

ODONATOLOGICAL ABSTRACTS

1973

- (3238) ISHIDA, S., S. NAKAMURA & K. KOJIMA, 1973. Dragonflies of Taipei and its neighbourhood, Taiwan. *Gensei, Kochi* 25: 13-24, pls 1-4 excl. (Jap., with Engl. s.). — (2-8 *Okinoshima-cho, Yokkaichi, Mie Pref., 510, JA*).
52 spp. are recorded from the city of Taipei and its suburbs, along with notes on their habitats and distribution. *Anaciaeschna martini*, *Rhyothemis severini* and a not further identified *Rhyothemis* sp. are new for Taiwan.

1974

- (3239) NAKAMURA, S., K. KOJIMA & S. ISHIDA, 1974. Variation in the wing marking of the dragon-fly, *Rhyothemis variegata* Linné et Johansson. *Gensei, Kochi* 27: 1-6. (Jap., with Engl. s.). — (13-1, *Tenkawa-cho, Takatsuki, 569, JA*).
Material was studied from Taiwan and the Ryukyus (Japan). The variation is considerable and the markings of each sex were classed into 16 types. As a rule, the hyaline area is broad in the Taiwan individuals, and it is narrow in those from the Ryukyus. The former specimens are usually treated as *R. v. arria* (Dru.) or *R. v. imperatrix* Sel., and the latter as *R. v. imperatrix*. However, there is a continuous gradient in the markings, and a critical distinction between the 2 spp. is lacking. For a subspecific revision the examination of material from continental China is inevitable.

1976

- (3240) PATTERSON, J.A., 1976. Neural architecture and function in the ocellar system of the locust. In: F. Zettler & R. Weiler, Eds, *Neural principles in vision*, pp. 334-353. Springer, Berlin-Heidelberg-New York. — (Dept. Zool., St. Bartholomew's Hosp. Med. Coll., Charterhouse Squ., London, EC1M 6BQ, UK).
The paper deals with *Schistocerca gregaria*, but contains also numerous references to the visual system of Odon. (and to that of Calliphora, Dipt.).
- (3241) PRESTIDGE, R.A., 1976. Aspects of the biology of *Aeschna brevistyla* Rambur and *Hemicordulia australiae* Rambur (Odonata). M. Sc. thesis, Univ. Waikato, Waikato, New Zealand. X+102 pp. — (Ruakura Anim. Res. Stn, Min. Agric. & Fish., Private Bag, Hamilton, NZ).
The life-histories of the 2 spp. were studied from sampling within the Waikato River catchment, New Zealand. *Aeschna*: 15 instars (2-3 yr), *Hemicordulia*: 14 instars (1-2 yr). When offered a selection of prey, the larvae often showed a strong preference for one of them; this attitude is discussed in relation to the type of niche occupied by the larva. A laboratory study on ingestion and assimilation efficiency, using a double isotopic labelling technique, has shown that ingestion losses exceed 30% in both spp., while assimilation efficiency is greater than 60% of the ingested material. The assimilation efficiency increases with the increased age in Hemi-

cordulia, but not so in *Aeshna*, and it is higher under starvation conditions in both spp. This evidence seems to indicate a correlation with the conditions likely to be prevailing within the environment. — (Cf. also *OA* No. 2730).

- (3242) WILLIAMS, C.A.S., 1976. Outlines of Chinese symbolism & art motives. An alphabetical compendium of antique legends and beliefs, as reflected in the manners and customs of the Chinese. Dover, New York. XXII+472 pp.
This is the 3rd revised edition of this well-known work, first published (1931) under the title "Outlines of Chinese symbolism" (Customs College Press, Peiping). The "Dragonfly" is dealt with on p. 141. It represents an emblem of summer, and symbol of instability and weakness, providing a popular motif for the Chinese poets and painters. It is sometimes known as the typhoon-fly, because of its sudden occurrence in large numbers before a storm. A slang term for the dragonfly is "Old Glassy" (also given in Chinese script), because of the vitreous appearance of its wings.

1977

- (3243) BELYSHEV, B.F. & A.Yu. KHARITONOV, 1977. On the history of the boreal dragonfly species *Nehalennia speciosa* Charp., 1840, and the center of origin of the genus *Nehalennia* Selys, 1850 (Odonata, Coenagrionidae). *Entomol. Rev.* 56 (4): 46-49. — (*Inst. Biol., Siberian Sect. USSR Acad. Sci., Ul. Frunse 11, USSR-630091 Novosibirsk*).
Engl. edition of the paper listed in *OA* 1965. (Date of publication 1978).
- (3244) HOLLOWAY, J.D., 1977. Lepidoptera of Norfolk Island. Junk, The Hague. 291 pp. — (*Author's address not stated*).
The Odon. are briefly dealt with on p. 191 and in the Appendix (p. 267). The discussion includes comparisons with the odon. fauna of the Kermadecs and Lord Howe Island.
- (3245) MATSUKI, K. & J.C. LIEN, 1977. (Dragonflies of Taiwan, part I-A). *Tzujan Tsachih* (= *Nature Mag.*), Taichung, Taiwan 3 (2): 19-21. (Chinese). — (First author: 3-75-17, *Nakadori, Tsarumi-ku, Yokohama, 230, JA*; — Second author: cf. *OA* No. 3246).
Notes on morphology, bionomics and distribution are provided for *Agriocnemis femina oryzae*, *A. pygmaea*, *Aciagrion migratum*, *Ceriagrion melanurum*, *C. f. fallax*, *C. latericum ryukyuanum* and *Pseudagrion microcephalum*. Figures of penis and male anal appendages, as well as (colour) specimen photographs of all spp. are also included. — (For pt. I-B cf. *OA* No. 3246).
- (3246) MATSUKI, K. & J.C. LIEN, 1977. (Dragonflies of Taiwan, part I-B). *Tzujan Tsachih* (= *Nature Mag.*), Taichung, Taiwan 3 (3): 20-21. (Chinese). — (Second author: *Med. Ent. Sect., Taiwan Prov. Inst. Infectious Diseases, 161 Kun-yang Str., Nankang, Taipei, Taiwan*).
Notes on morphology, bionomics and distribution are provided for *Pseudagrion pilidorsum*, *Ischnura aurora*, *I. asiatica*, *I. senegalensis*, *Cercion calamorum dyeri* and *C. sexlineatum*. Figures of penis and male anal appendages, as well as (colour) specimen photographs of all spp. are also included. — (For pt. I-A cf. *OA* No. 3245).
- (3247) PAINA, M.I., 1977. Consideratii zoografice asupra odonatofaunei (Insecta, Odonata) din România. (Zoogeographical considerations about on the odonatofauna (Insecta, Odonata) of Rumania) [sic!]. *Nymphaea* 5: 381-409. (Rumanian, with Engl. s.). — (*Author's address not stated*).
A list of the 72 spp. known from Rumania is followed by various statistical comparisons of the Rumanian fauna with that of other regions, and by a somewhat elaborate zoogeographic analysis.
- (3248) PRITYKINA, L.N., 1977. Novye strekozy iz nizhnemelovyh otlozheniy Zabaykal'ya i Mongolii. [New dragonflies from the Lower Cretaceous deposits of Transbaikal and

Mongolia]. *Irr. B.A. Trofimov, [Ed.], Fauna, flora i biostratigrafiya mezozoya i kaynozoya Mongolii* [Fauna, flora and biostratigraphy of the Mongolian Mesozoic and Cenozoic], pp. 81-96, pls 1-4. Nauka, Moscow. (Russian). — (*Inst. Palaeontol., USSR Acad. Sci., Profsoyuznaya 113, USSR-117321 Moscow*).

The paper deals with over 2500 odon. fossils from the Neocomian (Lower Cretaceous) of Transbaikal, USSR (Baysa, Zaza), and Mongolia (Anda-Huduk-2, Bon-Cagan, Hovur). Most of the material (adult and larvae) is referable to a single sp. of a new family. The following taxa are described, illustrated and their systematic affinities discussed: Anisozygoptera: Karatawiidae: *Nacholonda crassicauda* gen. n., sp. n. (Baysa, incomplete hind wing, Holotype No. 3064/101); Tarsophlebiidae: *Turanophlebia sibirica* sp. n. (Baysa, incomplete hind wing, Holotype No. 1289/1258); — Anisoptera: Aeshnidae: *Baissaeschna prisca* gen. n., sp. n. (Baysa, complete hind wing, Holotype No. 1989/1495); *Gobiaschna occulta* gen. n., sp. n. (Anda-Huduk-2, substantial portion of a fore wing, Holotype No. 3145/672); *Gomphaeschna inferna* sp. n. (Baysa, holotype: incomplete hind wing, No. 1989/1808; additional material: fore wing); Aeschniidae: *Leptaeschnidium latum* gen. n., sp. n. (Baysa, incomplete hind wing, Holotype No. 1989/955); Hemeroscopidae fam. n.: *Hemeroscopus baissicus* gen. n., sp. n. (♀ holotype: Baysa, complete hind wing, No. 3064/141; additional material: close to 2500 remains of adult and larval specimens, from Baysa, Zaza, Anda-Huduk-2, Bon-Cagan and Hovur). — The Hemeroscopidae is a cordulegasterid family, related to Cordulegasteridae rather than to Aeschniidae.

1978

- (3249) TYAGI, B.K., 1978. A note on the karyotypes of *Burmagomphus pyramidalis* Laidlaw, *Onychogomphus saundersi* duaricus Fraser and *Onychogomphus schmidti* Fraser (Anisoptera: Gomphidae). Abstr.

Ref. 5th Symp. Young Scientists' Soc., Dehra Dun, p. 3. — (*Malaria Res. Cent., Sector VI, Ukai-394680, Distr. Surat, Gujarat, India*).

A note on the male gonial karyotypes from Dehra Dun, India. The cytology of the first 2 spp. has been dealt with in extenso, on the same material, in *Odonatologica* 6 (1977): 277-282, but *O. schmidti* is published here for the first time ($2n=22$, $n=12, 13$, m , neo-XY).

