ODONATOLOGICAL ABSTRACTS

1971

(1750) BEATTY, A.F. & G.H. BEATTY, 1971. The distribution of Pennsylvania Odonata. Pa Acad. Sci. Proc. 45: 147-167. – (*P.O. Box 281, State College, Pa 16801, USA*).
Known distribution of each of the 169 spp. currently listed for this state, USA, was mapped, using counties as distribution units. The entire recorded continental North American distribution of these spp. was also mapped. From these data a faunal analysis of the Pennsylvania Odonata was made, showing that the fauna is a strongly northeastern one, with only 25% of the species showing transcontinental distribution patterns and only 15% having essentially southern ranges. (Authors). (Cf. also *OA* No. 1751).

(1751) BEATTY, G.H. & A.F. BEATTY, 1971. The Odonata of Pennsylvania: list and cross-references to literature containing data on occurrence in the state. Pa Acad. Sci. Proc. 45: 111-120. – (*P.O. Box 281, State College, Pa 16801, USA*).
169 odon. spp. comprising the Pennsylvania, USA, fauna, recognized by the writers are tabulated with reference numbers to literature containing data on specific occurrences in Pennsylvania, from 1839 to 1971. References to 104 publications are given, with cross-references to all spp. cited in each occurring in Pennsylvania. This serves as an index to pertinent literature as well as a current check list of Pennsylvania Odonata. (Authors). (Cf. also *OA* No. 1750).

1972

(1752) SIMON, H., 1972. Dragonflies. Viking Press, New York. 95 pp. – Price: US $ 4.95. – (*Author's address unknown.* – Publishers' address: *625 Madison Ave., New York, N.Y. 10022, USA*).
Hilda Simon is taking the reader of this nice popular volume to a dragonfly-watching "expedition" that explores every aspect of its complex life history. Beautiful four-colour illustrations (by the author) reveal dragonfly anatomy, behaviour and species diversity around the world. – (*Abstracter's note:* The book will be particularly enjoyed by the secondary school youth and will represent useful reading to any non-biologist interested in the features of dragonfly life).

1974

(1753) HOGUE, C.L., 1974. The insects of the Los Angeles Basin. Nat. Hist. Mus. Los Angeles Co., Sci. Ser. 27: 1-174. – (c/o *Nat. Hist. Mus. Los Angeles, 900 Exposition Boulevard, Los Angeles, Calif. 90007, USA*).
The purpose of the publication (price: US $ 6.–) is to give the lay urban and suburban dweller of the Greater Los Angeles

Basin a means of identifying and understanding the insects and related terrestrial arthropods that most likely might be encountered. Odon. are dealt with on pp. 24-26. A brief general characterization of the Order is followed by photographs and drawings, accompanied by descriptions, of 6 most common spp. Latin and vernacular names are given.

(1754) LEGRAND, J., 1974. Ordre des Odonatoptères. *In:* Les Sciences. La Grande Encyclopédie Alpha des Sciences et des Techniques. Zoologie (2) 34: 13-16. Grange Batelière, Paris. – (*Lab. Ent., Mus. natl Hist. nat., 45 rue de Buffon, F-75005 Paris*).
This is an encyclopedia-style general review of the Order, based principally on the French fauna. Non-European taxa are hardly considered, and in the systematic account the Anisozygoptera are not mentioned. Rich illustrations (9) are well chosen and will certainly help the general reader to gain a good impression of dragonflies. It is unfortunate that subheadings and references are omitted and that the spelling of some taxonomic names is incorrect (Aeschna, Coenagriidae). (For the Odon. article in the Encyclopedia Britannica cf. *OA* No. 869).

(1755) SMART, J., 1974. Insects. Instructions for collectors No. 4 a. Brit. Mus. (Nat. Hist.), London. VI + 169 pp. – Price: £ 1.50. – (c/o *Messrs B. Cogan & K.G.V. Smith, Dept. Ent. Brit. Mus. [Nat. Hist.], Cromwell Rd., London SW7 5BD, UK*).
The first edition of this work was published in 1940, new editions were printed from time to time, the fourth appearing in 1963. This is the fifth, completely revised edition, prepared by B. Cogan and K.G.V. Smith. The handbook gives an up-to-date account of modern methods of insect collecting, packing and transport. A part of the book is devoted to general methods and descriptions of apparatus and their use. The second part deals with specific methods required for each order, Odon. being dealt with on p. 74.

1975

(1756) ASTRADAMOV, V.I., 1975. Rol' amfibii v poimennyh lesah Srednego Prisur'ya. [Role of the amphibians in the flood-plain forests on the middle section of the Sura River]. Mater. 2. itog. Konf. Zool. Volzhsko-Kamskogo Kraya, pp. 94-98. Inst. Biol. Kazan Acad. Sci., Kazan. (Russian). – (*Dept. Zool., Mordovian Univ., 61 Proletarskaya Str., USSR-430000 Saransk*).
Odon. larvae account for 5% of the food of Bombina bombina and for 20% of that of Rana esculenta.

(1757) BAYER, C.W., 1975. The dragonfly nymphs (Odonata: Anisoptera) of the Guadalupe River Basin, Texas. M. Arts Thesis, Southwest Texas State Univ., San Marcos. 117 pp. – (*Biol. Dept., Aquatic Stn, Southwest Texas St. Univ., San Marcos, Texas 78666, USA*).
The author aimed at determining the ecological distribution of anisopteran larvae in the Guadalupe River Basin, Texas, United States, thus establishing a baseline information as to which spp. occur in the Basin and under what conditions they exist. From Jan. 1973. through June 1974, 56 lotic and 14 lentic sites in the Basin were sampled, and 47 spp., referable to 32 genera of 5 families, were collected. The key presented includes 59 spp. of 35 genera.

(1758) GARDINER, N., 1975. Dragons and damsels are fantastic flies. Sth. Afr. Garden and Home (1975 (Apr.): 51-54. – (*Box 1017, Pietermaritzburg, Natal, Sth. Afr. Rep.*).
A popular article, from the illustrations of which Ischnura senegalensis, Aeshna minuscula, Trithemis annulata and T. stictica could be identified by the Abstracter.

(1759) ILYUSHINA, T.L., 1975. [The role of aquatic insects in the life-cycle of trema-

todes]. Trudy biol. Inst. sib. Otdel. Akad. Nauk SSSR 1975 (17): 53-94. (Russian). – *(Biol. Inst. Siberian Sect. USSR Acad. Sci., Ul. Frunse 21, USSR-630091 Novosibirsk).*
This paper forms part of a collection that deals with the helminth parasites of fish, birds, rodents and man in the forest-steppe zone of Western Siberia, USSR, and in particular with the western Kulunda area and the lakes associated with the basin of the Karasuk River. In it, records of collections of trematode larvae from aquatic insects are brought together from publications within and outside the Soviet Union, and are supplemented by data obtained by the author in the course of studies on aquatic insects of the orders Odon., Ephemeroptera, Coleoptera, Trichoptera and Diptera. Larvae of 60 spp. of trematodes, representing 10 families, have been found in association with aquatic insects. Detailed descriptions and figures of the metacercariae are given for many of them, and the nature of the association between them and the insects in which they were found is discussed. (Cf. also *OA* No. 740). – *(Abstracter's note:* Original paper not consulted; the above text taken verbatim from Rev. appl. Ent. [B] 64: 915; 1976).

