Montreal, P.C. 6128, Montreal, Que. H3C 3J7, CA): Notes on distribution, egg laying and embryonic development of *Enallagma vernale* Gloyd and *E. ebrium* Hagen (Odonata: Coenagrionidae) in Quebec (28); — Pritchard, G. (Dept. Biol., Univ. Calgary, Calgary, Alberta T2N 1N4, CA): Notes on the distribution and life history of *Argia vivida* Hagen in Alberta and Oregon (29); — Rudolph, R. (Landesmus. Naturk., Himmelreichallee 50, D-44 Münster): Swimming in libellulid larvae (30); — The burrowing behaviour of larval *Gomphus pulchellus* Selys (30-31); — Sherk, T.E. (Div. Biol. Sci., Univ. Michigan, Ann Arbor, Mich. 48109, USA): The vision of dragonflies that have specialized adult behavior (32); — Tembhare, D.B. (Dept. Zool., Nagpur Univ., Univ. Campus, Nagpur-440010, India): Neuroendocrine regulation of the intermediary metabolism during development and moulting of last instar larvae of the dragonfly *Orthetrum chrysis* (Selys) (Anisoptera: Libellulidae) (33-34); — Thakare, V.K. & M.W. Khan (Dept. Zool., Nagpur Univ., Univ. Campus, Nagpur-440010, India): Neurosecretory system of the ventral ganglia in the last instar nymph of the dragonfly, *Pantala flavescens* (Fabr.) (Anisoptera: Libellulidae) (34); — Waage, J.K. (Box G., Biol. & Med., Brown Univ., Providence, RI 02912, USA): The influence of sperm displacement on odonate mating systems (35); — Westfall, M.J. (Dept. Zool., Univ. Florida, Gainesville, Fla 32611, USA): Nymphs of the genus *Stylurus* in North America (Gomphidae) [title only] (36). — Abstracts of slide and movie programmes: Doerksen, G.: Mating and oviposition in *Enallagma cyathigerum* (Charpentier) [title only] (37); — Kiauta, B.: Slide documentation of the Fourth International Symposium of Odonatology, Gainesville, Florida, 1977 [title only] (37); — Sherk, T.E.: Dragonflies eyes (37); — Van Brink, J.M. (Dept. Animal Cytogen. & Cytotax., Univ. Utrecht, Padualaan 8, Utrecht, NL): The making of Odonatologica [title only] (37). — Addresses of the authors (38-40). — (For Program and generalities cf. *OA* No. 2576, for a newspaper report on the Symposium cf. *OA* No. 2549).
- (2549) ALEXANDRE, H., 1979. Congres international des odonatologistes à Sainte-Thérèse. La Voix des Mille-Iles, Ste-Thérèse, Quebec 42 (36): 1. — (Contact the *Editorial Office of the newspaper*).
A local daily's report on the Fifth International Symposium of Odonatology, held Aug. 5-11, 1979 at the CÉGEP Lionel Groulx College, Ste-Thérèse, Montreal, Quebec, Canada. A photograph is also provided. — (For the Abstracts of Papers and for the Program and Generalities cf. *OA* Nos. 2548, 2576).
- (2550) ANDERSON, N.H. & K.W. CUMMINS, 1979. Influences of diet on the life histories of aquatic insects. J. Fish. Res. Board Can. 36 (3): 335-342. (With Fr. s.). — (*Dept. Ent., Oregon St. Univ., Corvallis, Oregon 97331, USA*).
Benthic spp. (reference to Odon. is also made) are partitioned into functional feeding groups based on food-acquiring mechanisms. Effects of food quality on voltinism, growth rate, size and maturity are

demonstrated for these. It is stated that further elaboration of the role of food in life history phenomena will require controlled field or laboratory studies to partition the effects of temperature and food.

- (2551) BANTA, J., 1979. Dragonfly authority hails from Marlin. Waco Tribune-Herald, Waco, Texas 67 (236): 1 (issue of June 6, 1979). — (Editorial Office, Waco Tribune-Herald, Waco, Texas, USA).

This is a brief profile, in a local daily, of the odonatological achievements of the well-known Texas odonatologist, Curtis E. Williams. — (For references to other publications on C.E. Williams Cf. *OA* No. 2244).

- (2552) BELYSHEV, B.F. & A.Yu. HARITONOV, 1979. O rasprostraneni rod Orthetrum Newm. (Odonata, Libellulidae). [On the distribution of the genus *Orthetrum* Newm. (Odonata: Libellulidae)]. Vest. Zool. 1979 (3): 81-84. (Russian). — (*Inst. Biol., Siberian Sect. Acad. Sci. USSR, Ul. Frunze 21, USSR-630091*).

A review is given of the distribution of 50 spp. pertaining to this genus, and its origin is discussed. The latter cannot be tentatively ascertained. If the genus has developed from a European-North African stock, it is surprising that it is not represented in the American fauna. If, on the other hand, it is of a paleoafrikan origin, it is argued that one should expect to encounter endemic forms in the Indian Subcontinent.