- (3250) TYAGI, B.K., 1978. The male germ cell chromosomes of *Macromia moorei moorei* Selys from India (Odonata: Corduliidae, Epophthalmiinae). Abstr. Ref. 5th Symp. Young Scientists' Soc., Dehra Dun, p. 4. — (*Malaria Res. Cent., Sector VI, Ukai-394680, Distr. Surat, Gujarat, India*).
- A note on the karyotype from Dehra Dun, India (exact locality not stated: $2n=25$, $n=13$, m , XO). (For a description of the karyotype from Nepal cf. *OA* No. 1738). — (*Abstracter's Note*: A newspaper report on the Symposium was published in The Daily Himachal Times, Vol. 11, No. 237, p. 2, of Dec. 15, 1978. At the Symposium, Dr. Tyagi was awarded a Prize for "The Best [Dehra Dun] Research Scholar 1977-78").
- (3251) ZHERIHIN, V.V., 1978. Razvitiye i smena melovyh i keynozoyevykh faunisticheskikh kompleksov (traheynye i helicerovy). [The development and succession of the Cretaceous and Cenozoic faunal complexes (Tracheata and Chelicerata)]. *Trudy paleontol. Inst. Akad. Nauk SSSR* 156: 1-200. (Russian). — (*Author's address not stated*). This is a monograph on the Cretaceous and Lower Palaeogene chelicerate, myriapod and insect faunas, but it is not concerned with the taxonomy and systematics of these groups. The faunal inventories are given for all known localities; many of these are published here for the first time. Among the odon. inventories discussed, there are 11 from the Lower Cretaceous (pp. 11, 15, 41, 46-49, 56, 58-59, 62), 3 from the Upper Cretaceous (pp. 77, 80, 91) and 2 from the Palaeocene-Eocene (pp. 115, 119) that were

not previously brought on record. In addition, some stratigraphically not further specified Cretaceous odon. material in the collection of the Inst. Paleontol., Akad. Sci. China, Nanking, is also stated (p. 105). — The facial synecology and synchronology are discussed in terms of the evolution and biogeography of the Cretaceous and Cenozoic insect faunas. The Neocomian fauna (Early Lower Cretaceous) is considered typically Mesozoic (for the Ephemeropsis-Coptoclava odon. fauna cf. *OA* No. 3248), the Aptian-Albian fauna (Late Lower Cretaceous) often has more affinities with the Jurassic than with the Neocene (e.g. *Creto-cleistogaster*) and the rheophilous Anisozygoptera of the Proameletus-Samrura fauna are considered relicts of the much richer Jurassic fauna, surviving in the upper stream sections and in small, oxygen-rich lakes. In the Maastrichtian (uppermost Cretaceous) of Amur (Cagayna) the Zygoptera, very rare prior to the Late Cretaceous (but present e.g. in the Turonian of Kazakhstan), become dominant, and the Pseudolestidae are the characteristic group of the Palaeogene. The Zygoptera are common in the Eocene, the endemic Sieblosidae are of Oligocene age, and so are the stagnicolous Coenagrionidae, Lestidae and Aeshnidae, while the Libelluloidae do not appear until the Miocene. — (*Abstracter's Note*: The book contains 859 bibliographic references and is an absolutely indispensable source of evidence on the subject. It is unfortunate, however, that no taxonomic index was provided. A tabular review of the fossil inventories would be also useful, and the non-Russian reader will have almost certainly considerable difficulties with the cyrillic spelling of the Chinese and some other geographic names).

1979

- (3252) CHAPMAN, C., 1979. Tararua Forest Park's silver jubilee this year. *Forest & Bird*, N.Z. 13 (3): 19-23. — (*New Zealand Forest Serv., Private Bag, Wellington, NZ*). The history and natural history of the Park

(Wellington Province, North Island, New Zealand) are outlined, and its map is shown. A reference is made also to the Odon., but a species list is not produced. — (*Abstracter's Note*: The information on the odon. fauna of the Park is contained in an unpublished report to New Zealand Forest Service, by S. Natusch).

- (3253) GANGULEE, P.K., 1979. Studies on the morphology, taxonomy, growth rates and seasonal abundance of dragonflies (Odonata: Anisoptera) from Dacca University Campus and adjoining areas. M. Sc. thesis, Univ. Dacca. 111 pp. — (*c/o Dept. Zool., Univ. Dacca, Dacca-2, Bangladesh*). [Not available for abstracting; reference in the paper listed in *OA* No. 3291. For further information contact Dr. A. Begum of the said institute].
- (3254) GROSS, H., 1979. Untersuchungen zur Habituation des Fangschlagverhaltens der Larve von *Aeschna cyanea* Müller (Odonata: Anisoptera). Ph. D. thesis, Univ. Marburg/Lahn. IV+138 pp. — (*c/o Prof. Dr. C. Buchholtz, Inst. Tierpsychol., Philipps-Univ., Ketzerbach 63, D-355 Marburg/Lahn, GFR*). The habituation and capture-stroke behaviour were studied in larval *Aeschna cyanea*. Some of the main conclusions are (1) under the natural light conditions, there is a season-conditioned variation in prey capture (max. activity in summer), (2) it was shown experimentally that there is a preference for yellow-coloured prey, (3) the process of "forgetting" is considerably slower than that of "learning", (4) the "learning" is enhanced by higher water temperatures, and by higher intensity of capture stimulation.
- (3255) HOLLOWAY, J.D., 1979. A survey of the Lepidoptera, biogeography and ecology of New Caledonia. Junk, The Hague. XII+588 pp. — (*Author's address not stated*). With reference to the paper listed in *OA* No. 1736, the New Caledonian fauna is analysed on pp. 231-232. So far [verbatim]: 40 spp. have been recorded from New Caledonia

and the Loyalties, and they can be referred fairly readily to the geographical elements recognised for macrolepidoptera. Thus, 16 spp. (40%) are endemic, 6 (15%) are shared with the New Hebrides (New Caledonian element) with 1 extending on Fiji, 6 are referable to the widespread element, 6 are broadly Melanesian, and 7 (17.5%) can be assigned to the Australian-centred elements (widespread, Coral Sea and Australian-Pacific). Compared with the macrolepidoptera the endemism is greater, the number of widespread spp. much less, the Australian elements representing a similar percentage and the New Caledonian and Melanesian elements a higher one. These differences, especially the proportion of endemics to widespread spp., could be indicative of poorer dispersal powers in the Odon. of Australasia overall, though some of the larger spp. are known to be extremely mobile. — In the Argiolestinae there are 3 genera represented, 2 endemic and 1 shared with the New Hebrides, containing a total of 4 spp. They belong to a generally Australo-Papuan group of genera and could have colonised New Caledonia initially from either source. There is an interrelated group of 6 endemic *Isosticta*, a genus shared with Australia (2 spp.) in an Australo-Papuan family. A taxonomically isolated sp. of *Metaphya* is related to spp. from New Guinea and Borneo. — There are 6 endemic *Synthemis*, a primarily Australian genus with 2 spp. in New Guinea and 1 in Fiji. The genus is part of a tribe that otherwise consists of 3 genera restricted to Australia. — 5 Oriental-Papuan zygopteran families do not reach New Caledonia, nor is the genus *Nesobasis* represented, though this has approx. 20 spp. endemic to Fiji and 2 shared between Fiji and the New Hebrides. Thus, the older elements of the fauna have most affinity with Australia and there are also indications of Inner-Arc relationships; there is a discontinuity with areas to the N and E. The small New-Zealand fauna (11 spp. with 6 endemic) is also related to that of Australia.

(3256) MOSSBERG, P. & P. NYBERG, 1979. Bot-

tom fauna of small acid forest lakes. Rep. Inst. Freshw. Res., Drottningholm 58: 77-87. — (*Inst. Limnol., Univ. Uppsala, Box 557, S-751 22 Uppsala*).

The structure of the benthic community was studied in 7 small, acid forest lakes in Sweden, all of which were practically without fish at the time of sampling. The number of taxa was decreasing with the increase in acidity. Probably as a result of very slight or non-existent fish predation, certain groups were occurring in unusual abundance. This applies also to the Odon. lists of spp. (incl. numbers of specimens) are given for all lakes.

(3257) ZUCCHI, H., 1979. Maikäfer (*Melolontha melolontha* L.) als Nahrung der Waldohr-eule (*Asio otus* L.). *Egretta* 22 (2): 79-82. — (*Fachber. Biol., Philipps Univ., Lahnb-erge, Postfach 1929, D-3550 Marburg/Lahn, GFR*).

Dragonflies (without further specification) are listed among the diet items of the Long-eared Owl.

1980

(3258) (Anonymous), 1980. New dragonfly group. *Oryx* 15 (5): 470.

A note on the inauguration of the Odonata Specialist Group, Species Survival Commission, International Union for Conservation of Nature and Natural Resources (Kyoto, Japan, Aug. 4-5, 1980). (Cf. also *OA* Nos. 3207, 3230).

(3259) BELYSHEV, B.F. & A.Yu. HARITONOV, 1980. Zapolyarnaya odonotofauna (Insecta, Odonata) severnogo polushariya i veroyatnye puti ee formirovaniya. (Arctic odonotofauna (Insecta, Odonata) of the northern hemisphere and probable ways of its forming). *Izv. sib. Otdel. Akad. Nauk SSSR (biol.)* 1980 (3): 35-38. (Russian, with Engl. s.). — (*Inst. Biol., Siberian Sect. USSR Acad. Sci., Ul. Frunse 11, USSR-630091 Novosibirsk*).

Faunal composition of the Eurasian and American Arctic is compared, and the

Temperate Zone origin of the arctic fauna is advocated. There are no large-scale longitudinal odon. migrations in the high latitudes, and a specific "northern" fauna does not exist.

- (3260) BELYSHEV, B.F. & A.Yu. KHARITONOV, 1980. The latest faunistic links between the Ethiopian and Australian realms as exemplified by Odonata. *Entomol. Rev.* 59 (1): 73-75. — (*Inst. Biol., Siberian Sect. USSR Acad. Sci., Ul. Frunse 11, USSR-630091 Novosibirsk*). Engl. edition of the paper listed in *OA* No. 2834. (Date of publication 1981).
- (3261) BEUTLER, H. & H. DONATH, 1980. Liste der in den brandenburgischen Bezirken gefährdeten Libellen (Insecta, Odonata): Stand vom Januar 1980. *Naturschutz Arb. Berlin Brandenb.* 16 (3): 71-75. — (First author: *Biol. Heimatsmus., Frankfurter Str. 23, DDR-123 Beeskow, GDR*).
A list is given of 28 spp. considered to be threatened (to various degrees specified in the text) in the province of Brandenburg, German Democratic Republic, by moor- and marsh drainage (*Sympetrum depressiusculum*) or a combination of up to 5 of the following factors: water pollution (27 spp.), eutrophication (16), destruction of oviposition vegetation (3), moor- and marsh drainage (13), small ponds drainage (12), intensification of fish cultivation (16), tourism (*Aeshna viridis*: in combination with pollution, destruction of vegetation, drainage and fish cultivation), and general scarcity (11 spp.). — (*Abstracter's Note*: This is a well-balanced analysis, testifying to the authors' thorough knowledge of autecology, population biology and local faunistics. It is greatly contrasting with the recently increasingly frequent superficial generalisations in some local Central European literature, which are seriously threatening to inflict irreparable damage to the credibility of the urgently needed odon. conservancy efforts. Cf. *Abstracter's Note* in *OA* No. 3296).
- (3262) BOOTHROYD, E.R., 1980. John Wallace Boyes. *Bull. Genet. Soc. Can.* 11 (4): 29-30, portrait incl. — (*Biol. Dept., McGill Univ., 1205 Dr Penfield Ave., Montreal, Que., H3A 1B1, Ca*).
Obituary, giving a detailed account of the professional career of Prof. J.W. Boyes (27-1-1907/12-1-1980). The bibliography is not listed. — (For another obituary, portrait and odonatol. bibliography cf. *Odonatologica* 9 [1980]: 1-4).
- (3263) CASPERS, N., 1980. Die Makrozoobenthos-Gesellschaften des Hochrheins bei Bad Säckingen. *Beitr. naturk. Forsch. SüdWdtl.* 39: 115-142. (With Engl. s.). — (*Inst. Landwirtschaft. Zool., Melbweg 42, D-5300 Bonn-1, GFR*).
Calopteryx virgo is the only odon. sp. encountered (1978-1979) at Bad Säckingen, on the Upper Rhine R., Federal Republic of Germany.
- (3264) CHOU, Io, 1980. A history of Chinese entomology. *Entomotaxonomia*, Suppl. No. 6, 213 pp. (Chinese, with extensive Engl. & Esperanto s's). — (*N.W. Coll. Agric., Wugong, Shaanxi, P.R. China*).
On p. 140 of the Engl. text, a reference is made to the dragonfly figures, often found on the copper vessels and in tortoiseshell inscriptions in the tombs of the Yin [= Shang; 1500-1100 BC approx.] and Han [206 BC - 221 AD] dynasties.
- (3265) COWAN, C.F., 1980. Brief encounter: how a dragonfly made our day. *Ent. Rec. J. Var.* 92 (11/12): 282. — (*4 Thornfield Terrace, Grange-over-Sands, Cumbria, LA11 7DR, UK*).
A personal note on a dragonfly photography trip (July, 1968) in the Glen Spean area, Scotland, with a reference to *Aeshna caerulea* and *Cordulegaster boltoni*.
- (3266) CRUCITTI, P., 1980. Proposte alternative per la preparazione e conservazione degli odonati. *Inf. giov. Ent.* 21 (96): 9-12. — (*Soc. romana Sci. natur., Via Fratelli Maristi 43, I-00137 Roma*).