(1760) KAFTANNIKOVA, O.G., 1975. Bespozvonochnye kanalov SSSR. [Invertebrates of the canals of the USSR]. Naukova Dumka, Kiev, 164 pp. (Russian). – *(Inst. Hydrobiol., Ukrainian Acad. Sci., 44 Vladimirskaya Str., USSR-252003 Kiev).*
Larvae of Platycnemis pennipes, Gomphus vulgatissimus and Libellula depressa are recorded from the Dnieper-Krivoi Rog Canal (Ukraine), Ischnura elegans from the Upper Shirvan Canal (Azerbaijan), and not further identified larvae from the Karakum Canal (Turkmenia).

(1761) PAVLYUK, R.S., 1975. Novye dopolnitel'nye hozyaeva trematody Plagiorchis elegans Rud., 1802. [New additional hosts of the trematode Plagiorchis elegans Rud., 1802]. Problemy Parasitol. (Mater. 8 nauch. Konf. Parasitol. UkrSSR), pp. 88-89. Naukova Dumka, Kiev. (Russian). – *(Zool. Mus., Fac. Biol., Lvov Univ., 4 Shcherbakov Str., USSR-290005 Lvov).*
35 Ukrainian (USSR) odon. spp. are listed as hosts. In large dragonflies up to 34 metacercariae were found per specimen. Infestation intensity amounted up to 21.7% of the specimens examined.

(1762) SLEPUHINA, T.D., 1975. Zoobenthos of Lake Onega littoral zone. *In:* Litoral'naya zona Onezhkogo Ozera, pp. 169-182, 234-240. Nauka, Leningrad. (Russian, with Engl. translation of the title). – *(Inst. Limnol., USSR Acad. Sci., 4 Petrovskaya Quay, USSR-197046 Leningrad).*
Solitary larvae of Coenagrion armatum were found on silt, whereas those of C. concinum and Aeshna affinis were recovered from the macrophytes.

(1763) SPILLNER, W., 1975. Zur Fortpflanzungsbiologie der Trauerseeschwalbe (Chlidonas niger). Beitr. Vogelkd. 21 (3/4): 172-215. – *(Mühle, DDR-2401 Wendisch Rambow, GDR).*
The reproductive biology of the Black Tern, C. niger, is described. This is the only Chlidonas sp. which broods regularly in Central Europe and has the northermost distribution in its group. The vocalizations and physical behaviour of black terns brooding on a fish pond at the Dambecker See nature preserve, German Democratic Republic, were observed from 1965-1968. Their food consisted of perch and various odon. larvae, especially Coenagrion spp. and Cordulia. Premating behaviour, copulation, nest construction, alternate brooding, behaviour towards egg surrogates of different shapes, colors and sizes, hatching, care of offspring, sand bathing, feeding and behaviour towards humans are discussed.

1976

(1764) (Anonymous), 1976. Otto R. Strub/Irene

Siegenthaler: Das Libellenjahr. Der Bund, Bern 1976 (Nov. 23), 1 p.
A book review of the volume listed in *OA* No. 1563. (For other reviews cf. *OA* Nos. 1668, 1765, 1766, 1767, 1769, 1771, 1772, 1775, 1784, 1787, 1795, 1797).

(1765) (Anonymous), 1976. Bücher zum Wünschen und Schenken. Otto R. Strub/Irene Siegenthaler: "Das Libellenjahr". Burgdorfer Tagbl. 1976 (242): 1 p. (issue of Dec. 14, 1976).
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1766) (Anonymous), 1976. Das Buch für den Tierfreund. Otto R. Strub/Irene Siegenthaler: Das Libellenjahr. Mensch u. Tier 1976 (17): 25.
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1767) (Anonymous), 1976. Das Libellenjahr. MittBl. schweiz. Ges. Tierschutz 1976 (4): 1 p. – (Publisher's address: *Schweiz. Ges. f. Tierschutz, Alfred-Escher Str. 76, CH-8002 Zürich*).
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1768) adg, 1976. Libellen auf der Heubühne. Thuner Tagbl. (Region Thun) 1976 (Sept. 29), 2 pp.
Announcement of, background information on, and impressions from the Dragonfly Photographs Exhibition by O.R. Strub and I. Siegenthaler, held in the Heubühne Gallery, Oberdiessbach, Switzerland (Sept. 26-Oct. 10, 1976). (For notes on the same exhibition in Bern, 1977, cf. *OA* Nos. 1793, 1794, 1796, 1799, 1803, 1821; – for the book by the same authors, referred to in this note cf. *OA* No. 1563).

(1769) BIERI, F., 1976. Bücher für den Tierfreund. Otto R. Strub, Irene Siegenthaler: Das Libellenjahr. Tierschutz 1976 (Dec.): 23. – (*Obmann Information, Tierschutzverein Bern, CH-Bern*).
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1770) BRZEK, J., 1976. Jan Jonston as a zoologist. Tercentenary of his death. Przegl. zool. 20 (3): 272-279. (Polish, with Engl. s.). – (*Zakl. Zool. & Hydrobiol., Inst. Biol. Podstaw Produkcji Zwierzecej, Akad. Rolnicz., Lublin, PO*).
This is a retrospective paper on zoological activities and views of Jan (Johann) Jonston (Sept. 3, 1603 - June 8, 1675), son of a Scotch Calvinist emigrant, born in Samter (Szamotuly), Great Poland. It was prepared on the occasion of a Symposium (June 6-8, 1975; Leszno, Lubin and Skladowice, Poland), held to commemorate the tercentenary of his death. He was a distinguished naturalist and author of several philosophical and zoological works. Among the latter, the most important is "Historia naturalis de insectis libri III" from 1653 (incl. several editions and translations into Engl. and Dutch, under various titles). The work includes numerous copper-engravings by Matthias Merian (mostly original, some redrawn from e.g. T. Moufet, 1550-1604) of adult and larval Odon., that are among the first that have appeared after publication of U. Aldrovandi's famous "De animalibus insectis libri septem" (1602). A contemporary portrait is also provided.

(1771) BUCHER, F., 1976. Das Libellenjahr. Die Tat 1976 (270): 11 (issue of Nov. 16, 1976). – (*Author's address unknown*).
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1772) db, 1976. Das Libellenjahr. Von Otto R. Strub und Irene Siegenthaler. Schweiz. Naturschutz 1976 (8): 12.
A book review of the volume listed in *OA* No. 1563. (For references to other reviews

cf. *OA* No. 1764).

(1773) EISELE, P.J. & R. HARTUNG, 1976. The effects of methoxychlor on riffle invertebrate populations and communities. Trans. am. Fish. Soc. 105 (5): 628-633. – (*Eng. Res. Dept., Detroit Edison Co., 2000 Second Ave., Detroit, Mich. 48226, USA*).
A study was conducted to evaluate the chronic effects of a toxicant on interacting stream invertebrate populations. The study involved the continuous dosing of a small stream at 0.2 µg/l methoxychlor for > 1 yr. Invertebrate populations were monitored by artificial substrate and bottom sample collections of riffle invertebrates. Most invertebrate populations experienced some reduction due to the stream dosing. Some taxa (baetids and plecopterans) were affected as reflected by population reductions in dosed areas. Many taxa (hydropsychids, simulids and aeshnids) were temporarily affected, experiencing initial population reductions in dosed areas but then recovering to control levels. Other taxa (chironomids and elmids) were not affected by the pesticide dosing. The riffle invertebrate community colonizing artificial substrates experienced a temporary decrease in diversity, through both reduced richness and evenness. Diversity was not decreased in bottom sample collections. In general, most long-term effects were minor in comparison to naturally occurring phenomena such as flooding.