- (2553) BERTE, S.B., 1979. An improved method for preserving color patterns in pinned insects. Ent. News 90 (3): 147-148. — (*Dept. Biol., Univ. Calgary, Alberta, T2N 1N4, CA*).

A method for drying pinned insects, incl. Odon., and which preserves their colour patterns better than the standard air-drying technique is described. The process involves the use of acetone and offers an added advantage in that the specimens can be dried and ready for labeling and storage 48 hrs after being collected. (Author).

- (2554) BICK, G.H., 1979. Bibliography of reproductive behavior of Zygoptera of conterminous United States and Canada. Working paper distributed at the Fifth Int. Symp. Odonatol., Montreal, 7 pp. — (*1928 SW 48th Ave. Gainesville, Fla 32608, USA*).

A list is given of the regional zygopteran spp. along with the complete bibliography on their reproductive behaviour. Under each sp. the different aspects of reproductive behaviour are specified and cross references to the bibliographic list are provided for each subject.

- (2555) CANNINGS, R.A. & G.P. DOERKSEN, 1979. Description of the larva of *Ischnura erratica* (Odonata: Coenagriidae) with notes on the species in British Columbia. Can. Ent. 111: 327-331. — (*103-964 Heywood Ave., Victoria, Brit. Columb. V8V 2Y5, CA*).

A description of the previously unknown larva of *I. erratica* Calv. is presented along with drawings of the ultimate stage. In addition, information on larval habitat, and on the emergence and breeding behaviour of the adults is documented.

- (2556) CARLE, F.L., 1979. Two new *Gomphus* (Odonata: Gomphidae) from eastern North America with adult keys to the subgenus *Hylogomphus*. Ann. ent. Soc. Am. 72 (3): 418-426. — (*Dept. Ent., Virginia Polytechn. Inst & St. Univ. Blacksburg, Va 24061, USA*).

As new are described and illustrated *G.* (*Hylogomphus*) *carolinus* sp. n. (♂ holotype, ♀ allotype: US Hgwy 1, S of Cheraw, Cheraw St. park, Chesterfield Co., South Carolina, USA, Apr. 17, 1965; paratypes and larvae: same locality and North Carolina, and *G.* (*H.*) *geminatus* sp. n. (♂ holotype, ♀ allotype: Pond Creek at Rt. 191, Santa Rosa Co., Florida, May 16, 1973; paratypes and larvae: same locality and Gadsden, Liberty and Okaloosa Co., Florida, and Decatur Co., Georgia). All types are deposited in the Florida State Collection of Arthropods, Gainesville. Adults and larvae of *G. parvidens* Currie are also described and a female allotype is designated. Keys to the

adults of the subgenus are provided, and the known distribution of each sp. is reported.

- (2557) CORBET, P.S., 1979. Corrigenda for Volume III of "The Odonata of Canada and Alaska" (1975). *Can. Ent.* 111 (3): 225-232. — (Temporary author's address up to Sept. 1, 1980: *Dept. Appl. Zool., Univ. Cambridge, Pembroke Str., Cambridge, CB2 3DX, UK*; — otherwise: *Dept. Zool., Univ. Canterbury, Christchurch-1, NZ*).

An annotated list of corrections is provided for the volume listed in *OA* No. 1194, and a bibliography of the published reviews (8) of the same is given.

- (2558) CORDULIA. Cahier d'amateurs. Published by the Collège Bourget, Rigaud, Quebec, Canada; edited by R. Hutchinson & A. Larochelle, Collège Bourget. Vol. 5, No. 1 (March, 1979). (French and Engl., larger papers with s's. in Engl.). — Annual subscription for 1979 (4 issues): Can. \$4.— (Canada, USA), Can \$5.— (others). — (c/o. *R. Hutchinson, Collège Bourget, C.P. 1000, Rigaud, Que., J0P 1P0, CA*).

Hutchinson, R. (address cf. above): A newly emerged dragonfly with damaged wings caught in surrounding twigs at emergence site (5); — *Legault, J.* (62 Place Le Roy, Repentigny, Que., CA): Quelques notes sur *Ischnura verticalis* Say (Odonata: Zygoptera) (11-13); — *Hutchinson, R. & A. Larochelle*: Première liste d'Odonates pour Baie-Comeau et Havre-Saint-Pierre, Comté de Saguenay, Québec (14-16); — *Ideker, J.* (McDonnell Nat. Hist. Cent., P.O.B. 1433, Edinburg, Texas 78539, USA): Competition between odonate insects and avian aerial predators for dipteran prey (17-18; — *Caron, A.* (132 Nord, rue Saint-Charles, C.P. 190, Joliette, Que., J6E 3Z6, CA): Quelques libellules du Québec capturées de 1939 à 1954 (19-20). — The issue contains also the advertisements for E.M. Walker's *The Odonata of Canada and Alaska* (13) and for *Odonatologica* (16), and an announcement of the Fifth International Symposium of Odonatology (18).