A detailed description is given of the American way of storage of collection specimens in rectangular cellophane envelopes. — (*Abstracter's Note*: The envelopes can be ordered, at the price of US \$ 25.— per 1000, from: Z & H Company, 3063 Hazelwood Ave., Santa Clara, Cal. 95051, USA. — For some comments on the cellophane shrinkage problem cf. M.J. Westfall's note, listed in *OA* No. 3230).

- (3267) DONATH, H., 1980. Eine bemerkenswerte Libellenfauna an einem Kiesgrubenweiher in der Niederlausitz (Odon.). Ent. Ber., Berl. 1980 (2): 65-67. — (*Jahnstr. 6, DDR-7960 Luckau, GDR*).

36 spp. are listed from a pond in a gravel-pit nr Giessmannsdorf, recorded 1977-1980, and representing close to 54% of the total odon. fauna of the German Democratic Republic. The pond came to picture in about 1970, its vegetation has not yet reached the climax, and the present odon. fauna composition is considered a transitional stage in the biotic succession. It is argued that the systematic study of the development of succession could serve as a basis for the management of, and the conservancy measures related to the locally endangered odon. spp.

- (3268) DUNKLE, S.W., 1980. Second larval instars of Florida Anisoptera (Odonata). PhD thesis, Univ. Florida, Gainesville. VIII+125 pp. — (*c/o Dr. M.J. Westfall, Dept. Zool., Univ. Florida, Gainesville, Fla 32611, USA*). — Microfilm or xerox available (refer to Order No. 8105572) from the University Microfilm International, Dissertation Copies, P.O.B. 1764, Ann Arbor, Mich. 48106, USA. — Prices: microfilm or microfiche: US \$ 15.—; xerox, soft or hard cover: US \$ 28.— or 33.— resp.; postage extra. Before ordering apply for the Order Form, with specified prices; payment must accompany orders from individuals. [Verbatim abstract from Diss. Abstr. 41, 9 (1981)]; Descriptions and identification keys are provided for Florida anisopteran second instars, including all of the families, 78% of the genera, and 62% of the 109 species

breeding within the state. Comparative and supplementary data on 28 non-Florida species are also given. A list of all previously published illustrations of anisopteran first and second instars of the world is included. Methods of obtaining and hatching Anisoptera eggs are discussed, along with methods of preparing specimens of second larval instars for examination. The only known mid-ventral thoracic and abdominal spines in larval Anisoptera were found in *Ari-gomphus*, evidence that this group should be considered a genus instead of a subgenus. Epicranial tubercles, or horns, were found in 25 to 100% of the genera studied in Aeshnidae, Gomphidae, Macromiidae, Corduliidae, and Libellulidae. Horns have evolved independently many times in the Anisoptera, and are probably primarily sensory. The behavior of second-instar Anisoptera, and the use of second-instar characters in solving taxonomic problems are discussed. Partial life histories for species of Cordulegasteridae and Macromiidae are the first to be described for these families.

- (3269) EGUCHI, M., 1980. [Population studies on closely related damselflies, *Mnais p. pruinos-a* Selys and *M. p. nawai* Yamamoto, coexisting in a creek]. Kotaigun-seitaigak-kai-kaiho [Proc. Soc. Popul. Stud.] 33: 10-19. (Jap., with Latin taxonomic names and Engl. fig. labelling). — (*Dept. Biol., Fac. Sci., Kanazawa Univ., 1-1, Maruno-uchi, Kanazawa, 920, JA*). The observations were carried out on the Yu-no-kawa creek, Japan.
- (3270) FOLSOM, T.C., 1980. Predation ecology and food limitation of the dragonfly *Anax junius* (Aeshnidae). Ph.D. thesis, Univ. Toronto. XIV+138 pp. (With Fr. s.). — (*Env. Lab., Duke Power Co., Rt 4, Box 531, Huntersville, N.C. 28078, USA*). [Author's verbatim abstract]: A Food Limitation Index (FLI) was developed. The basis of the index is a comparison between fecal pellet mass resulting from ad libitum feeding in the laboratory to pellet masses from field collected dragonflies. A regression

equation of pellet mass versus larval size is used to predict the ad libitum pellet mass for comparison with the actual mass the individual dragonfly egests after collection from the field. Circadian variation in feeding was present, but was controlled for in the ad libitum feeding. The pellet mass produced by ad libitum food was unaffected by differences in water temperature. Quantity and type of food consumed did not affect food digestibility. The FLI could be biased whenever the feces were split into two pellets (this occurred in 9-20% of observations), and only one of the pair was excreted after the dragonfly was collected. — A field survey was conducted at 4 sites in or near Mississauga, Ontario, to measure FLI values. The FLI could discriminate site and seasonal differences in food limitation. Most mean FLIs did not show strong food limitation, but there was a consistent pattern with time over all sites. Increased *Anax* density and decreased prey density were correlated with increased limitation. Only the local prey density around individual *Anax* larvae was correlated with their FLIs, and pond means for prey density did not correlate with pond means for FLI. — Some fecal pellets contained snail shell remains that biased the FLI at some sites. Pellets can be screened for shell fragments and eliminated from further considerations. — The mechanisms limiting prey availability to *Anax* were studied in the laboratory and field. Several kinds of natural substrates were very effective in reducing prey capture rates in the laboratory. Very inactive prey were captured much less often than more active types. Inter-*Anax* aggression was common among large instars and was known to interrupt feeding, but aggression could be reduced by adding spatial complexity (macrophytes) to the arenas, and eliminated by adding a continuously available prey (brine shrimp). *Anax* preferred to strike at the smaller dummy prey that were presented. Most natural prey sizes are less than or equal to those small dummy sizes. — The field diet of *Anax* mainly consisted of *Chaoborus* and amphipods which were always consumed dispropor-

tionately to their abundance. Statistical differences (Hotelling's T^2) between diet and pond prey composition were detectable on two dates, but not on another two dates. Traps were set to capture the more active prey in the pond, but the composition of prey in the traps differed from the diet composition. Thus neither relative prey density nor activity seem sufficient to account for the field diet of *A. junius*. — To understand the preference better, *Anax* foraging behavior on *Chaoborus* and amphipods was observed in an aquarium mimicking natural conditions. *Anax* larvae spent 90% of their time stationary on the gravel-debris substrate or clinging to the horsetail stems. The larvae spent significantly more time on the bottom when amphipods were present (and located in the substrate) than when absent. As seen in the natural diet, *Anax* consumed more *Chaoborus* than amphipods. *Chaoborus* were visible in the water column and attracted the attention of *Anax*, whereas the amphipods were hidden in the substrate and were less active than *Chaoborus*. Observations or predation under natural conditions revealed the true interaction between *Anax* and its prey, thus explaining why the natural diet differed from expectations based on prey relative abundance and activities.

- (3271) GILL, B.J., 1980. Foods of the Shining Cuckoo (*Chrysococcyx lucidus*, Aves: Cuculidae) in New Zealand. N.Z. J. Ecol. 3: 138-140. — (*Univ. Zool., Univ. Canterbury, Christchurch-1, NZ*).
In 10% of stomachs of bird specimens from the Christchurch area, South Island, New Zealand odon. remains were identified (max. 9 specimens per stomach). Most of them are referable to *Austrolestes colsonis*, one of the only 2 South Island zygopterans (the other one is *Xanthocnemis zealandica*).
- (3272) GOTTSCHALK, H.-J., 1980. Beobachtungen an Odonaten im Stadt- und Landkreis Rostock in den Jahren 1964 bis 1975. NaturschutzArb. Mecklenburg 23 (2): 52-55. — (*Asternweg 8, DDR-2500 Rostock-1*,

GDR).

32 spp. from the Rostock area, German Democratic Republic, are listed and briefly discussed. Among these, 14 were not earlier reported from the region, bringing the number of spp. known in the district to-date up to 37.

- (3273) MÜLLER, W., 1980. Zur Verbreitung und Ökologie der Gross-Libellen (Anisoptera) am rechten unteren Niederrhein und angrenzender Gebiete. *Niederrh. Jb.* 15: 83-89. — (*Weidenweg 10, D-4242 Rees-1, GFR*). The anisopteran fauna (22 spp.) of the eastern Lower Rhine region, German Federal Republic, is listed and discussed.

- (3274) PRITYKINA, L.N., 1980. Otryad Libellulida Laichartig, 1781. Strekozy (= Odonata). [Order Libellulida Laichartig, 1781. Dragonflies (= Odonata)]. *Iz*: Rodendorf, B.B. & A.P. Rasnitsyn, [Eds], *Istoricheskoe razvitiye klassa nasekomyh. Trudy paleontol. Inst. Akad. Nauk SSSR 175: 128-134. pl 7.* (Russian). — (*Inst. Palaeontol., USSR Acad. Sci., Profsoyuznaya 113, USSR-117321 Moscow*).

This is the odon. chapter in the monograph listed in *OA* No. 3276, giving a brief, but radical reclassification of the Order, introducing also a new nomenclature. The Order, here called "Libellulida", is divided into 2 suborders, Meganeurina (= Permodonata) and Libellulina (= Neodonata), each of which is composed of 3 infraorders, viz. *Meganeuromorpha* (= Meganisoptera): Erasipteridae, Meganeuridae, Paralogidae, Triadotypidae; — *Ditaxineuromorpha* (= Permanisoptera): Callimokaltaniidae, Ditaxineuridae, Permaeschnidae, Polytaxineuridae; — *Kennedyomorpha* (= Protozygoptera and Archizygoptera): Campylopteridae, Kennedyidae, Permagriionidae, Permepallagidae, Permolestidae, Protomyrmeleontidae, Solikamptilonidae; — *Lestomorpha* (= Heterophlebioidea, Stenophlebioidea and Zygoptera); — *Epiophlebiomorpha*: Epiophlebiidae; and — *Libellulomorpha* (= Anisoptera). — The *Lestomorpha* include 6 super-

families, viz. Stenophlebioidea (Stenophlebiidae), Heterophlebioidea (Archithemistidae, Heterophlebiidae, Isophlebiidae, Karatawiidae, Liassophlebiidae, Oreopteridae, Tarsophlebiidae, and Triassolestidae), Hemiphlebioidea (Hemiphlebiidae), Coenagrionidea (extant), Lestoidea (extant), and Calopterygoidea (extant and Steleopteridae and Zacallitidae). — The taxa are briefly characterized, their geological distribution is stated, and a phylogenetic tree of the Order is produced. — (*Abstracter's Note*: According to a personal communication from the author, her book, "Historical development of dragonflies", in Russian, is in the press, scheduled to appear in 1982).