(1774) GAGNON, P., 1976. Une cinquième station pour Ophiogomphus carolus (Needham). Fabreries 2 (7): 99-100. (With Engl. s.). – (*7 rue Verdun, Lévis, Que., CA*).
A new record of O. carolus from Quebec, Canada, is presented (1 ♂, 1 ♀, June 9, 11, 1976, Levis).

(1775) GROSSNIKAUS, H.P., 1976. Das Libellenjahr. Berner Oberländer 1976 (301), 1 p. (issue of Dec. 23, 1976). – (*Author's address unknown*).
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1776) HARITONOV, A. YU., 1976. Osnovnye napravleniya evolucii reproduktivnogo povedeniya u ravnokrylyh strekoz i ego taksonomicheskoe znachenie. [Evolutionary trends in the reproductive behaviour of zygopteran dragonflies and their taxonomic significance]. *In:* B.P. Manteyfel', [Ed.], Gruppovoe povedenie zhivotnyh. Nauka, Moscow, pp. 409-412. (Russian). – (*Inst. Biol., Siberian Sect. Acad. Sci. USSR, Ul. Frunse 11, USSR-630091 Novosibirsk*).
The reproductive behaviour of Coenagrion armatum, C. hastulatum and C. lunulatum (= vernale Hagen, nomen nudum) is described and discussed. The behavioural patterns of Coenagrionidae are compared to those recorded in Calopterygidae, and it is argued that the behavioural distinctions between the 2 families should be regarded as additional evidence in support of G. Zalesky's (1934. Bull. Soc. geol. Fr., V, 3: 497-520) suborder Calopterícoptera (Caloptera of the author).

(1777) HOEHER, S. & H. BELLMANN, 1976. Insekten im Kreislauf der Natur. Interessantes und Lehrreiches aus dem Leben der Insekten. Lehmanns Verlag, München, 146 pp., 112 col.figs. incl. – Price: DM 22,– – (*Author's address unknown*).
This is another of the numerous "field guides" to the insect world of central Europe, and is listed here only because of the beautiful colour photographs of and relatively extensive and accurate comments on 5 odon. spp. (pp. 14-20, figs. 3-9), viz. Aeshna cyanea, A. grandis, Sympetrum danae, Platycnemis pennipes, Pyrrhosoma nymphula.

(1778) HÖHN-OCHSNER, W., 1976. Zürcher Volkstierkunde. Mundartliche Tiernamen und volkskundliche Mitteilungen über die Tierwelt des Kantons Zürich. Vjschr. naturf. Ges. Zürich 121 (1): 1-140. –

(*Kinkel Str. 61, CH-8006 Zürich*).
This is a monograph on the animal folklore and dialect animal names, incl. popular animal stories and superstitions, in Canton Zürich, Switzerland. Odon. are dealt with on p. 18. The following local dialect (Swiss German) dragonfly folk names are listed: *Wasserjumpfere, Augestächer, Augeschüüsser, Tüüffelsgrosmueter, Tüüfelsnaadle.* The fishermen in ancient Zürich used to call the dragonfly larvae *Rickli, Rückle* or *Rückling.* The verbatim text, translated into modern German, of the dragonfly (Rückling) life history, as narrated by Erhard Hans Escher (1692, Beschreibung des Zürichsees sambt den daran gelegenen Orthen, Zürich), is also given.

(1779) JAHN, K., 1976. Über den Aufbau und den Einsatz verschiedener Typen von Saugfallen. Ent. Ber., Berlin 1976: 69-78. – (*LK Allg. & Spez. Zool., Sekt. Chemie/Biol., Pädagog. Hochschule, Lohmannstr. 23, DDR-437 Köthen/Anhalt, GDR*).
3 types of sucking traps are described. In one of these (ventilator sucking trap, with white funnel) Apterygota and representatives of 11 pterygote orders, incl. not further specified Odon., were caught. Detailed technical descriptions are accompanied by drawings.

(1780) KLAUSNITZER, B., D. BRAASCH, U. JACOB, W. JOOST & W. ZIMMERMANN, 1976. Gegenwärtiger Stand der faunistischen Erforschung der aquatischen Insektenordnungen in der DDR. Ent. Nachr. 20 (9/10): 133-159. (With Engl. and Russ. s's.). – (*Lannerstr. 5, DDR-8020 Dresden, GDR*).
A detailed review and a critical evaluation are given of the present state of faunistics of the aquatic insects in the German Democratic Republic. Odon. (pp. 140-142) are considered relatively well explored (63 spp. on the GDR territory), though faunistic information for some regions is still inadequate, notably so for the Eastsea (Ostsee) coast, and for the districts of Schwerin, Cottbus, Halle and Suhl. Bibliographic references are specified for each region.

(1781) LIEFTINCK, M.A., 1976. The dragonflies (Odonata) of New Caledonia and the Loyalty Islands. Part 2. Immature stages. Cah. O.R.S.T.O.M. (Hydrobiol.) 10 (3): 165-200. (With Fr. s.) – (*Nwe Veenendaalseweg 224, Rhenen-2780, NL*).
Of the 40 spp. hitherto known to occur in New Caledonia (18 Zygoptera and 22 Anisoptera), the larval stages of 9 belonging to the first and 12 to the second suborder are represented in the material studied, 10 of them being here characterized for the first time. Special attention has been paid to the endemic Argiolestinae, the Isostictidae, and Synthemis, whose salient characteristics are described and illustrated in some detail. The first category comprises 4 spp., viz. Argiolestes ochraceus, the supposed Caledargiolestes uniseries, Caledopteryx sarasini and, inevitably, also the mysterious terrestrial kind, of which the imago still remains to be discovered. All are isolated, dissimilar forms showing specializations of their own, which are probably largely adaptive by nature, being nonapparent in the adult dragonfly. For 3 spp. the generalized structure of the proventriculus is also described and figured. Comparisons are made with some Papuan relatives and, more especially, with Austroargiolestes icteromelas. The most noticeable characters of this Australian zygopteron are described and figured, with notes on the ethology of its larva based on field observations, and comments on the function of its caudal lamellae as respiratory and locomotion organs. As to Isosticta, keys are supplied for the distinction of 3 of the 5 known spp., followed by a brief characterization of a very young individual. The diagnosis of I. robustior is mainly based on the exuviae of one specimen which is, in fact, the only New Caledonian dragonfly ever obtained in the act of transformation and preserved with its larval skin. Of the con-

spicuous corduliid genus Synthemis, only 6 insular spp. have so far been described, but 7 are recognized in the material on hand. The distinguishing features are illustrated and arranged in a key, though only S. fenella and miranda could be identified with reasonable certainty. The only aeshnid represented in the collections is Aeshna brevistyla, of which some structural peculiarities are figures. (Author). (For Pt. 1 cf. *OA* No. 1376).

(1782) MATSUDA, R., 1976. Morphology and evolution of the insect abdomen, with special reference to developmental patterns and their bearings upon systematics. Int. Ser. Pure and Appl. Biol. (Zool. Div.) 56: VIII + 534 pp. Pergamon Press, Oxford - New York - Toronto - Sydney - Paris-Frankfurt. – (*Biosyst. Res. Inst., Canada Dept. Agric., Ottawa, CA*).
This is the 3rd volume in a series on the structural evolution of insects. The other 2 works, by the same author, dealt with the head (1965) and with the thorax (1970). The book is organized into 3 main parts, dealing with (1) the principles of structural evolution (5 chapters, pp. 1-48), (2) general discussion on the insect abdomen (8 chapters, pp. 49-108), and (3) special discussions on the insect abdomen, arranged per order (pp. 109-430). Odon. are dealt with on pp. 132-141. The subjects treated are: "Abdominal segmentation", "Abdominal appendages", "Postembryonic development of the male external genitalia", "The male external genitalia", "Postembryonic development of ovipositor", "The female external genitalia", "Germ cells and embryonic development of the gonad", "The male internal reproductive system", "Postembryonic development of the female efferent system", and "The female internal reproductive system". A cumulative bibliography is given on pp. 431-502.