- (2559) CUPPEN, H.P.J.J. & J.G.M. ROELOFS,

1979. Een hydrobiologisch onderzoek in enkele kleikuilen in het gebied "Onderste en Bovenste Molen" (Gemeente Venlo). [Hydrobiological survey of some clay-pits in the region, "De Onderste en Bovenste Molen" (Venlo Municipality)]. *Natuurh. Maandbl.* 68 (5): 83-92. (Dutch, with Engl. s., without translation of the title). — ("*Oost-Veluwe*", *Postbus 748, 7300 AS Apeldoorn, NL*).

A survey is given of the vegetation and fauna of the said nature reserve nr. the city of Venlo, the Netherlands. The only odon. sp. listed is *Orthetrum cancellatum*, which is said to be the most rare of the 3 spp. encountered (the names of the other 2 are not stated).

- (2560) DIERL, W., 1979. Insekten. Vlinders, kevers, libellen en andere insekten determineren met kleurenfoto's. Thieme's kleine natuurgidsen in kleuren. 143 pp., 128 col. figs. incl. Thieme, Zutphen. (Dutch). — Price: Hfl. 14.50. — (Author's address: *Zool. Staatssammlung, Schloss Nymphenburg, Maria-Ward-Str. 1b, D-8000 München-19, GFR*; — Publishers' address: *W.J. Thieme, Postbus 7, Zutphen, NL*).

Dutch edition of the volume listed in *OA* No. 2211. The errors occurring in the original edition are not corrected.

- (2561) FONTAINE, R. & J.-G. PILON, 1979. Étude de la croissance postembryonnaire chez *Enallagma ebrium* (Hagen) (Zygoptera: Coenagrionidae). *Annls Soc. ent. Québ.* 24 (2): 85-105. (Fr. with Engl. s.). — (*Dép. Sci. biol., Univ. Montreal, C.P. 6128, Montreal, Que. H3C 3J7, CA*).

Data obtained from laboratory rearings were used to analyse variation occurring during larval growth of *E. ebrium*. Intra-stage variation during larval development was investigated, along with the evidence for the presence of distinct growth phases, with allometry equations. (Authors).

- (2562) INOUE, K., 1979. [Dragonfly king and its allies in natural colours (Aeshnidae and Cordulegasteridae)]. *Bunken, Osaka.* 58 pp. (Japanese). — Price: Y 980.—. (Author's address: 5-9, *Fuminosato 4-chome, Abeno-*

ku, Osaka, 545, JA; — Publishers' address: Bunken Publishing Co., 128, Daido 4-chome, Tennoji-ku, Osaka, 543, JA).

This is a popular style monograph on the Japanese members of the 2 families. The author is one of the leading Japanese odonatologists, and the book is certainly one of the most well-organized and beautifully executed works of this kind in the literature. The first (and largest) part deals with the 20 regional aeshnid spp. and 6 cordulegasterid taxa, preceded by model life history accounts of *Anax parthenope julius* and *Anotogaster sieboldii*. For each sp. colour photographs are given of freshly killed specimens, and distribution maps and phenology diagrams are provided. The second part of the book is devoted to some topics of special interest to the workers in the 2 families, and to general odonatological subjects such as oviposition, emergence, territoriality, family organization of the order and the place of Odon. among insects in general. It is a pity that no similar treatments are planned for the other Japanese odon. families.

- (2563) iss, 1979. 10 Jahre intensive Arbeit hat sich gelohnt: Thuner Libellen fliegen um die Welt. *Berner Ztg RZ* 1979 (Apr. 26): 29. Nearly identical text to that of the article listed in *OA* No. 2547.

- (2564) JANSEN, R., 1979. Libellenonderzoek. [Dragonfly studies]. *Stridula* 3 (1/2): 4-5. (Dutch). — (*Kolfbaan 18, 1412 ES Naarden, NL*).

The article, published in the entomology journal of the Belgian and Dutch Youth Federations of Nature Friends, contains a number of suggestions for population and behavioural studies that could be carried out by the members and for which no sophisticated equipment is required.

- (2565) JURZITZA, G., 1979. Libellen. De water-nimfen van West- en Midden Europa. Thieme's zakboeken voor natuurliefhebbers. 71 pp., 120 cl. ill. incl. Thieme, Zutphen. (Dutch). — Price: Hfl. 10.90. — (Author's address: *Bot. Inst., Univ. Karlsruhe, Kaiser-*

str. 12, D-7500 Karlsruhe, GFR; — Publishers' address: W.J. Thieme, Postbus 7, Zutphen, NL).