- (3275) ROBACK, S.S., 1980. Results of the Catherwood Bolivian-Peruvian Altiplano Expedition. Odonata nymphs. *Proc. Acad. Nat. Sci. Philadelphia* 132: 186. — (*Acad. Nat. Sci. Philadelphia, 19th & The Parkway, Philadelphia, Pa 19103, USA*).

This is an account of the material mentioned in *OA* No. 3194. The 3 spp. collected are *Protallagma titicacae*, *Aeshna* (*Hesperaeshna*) *peralta*, and *A.* (*Marmaraeschna*) *intricata*.

- (3276) RODENDORF, B.B. & A.P. RASNITSYN, [Eds], 1980. *Istoricheskoe razvitiye klassa nasekomyh.* [Historical development of the class Insecta]. *Trudy paleontol. Inst. Akad. Nauk SSSR 175: 1-270, pls 1-8 excl.* (Russian). — (*First author deceased*).

This is a completely new approach to the subject, characterized by new phylogenetic views and by a very radical departure from current practice in the nomenclature of taxa in the order-class group. Various orders are dealt with by different specialists (for the Odon. cf. *OA* No. 3274), but the late Dr Rodendorf (= Rohdendorf) seems to be mainly responsible for the general views and nomenclature. The Pterygota are divided into infraclasses of Scarabaeones (some Palaeozoic orders, Ephemeroptera, hemipteroid orders and Endopterygota), Libellulones (Odon. and allied Palaeozoic fossils), and Gryllones (orthopteroid orders). The

term "Libellulones" is Rodendorf's adaptation of "Libelluloides" of J.N. von Laichartig, 1781, Verzeichniss und Beschreibung der Tyroler Insecten, Bd. 1, Füessly, Zürich. — (For some comments cf. *OA* No. 3298).

- (3277) SCHMIDT, E., 1980. Das Artenspektrum der Libellen der Insel Helgoland unter dem Aspekt der Fund- und Einwanderungswahrscheinlichkeit (Odonata). *Entom. gen.* 6 (2/4): 247-250. — (With Engl. s.). — (*Biologie Didaktik, Pädagog. Fak., Univ. Bonn, Römerstr. 164, D-5300 Bonn, GFR*).
The recording frequency of the 35 spp. known from the island of Helgoland, German Federal Republic, is analysed for the period 1860-1980. *Ischnura elegans* is the only autochthonous sp. The frequency of the records of the other spp. largely depends on the abundance of the latter on the mainland coast, on their migration capacities, and on the recognition of taxa by non-specialists.
- (3278) STARK, J.D., 1980. A cylinder-sampler for collecting the invertebrate fauna from submerged aquatic vegetation. *Mauri Ora* 8: 45-53. — (*Dept. Zool., Univ. Canterbury, Christchurch-1, NZ*).
A sampler designated to provide a quantitative estimate of the invertebrate fauna from littoral macrophyte zones of lakes, operating from a small boat, is described. An example is given of collections from the Grasmere Lake, which include *Xanthocnemis zealandica*.
- (3279) ŠTYS, P. & T. SOLDAN, 1980. Retention of tracheal gills in adult Ephemeroptera and other insects. *Acta Univ. carol. (Biol.)* 12: 408-435. — (*Dept. Syst. Zool., Charles Univ., Viničná 7, CZ-128 44 Prague-2*).
Various spp. of Ephemeroptera were examined in search for possibly occurring remnants of larval gills. The cases of retention of larval tracheal gills by adults of Odon., Plecoptera and Trichoptera are briefly reviewed, and the functional, developmental and evolutionary significance of these phenomena is discussed.
- (3280) SUZUKI, K., 1980. Intraspecific forms and their geographical distribution of the Mnaisdamselflies (Odonata, Calopterygidae) inhabiting the Hokuriku District, Central Honshu, Japan. (II). *J. Coll. lib. Arts, Toyama (nat. Sci.)* 13 (2): 21-30. (With Jap. s.). — (*Dept. Biol., Coll. Liberal Arts, Toyama Univ., 3190 Gofuku, Toyama, 930, JA*).
This is the continuation of the series, the first paper of which is listed in *OA* No. 2917, reporting on the results of the 1980 surveys of *M. nawai* and *M. pruinosa*. The major conclusions on the local distribution of the 2 spp. are as follows: (1) both spp. are widely distributed in the Hokuriku District; — (2) *M. nawai* inhabits the lower stream courses, while *M. pruinosa* has a wider range of habitats, from the uppermost sections of a mountain creek, down to the open drainage areas of a river; — (3) the northeasternmost limit of distribution of *nawai* is located in the area nr Kicchōji, Kurobe-shi; the Kurobe-gawa River clearly blocking its NE penetration along the Japan Sea; — (4) *M. pruinosa* has a wide range along the Japan Sea to SW Niigata Prefecture; — (5) it seems that the boundary between the 2 spp. and *M. costalis* (widely distributed in northern Japan) is somewhere between the NE Toyama Pref. and SW Niigata Pref. — Some biogeographic and taxonomic problems are outlined and discussed.
- (3281) TARANOVA, V.M., 1980. Sezonnoe razvitiye fauny strekoz (Odonata) pribrezh'ya Rybinskogo vodohranilishcha i prilgayushchin k emu vodoemov. [Seasonal development of the dragonfly fauna (Odonata) of the Rybinskoe basin and the adjacent water bodies]. *Trudy Inst. Biol. vnutr. Vod* 41 (44): 145-154. (Russian). — (*Inst. Inland Water Biol., USSR Acad. Sci., USSR-152742 Borok, Nekouz, Yaroslavl*).
The composition, seasonal abundance and phenology of the odon. fauna of the Rybinskoe Basin, Yaroslavl Prov., USSR (31 spp.) were studied (1974-1977). The local phenology and general abundance are compared to those recorded in some other regions of the USSR.

- (3282) TARANOVA, V.M., 1980. Stadii razvitiya lichinok *Sympetrum flaveolum* L. (Odonata). [Developmental stages of the larvae of *Sympetrum flaveolum* L. (Odonata)]. Trudy Inst. Biol. vnutr. Vod 41 (44): 155-160. (Russian). — (*Inst. Inland Water Biol., USSR Acad. Sci., USSR-152742 Borok, Nekouz, Yaroslavl.*)
11 larval instars of *S. flaveolum* are described, illustrated, and morphometrically analysed.
- (3283) WHIZZARD, G. (text) & G. BERNARD (illustrations), 1980. Die Libelle: von der Larve zum farbprächtigen Insekt. *Arena-Kindersachbuchreihe "Farbige Tierwelt"*, Arena, Würzburg. IV+28 pp. — Price: DM 12.80. — (Publishers: *Arena Verlag, Talavera 7, D-87 Würzburg, GFR.*)
A picture book (photographs), directed at a general reader.
- (3284) WILKINSON, R.S., 1980. Further observations on freezing insects for storage. *Ent. Rec. J. Var.* 92 (11/12): 273-274. — (*Am. Mus. Nat. Hist., New York, N.Y. 10024, USA.*)
Subsequent to the author's 1974 paper (*Great Lakes Ent.* 7: 8), dealing with Lepidoptera, freezing experiments, without the application of chlorocresol, were conducted on various insect orders, incl. Odon. These are described, but the results with Zygoptera are not considered satisfactory.
- (3285) ZHOU, Wenbao & Jinlai WEI, 1980. A new species of the genus *Planaeschna* from Zhejiang (Odonata: Aeshnidae). *Entomotaxonomia* 2 (3): 227-228. (Chinese, with Engl. s.). — (First author's address stated as "*Zhejiang Museum*", P.R. China).
P. suichangensis sp. n. is described and illustrated (♂ holotype, ♀ allotype: Suichang, Zhejiang, P.R. China, 1-IX-1979; deposited in Zhejiang Mus.). The new sp. is closely related to *P. r. risi* Asahina from Taiwan, from which it differs in 2 features, viz. (1) the 10th abd. segm. is black, dorsally with a pair of greenish yellow median spots, and (2) if seen from the side, there is no apical ventral inflation in the male superior caudal appendage.

1981

- (3286) (Anonymous), 1981. Lautlose Hubschrauber. *Junior* 14 (7): 16-20. — (Publishers: *Hug-Verlag, Hohenrainweg 1, CH-8802 Kilchberg-Zürich.*)

This is a general article on the biology and behaviour of dragonflies, addressed to children, and containing numerous colour photographs from the paper listed in *OA* No. 1854. — (*Abstracter's Note*: Copies of the journal are distributed free to junior customers of the shops in Austria, Germany and Switzerland).

- (3287) ARNSCHEID, W., 1981. *Libellula* 1 (1). *Mitt. westf. Entomol.* 5 (3): 33. (German). — (*Author's address not stated.*)

Book review of the first issue of the new periodical listed in *OA* No. 3310.

- (3288) ASAHINA, S., 1981. A new *Chlorogomphus* from Thailand (Odonata, Cordulegasteridae). *Proc. Jap. Soc. syst. Zool.* 1981 (20): 35-38. (With Jap. s.). — (*Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA.*)

C. arooni sp. n. (♂ holotype, ♀ allotype: Khao Phaw Ta, Surattani, 10/11-IV-1980) is described and illustrated. The type material is deposited in Div. Ent. & Zool., Dept. Agric., Bangkok, Bangkok). This is the first member of the genus known from Thailand. It is closely allied to *C. fraseri* St. Quentin (Assam), and also to *C. vietnamensis* Asah. (southern Vietnam) and *C. auratus* Martin (Tonkin), but the latter 2 spp. are known from the female sex only.

- (3289) ASAHINA, S., 1981. A revision of the Himalayan dragonflies of the genus *Cephalaeschna* and its allies (Odonata, Aeshnidae). Part 2. *Bull. natn. Sci. Mus., Tokyo (A)* 7 (2): 57-77. — (*Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA.*)

This is the continuation of the paper listed in *OA* No. 3208, dealing with the genus

Periaeschna, and with a number of taxa considered incertae sedis, viz. *Periaeschna nocturnalis* Fraser, *Cephalaeschna biguttata* Fraser, *Petaliaeschna fletcheri* Fraser, and *Cephalaeschna acutifrons* Fraser. *Periaeschna flinti assamensis* ssp. n. (δ holotype, \varnothing allotype: Khasi Hills, Assam, India) is also described and illustrated. The type material is in the Brit. Mus. (Nat. Hist.).

- (3290) BAKER, R.L., 1981. Behavioural interactions and use of feeding areas by nymphs of *Coenagrion resolutum* (Coenagrionidae: Odonata). *Oecologia* 49: 353-358. — (*Dept. Zool., Univ. Alberta, Edmonton, Alberta T6G 2E9, CA*).

Behaviour of *C. resolutum* larvae was studied in the laboratory, and some of its features were classified as grooming, feeding/aggression, retreat, or defense. In an experiment on the use of space, some larvae excluded other from feeding areas through aggressive interactions. The use of the feeding area was positively associated with the dominance status of an individual. Exclusion of some individuals is interpreted as a combination of dominance and limited movement rather than as a territorial system.