(1783) MAUCH, E., 1976. Die Bedeutung der Saprobität für die biologische Gewässeranalyse. 5. Cour. Forschungsinst. Senckenberg 21 (5): 564-797. – (*Regier. Unterfranken, Postfach, D-8700 Würzburg-2, GFR*; or *c/o the Editors/Publishers: Forschungsinst. Senckenberg, Senckenberganlage 25, D-6 Frankfurt a.M.-1, GFR*).
This is the last of a 5 volume series cataloguing saprobic water pollution indicator organisms. Degree of saprobity indicates which of 7 pollution classes a lake or stream is in. Degrees of saprobity include oligosaprobic, (least pollution) β-mesosaprobic (moderate pollution), α-mesosaprobic (heavily polluted) and polysaprobic (excessively polluted). Among the organisms listed are also Odon.

(1784) MAURER, T., 1976. Für Aestheten und Tierfreunde. Das Libellenjahr. Otto R. Strub und Irene Siegenthaler. Berner Oberländer/Berner Oberländer Nachrichten 1976 (278), 1 p. (issue of Nov. 26, 1976). – (*Author's address unknown*).
A book review of the volume listed in *OA* No. 1563, For references to other reviews cf. *OA* No. 1764).

(1785) OLSON, E.C., 1976. The exploitation of land by early tetrapods. *In:* A. d'A. Bellairs & C.B. Cox, Eds., Morphology and biology of reptiles. Linn. Soc. Symp. Ser. 3: 1-30. – (*Dept. Biol., Univ. California, Los Angeles, Cal. 90024, USA*).
Due to the difference in conditions required for the fossilization of vertebrates and insects, the 2 groups but seldom occur in the same beds. Nevertheless, it is suggested that larval and adult Odon. are likely to have represented an important item in the diet of early reptiles. The increase in number of insects has been followed by that of the reptiles.

(1786) PERRY, T.E., 1976. Somatochlora kennedyi Walker (Odonata: Corduliidae), a new Ohio dragonfly. Ohio J. Sci. 76 (5): 224. – (*Mem. Sch., Mentor, Ohio 44060, USA*).
A specimen of S. kennedyi, collected in 1955, is thought to be the only record of

this sp. from Ohio, USA. Calopteryx maculata is the only odon. recorded from the same location in July 1975.

(1787) RIMOLDI, C., 1976. Das Libellenjahr. Zürichsee-Ztg. – Allg. Anzg. – Grenzpost 1976 (Nov. 5), 1 p. – *(Author's address unknown)*.
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1788) SCHIER, R., 1976. Libellen im Computer. Elektronenrechner simuliert Verhalten von Tieren. Mitt. Univ. Köln 1976 (1): 32-33. – *(Author's address unknown)*.
A popular note on the research project on dragonfly behaviour simulated by computer, carried out by Dr. Heinrich Kaiser (Zool. Inst., Univ. Köln, Weyertal 119, D-5000 Köln-41, GFR). A portrait of the scientist is also provided.

(1789) SCHÖNBORN, W., 1976. Beitrag zum Modell der Krautschicht-Stratozönose. Ent. Abh. Mus. Tierk. Dresden 41 (1): 1-18. (With Engl. s.). – *(Friedrich-Engels-Str. 15, DDR-69 Jena, GDR)*.
The fieldlayer-stratocoenoses of the Holcus-Agrostis, Deschampsia-flexuosa-forest, and Holcus-lanatus-forest meadows in the German Democratic Republic were examined. A reference is made also to Odon., but no names of spp. are stated.

(1790) SENF, E., 1976. Die Odonaten-Fauna des westlichen Bodenseegebiets. Mitt. bad. Landesver. Naturk. Naturschutz 11 (3/4): 327-335. – *(Stiegerstr. 11, D-7763 Oehningen, GFR)*.
46 spp., recorded from 1968 through 1974 in the western area of the Bodensee territory, German Federal Republic, are listed along with data on their phenology and abundance, and ecology notes on some spp. are provided. Nehalennia speciosa is new for the federal state of Baden-Württemberg. Anthropogenic influence on the odon. populations is also briefly discussed.

(1791) STREET, P., 1976. Animal migration and navigation. David & Charles, Newton Abbott - London - Vancouver. 144 pp. – *(Author's address unknown)*.
On pp. 90-92 a chapter is devoted to odon. migrations. A few cases of the phenomenon are narrated and the relation between odon. migratory flights and trematode infestation of domestic poultry are briefly considered.

(1792) THEISCHINGER, G., 1976. Cordulegaster charpentieri (Kolenati, 1846) in Ober-Österreich? (Odonata, Cordulegasteridae). Naturk. Jb. Stadt Linz 22: 113-122. (With Engl. s.). – *(Biol. Abt. II, Oberösterreichisches Landesmus, Museumstr. 14, A-4010 Linz.)*.
It is shown that the record of C. Charpentieri from Upper Austria (Seebach nr. Eferding) (cf. D. St. Quentin, 1959. Catalogus Faunae Austriae, XII, c, p. 6) is erroneous, and the sp. occurring there should be referred to C. b. boltoni. Detailed figures of the Upper Austrian C. b. boltoni and the Lower Austrian and Styrian C. charpentieri are provided. If any, the ecological differences between the 2 spp. are but very small.

1977

(1793) (Anonymous), 1977. Berner Schulwarte. Photoausstellung: Libellen. Amtl. Schulbl. Kanton Bern 1977 (Apr. 30): 265.
Announcement of the Dragonfly Photograph Exhibition by O.R. Strub and I. Siegenthaler in the Schulwarte Bern, Switzerland (May 6-June 4, 1977). (For other notes cf. *OA* Nos. 1794, 1796, 1799, 1803, 1821; – for a note on the same exhibition in Oberdiessbach, 1976, cf. *OA* No. 1768).

(1794) (Anonymous), 1977. Photo-Ausstellung von Otto R. Strub in der Schulwarte. Funkelndes Libellenleben auf einem Waffenplatz. Berner TagBl. 1977 (May 11): 9.
Background information on and impressions from the Dragonfly Photographs Ex-

hibition by O.R. Strub and I. Siegenthaler, held in the Schulwarte Bern, Switzerland (May 6-June 4, 1977). (For other notes cf. *OA* No. 1793; – for a note on the same exhibition in Oberdiessbach, 1976, cf. *OA* No. 1768; – for the book by the same authors, referred to in this note cf. *OA* No. 1563).

(1795) (Anonymous), 1977. Irene Siegenthaler/ Otto R. Stub [sic!]: Das Libellenjahr. Die Ostschweiz 1977 (Apr. 4), 1 p.
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1796) (Anonymous), 1977. Wussten sie schon dass Libellenlarven bis zu 5 Jahren in Wasser leben. PersonalZtg. Stadt Thun 1977 (1), 1 p.
Indicative note on the book and exhibition of photographs, listed in *OA* No. 1563 and e.g. 1768 respectively.