Dutch edition of the volume listed in *OA* No. 2121. — (*Abstracter's notes*: This is the first commercially published dragonfly book of this kind in the Dutch language. The only other Dutch "odonatological" book, also translated from German, is the children story by W. Heinen, 1941, "Agrion. Uit het leven van een libel", Rutgers, Naarden, while numerous identification works were published by the Netherlands Youth Federation of Nature Friends, N.J.N., on a non-commercial basis, and of which at least the most recent one is readily available to general public; cf. *OA* No. 1041, new edition 1977. The original German edition of the present booklet has received a number of favourable reviews in the entomological press, e.g. *Notul. odonotol.* 1, 1978, pp. 34-36, and the author is one of the foremost German odonatologists and dragonfly photographers. The reproduction of the illustrations is excellent. It is all the more unfortunate, therefore, that the translator and the adaptor of the text of the Dutch edition, Dr. W.J. Kabos, in the adaptation of the text and with reference to the Dutch fauna committed such a number of imperfect or erroneous statements, omissions and even contradictions that, not considering the numerous printing errors (particularly in the spelling of the taxonomic names and their authors) the text, will be but of greatly limited value to the reader. Only some of these could be mentioned here, e.g. *Ceria-griion tenellum*, a scarce and local sp. in the Netherlands, is said, on p. 26, to be lacking in the country, while on p. 48 it is stated as being 'common there'; — *Platycnemis pennipes* is known from at least 38 Dutch localities [Jb. ned. ent. Ver. 1976-1978, p. 66, incl. map], on p. 38, however, one reads that it is not known from the Netherlands; — *Aeshna affinis*, according to the adaptor's statement on p. 54, is known from the Netherlands only from a single record made in 1911, whereas it has been taken at Blijenbeek still in 1951 [Ent. Ber., Amst. 14, 1952, p. 19]; — *A. viridis* is, on p. 56, said to

be locally found in Friesland, whereas it is regularly being reported from various provinces; — *Gomphus pulchellus*, p. 58 is said to "perhaps" occur in the eastern and southern parts of the country, but it is the most common gomphid sp. in the eastern regions; — *Aeshna subarctica*, on p. 66, is said not to be a Dutch sp.; the (North American) nominate form is indeed not, but the Netherlands records of *A. s. elisabethae* have been dealt with in Tijdschr. Ent. 72, 1929, pp. 169-186, pl. 1, and in Ent. Ber., Amst. 14, 1952, pp. 19-21. — During the past 5 decades the knowledge on the odon. fauna of the Netherlands has greatly increased, therefore it is unfortunate that the reader has been directed solely to the well-known and certainly outstanding monograph by M.A. Liefstinck, published in 1925-1926. Though indispensable to a specialist, the work is not readily available to the general reader, and to-day it is greatly outdated both as to the distributional data presented as well as from the point of view of the nomenclature adopted).

- (2566) KIAUTA, B. & M.A.J.E. KIAUTA, 1979. Ecology, case structure, larval morphology and chromosomes of the caddis-fly, *Allrogamus auricollis* (Pictet, 1834), with a discussion on the variation of recombination indices in the Stenophylacini (Trichoptera, Integripalpia: Limnephilidae). *Genetica* 50 (2): 119-126. — (*Dept. Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL*).

On p. 124 the relation between the cytogenetic system and autecology in Trichoptera is compared to the evidence on the 2 phenomena in the coenagrionide genera *Argia* and *Ischnura*.

- (2567) LEGRAND, J., 1979. Morphologie, biologie et écologie de *Malgassophlebia aequatoris* n. sp., nouveau Tetratheminae du Gabon (Odonata: Libellulidae). *Rev. fr. Ent. (N.S.)* 1 (1): 3-12. (With Engl. s.). — (*Lab. Ent., Mus. natn. Hist. nat., 45 rue de Buffon, F-75005 Paris*).
- M. aequatoris* sp. n. (♂ holotype, ♀ allotype, paratypes of both sexes: Mézalé Riv., km.

16, Route de Libreville, Makokou, Gabon; Oct. 2-25, 1973) is described and illustrated along with the description of various larval instars. Detailed notes on biology, ecology and behaviour are also provided. Oviposition takes place under leaves overhanging the water. The prolarvae are carried into the stream by rain. Inside the egg-mass, drosophilid and cecidomyid larvae were observed feeding on the eggs. The adult ♂♂ and ♀♀ reach the (permanent) streams for mating and oviposition not until the rainy season sets in. The seasonal cycles of this sp. are also outlined. (Cf. also *OA* No. 2580).

- (2568) MALZ, H., 1979. "Geführte" Dendriten im Gestein. *Natur & Museum* 109 (8): 257-259. — (*Forschungsinst. Naturmus. Senckenberg, Senckenberganlage 25, D-6000 Frankfurt 1, GFR*).