- (3291) BEGUM, A., M.A. BASHAR & B.R. BISWAS, 1981. Life history of *Ictinogomphus rapax* (Rambur) (Anisoptera: Gomphidae). *Bangladesh J. Zool.* 8 (1): 53-60. — (*Dept. Zool., Univ. Dacca, Dacca-2, Bangladesh*).

Under laboratory conditions, the life cycle was completed in 229.5 days. There are 12 larval instars. The principal changes in external morphology of all of these are figured and described in detail.

- (3292) BELYSHEV, B.F. & A.Yu. HARITONOV, 1981. Geografiya strekoz (Odonata) boreal'nogo faunisticheskogo carstva [Geography of dragonflies (Odonata) of the boreal realm]. *Nauka, Novosibirsk*. II+278 pp. (Russian). — (*Inst. Biol., Siberian Sect. USSR Acad. Sci., Ul. Frunse 11, USSR-630091 Novosibirsk*).

The geography and history of the holarctic

odon. fauna are dealt with monographically. The book is organized into 3 parts, viz. "Zoogeographical and historical characterisation of the boreal odonate genera" (5-96), "Special problems of zoogeography and history of the boreal odonate fauna" (97-188), and "Zoogeographic division of the boreal realm" (189-258). The bibliography contains 388 references, organized geographically. Close to 30 maps and 10 tabs elucidate the text. — (*Abstracter Note*: The senior author is a leading Russian odonatologist. The monograph contains numerous original views, based on thorough considerations and analyses of evidence scattered in the literature).

- (3293) BOULARD, M., 1981. Odonates de Sérignan. I. La Carrière. *Entomologiste* 37 (3): 113-125. — (*Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris*).

11 spp. are listed and discussed from Sérignan, incl. *Coenagrion scitulum* and *Orthetrum albistylum*, which are new to the fauna of the Vaucluse, France.

- (3294) BRÖRING, U. & R. NIEDRINGHAUS, 1981. Zur Odonatenfauna der Ostfriesischen Insel Norderney. *Drosera* 1981 (1): 1-16. (With Engl. s.). — (*Fachber. Biol., Univ. Oldenburg, Ammerländer Heerstr. 67-99, D-2900 Oldenburg, GFR*).

The abundance and spatial and temporal distribution of Odon. (17 spp.) were studied (1979-1980) on the Northfrisian island of Norderney, German Federal Republic. 13 of the recorded spp. are considered to be (at least periodically) indigenous. The occurrence of *Lestes barbarus*, *Coenagrion lunulatum*, *Ichnura pumilio* and *Sympetrum striolatum* is emphasized as being remarkable.

- (3295) CARPENTER, F.M., 1981. Studies on North American Carboniferous insects. 6. Upper Carboniferous insects from Pennsylvania. *Psyche* 87 (1/2): 107-119. (Dated 1980, published July, 1981). — (*16 Divinity Ave., Cambridge, Mass. 02138, USA*).

So far 5 protodonate spp. were known from

the Upper Carboniferous of North America, viz. *Paralogus aeshnoides* Scudd., 1893 (Paralogidae), *Palaeotherates pennsylvanicus* Handl., 1906 (incertae fam.), *Paralogopsis longipes* Handl., 1911 (incertae fam.), *Typus durhami* Carp., 1960 (Meganeuridae), and *Olygotypus makowskii* Carp. & Rich., 1971. — Here *Palaeotherates analis* sp. n. is described and illustrated from the Anthracite Coal Fields of Pennsylvania (basal 2/5 of a fore wing; Type No. 11028, William Penn Memorial Mus., Harrisburg). The most distinctive feature of the wing is the absence of a major branch of 1A. The new sp. is obviously larger than *pennsylvanicus*, and is the largest sp. of that series of fossils.

- (3296) CASPERS, N., 1981. Die Libellen der Eggstätter und Seconer Seenplatte (Chiemgau) (Insecta, Odonata). NachrBl. Bayer. Entomol. 30 (3): 56-60. — (*Inst. Landwirtschaftl. Zool., Melbweg 42, D-5300 Bonn-1, GFR.*)

43 spp., collected in the Chiemgau, Bavaria 1973-1980, are listed, without locality and collection data. The list includes a number of zoogeographically and ecologically remarkable records. With reference to a not further specified "reliable source", the author is of the opinion that the "activities" of the "overenthusiastic odonatologists" are partly responsible for the decrease in abundance of some spp. in the past 15 yrs. — (*Abstracter's Note:* If the latter assumption is correct, this would be the first case on record, therefore it is unfortunate that neither the "reliable source" is disclosed nor the technical evidence produced. If, judging from the bibliographic list, an "anonymous hint" to the grave destiny of the Inzell population of *Coenagrion hylas* is to be understood in this statement, it should be emphasized that no evidence has ever been produced on the population effects of the (adult) specimen collecting there. Between 1967-1970 the locality has been turned into the swimming pool of a nearby hotel, and it is partly managed as a trout nursery pond (Cf. H.J. Dumont, 1971, *Biol. Conserv.* 3: 223-228) hence, if de-

stroyed, it has been so by evidently "economic" measures rather than by the "specimen collecting". Aside from this, unspecified generalisations in technical literature should be firmly rejected, and it is not unremarkable that recently quite a few attempts have been made by the "conservationists" to turn the "Inzell case" into a classical example of odonate population destruction by overcollecting of specimens, without ever producing a detailed account of the economic management of the locality and/or any other documented evidence on the population's development prior to its decline and reported extinction).

- (3297) COTHRAN, M.L. & J.H. THORP, 1981. Emergence patterns of Odonata in a thermal reservoir. Program & Abstr. 29th ann. Meet. North Am. benthol. Soc., p. 16. — (*Savannah Riv. Ecol. Lab., Aiken, SC, USA.*) [Verbatim]: Patterns of odon. emergence were examined seasonally in a reservoir receiving thermal effluents. Exuviae were routinely removed from inside 4 m² predator exclusion cages. Mean emergence date (MED), duration, synchronization, and head widths at emergence were determined for 11 taxa at 6 stations along a thermal gradient. MED varied significantly among spp. and ranged from Apr. 2 for *Tetragoneuria cynosura* to July 18 for *Pachydiplax longipennis*. Those stations with the highest mean annual temperatures generally had earlier MED's. Species composition differed among stations and a significant interaction existed between spp. and station for MED, i.e., some spp. were more susceptible to station (temperature) effects on MED than others. There were significant species differences in mean head width among stations. In general, size at emergence decreased with increasing temperature. Significant differences in mean head width were found among emergence dates for all spp. except *Epicordulia princeps*. With the exception of the 2 earliest emerging spp., *T. cynosura* and *Ladona deplanata*, the later in the year the emergence date, the smaller the individual emerging. The opposite relation-

ship existed for *T. cynosura* and *L. deplanata*.

- (3298) CROWSON, R.A., 1981. A Russian palaeo-entomological view of insect phylogeny. *Entom. gen.* 7 (1): 105-108. — (*Dept. Zool., Univ. Glasgow, Glasgow, UK*). An exhaustive critical and informative review of the volume listed in *OA* No. 3276.
- (3299) CUPPEN, H.P.J.J., 1981. De hydrobiologische betekenis van het Uddelermeer. [The hydrobiological value of the Uddeler Lake]. Regionale Milieuraad Oost-Veluwe, The Netherlands. 36 pp. (Dutch). — (*Author's address not stated*). On p. 34, *Coenagrion puella*, *C. pulchellum*, *Ischnura elegans*, *Pyrrhosoma nymphula*, *Libellula quadrimaculata*, and *Aeshna* sp. and *Sympetrum* sp. are listed from the Uddeler Lake, the Veluwe, The Netherlands.
- (3300) DIEHL, B., 1981. Bestimmungsschlüssel für die Libellen der Bundesrepublik Deutschland. Deutscher Jugendbund für Naturbeobachtung, Hamburg. 44 pp. — Price: DM 2.50. — (Author: *Silcherstr. 12, D-7031 Neuweiler, GFR* — Publishers: *DJN Bundesmaterialverwaltung, c/o Mr. U. Kretschmer, Moltkestr. 47, D-2000 Hamburg-20, GFR*). This is a revised and enlarged edition of the volume listed in *OA* No. 2655. Copies should be ordered from the Publishers rather than from the author.
- (3301) DUFOUR, C., 1981. 45 odonates européens à l'étang de Bavois (Suisse, Vaud). *Bull. romand Ent.* 1 (1): 3-10. (With Engl. s.). — (*Mus. d'Hist. nat., Passage Max.-Meuron 10, CH-2000 Neuchâtel*). 45 spp. (59% of the Swiss fauna) were recorded (1938-1980) from the Bavois marsh, canton Vaud, Switzerland. This is the highest number ever observed at a single locality in Central Europe. Although 13 spp. were not covered by recent surveys (1974-1980), the locality still harbours a number of interesting taxa, such as *Anax parthenope*, *Leucorrhinia albifrons* and *Libellula fulva*.
- (3302) FORSYTH, D.J. & I.D. McCALLUM, 1981. Benthic macroinvertebrates of Lake Taupo. *N.Z. Jl marine & freshw. Res.* 15 (1): 41-46. — (*Ecol. Div., Dept. Sci. & Ind. Res., P.O.B. 415, Taupo, NZ*). The seasonal abundance of benthic macroinvertebrates from the profundal zone and from 2 transects from the littoral to the profundal zone of Lake Taupo, North Island, New Zealand, was investigated. In a transect of 6 bays, Odon. were identified only in Motuopa Bay, where *Hemicordulia australiae* (2/m², 0.13% of fauna), *Procordulia grayi* (2/m², 0.13%) and *Xanthocnemis zealandica* (6/m², 0.4%) occur.
- (3303) GRACILE (Newsletter of Odonatology). Published by the Kansai Research Group of Odonatology, Osaka, No. 28 (M. Iwasaki memorial issue; Feb. 1, 1981), No. 29 (Apr. 1, 1981). (Jap., with Engl. translation of the titles). — Annual subscription/membership for 1981: Y 2000.— (*c/o K. Tani, 129 Jizochō, Nara, 630, JA*). (No. 28): [*Hiura, I. & K. Tani*] (Osaka Mus. Nat. Hist., Nagai Park, Higashinagai-cho, Higashisumiyoshi-ku, Osaka, 546, JA): In memoriam (1-2, with portrait of M. Iwasaki; — Engl. translation available from the Editors of *Odonatologica*, or from the SIO Office in Japan: *c/o K. Inoue, 5-9, Fuminosato 4-chome, Abenoku, Osaka, 545, JA*); — *Asahina, S.* Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA): In memoriam Mr. M. Iwasaki (3-4); — *Inoue, K.* (address above): Mr. M. Iwasaki in memoriam (4-7, with portrait and bibliography); — *Miyazaki, T.* (Naniwa-Ryo, 2-4-26, Higashinaniwa-cho, Amagasaki, Hyogo Pref., 660, JA): The late Mr. M. Iwasaki and *Mnais pruinosa* (7-9); — *Yamamoto, T.* (2-4-9, Ebaraji-cho, Sakai, Osaka Pref., 593, JA): I remember the days I spent with Mr. Iwasaki (10-11); — *Hirake, T.* (2-4-11, Johnan, Ikeda, 563, JA): I remember him of that old day (11); — *Iwasaki, M.* (deceased): Field observation notes