(1797) (Anonymous), 1977. Strub/Siegenthaler, Das Libellenjahr. Schweizerjäger 1977 (March 19): 158.
A book review of the volume listed in *OA* No. 1563. (For references to other reviews cf. *OA* No. 1764).

(1798) ABSTRACTS OF PAPERS read at the Fourth International Symposium of Odonatology, Gainesville, 1977. [Edited by M.J. Westfall & C. Johnson]. Issued by the Societas Internationalis Odonatologica (S.I.O.), Gainesville, 30 pp. – Price: US $ 5.–. – (c/o *Prof. Dr. M.J. Westfall, Jr., Dept. Zool., Univ. Florida, Gainesville, Fla 32611, USA*).
Carle, F.L. (Ent. Dept., Va Polytechn. Inst. & St. Univ., Blacksburg, Va 24061, USA): Freeze techniques for preserving the Odonata; – *Carlson, P.H., T.R. White & R.C. Fox* (Dept. Ent. & Economic Zool., Clemson Univ., Clemson, SC 29631, USA): The Odonata of natural and channelized streams in South Carolina (Title only); – *Donnelly, T.W.* (Dept. Geol. Sci., St. Univ. New York, Binghamton, N.Y. 13901, USA): Continental drift and biogeography of Odonata – an appraisal of the state of our knowledge; – *Garrison, R.W.* (32 Croxton Ave., Oakland, Calif. 94611, USA): Biosystematics of Enallagma of the western United States (Odonata: Coenagrionidae) (Title only); – *Hassan, A.T.* (Dept. Zool., Univ. Ibadan, Ibadan, Nigeria): Some aspects of the ecology of three libellulid dragonflies' larvae (Libellulidae: Anisoptera); – Reproductive behaviour of Acisoma panorpoides inflatum Selys (Libellulidae: Anisoptera); – *Thakare, V.K., M.W. Khan & S.G. Uttarwar* (P.-G. Dept. Zool., Nagpur Univ., Nagpur-440010 M.S., India): Accessory role of rectum in the regulation of Na^+ and K^+ ions in the nymph of dragonfly, Orthetrum chrysis (Selys); – *Kennedy, J.H. & H.B. White III* (Cent. Environm. Stud., Aquat. Ecol., Dept. Biol., Blacksburg, Va 24061, USA): Description of the nymph of Ophiogomphus howei (Odonata: Gomphidae); – *Knopf, K.W.* (4100 S.W. 31st Str., Apt. 13, Gainesville, Fla 32608, USA): Analysis of protein variation in dragonflies; – *Komnick, H.* (Inst. Cytol., Univ. Bonn, Ulrich-Haberland-Str. 61 a, D-5300 Bonn-1, GFR): Osmoregulatory role and transport atpases of the rectum of dragonfly larvae; – *Machado, A.B.M.* (Dept. Morfol., Inst. Cienc. Biol., UFMG, C.P. 2486, BR-30000 Belo Horizonte, Minas Gerais, Brazil): Life-history of the plant-breeding damselfly Roppaneura beckeri Santos, 1966 (Zygoptera-Protoneuridae); – Ecological studies on the larva of the plant-breeding damselfly Roppaneura beckeri Santos, 1966 (Zygoptera-Protoneuridae); – *Mathavan, S.* (Zool. Dept., Arulmingu Palaniandavar Arts Coll., Palni-624602, India): Yolk utilization in the tropical dragonflies Brachythemis contaminata and Orthetrum sabina; – *May, M.L.* (Dept. Physiol. & Biophys., Univ. Illinois, Urbana, Ill. 61801, USA): Thermal adaptations of dragonflies; – *Montgomery, B.E.* (906 North Chauncey Ave., West Lafayette, Ind. 47906, USA): The des-

cribers of Odonata; – Bibliographies of the Odonata; – *Nimz, C.* (Dept. Biol., Idaho St. Univ., Pocatello, Idaho 83209, USA): A computer model of the growth of larval dragonflies; – *Parr, M.J.* (Dept. Biol., Univ. Salford, Salford M5 4WT, England, UK): Some ecological observations in Ceriagrion tenellum in southern England (Text on inlaid sheet); – *Paulson, D.* (Burke Mus., Univ. Washington, Seattle, Wash. 98195, USA): The adaptive significance of dragonfly coloration; – *Pilon, J.-G.* (Dép. Sci. biol., Fac. Arts & Sci., Univ. Montréal, Que. H3C 3J7, CA): The Odonata of the Grande Région, James Bay, Quebec; – *Rudolph, R.* (Fliednerstr. 21, D-44 Münster, GFR): The flow around dragonfly wings and corrugated wing model sections; – *Schmidt, E.* (Biol.-Sem., P.H., Mürwikerstr. 77, D-239 Flensburg, GFR): Approaches to a quantification of the decrease of some dragonfly species in West Germany (BRD); – *Sherk, T.* (Dept. Biol., Kline Biol. Tower, Yale Univ., New Haven, Conn. 06520, USA): The vision of adult dragonflies; – *Tennessen, K.J.* (1949 Hickory Ave., Florence, Alabama 35630, USA): Diel periodicity in hatching of Epitheca eggs (Title only); – *Van Brink, J.M. & B. Kiauta* (Dept. Anim. Cytogenet. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL): Annotations on the chromosome complements of some dragonflies from Southern Africa; – *Voshell, J.R., Jr. & G.M. Simmons, Jr.* Dept. Ent., Va Polytechn. Inst. & St. Univ., Blacksburg, Va 24061, USA): The Odonata of a new reservoir in the southeastern United States; – *Waage, J.K.* (Biol. & Med., Box G, Brown Univ., Providence, Rhode Island 02912, USA): Reproductive character displacement in damselflies (Calopterygidae: Odonata); – Evolutionary aspects of territorial behaviour in Calopteryx maculata; – *Westfall, M.J.* (Dept. Zool., Univ. Florida, Gainesville, Fla 32611, USA): Some interesting dragonfly larvae of Brazil (Title only); – *Willey, R.L.* (Dept. Biol. Sci., Univ. Illinois. Box 4348, Chicago, Ill. 60680, USA): Further studies on the damselfly hindgut. – Abstracts of s l i d e and m o v i e programs: *Belle, J. (Onder de Beumkes 35*, 6883 HC Velp, NL): Dragonflies in the south of France (Summary of the movie film); – Slide program on Surinam dragonflies; – *Donnelly, T.W.* (Dept. Geol. Sci., St. Univ. New York, Binghamton, N.Y. 13901, USA): Odonata in my travels (Title only); – *Machado, A.B.M.* (Dept. Morfol., Inst. Cienc. Biol., UFMG, C.P. 2486, BR-30000 Belo Horizonte, Minas Gerais, Brazil): Mating and oviposition behavior of Neoneura sylvatica Selys (Odonata-Protoneuridae); – *Schmidt, E.* (Biol.-Sem., P.H. Mürwikerstr. 77, D-239 Flensburg, GFR): Central European dragonflies (Title only); – *White, H.B.* (Dept. Chem., Univ. Delaware, Newark, Delaware 19711, USA): Some interesting Odonata from two New England bogs; – *Williams, C.E.* (704 Foster Str., Marlin, Texas 76661, USA): Life cycle of the dragonfly. (A series of 140 color slides). – A d d r e s s e s of the authors. – (For Program and Generalities cf. *OA* No. 1817).