The formation of the so-called dendrites is described, which are commonly found in the Solnhofen limestone and usually are considered fossil plants by the layman. These fern- or moss-like patterns result from precipitation of iron or manganese oxyde in capillaries within the limestone. Precipitation may also occur in capillaries left from decaying organic material embedded in the stone such as dragonfly wings, thus preserving finest details of the venation.

- (2569) MILES, P.M., 1979. *Ischnura pumilio* (Charpentier) (Odonata, Coenagrionidae) in Cardiganshire, Wales. *Ent. mon. Mag.* 114 (1364-1367): 15. — (*Werndêg, Cnwch Coch, nr. Aberystwyth, Ceredigion, Wales, UK*).
- A male taken at a small spring flush at Pwllpeiran, Tyn-bryn, SN 783746, Cardiganshire, Wales, United Kingdom (June 14, 1978), is brought on record. A detailed description is given of the locality, and the hitherto known records of this sp. in Wales are reviewed.

- (2570) MITCHELL, P. & D. WIGHTON, 1979. Larval and adult insects from the Paleocene of Alberta, Canada. *Can. Ent.* 111 (7): 777-782. — (*Dept. Zool., Univ. Alberta, Edmonton, Alberta T6G 2E9, CA*).
- 176 insects were collected from 2 Paleocene

sites in Alberta Canada, viz. Blackfalds (locality No. 22 of M.V.H. Wilson, 1979, *Quest. ent.* 14: 13-34) at the junction of Blindman and Red Deer rivers, and the other 3 km upstream of the Blackfalds site. Geological conditions of the 2 localities are identic. Excluding the exuviae, 65% of the fossils are immature stages, half of the specimens recovered are aquatic. Among adults 40% are Coleoptera, 11% Hemiptera, 5.5% Diptera, 3.6% Hymenoptera, 3.5% Orthoptera and 1.8% Odon.; the remainder are unidentified. The single adult odon. spec. is referable to an unknown gomphid genus. Its wings are illustrated (Inv. No. UAPC 5553). — (Cf. also *OA* No. 2583).

- (2571) NACHTIGALL, W., 1979. Von Teichjungfern und Prachtlibellen. *Kosmos* 75 (7): 518-527. — (*Zool. Inst., Univ. Saarland, D-66 Saarbrücken, GFR*).

This is a narrative for the general reader on all aspects of the life of Odon. A key to the central European families and 7 col. photographs are added.

- (2572) NATURE AND INSECTS, THE. Special issue on Odonata. Vol. 14, No. 6, 72 pp. (May 30, 1979). Published by New Science, Tokyo. (Japanese). — (Publishers' address: 3-24, Kanda-nishiki-cho, Chiyoda-ku, Tokyo, 101, JA)

The cover photograph shows a *Neurothemis fluctuans* (erroneously identified as *N. t. tulia*) from Kuala Lumpur, Malaysia (K. Narumi, Nov. 10, 1978). The titles of the papers are as follows. *Narumi, K.* (4400-23 Nishibeppu-cho, Kagoshima, 890, JA): Dragonflies of Taiwan (1-3, black-and-white photographs); — *Eda, S.* (Matsumoto Dental Coll., 1780 Gohara, Hirooka, Shiojiri-shi 399-07, JA): Dragonfly stamps of the world (supplement) and dragonfly postcards (4); — Recent situation of the dragonfly distribution survey in Japan (6-16); — *Asahina, S.* (4-4-24 Takadanobaba, Shinjuku-ku, Tokyo, 160, JA): A visit to Ozegahara after 27 years (17-22); — *Ueda, T.* (Dept. Zool., Kyoto Univ., Sakyo-ku, Kyoto, 606, JA): The origin of the life history pattern of *Lestes sponsa* (23-27); — *Matsui,*