- on Malay Peninsula and Sumatra (12-26); — *Arai, Y.* (3-72 Ishiwara, Kumagaya, Saitama Pref., 360, JA): Ecological observation of *Sieboldius albardae* Selys at the reproductive site (27-28); — *Obana, S.* (Kinryo-cho 3-4-10, Sakai, Osaka Pref., 590, JA): Larval breeding memo (sequel 1) (29-31); — *Takeuchi, T.* (303, 2-2-6, Hotarugaik Higashi-machi, Toyonaka, 560, JA): On artificial fertilization in vitro of dragonflies, I (32-34); — *Tani, K., O. Tabata, N. Doi & O. Tominaga* (address Editor): Odonate fauna of Hacho-daira Marsh and the surroundings (35-36); — *Yamashita, Y.* (Hozenji Temple, 6-3, Hannan-cho 4-chome, Abeno-ku, Osaka, 545, JA): Observation records in Nagai Botanical Garden (37); — *Tani, K.* (address Editor): Postscript (38). — (*Abstracter's Note*: The address of the parents of the late Mr. M. Iwasaki: Mr. Jiro Iwasaki, Tsutoyaha-cho, 5-16, Nishinomiya, Hyogo Pref., 662, JA). (No. 29): *Inoue, K.* (address above): 'Odonatists' Meetings' with overseas odonatologists (1-17); — *Jurzitza, G.* (Bot. Inst. Univ. Karlsruhe, Kaiserstr. 12, D-7500 Karlsruhe, GFR): [facsimile and Jap. translation of a letter to the Kansai Research Group of Odonatology] (18); — [photographs of *Ictinogomphus clavatus* and *Rhythemis fuliginosa*] (19); — *Anaze, N. & T. Takamatsu* (Takara 529, Yukawa-cho, Gobo, Wakayama Pref., 644, JA): A survey trip for *Mnais pruinosa* in northern parts of Wakayama Pref. (20-21); — *Miyazaki, T.* (address above): Report of a survey of Kyoto on *Mnais pruinosa* nawai f. *taketoi* (22-23); — *Takeuchi, T.* (address above): Report of the failed survey trip for the ratio of the bimorphic females of *Ischnura senegalensis* (23); — *Obana, S.* (address above): A survey trip for *Davidius moiwanus sawanoi* (24-25); — *Tominaga, O. & N. Doi* (1395, Tahakata-cho, Nara, 630, JA): Survey records of *Mnais pruinosa* (26-27); — *Hirake, T.* (address above): Odonate fauna of Iwami-gun, Tottori Pref. (28); — *Takamatsu, T.* (11, Higashi-nakama-cho 1-chome, Wakayama, 640, JA): *Mnais pruinosa* nawai first found in Wakayama Pref. (29); — *Morimitsu, S.* (4-2, Harumidai 1-chome, Sakai, 590-01, JA): *General Pantala flavescens* (29-30); — *Inoue, K.* (address above): Overseas odonatologists becoming members of our Kansai Research Group of Odonatology (30).
- (3304) HARRIS, K.M., 1981. *Bremia legrandi* sp.n. (Diptera, Cecidomyiidae), a predator on eggs of a dragonfly, *Malgassophlebia aequatoris* Legrand (Odonata, Libellulidae) in Gabon. Rev. fr. Ent. (N.S.) 3 (1): 27-30. (With Engl. s.). — (*Commonwealth Inst. Ent., c/o Brit. Mus. (Nat. Hist.), Cromwell Rd., London, SW7 5BD, UK*).
The larvae of the n.sp. described and illustrated here are feeding on eggs of *M. aequatoris*. The material originates from 2 localities in Makokou, Gabon. (Cf. *OA* No. 2567).
- (3305) HERMANS, J.T. & J.A.M. JANSEN, 1981. De Linnerweerd. [*The Linnerweerd*]. Natuurh. Maandbl. 70 (3): 43-50. (Dutch). — (*Hertestr. 21, Linne, NL*).
The Linnerweerd is situated on the Meuse R., Zuid Limburg prov., The Netherlands. On p. 49, *Pyrrhosoma nymphula*, *Calopteryx splendens*, *Anax imperator*, *Libellula depressa*, and *Sympetrum sanguineum* are recorded. — (*Abstracter's Note*: The same paper has appeared also in *Natura*, *Amst.* 78 (3); 1981).
- (3306) JURZITZA, G., 1981. Schmetterlingsnetz ade. *Kosmos* 77 (6): 9-10. — (*Bot. Inst., Univ. Karlsruhe, Kaiserstr. 2, D-7500 Karlsruhe-1, GFR*).
Comments on the (German) Federal Species Conservation Act (cf. *OA* No. 3112), by one of the foremost German odonatologists.
- (3307) KIKILLUS, R. & M. WEITZEL, 1981. Grundlagenstudien zur Ökologie und Faunistik der Libellen des Rheinlandes. Veränderungsstendenzen einer Libellenfauna in belasteten Ökosystemen. *Pollichia* Buch Nr. 2, Bad Dürkheim. VI + 244 pp. — Price: DM 17.—. — (First author: *Friedrich-Ebert-Str. 51, D-4000 Düsseldorf-2, GFR*;

— Second author: *Auf der Steinrausch 15, D-5500 Trier, GFR*; — Publishers: *Pfzalmuseum für Naturkunde, Hermann-Schäfer-Str. 17, D-6702 Bad Dürkheim-2, GFR*. This is a monograph on the odon. fauna (62 spp.) of Rhineland, between the Nahe-Hunsrück and the Lower Rhine Plain, Federal Republic of Germany. It includes a detailed faunistic inventory (incl. 66 distribution maps), a critical evaluation of the fauna, and considerations on various conservancy measures. The following are the titles of the chapters: "Introduction" (1); — "Study area" (2); — "List of collaborators" (2-3); — "Method and material treated" (3-7); — "Cumulative locality index" (7-25); — "Discussion of the cumulative locality map" (26-30); — "Annotations on the locality lists and distribution maps" (31-33); — [Systematic account] (33-176); — "The present situation of the Rhineland odonate fauna" (177); — "Species index of the area studied" (177-178); — "The Rhineland odonate fauna in the light of the Red List criteria" (178-179); — "Comments on the Red List" (179-181); — "Trends in the changes of the Rhineland odonate fauna in the ecosystems under stress" (181-185); — "Nature conservancy considerations" (185-189); — [German] Summary (189); — References (190-199). — The "Appendix" contains an account of faunal analyses of various habitats in 17 areas (200-220), and the hydrochemical data of the same (221-244). — (*Abstracter's note*: This extremely well documented account, treated by a modern approach, is by far the best monograph available so far for a large region of Germany. It is all the more fortunate, therefore, that it has been issued in a more or less commercial way, hence the book is readily available in the market).

- (3308) LEGRAND, J., 1981. Liste des types d'odonates décrits par Fraser de la région Malgache des collections du M.N.H.N. Paris (Odonata). *Revue fr. Ent. (N.S.)* 3 (2): 49-56. (With Engl. s.). — (*Lab. Ent., Mus. Natn. Hist. Nat., 45 rue de Buffon, F-75005 Paris*).

With reference to the 1966 Catalogue of D.E. Kimmins (*Bull. Br. Mus. nat. Hist., Ent.* 18: 175-227), F.C. Fraser's type material from Comore Islands, Madagascar and Réunion, deposited in the Paris Museum, is listed (save for 3 spp.) and discussed, and lectotypes are designated.

- (3309) LEHMANN, G., 1981. Aus der Nordtiroler Odonatenfauna: die Libellen des Thierberggebietes. *Jber. Bundesgymn. Kufstein* 74: 41-49. — (*Stimmerfeldstr. 17, A-6330 Kufstein*).
29 spp. are recorded (1977-1980) from the Thierberg area, Northern Tyrol, Austria. The odon. communities of various biotopes are outlined, and the regional fauna is zoogeographically analysed.
- (3310) LIBELLULA. Mitteilungsblatt der Arbeitsgemeinschaft Deutscher Odonatologen. Vol. 1, No. 1 (Feb. 14, 1981). Edited by, and available from R. Rudolph, *Biol. Didaktik, Univ. Münster, Fliegerstr. 21, D-4400 Münster, GFR*.
This is a semiannual bulletin, published by the German Odonatological Association, affiliated to the International Odonatological Society (S.I.O.). The first issue mainly contains abstracts of papers presented at the First Meeting of German Odonatologists, Münster, Oct. 6, 1979: *Rudolph, R.*: Zusammenkunft deutschsprachiger Libellenkundler in Münster am 6.10.1979 (1); — *Lohmann, H.* (Untere Dorfstr. 16, D-7888 Rheinfelden, GFR): Postglaziale Disjunktionen bei europäischen Libellen (2-4); — *Schmidt, E.* (Biol. Didaktik, Pädagog. Fak., Univ. Bonn, Römerstr. 164, D-5300 Bonn, GFR): Aktuelle Problematik faunistischer Arbeiten über Odonaten in der Bundesrepublik Deutschland (5-11); — *Geijskes, D.C.* (Rijksmus. Nat. Hist., Raamsteeg 2, Leiden, NL): Die Libellen des Grenzraumes Niederlande-Deutschland (12); — *Dreyer, W.* (LS Tierökol., Univ. Bayreuth, Postf. 3008, D-8580 Bayreuth, GFR): Partnerfindungsmechanismen bei *Lestes viridis* (Van Der Linden) (Zygoptera: Lestidae)