(1799) adg, 1977. "Das Libellenjahr" – Erfolg auch in Bern: und wann kommt die Ausstellung nach Thun? Thuner TagBl. 1977 (June 18), 1 p.
A brief retrospective note on the Dragonfly Photographs Exhibition by O.R. Strub and I. Siegenthaler, held in the Schulwarte Bern, Switzerland (May 6-June 4, 1977), including citations of the recensions published by the local Swiss press (Der Bund, Berner Nachrichten, Berner Tagblatt). (For references to these and others cf. *OA* No. 1768; – for the book by the same authors, referred to in this note cf. *OA* No. 1563.

(1800) ANSELIN, A., 1977. Libellen tijdens de zoka te Matagne van 13 tot 24 juli 1976. (Dragonflies observed during the summer camp at Matagne, Belgium, between July 13th and July 24th 1976). Stridula 1 (1): 11-19. (Dutch, with Engl. s. on p. 1). –

(*Diksmuider Heirweg 114, B-8200 Brugge-2*).
23 spp. collected in the limestone region Fagne Famenne, Belgium, are listed and discussed. Special attention is being paid to the ecology and to the local occurrence and abundance of single taxa. (Cf. also *OA* No. 1823).

(1801) ASAHINA, S., 1977. On a small collection of the Odonata from Laos. Kontyû 45 (2): 165-184. – (*Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA*).
14 spp. taken along a tributary of the Nammoh River, Upper Mekong, 200 km N of Ventiane, Ventiane prov., Laos, are recorded, 3 of these are revisionally considered (Orolestes selysi MacLachl., Euphaea ochracea Sel., Burmagomphus divaricatus Lieft.). The Orolestes spp. are keyed, and Euphaea guerini inouei is described as new (♂ holotype: Thao Bolba nr. Dalat, southern Vietnam, 31.III.1962; ♀ allotype: Tay Ninls, southern Vietnam, 1.V.1958; – ♂, ♀ paratypes: various southern Vietnam localities). The ♂ exuvia of B. divaricatus is also described and figured. The revisionally considered taxa are illustrated by 67 figures.

(1802) BELYSHEV, B.F. & A. YU. HARITONOV, 1977. Determiner of dragonflies (genera of Boreal faunistic kingdom and some contiguous territories, species of the USSR fauna). (Russian title: Opredelitel' strekoz po kryl'yam (rody Boreal'nogo faunisticheskogo carstva i sopredel'nyh zemel', vidy fauny SSSR)). Nauka, Novosibirsk. 399 pp., 327 figs. (Russian, with Engl. translation of the title). Price: Rub. 8.23. – (*Inst. Biol., Siberian Sect. USSR Acad. Sci., Ul. Frunse 11, USSR-630091 Novosibirsk*).
This is a voluminous key for identification of holarctic genera and the USSR spp. It is based solely on venational characters and wing morphology. The book is organized into the following chapters: (1) Preface, (2) Introduction, (3) List of taxa keyed, (4) Key to and atlas of the genera of the Holarctic and adjacent territories, (5) Atlas for identification of the USSR spp., (6) References. Since the book is intended also for paleoentomologists, the Neogene and the Quarternary taxa are included. One of the peculiar features of the work is the reintroduction of G. Zalessky's (1934. Bull. Soc. geol. Fr., V, 3: 497-520) suborder Calopticoptera (here modified as Caloptera) for the families Euphaeidae (= Epallagidae) and Calopterygidae. – (*Abstracter's notes:* The book is the result of many years' meticulous work of the senior author. Many original drawings will certainly be useful. It is unfortunate that the phylogenetic classification and, where appropriate, the valid nomenclature are disregarded. This attitude is due to the profound influence exercised on the Russian workers by the works of the late A.N. Bartenev which, in these aspects, are since long obsolete. At present, the Russian odonatologists are the last active workers still adhering to the views of taxonomists of the early decades of this century).

(1803) ckb, 1977. Die grössten einheimischen Insekten. Farbfoto-Ausstellung über Libellen in der Schulwarte. Der Bund 1977 (109): 9 (issue of May 11, 1977).
Brief description of the Dragonfly Photograph Exhibition by O.R. Strub and I. Siegenthaler, held in the Schulwarte Bern, Switzerland (May 6-June 4, 1977). (For other notes cf. *OA* No. 1793; – for a note on the same exhibition in Oberdiessbach, 1976, cf. *OA* No. 1768; – for the book by the same authors, referred to in this note cf. *OA* No. 1563).

(1804) CLAUSNITZER, H.-J., 1977. Fliesswasserlibellen (Odonata) in Heidebächen. Beitr. Naturk. Niedersachs. 30 (2): 38-45. – (*Südstr. 6, D-3106 Eschede, GFR*).
The odon. fauna of a number of rivulets in the Lüneburger Heide, Niedersachsen, German Federal Republic, has been studied from 1971 through 1975. The upper rivulet region is inhabited by Calo-

pteryx virgo and Cordulegaster boltoni (= annulatus), in warmer sections there are Calopteryx splendens and Ophiogomphus serpentinus, while in slowly running waters Pyrrhosoma nymphula and Somatochlora metallica were recorded. Enallagma cyathigerum appears strictly stagnicolous. The digging in and the artificial regulation of the rivulet bed endanger the habitats of rheophilic spp.

(1805) CLAUSNITZER, H.-J., 1977. Gefährdete Libellen aus der Umgebung von Celle. Ent. Z. Frankf. a. M. 87 (12): 126-131. – *(Südstr. 6, D-3106 Eschede, GFR).*
16 spp. that are endangered in the region of Celle, Niedersachsen, German Federal Republic, are listed and briefly discussed.

(1806) DUMONT, H.J., 1977. Redécouverte d'Oxygastera curtisi (Dale, 1834) en Belgique (Odonata). Bull. Ann. Soc. r. belge Ent. 113 (1-3): 26; author's name on p. 25. – *(Inst. Zool., Univ. Ghent, Ledeganckstr. 35, B-9000 Ghent).*
5 spec., incl. a young ♀, taken on June 23, 1976 on the Ourthe River, Hotton, Luxembourg prov., Belgium, are brought on record. The sp. has been first recorded in Belgium on June 16, 1900 (cf. A. Lameere, 1900. Ann. Soc. ent. Belg. 44: 259-260), and in Holland on June 21, 1925 (cf. M.A. Lieftinck, 1926. Ent. Ber., Amsterdam 8: 43-45). It is argued that the sp. either regularly breeds in Belgium, or does so at least during meteorologically favourable periods, similar to those that have prevailed in 1975-1976, when "mediterranean"-like weather conditions resulted in northward expansion of mediterranean faunal elements.

(1807) DUMONT, H.J., 1977. An analysis of the Odonata of Tunisia. Bull. Ann. Soc. r. belge Ent. 113 (1-3): 63-94. (With Fr. s.)– *(Inst. Zool., Univ. Ghent, Ledeganckstr. 35, B-9000 Ghent).*
A review is given of the odon. fauna of Tunisia (56 spp.). It includes all known literature records, though it is in the first place based on material collected by the author in 1976 (March 22 - Apr. 3, May 30 - June 11). Detailed descriptive notes (incl. illustrations) and remarks on ecology are furnished for some taxa. Sympetrum decoloratum sinaiticum ssp. n. is described and figured (♂ holotype, ♀ allotype, ♂, ♀ paratypes: Tozeur Oasis; extralimital material from Sinai; type in Inst. Roy. Sci. Natur., Brussels). Chorology of the fauna is discussed in detail and the following 4 categories are recognized: remnants of an endemic fauna, European pluvial relicts, Ethiopian relicts, and Asiatic elements.