I. (Aza-ichiba 73, Moriyama-ku, Nagoya, 463, JA): Dragonflies in the Japanese ancient literature: *Kojiki* and *Nihonshi* (28-29); — *Inoue, K.* (5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA): Life history of *Stylurus annulatus* (30-36); — *Rai, T.* (address unknown): *Indolestes peregrinus* after late autumn (36-37); — *Arai, Y.* (3-72, Ishiwaru, Kumagaya, Saitama Pref., 360, JA): Copulation and refusing behaviour of mature *Ischnura asiatica* females (38-40); — *Ubukata, H.* (Zool. Inst., Hokkaido Univ., Sapporo, 060, JA): Mating strategy of *Mnais pruinosa costalis*, a preliminary note (41-44); — *Sugimura, M.* (Hagishishitacho, Nakamura, Kochi, 786, JA): Considerations on the oviposition of some dragonflies (45-48); — *Takamatsu, T.* (11, Higashinakama-cho 1-chome, Wakayama, 640, JA): *Tramea virginia* captured in tandem at Kada, Wakayama (48); — *Yamaguchi, H.* (address unknown): *Sympetrum risi yosico* recorded at Tokachi, Hokkaido (48); — *Obana, S.* (Kinryo-cho 3-4-10, Sakai, 590, JA): Some important points in the breeding of dragonflies (49-53); — *Eda, S.* (for address cf. above): Dragonfly stamps of the world (supplement) and dragonfly postcards (54); — *Yamamoto, Y.* (Inafume Bldg 1-2, Inafume-dori, Chikusa-ku, Nagoya, 464, JA): A somersault by a male of *Anax n. nigrofasciatus* during the sexual flight (55-56); — *Lien, J.C. & K. Matsuki* (address Matsuki: 3-75-17 Nakana-dori, Tsurumi-ku, Yokohama, JA): On the larval stage of two Taiwanese *Lyriothemis* species (57-60); — *Ishikawa, H.* (address unknown): A symptetrum hybrid taken at the foot of Mt. Takao (61); — *Andoh, T.* (5-24, Otawa 1-chome, Ichinomya, Aichi Pref., 491, JA): Five dragonflies with the southwestern distribution limit in the Takai District (62-65); — *Hirose, M.* (3-4-7 Daikucho, Mito, Ibaraki, 310, JA): Dragonfly fauna of the Ibaraki Prefecture, part 2 (66-72).

- (2573) O'CONNOR, J.P. & R. NASH, 1979. Notes on some mss. relating to dragonflies (Insecta: Odonata) by the late Colonel Niall MacNeill, Jr. *Nat. J.* 19 (9): 316-317, pls. 12-14. — (*Natn. Mus. Ireland, Kildare Str.,*

Dublin-2, Eire).

A brief inventory is given of the 2 odonatological notebooks of the late Col. N. MacNeill, purchased by the Ulster Museum (address second author: Ulster Mus., Belfast BT9 5AB, UK), and covering the period 1948-1952. The titles are: Vol. 1: "Irish Odonata, miscellaneous notes on biology, geology, microscopy etc. etc. and on the Odonata Agrion, Lestes, Coenagriidae, Pyrrhosoma nymphula, Ischnura elegans; Niall MacNeill" (450 pp. approx); — Vol. 2: "Irish Odonata; Ischnura pumilio, Enallagma, Coenagrion, Ceriagrion, Erythromma; Niall MacNeill" (300 pp. approx). 2 black-and-white and 1 col. illustration from the notebooks are also provided, along with a facsimile portion of the text. — (*Abstracter's Notes*: The late Col. MacNeill [1899-1969] was one of the most distinguished Irish odonatologists, the author of close to 20 papers. For obituaries cf. Anon. 1970, Ir. Nat. J., 16: 289-290; — S. Asahina, 1971, Tombo 14: 11; — H.E. Hinton, 1971, proc. R. ent. Soc. Lond., C, 35: 53; — C. Longfield, 1970, Ir. Nat. J. 16: 290-291. A funeral notice appeared in Irish Times, Dublin, Nov. 6, 1969. For a portrait cf. also Odonatologica 5 [1976]: 6).

- (2574) **ODONATA MAPPINGSCHEMENEWS-LETTER.** Compiled by National Organizer D.G. Chelmick, No. 3 (June 1979). — (c/o Mr. D.G. Chelmick, "Bredon", High Beech Lane, Haywards Heath, Sussex, UK).

The issue contains a review of noteworthy 1978 records of British Odon., a brief report on the Recorders' Meeting (London, Apr. 7, 1979), and a number of news items, incl. an SIO advertisement, the announcement of the preparation of a determination booklet for British Odon. (G. Vick & D.G. Chelmick), and a statement on the suggestions received for the formation of a British Odonatological Society. A brief note on the volume listed in OA No. 2121 is also provided.

- (2575) **PANDIAN, T.J., S. MATHAVAN & C.P. JEY AGOPAL, 1979.** Influence of temperature and body weight on mosquito predation by dragonfly nymph *Mesogom-*

plus lineatus. Hydrobiologia 62 (2): 99-104. — (*Sch. Biol. Sci., Kamaraj Univ., Madurai-625021, India*).

Different weight classes (25, 50, 100 and 160 mg) of the dragonfly nymph *M. lineatus*, were allowed to predate on constant density (15 larvae/aquarium of 500 ml capacity) of healthy fourth instar larvae of *Culex fatigans* at 10, 15, 20, 25, 30, 35 and $50 \pm 0.5^\circ\text{C}$ to study the interactions of body weight and temperature on satiation time, maximum food intake (C max.) and return of maximum appetite. Satiation time is not a temperature dependent factor, but is significantly influenced by weight; it lasts for 12.0, 16.6 and 39.4 min in the nymphs weighing 50, 100 and 160 mg, respectively. Number of larvae predated (C max) by a 50 mg nymph increases linearly from 1 larva at 10°C to 18 larvae at 35°C ; the corresponding increases are from 2 to 11 larvae for the 100 mg nymph and 5 to 24 larvae for the largest nymph (160 mg). Statistical analysis of the data reveals that the maximum food intake of the nymph is significantly dependent on weight as well as temperature. Critical period of food deprivation permitting the return of maximum appetite in these nymphs is a temperature-dependent phenomenon but it was not influenced by weight. At 10°C , the maximum appetite returns after a food-deprivation period of about 60 hrs in all weight classes of the nymph; the corresponding values are about 53, 45, 37, 30 and 22 hrs in the nymphs exposed to 15, 20, 25, 30 and 35°C , respectively. (Authors).