- (13-14); — *Stark, W.* (Burgenländ. Landesmus., Museumgasse 5, A-7000 Eisenstadt): Die Libellenfauna des Neusiedlersee-Gebietes (15-18); — *Dickehuth, R.* (Abt. Biol., Karl-Hansen-Klinik, Postf. 1163, D-4792 Bad Lippspringe, GFR): Zur Odonatenfauna der Umgebung von Bad Lippspringe (19); — *Dévai, G.* (Inst. Zool. & Antropol., Kossuth Univ., Egyetem tér 1, HU-4010 Debrecen): Möglichkeiten der biologischen Wasserqualitätsbeurteilungen aufgrund der chorologisch-ökologischen Bearbeitung der Libellen (20); — *Jurzitza, G.* (Bot. Inst., Univ. Karlsruhe, Kaiserstr. 2, D-7500 Karlsruhe, GFR): Übersicht über die Odonaten Südamerikas (20); — *Benken, T.* (Poststr. 2, D-4573 Löningen, GFR): Ein Beitrag zur Libellenfauna des Hahleener Moores (21-23); — *Rudolph, R.* (address above): Die Verbreitung von *Gomphus pulchellus* in Westeuropa (23); — *Heidemann, H.* (Au-in-den-Buchen 66, D-7502 Bruchsal-5, GFR): Die europäischen Rassen von *Onychogomphus forcipatus* L. (24-26); — *Haese, U.* (Heerweg 3, D-5190 Stolberg, GFR): Bemerkungen zu Vorkommen und Ökologie von *Ischnura pumilio* (Charpentier) in Messitschblatt Stolberg (Rheinland) (26-27); — *Nielsen, P.* (Dept. Ent., Mus. Zool., Universitetsparken 15, DK-2100 København): Is the superfamily Coenagrionidae a monophyletic group? — A cladistic approach (28); — *Anselin, A.* (Dicksmuide Heirweg 115, B-8200 Brugge-2): Distribution and ecology of Odonata in some areas near Brugge (West-Flandres, Belgium) (28); — *Eiseler, B. & F. Eiseler* (Zweifaller Str. 10, D-5106 Roetgen-Mulartshütte, GFR): Markierungsergebnisse bei *Gomphus pulchellus* Selys (29-32); — *Fränzel, U.* (Rüdesheimer Str. 6, D-53 Bonn-Bad Godesberg, GFR): *Cordulegaster bidentatus* (Selys 1843) und *C. annulatus* (Latr. 1805) im Siebengebirge (32); — *Clausen, W.* (Oppenwehe 459, D-4995 Stemwede-3, GFR): Libellennachweise aus dem nordöstlichen Westfalen (33); — *Schmidt, E.* (address above): Faunistische Notizen aus dem Bodensee-Gebiet (34-36); — Faunistische Notizen aus nordwestdeutschen Mooren (37-38); — *Dorloff, F. & R. Körner* (Unterer Haarkamp 1, D-3394 Langelsheim-5, GFR): Odonatenfauna des Harzes (39-41).
- (3311) LOUTON, J.A., 1981. Zoogeographical categories for lotic dragonflies in eastern North America based on functional (faunistic) and phylogenetic considerations. Program & Abstr. 29th ann. Meet. North. A. benthol. Soc., p. 29. — (*Dept. Zool., Univ. Tennessee, Knoxville, Tenn. 37916, USA*). [Verbatim]: 5 major patterns of dragonfly distribution were found by plotting published and unpublished locality records on base maps showing the major physiographic provinces, maximum extent of Mississippi embayment (fall line), maximum extent of Pleistocene glaciation, and the "prairie peninsula". The 5 patterns and their subdivisions are as follows: (1) Ubiquitous (existing in all physiographic provinces), 11 spp.; — (2) Glaciated interior (with and without refugia populations), 11 spp.; — (3) Unglaciated interior (above the fall line), 31 spp. Subdivisions within the unglaciated interior include: (a) widespread, (b) eastern interior, (c) Appalachian-Piedmont, (d) Appalachian-Cumberlandian, (e) Appalachian and (f) Ozarkian. — (4) Coastal plain, 17 spp.; and (5) Prairie, 5 spp. These divisions and subdivisions are thought to exist because of larval substrate preference, thermal tolerance, exclusion, and adult foraging strategies. Relative diversity of the different divisions follows relative geological stability.
- (3312) MacMILLAN, B.W.H., 1981. Food of house sparrows and greenfinches in a mixed farming district, Hawke's Bay, New Zealand. *N.Z.Jl Zool.* 8: 93-104. — (*Ecol. Div., Dept. Sci. & Ind. Res., Goddard's Lane, Havelock North, NZ*). *Xanthocnemis zealandica* was identified in the diets of adult and nesting adult house sparrows, and in adult greenfinches (Appendix 3, p. 104).
- (3313) MENDL, H., 1981. Dragonflies (Insecta: Odonata) in the estuary of the river Ängeran.

Fauna norrl. 1981 (1): 1-7. (*Johann-Schütz-Str. 31, D-8960 Kempten/Allgäu, GFR*). 17 odon. spp. have been observed in the Ångeran estuary, bringing the total number of Odon. recorded from brackish water areas of the Gulf of Finland and Gulf of Bothnia up to 30. This number, compared with the total of 44 spp. known from the inland waters of the area, indicates a high degree of adaptation of Odon. to the brackish water biotopes in the coastal regions of the northern Baltic Sea.

- (3314) MOENS, J., 1981. Libellen. [Dragonflies]. Stichting Limburgs Landschap, Bree, Belgium. 112 pp. (Dutch). — (*Dept. SBM, Limburgs Univ. Cent., Univ. Campus, B-3610 Diepenbeek*). This is a pocket-size volume on the Odon. of the Limburg Prov., Belgium, including a general introduction to the Order (pp. 7-27), identification keys for the regional fauna (larvae and adults; pp. 27-68), and a detailed treatment of each of the 41 local spp. (pp. 68-103). A biographic note and a portrait of the author are provided on the cover.
- (3315) NOTULAE ODONATOLOGICAE, Semi-annual bulletin of the International Odonatological Society. Published by the Societas Internationalis Odonatologica (S.I.O.), Utrecht, Vol. I, No. 7 (June 1, 1981). — Annual subscription Hfl. 25.— net. — (*c/o Dept. Anim. Cytogenet. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL*). *Brooks, S.J.* (Dept. Ent., Brit. Mus., Cromwell Rd., London, SW7 5BD, UK): Dragonfly records from West Malaysia (113-114); — *Crucitti, P., P.A. Galletti & M. Pavesi* (Ist. Zool., Univ. Roma, Viale dell'Università 32, I-00100 Roma): Un interessante reperto sardo: *Brachythemis leucostica* (Burmeister), genere nuovo per la fauna italiana (Anisoptera: Libellulidae) (115-117); — *Jurzitza, G.* (Bot. Inst., Univ. Karlsruhe, Kaiserstr. 12, D-7500 Karlsruhe, GFR): Lista provisional de los odonatos del Parque Nacional Iguazú, provincia de Misiones, República Argentina (117-118); — *Robinson, V.J.* (Dept. Biol., Univ. Texas, Arlington, Texas 76019, USA): Observations on the reproductive behavior of *Enallagma trivium* Selys (Zygoptera: Coenagrionidae) (118-120); — *Dommanget, J.-L.* (7 rue Lamartine, F-78390 Bois d'Arcy): Captures intéressantes d'odonates en France (120-121); — *Handa, S.M. & N. Kochhar* (Dept. Zool., Panjab Univ., Chandigarh-160014, India): The chromosome numbers of two coenagrionid dragonflies from Panjab (Zygoptera) (122); — *Heady, S.E. & C. Cook* (Dept. Biol., Univ. Louisville, Louisville, Ky 40292, USA): New species records of Odonata from Kentucky, with notes on two other species (122-123); — *Lohmann, H.* (*Aeshna subarctica elisabethae* Djak. — neu für Frankreich (Anisoptera: Aeshnidae) (123); — *Rowe, J.R.* (Dept. Zool., Univ. Canterbury, Christchurch-1, NZ): Notes on a small dragonfly collection from China (123-124).
- (3316) ODONATA RECORDING SCHEME NEWSLETTER. No. 5 (May, 1981). Compiled by National Organizer D.G. Chelmick ("Bredon", High Beech Lane, Haywards Heath, Sussex, UK). (Available from: *Biological Records Centre, Monks Wood Experimental Station, Abbots Ripon, Huntingdon, PE17 2LS, UK*). The issue contains an obituary notice for Cyril Hammond (died Aug., 1980), a note on the "Proposed British Odonata Society", a brief report on the 1980 (British) Recorders' Meeting, a report on the recording progress, and various news items, instructions and appeals directed at the British recorders.
- (3317) PAVLYUK, R.S., 1981. Parazitologicheskoe issledovanie strekoz (Insecta, Odonata), hranyashchihcya v entomologicheskikh kolekciyah. (A parasitological study of dragonflies (Insecta, Odonata) kept in entomological collections). *Vest. Zool., Kiev* 1981 (2): 90-92. (Russ., with Engl. translation of the title). — (*Dept. Invert. Zool., Lvov Univ., 4 Shcherebenkov Str., USSR-290005 Lvov*). An account is given of the parasites found

(1977-1978) in 532 specimens of 43 odon. spp. The names are specified of hosts and parasites, and the quantitative data are presented along with the provenience of the odon. material.

- (3318) PAVLYUK, R.S., 1981. K izucheniyu fauny strekoz (Insecta, Odonata) Del'ty Dunaya. (A study of dragon-flies (Insecta, Odonata) from the Danube Delta). Vest. Zool., Kiev 1981 (3): 94-95. — (Russian, with Engl. title). — (*Dept. Invertebr. Zool., Lvov Univ., 4 Shcherebenkov Str., USSR-290005 Lvov*). 1976-1978, 22 spp. were identified in a material of 700 specimens from the Danube estuary, USSR. 10 of these are listed here, among which *Coenagrion lindeni* is for the first time recorded from the Ukraine.
- (3319) PFLETSCHINGER, H., 1981. Neues Leben aus dem Teich. Kosmos 1981 (5): 60-65. — (*Author's address not stated*). By means of a photograph (p. 62, no name in caption), *Sympetrum sanguineum* is recorded from a forest pond in the central Neckar area, German Federal Republic.
- (3320) PLACHTER, H., 1980. Tierbestände im Siedlungsbereich und ihre Erfassung im Rahmen von Biotopkartierungen — Animal populations in built up areas, and their inclusion within the context of biotope mapping. Garten & Landschaft 1980 (7): 569-576. (Bilingual). — (*Römerhofweg 51, D-8046 Garching, GFR*). The value of anthropogenous landscape structures (gardens, cemeteries, gravel-pits etc.) as animal habitats and refuges is discussed. *Libellula quadrimaculata* is mentioned with reference to gravel-pits.
- (3321) ROWE, R.J., 1981. Odonata (damselflies and dragonflies): key to larvae. In: Winterbourn, M.J. & K.L.D. Gregson, Guide to the aquatic insects of New Zealand, pp. 10-14. Bull. ent. Soc. N.Z. 5: 1-80. — Price of the volume: NZ \$ 9.—. Available from: Mrs S. Millar, 8 Maymorn Rd., Te Marua, Upper Hutt, NZ. — (*Author's address: Dept. Zool., Univ. Canterbury, Christchurch-1, NZ*).
- The volume is a welcome addition to the New Zealand limnological literature. As far as the Odon. are concerned, keys are provided to the larvae of 13 spp., incl. *Pantala flavescens* known only as an adult migrant, and *Tramea transmarina*, which has not been recorded from the New Zealand mainland. The generally clear illustrations will certainly facilitate the use of the key.
- (3322) SCHIESS, H., M. WOLF, C. MEIER, C. DUFOUR & G. PRADERVAND, 1981. La faune des libellules de Suisse: nouveau recensement des libellules de Suisse. Bull. romand Ent. 1 (1): 63. — (*Brüglenstr. 1, CH-8345 Adetswil*). An appeal for cooperation in the preparation of a new survey and mapping of the Swiss odon. fauna. — (An identic text has appeared also in Schweiz. Naturschutz 47 (2): 31; 1981).
- (3323) SCHLÜTER, T., 1981. Fossile Insekten aus dem Jura/Kreide-Grenzbereich Südwest-Ägyptens. Berlin. geowiss. Abh. (A) 32: 33-61, 4 pls incl. (With Engl. and Fr. s's.). — (*Inst. Paläontol., Freie Univ. Berlin, Schwendener Str. 8, D-1000 Berlin-33, West Berlin*). An account is given of 14 specimens of fossil insects from clay-stones of 3 localities in SW Egypt. The deposits are considered of Late Jurassic/Early Cretaceous age. This is the first insect material from the Mesozoic of Egypt, and includes the remains of Odon., Isoptera, Coleoptera and Heteroptera. The 2 odon. specimens described and illustrated are probably referable to *Aeschnidiopsis* and to a new gomphid genus. The spp. are not named taxonomically, but a taxonomic treatment is in preparation.
- (3324) SCHNEIDER, W., 1981. Eine Massenwanderung von *Selysiothemis nigra* (van der Linden, 1825) (Odonata: Macrodiplactidae) und *Lindenia tetraphylla* (van der Linden, 1825) (Odonata: Gomphidae) in Südjordanien. Ent. Ztschr. Frankfurt 91 (9): 97-102. (With Engl. s.). — (*Inst. Zool., Univ. Mainz, Saarstr. 21, D-6500 Mainz, GFR*).