(1808) HARITONOV, A. YU., 1977. A description of relict species of dragonflies (Insecta, Odonata) from southern regions of West Siberia. New little-known Spec. sib. Fauna 11: 117-124. (Russian, with Engl. s.). – *(Inst. Biol., Siberian Sect. USSR Acad. Sci., Ul Frunse 11, USSR-630091 Novosibirsk).*
Calopteryx splendens johanseni Belyshev (1955. Zametki Faune Flore Sibiri 18: 27-28) and Libellula relicta Belyshev (1973. Dragonflies of Siberia I, 1/2: 193-199) are redescribed. The former is elevated to the species rank, and the latter is compared to L. quadrimaculata.

(1809) HEYMER, A., 1977. Hoogontwikkelde gedragspatronen en behoud van oorspronkelijke lichamelijke kenmerken bij libellen. [Highly developed behavioural patterns and conservative body structure in dragonflies]. Stridula, Gent 1 (1): 3-10. (Dutch). – *(Lab. d'Ecol. Gén., Mus. Natl d'Hist. Nat., 4 av. Petit Château, F-91800 Brunoy).*
This is a reprint of the Dutch version of the paper listed in *OA* No. 875, incl. the line drawings, but excl. the colour photographs.

(1810) HIGLER, L.W.G., 1977. Macrofaunacenoses on Stratiotes plants in Dutch broads. Verhand. [Neth. St.] Res. Inst. Nature Manag. 11: 1-86. (With Dutch s.). –

(*Res. Inst. Nature Manag., "Broekhuizen", Leersum, Utr., NL*).
Usually only early larval stages are found in the Stratiotes vegetation, therefore the identification is rather difficult. In macrofauna samples collected at 73 localities in various provinces of the Netherlands, the following odon. spp. were found associated with the Water Soldier vegetation: Lestes sponsa, Ischnura elegans, Enallagma cyathigerum, Coenagrion pulchellum, C. puella, Erythromma najas, Aeshna affinis, A. (?) cyanea, A. (?) grandis, A. mixta, A. viridis, Anaciaeschna isosceles, Cordulia aenea, and Sympetrum striolatum. Odon. larvae are considered very important top predators in most Stratiotes vegetations, where fish are less abundant or completely lacking.

(1811) JENSEN, H., 1977. Ultrastructure of the myocardial cell and its membrane system in the adult fly Calliphora erythrocephala (Insecta: Diptera). Cell Tiss. Res. 180: 293-302. – (*Cellular Cardiology Res. Group, Inst. Anat., Univ. Bergen, Arstadveien 19, N-5000 Bergen*).
The length of the myosin filaments amounts to 1.2 μ in Orthoptera, 1.4 μ in Calliphora, and 2-3 μ in Odon. It is suggested that the difference may be related to the contraction speed required by the heart, i.e. the shorter the myosin filaments (sarcomeres), the faster the contractions. (Cf. also *OA* Nos. 1182, 1476).

(1812) KOK, L., 1977. Libellen in heempark "De Braak", Amstelveen. (Dragonflies in "De "Braak", an instructive park in the centre of Amstelveen). Stridula 1 (1): 26-41. (Dutch, with Engl. s. on p. 1). – (*Keizershof 4, Dordrecht, NL*).
The odon. fauna of the park (near Amsterdam, Netherlands) is analyzed with special reference to the faunal composition and succession. The capture-recapture method has been applied on a fairly large scale, but too few specimens were recaptured to give a picture of the internal migration and age. In all, 11 spp. were noticed in the park (1975-1976).

(1813) KOMNICK, H., 1977. Chloride cells and chloride epithelia of aquatic insects. Int. Rev. Cytol. 49: 285-329. – (*Inst. Cytol. & Mikromorphol., Univ. Bonn, Gartenstr. 61 a, D-53 Bonn, GFR*).
Larval Odon. lack specialized sites for ion absorption on the body surface. Instead, certain regions of the rectal wall are differentiated for this function. Rectal chloride epithelia in the Order are described and discussed.

(1814) KÜRSCHNER, K., 1977. Beobachtung einer Libellenwanderung in Griechenland. Atalanta 8 (2): 73. – (*Robert-Koch-Str. 31, D-6100 Darmstadt-Eberstadt, GFR*).
On July 17, 1975, a large scale migration of Hemianax ephippiger was observed at the city of Alexandrapolis, Greece. The flight started at 18.45, reached its peak at 18.50-18.55, and it was suddenly over at 19.05 hrs. The insects flew along the sea coast in SWW direction, at an approx. height of 3-5 m. The dragonflies appeared in such huge numbers that during the flight the skies were darkened and the air was filled with their buzzing. The sp. has been identified by Mr. H. Heidemann (Bruchsal, GFR).

(1815) MIYAKAWA, K., 1977. Tombo. [Dragonfly]. Gaku-ken Photo-Encyclopedia Series. 56 pp. Gakushû-Kenkyû-Sha, Tokyo. (Japanese). – Price: ¥ 880.–. (Author's address: *1024 Imafuku, Kawagoe-shi, Saitama-ken, 356, JA*; – Publishers' address: *Gekkan Co., 40-5, 4 chome, Kamiikedai, Ohta-ku, Tokyo, 145, JA*).
The nice, richly illustrated volume (colour photographs and drawings, some of the latter showing dragonflies in a refreshingly anthropomorphic, humoristic style) is intended for school youth. The 22 brief chapters deal with dragonfly behaviour, life history, ecology, collecting and rearing. The book is certainly a useful addition to the already rich Japanese dragonfly children's litterature, and the Ab-

stracter can only hope that a similar work will find its way also in the western literature, where it will definitely find numerous thankful readers. The translation into English of the present volume is certainly worth consideration.

(1816) MIYATAKE, Y., 1977. A migration of Sympetrum frequens in tandem. Nature Study 23 (1): 7. (Japanese). – (*Osaka Mus. Nat. Hist., Nagai Park, Higashinagaicho, Higashisumiyoshi-ku, Osaka, 546, JA*).
A peculiar migration of S. frequens, in tandem, was observed in Osaka, Japan, on Oct. 7, 1976. 130 pairs were counted per 5 min (11-02 hrs), flying in southern or southwestern direction, against a gentle breeze, at an approximate height of 5-10 m, and in a stretch of over 100 m width. It seems that the migration represented a mass return flight to the oviposition sites. (Cf. also *OA* Nos. 1536, 1537).

(1817) PROGRAM AND GENERALITIES of the Fourth International Symposium of Odonatology, Gainesville, 1977. Edited by C. Johnson & M.J. Westfall. Issued by the Societas Internationalis Odonatologica (S.I.O.), Gainesville, 28 pp. – (c/o *Prof. Dr. M.J. Westfall, Jr., Dept. Zool., Univ. Florida, Gainesville, Fla 32611, USA*).
Contents: Symposium Officers; – Symposium location; – Symposium membership; – Symposium publications; – Ladies program; – Mail; – Ichatucknee tubing party; – Dinner and discussions after Ichatucknee tubing party; – Florida State Museum; – Odonata collections; – Evening slide programs; – Symposium banquet; – Friday field trip; – Post-Symposium trip to Northwest Florida; – Scientific program; – List of Symposium participants and authors of contributed papers. – (For the Abstracts of Papers cf. *OA* No. 1798).