- (2576) **PROGRAM AND GENERALITIES of the Fifth International Symposium of Odontology, Montreal, 1979.** Edited by J.-G. Pilon. Issued by the Societas Internationalis Odonatologica (S.I.O.), Montreal, 32 pp. — Price US \$5.—. — (c/o Prof. Dr. J.-G. Pilon, Dép. Sci. biol., Fac. Arts & Sci., Univ. Montreal, C.P. 6128, Montreal, Que. H3C 3J7, CA).

Symposium officers (5); — Symposium location (6-9); — General information (Symposium membership, Accommodation, Meals, Symposium publications, Free periods, James Bay field trip, Field trip to

- the Laurentian Hills, Post-Symposium field trip, Symposium dinner) (10-13); — Symposium office and other quarters (14); — Business meeting of the S.I.O. Agenda (15); — Scientific programme (16-20); List of Symposium participants and authors of contributed papers (21-28); Notes (29-32). — (For the Abstracts of Papers cf. *OA* No. 2548, for a newspaper report on the Symposium cf. *OA* No. 2549).
- (2577) SCIFRES, B., 1979. The drama of dragons and damsels. Indianapolis Star Mag. 1979 (July 29): 18, 21-22. — (*Author's address unknown*).
A popular general narrative on dragonflies, with special reference to the process of emergence. Of the 6 accompanying photographs, 3 are in colour. A statement on the fauna of Indiana, USA, by Dr. B.E. Montgomery is also included.
- (2578) SMIT, A., 1979. Een juffertje met een gereedschapskist (*Lestes viridis*). [A damselfly with a toolbox (*Lestes viridis*)]. *Natura*, Amst. 76 (6): 165-169. (Dutch). — (*Lugtenbergweg 38, 8071 XH Nunspeet, NL*).
The copulatory behaviour of *L. viridis* is described and 5 black-and-white photographs are provided.
- (2579) TRACY, B.J., C.R. TRACY & D.S. DOBKIN, 1979. Desiccation in the black dragon, *Hagenius brevistylus* Selys. *Experientia* 35 (6): 751-752. — (*Dept. Zool. & Ent., Colorado St. Univ., Fort Collins, Colorado 80523, USA*).
H. brevistylus lost mass by evaporation in a moderately desiccating environment at the rate of 20.4 mg/h, and died of desiccation in less than 1 day at a body mass of 79.8% of their normally hydrated mass. It was estimated that the *Hagenius* adult minimally would have to consume the equivalent of 60% of its body mass each day to meet its daily water requirements. This amount of food is equivalent to that necessary to power flight of a dragonfly for 4.6 hrs. (Authors).
- (2580) TSACAS, L. & J. LEGRAND, 1979. Les pontes d'odonates, gîte larvaire nouveau pour une *Drosophila* africaine inédite: *Drosophila libellulosa* n. sp. (Odonata: Libellulidae; Diptera: Drosophilidae). *Rev. fr. Ent.* 1 (1): 13-22. (With Engl. s.). — (*Lab. Biol. & Genet. evolut., F-91190 Gif-sur-Yvette*).
Drosophila (s.str.) *libellulosa* sp. n. is described from Gabon, referable to the *simulivora* group. The larvae live in the egg-masses of the dragonfly *Malgassophlebia aequatoris* Legrand (cf. *OA* No. 2567).
- (2581) WAAGE, J.K., 1979. Reproductive character displacement in *Calopteryx* (Odonata: Calopterygidae). *Evolution* 33 (1): 104-116. — (*Div. Biol. & Med., Brown Univ., Providence, Rhode Island 02912, USA*).
Previous work on species discrimination and reproductive isolation in *Calopteryx maculata* and *C. aequabilis* suggested that divergence between these species in wing coloration would be favored by selection where they were sympatric. Some evidence for such a divergence was presented. This paper provides quantitative documentation of this divergence and proposes that it be considered a verified example of reproductive character displacement. The evidence presented is derived from collecting along a transect across the area of sympatry and into regions of allopatry for each sp. The divergence in wing coloration is shown to be unique to the area of sympatry and not the result of trends established in allopatry. The patterns of divergence are exactly those predicted by previous work on species discrimination and cannot be easily explained as variation correlated with latitude, length of the juvenile period, or other aspects of *Calopteryx* biology. The degree of divergence in each sp. appears to reflect its abundance relative to that of the other spp. Factors that might account for the apparent paucity of examples of character displacement in the context of reproductive isolation are discussed. (Author).
- (2582) WHALLEY, P.E.S., 1979. New species of Protorthoptera and Protodonata (Insecta) from the Upper Carboniferous of Britain,

with a comment on the origin of wings. *Bull. Br. Mus. nat. Hist. (Geol.)* 32 (1): 85-90. — (*Dept. Ent. Brit. Mus. nat. Hist., Cromwell Rd., London SW7 5BD*).