In May 1980, a swarm of *S. nigra* was observed nr. Aqaba, and one composed of *S. nigra* and *L. tetraphylla* nr. Al-Hasa, 80 km south of Amman, Jordan. The observations are described, and it is emphasized that this is the first record of a migratory flight of a gomphid.

- (3325) SCHNEIDER, W., 1981. Neue Funde von *Pseudagrion syriacum* (Selys, 1887) in der nördlichen Levante (Odonata: Zygoptera, Coenagrionidae). *Ent. Ztschr. Frankfurt/Main* 91 (13): 145-150. (With Engl. s.). — (*Inst. Zool., Univ. Mainz, Saarstr. 21, D-6500 Mainz, GFR*).
2 new records for Syria are communicated. The catchment basins of the Afrin and the Kara Su rivers are considered the northernmost range limit of this sp. in the Levant. The occurrence of *P. syriacum* on the Nahr al-Kabir (South) is considered the indication of the former connection between this river and the upper course of the Orontes. The information on the similarity of habitat selection in *P. syriacum* and *Platycnemis* is supplied.
- (3326) SHELLY, T.E., 1981. Selective predation by nymphs of the dragonfly *Paltothemis lineatus* Karsch. *Program & Abstr. 29th ann. Meet. North Am. benthol. Soc.*, p. 56. — (*Dept. Biol., Univ. California, Los Angeles, Cal. 90024, USA*).
[Verbatim]: Numerous workers have found odon. larvae to be opportunistic predators whose diet broadly reflects the availability of prey in the environment. Here data are presented which suggest that larvae of *P. lineatus* feed rather selectively upon baetid mayfly nymphs. Gut contents were examined for approximately 250 individuals collected from the Big Tujunga River, Los Angeles Co., California in late November 1978. In addition, available prey were collected with kick samples. Of the 179 prey items identified, baetid mayfly nymphs comprised 74% of the diet, a proportion well above the relative availability of baetid nymphs in the environment. Predator-prey size relations were also examined, and mean prey size and food size breadth were both found to increase with predator size. The within- and between-phenotype components of food size breadth were also determined and compared to values calculated for other taxa of aquatic insect predators.
- (3327) STARK, W., 1981. Bemerkenswerte Libellenfunde aus dem Burgenland (Ins., Odonata). *Natur & Umwelt Burgenland* 4(1): 13-16. (With Engl. s.). — (*Burgenländ. Landesmus., Museumgasse 5, A-7000 Eisenstadt*).
Pyrhosoma nymphula and *Aeshna cyanea* are added to the odon. fauna list of Burgenland, Austria, bringing the number of spp. reported from the province up to 50.
- (3328) STEINMANN, H. & L. ZOMBORI, 1981. An atlas of insect morphology. *Akadémiai Kiadó, Budapest*. 248 pp. — (*Authors' addresses not stated*).
The principal objective of the atlas is to present, in a simplified form, the illustrations of the adult exoskeleton. The Odon. are dealt with on pp. 112-113, figs 428-437.
- (3329) THORP, J.H. & E.A. BERGEY, 1981. Field experiments on responses of a freshwater, benthic macroinvertebrate community to vertebrate predators. *Ecology* 62 (2): 365-375. — (*Savannah River Ecol. Lab., Post Office Drawer E, Aiken, S.C. 29801, USA*).
The seasonal importance of vertebrate predators in potentially regulating the abundance and diversity of the benthic macroinvertebrates in the littoral zone of a soft-bottom reservoir, receiving thermal effluent from a nuclear production reactor, Barnwell Co., South Carolina, USA was examined. The odon. fauna listed consists of 11 anisopteran genera. The experimental results suggest that vertebrate predation was not the fundamental parameter organizing the benthic invertebrate community.
- (3330) TUTEN, J., 1981. Nature's advocate. *The State Magazine, Columbia, S.C.*, issue of May 17, pp. 7-9. — (*c/o Editors, P.O.B. 1033, Columbia, S.C. 29202, USA*).

A note (with portrait) on Rudy Mancke, curator of natural history for the South Carolina Museum Commission, with a reference to his dragonfly collecting. (Cf. *OA* No. 3227).

- (3331) VAN OS, J., 1981. Libellen in het Bargerveen. [Dragonflies of the Barger Moor]. Privately issued by the author. 9 pp. + 4 pls excl. (Dutch). — (*de Haar 2, Emmen, NL*).
The fauna (26 spp.) of the moor (Drenthe prov., The Netherlands) is enumerated and each sp. is briefly discussed. Amazing is the report on huge numbers of *Aeshna subarctica elisabethae*, encountered in 1980.
- (3332) VERDONK, M., 1981. Libellendag. [A Dragonfly Meeting]. Amoeba, Amst. 1981 (5): 13-14. (Dutch). — (*Floralialaan 47, Bussum, NL*).
Announcement of the Sixth Colloquium of Dutch Dragonfly Workers, held in Amsterdam, May 16, 1981.
- (3333) VERDONK, M., 1981. Onderzoek aan libellenlarven. [A study of dragonfly larvae]. In: (anonymous), Vissen in troebel water, pp. 87-92. ACJN, Zeist & NJN, 's-Graveland. (Dutch). — (*Floralialaan 47, Bussum, NL*).
This is a chapter in a booklet on the freshwater ecology, published by the Netherlands Youth Federation of Nature Friends. It contains original data on morphometry of *Ischnura pumilio* larvae and on phenology of 3 libellulid spp. in the Netherlands.
- (3334) VON HAGEN, H., 1981. Bemerkungen zum Verhalten von *Ischnura elegans* v.d.L. Mitt. westfäl. Entomol. 5 (3): 29-32. (*Akazienweg 28, D-5180 Wiiten, GFR*).
Some notes on colour patterns and general behaviour of adult *I. elegans* are given, and 4 drawings are provided showing an *I. elegans* devouring a *Coenagrion puella*.
- (3335) WATSON, J.A.L., 1981. Odonata (dragonflies and damselflies). In: A. Keast, [Ed.], Ecological biogeography of Australia, pp. 1141-1167. Junk, The Hague. — (*Div. Ent., CSIRO, P.O.B. 1700, Canberra City, A.C.T. 2601, AU*).
A review paper by the leading Australian odonatologist, consisting of the following 5 chapters (and sections): "The fauna" (Composition and endemism, Gondwana relics, Other southern groups, Odonata from the north, Odonata of uncertain affinity), "Larval ecology and distribution of dragonflies" (Larval ecology, Distributions), "Speciation and regional faunas in Australian dragonflies" (Tasmania, Western Arnhem Land, The north-west of Western Australia, The south-west of Western Australia), "Conservation" (The Millstream Springs, Western Arnhem Land, Dune lakes), and "Australian Odonata: points of concern". The bibliographic list contains over 70 references, and is updated to Sept. 1979.
- (3336) WILDERMUTH, H., 1981. Libellen, Kleinodien unserer Gewässer. Schweizer Naturschutz So-Nr. 1/81, 26 pp. — Available, at sFr. 1.80, from Schweizerischer Bund für Naturschutz, Postfach 73, CH-4020 Basel. — (Author's address: *Mythenweg 20, CH-8620 Wetzikon*).
This slim volume, published by the Swiss Nature Conservancy Association, represents one of the most attractive general introductions to the European odon. fauna that have been made available in the market during the past few years. The 4 main chapters are dealing with the biology (incl. behaviour and life history), ecology, conservancy, and with local (i.e. Swiss) faunistic research. Appended are a brief bibliographic section, a checklist of the Swiss fauna (78 spp., with annotations on their habitats, distribution and status in Switzerland), and a pictorial key to the regional families. In spite of the relatively high number of recorded spp., only 28 are generally common, 45 are considered local, endangered or extinct in Switzerland, while 5 are not autochthonous in the Swiss territory. Of particular interest is the chapter on the artificial creation of breeding sites (ponds), in which field the author is a well-known authority. Among the 79 (mostly

col.) illustrations, portraits are shown of a considerable portion of the Swiss fauna. The booklet is characterized by its original structure, and by its refreshing, but concise style. Since it was issued as a part of the national Nature Conservancy Association regular annual membership subscription, it has found its way to a very considerable number of Swiss homes. No doubt it will become also the "classical dragonfly text" in the Swiss schools. — (For a French edition cf. *OA* No. 3337).

- (3337) WILDERMUTH, H., 1981. Les libellules, merveilles des lieux humides. Protection de

la nature, No. spéc. 1/81, 26 pp. — Available, at sFr. 1.80, from the Ligue Suisse pour la Protection de la Nature, C.P. 73, CH-4020 Basel. — (Author's address: *Mythenweg 20, CH-8620 Wetzikon*).

French edition of the volume listed in *OA* No. 3336.

- (3338) WINSTANLEY, W.J., 1981. Some literature references to the Odonata of the New Zealand Region. Privately issued by the author. 22 pp. — (*Dept. Zool., Victoria Univ., Private Bag, Wellington, NZ*). A bibliographic list of close to 300 titles, covering the period 1832-1981 (partim).

ERRATA

Vol. 9, No. 1, p. 90 (PARR): the title of Table IV should read: 'Summary of territorial flight activities of male *Orthetrum julia* No. 144, on 1 May, 1977'.

Vol. 10, No. 1 (CONTENTS), pagination of papers: insert '43' for SANTOS.

The following errors were noticed in the *ODONATOLOGICAL ABSTRACTS*:

No. 432 (BAIJAL, Vol. 2, No. 3, p. 175): second author should read 'MEHTA', not Mehra.

No. 1239 (YAMAMOTO, Vol. 5, No. 1, p. 86): publication date is 1975.

No. 1289 (KARAMAN, Vol. 5, No. 2, p. 181): add pagination: 90 pp., 42 figs excl.

No. 2130 (PRETSCHER, Vol. 7, No. 3, p. 306): the authors of the paper are PRETSCHER, P., G. JURZITZA & H. SCHUMANN.

No. 2988 (NAZEER AHAMED, Vol. 10, No. 1, p. 69): the first author should be alphabetized as 'AHAMED, S.N.'. (Cf. *OA* No. 3188).

Nos 2972-2973 (Vol. 10, No. 1, p. 67): insert heading '1978' between the two abstracts.

No. 2978 (YOSHIDA, Vol. 10, No. 1, p. 67): in the title Shiga Prefecture should read 'Saga Prefecture'.

No. 3035 (NOTULAE, Vol. 10, No. 1, p. 77), line 16 from bottom: *Meijer* should read '*Meier*'.

No. 3038 (PAJUNEN, Vol. 10, No. 1, p. 78): the abstract number is given erroneously as 3028.

No. 3046 (SELYSIA, Vol. 10, No. 1, p. 80), line 22 from the top: *Hobbard, D.M.* should read '*Hobbard, M.D.*'.

No. 3155 (GANDHI, Vol. 10, No. 3, p. 237): the author's initial is 'V.', not 'Y.'. as erroneously stated.

No. 3320 (PLACHTER, Vol. 10, No. 4, p. 351): the text is erroneously placed under the 1981 heading; the publication date is 1980, as stated.