(1818) REISS, F., 1977. Qualitative and quantitative investigations on the macrobenthic fauna of Central Amazon lakes. I. Lago Tupé, a black water lake on the lower Rio Negro. Amazoniana 6 (2): 203-235. (With Portug.s.). – (*Zool. Sammlung des Bayerischen Staates, Schloss Nymphenburg, Maria-Ward-Str. 1 b, D-8000 München-19, GFR*).
Lago Tupé is a black water "ria lake", connected with the Rio Negro, Brazil, throughout the year and shows similar large fluctuations in water level, amounting to neraly 8 m in 1971. The benthic fauna of the littoral zone was investigated during the phases of low and rising water levels. The characteristic littoral fauna appears only during the low water phase (Nov.-Jan.), when Chironomidae larvae are dominant (abundance 43-47%). The rest of the fauna consists of many groups with low relative abundances. When the water begins to rise, the qualitative composition alters completely within a few weeks, Chaoboridae larvae and ostracods becoming dominant. Biomass values were also determined in the littoral zone. Comparable studies of the zoobenthos of other black water lakes are discussed. These lend support to the inferences from Lago Tupé, i.e. the profundal zone of the black water lakes has qualitatively and quantitatively the poorest benthic macrofauna of all lacustrine biotopes in the Central Amazon. The abundance of the odon. larvae has been determined in the littoral of the lake only on Jan. 18, and amounted to 45 spec./m^2. In the middle course of the Rio Cuieiras 44 spec. were counted per m^2, the biomass amounting to 0.142 g/m^2. The taxa within the order are not specified.

(1819) SCHOORL, P. 1977. Libellen in de Camargue. (Dragonflies in the Camargue, France). Stridula 1 (1): 42-46. (Dutch, with Engl. s. on p. 1). – (*Lod. Boisotstr. 20-I, Amsterdam, NL*).
An account is given of dragonfly observations made during July 15 – Aug. 3, 1976 at 3 Provençal localities (Alpilles, Camargue, Crau). Of particular interest are observations on the behaviour of Crocothemis erythraea, and on a migration flight

of this sp. as noticed nr. Villeneuve on July 24, at about 21 hrs, flying in western direction along the Villeneuve-Albaron road. (For a note on the Camargue dragonflies cf. also *OA* No. 991).

(1820) TYAHUN, S., 1977. Populationsdynamische Untersuchungen der Mesofauna in den Laichkrautständen des Donauarmes von Soroksár. Opusc. Zool., Budapest 13 (1-2): 83-106. (With Engl. s.). – (*Wasserdirektion Donautal-Mitte, Szabadkikötóút. 1, Budapest-21, HU*).
The population dynamics of the mesofauna of the Soroksár Danube Branch, Hungary, has been studied. 9 odon. spp. recorded are analyzed in a Table on p. 95 (Platycnemis pennipes, Coenagrion puella, Erythromma najas, Enallagma cyathigerum, Ischnura pumilio, I. elegans, Anax imperator, Sympetrum striolatum, Crocothemis erythraea).

(1821) usi, 1977. Faszinierende Ausstellung in der Schulwarte. Eine geheimnisvolle neue Welt. Berner Nachr. 1977 (May 18): 37.
A note on the Dragonfly Photographs Exhibition by O.R. Strub and I. Siegenthaler, held in the Schulwarte Bern, Switzerland (May 6 - June 4, 1977). (For other notes cf. *OA* No. 1973; – for a note on the same exhibition in Oberdiessbach, 1976, cf. *OA* No. 1768).

(1822) VERDONK, M., 1977. Het beschrijven van libellen en hun kleurvariaties. (Methods for describing captured dragonflies and their colour variants alive). Stridula 1 (1) 23-25. (Dutch, with Engl. s. on p. 1). – (*Verhulstlaan 8, Bussum, NL*).
In order to avoid unnecessary killing of specimens the author advocates detailed description of the captured insect. The latter should be then released. A carefully elaborated method for the description procedure is proposed and an appeal is made to pay more attention to the occurrence and distribution of colour varieties in dragonflies. – (*Abstracter's note*: The author's name is spelled erroneously as "Verdonck").

(1823) VERLINDEN, C., 1977. Libellen in onze kalkstreken. (Dragonflies in our limestone regions). Stridula 1 (1): 20-22. (Dutch, with Engl. s. on p. 1). – (*Groenendaallaan 268, Bus 72, B-2030 Antwerpen*).
An attempt is made to identify "dragonfly associations" in the areas of Gaume and Fagne-Famenne, Belgium. (Cf. also *OA* No. 1800).

(1824) WILLIAMS, D.D. & H.B.N. HYNES, 1977. Benthic community development in a new stream. Ca. J. Zool. 55 (7): 1071-1076. (With Fr. s.). – (*Div. Life Sci., Scarborough Coll., Univ. Toronto, 1265 Military Trail, West Hill, Ontaria, M1C 1A4, CA*).
The development of the invertebrate fauna in a man-made permanent stream which replaced a natural, temporary stream (Moser Creek, Waterloo Co., Ontario, Canada) was observed over a year. Spp. colonized the new stream through drift, upstream migration, migration from a nearby underground field drainage system, and from neighbouring water bodies. Community development was examined in terms of the colonization and extinction rates proposed by Mac Arthur and Wilson (1963. Evolution 17: 373-387) as part of their equilibrium model for island faunas. Although stability was possibly being approached after 109 days of flow, this equilibrium was disrupted by the introduction of a pollutant. Later the colonization rate leveled out at about 5 times the value of the extinction rate. This is thought to reflect either continued instability or that the Mac Arthur-Wilson model does not apply as well to habitats that are seasonally invaded by recurring temporary inhabitants. Larval Odon. (Libellula sp.) were noticed on the 109th day (Sept. 16).

(1825) ZAIKA, V.V., 1977. Adaptations to the survival under unfavourable conditions at different developmental stages in dragonflies (Odonata). Zool. Zh. 56 (6): 848-854. (Russian, with Engl. s.). – (*Dept. Gen.*

Biol., St. Univ. Novosibirsk, Novosibirsk, USSR).

The survival of 13 spp. under critical seasonal conditions (hibernation and drying) was studied in the West-Siberian lake forest-steppe, USSR. The laboratory experiments have shown that the Zygoptera larvae unlike those of Anisoptera, cannot endure the long-term stay in the air. The larvae of Aeshna serrata survived the period of drying best of all and those of Libellula quadrimaculata and Sympetrum flaveolum somewhat worse. Only eggs hibernate in 4 spp., eggs and larvae in 3 spp. and only larvae in all others. Sympecma braueri hibernates at the imaginal stage. (Author).

ERRATA

As the reader has probably noticed, parts of the text on pp. 97-98 (Odonatologica Vol. 6, No. 2) have been mixed up in the course of the final processing. The two pages have been reprinted, and mailed with No. 3. The misprinted pages should be replaced by the new ones.

Dr. E. PINHEY has drawn the Editors' attention to an error in the Errata of Vol. 5, p. 405. There the printing error from Vol. 5, No. 2, p. 100 has been mentioned and "corrected" in such a way that a new error has been introduced. "*A. umbargae* . . ." should not read "*Agriocnemis umbargae* . . . ", but "*Argiocnemis umbargae* . . .".

The following are the more serious errors noticed by the Editors in the text of ODONATOLOGICAL ABSTRACTS:

No. 1181 (Vol. 4, No. 4, p. 293): the correct name of the first author is NORLAND, R.L., and not Lee, N.R., as stated.

No. 1508 (Vol. 6, No. 1, p. 40): the name of the journal should read: "*Nauch Dokl. vissh. Shkoly, Moscow* (Biol.)".

No. 1509 (Vol. 6, No. 1, p. 40): the name of the journal should read: "*Inf.Byull. Biol. vnutr. Vod*".