E. bolsoveri sp. n. (Erasipteridae) is described and illustrated. Holotype (In. No. 64532) is in the British Museum (Nat. Hist.). It was recovered from the Upper Carboniferous (Westphalien A): Bolsover hard seam, at 586 m approx., 15 cm above seam; Bolsover, Derbyshire, United Kingdom, Diagnosis: forewing 87 mm x 12 mm; no pattern visible, concave and convex veins clear; R_1 terminates near wing apex; R_s sharply curved at apex; R_s and MA fork one third from base, anal veins curved in basal area; anal cells simple, single row, hindwing unknown. — (*Abstracter's note*: The name has appeared a number of times in the popular press, but without formal diagnosis. For the references to the popular articles cf. *OA* No. 2518).

(2583) WILSON, M.V.H., 1979. Paleogene insect faunas of western North America. *Quest. ent.* 14 (1): 13-34. (With Fr. s.). — (*Dept. Zool., Univ. Alberta, Edmonton, Alberta, T6G 2E9, CA*).

North American Paleogene insect faunas are concentrated in lacustrine sediments of the Cordillera. They represent cool temperate to tropical paleoclimatic conditions. The more than 200 insect families recognized are listed, with supporting bibliographic references. The faunas are dominated by Coleoptera, Hymenoptera and Diptera, but representatives of the following odon. families were also brought on record: Platycnemididae, Coenagrionidae, Chlorocyphidae, Calopterygidae, Gomphidae, Aeshnidae and Libellulidae. All of them originate from Florissant, Colorado (Oligocene), save for the Chlorocyphidae from the Green River deposits, Wyoming, Utah, Colorado (Eocene). Calopterygidae are known from both formations. — (Cf. also *OA* No. 2570).

ERRATA

Dr. V. TEYROVSKY has informed the Editors that the date of appearance of his '1973' paper actually is 1974, hence it should be corrected in Vol. 7, No. 3, p. 190. The bibliographic reference reads correctly as stated in *OA* No. 2328.

In the same issue, pp. 392-414, the running title of Odonatological Abstracts is misprinted ('Odonatologica' instead of 'Odonatological').

The following are the more serious errors in the paper by Dr. G. THEISCHINGER, in Vol. 8, No. 1:

- p. 27, line 6 from the top: the text should read: 'Selys, bezettelt "bidentatus [durchgestrichen] Dalmat."....', and further as printed.
- p. 29, line 10 from the top: the infraspecific form referred to is *C. pictus intermedius*, not *C. pictus pictus*.
- p. 33, Abb. 20-24: the bar represents 20 mm.

In the same issue, paper by Dr. R. RUDOLPH, p. 61, the publication date of V. RAU's paper is omitted. It has been published in 1966.

The following should be corrected in and/or added to the texts of *ODONATOLOGICAL ABSTRACTS*:

No. 1821 (usi; Vol. 6, No. 4, p. 311): the reference 'OA No. 1973' should correctly read 'OA No. 1793'.

No. 2105 (anonymous; Vol. 7, No. 3, pp. 299-300): the author is G. LEJEUNE: for the address cf. *OA* No. 2336.

No. 2138 (CORBET; Vol. 7, No. 4, p. 391): The following *Abstracter's Note* should be appended: "The illustrations and the text of captions were provided by the Publishers and have not been seen by the author prior to appearance. In particular, the author does not wish to accept the responsibility for the illustration on p. 593."

No. 2225 (MARMELS, de; Vol. 7, No. 4, p. 409): the author of the diary is, of course, Dr. F. Ris, and not Dr. R. Ris.

No. 2319 (STECHMANN; Vol. 8, No. 1, 87): the author's name is spelled erroneously as 'Stechman'. The author has drawn the Editors' attention to several other wrong statements in the text, stating: "...*A. crassicaudatus* is parasitizing only on *Procladius* sp., while there was no association with Odon. The *Arrhenurus* larvae do not parasitize on larval Odon., but use the nymphs in the phoretic phase...".

No. 2475 (HÄMÄLÄINEN; Vol. 8, No. 3, pp. 238-239): the book review has appeared in *Notulae entomologicae*.

The Editors have to apologize for the above errors and are grateful to the readers for drawing their attention to them. It goes without saying that any other correction and/or additions received from the readers will be greatly appreciated.