

ODONATOLOGICAL ABSTRACTS

1971

- (3474) CHOUDHURY, J.H. & O. ZETHNER, 1971. An interim report on results obtained in Forest Entomology Section from July 1969 to August 1971. *Forest Dale News, Chittagong* 4 (1): 49-61. — (Forest Ent. Sect., Forest Res. Inst., Chittagong, Bangladesh).

The report contains a list of insects recorded in Chittagong, Bangladesh, in which list reference is made to 24 (unidentified) odon. spp.

- (3475) KUMAR, A., 1971. *Taxonomic studies of the last instar larvae of Odonata from the Dehra Dun Valley (India)*. PhD thesis, Univ. Meerut. — (Northern Reg. Stn, Zool. Surv. India, 13 Subhash Rd, Dehra Dun-248001, U.P., India).

[Not available for abstracting]. The main data are published in papers listed in *OA* Nos 527, 528.

1973

- (3476) LAMPEL, G., 1973. *Biologie der Insekten. Mit einem Anhang über Sammel- und Präparationstechnik*. Goldmann, München. 269 pp. — (Author's address not stated).

This is a general, pocket-size text book, based on the author's lectures at the Univ. of Freiburg, Switzerland. It is listed here because of some interesting comparative data on various physiological features of Odon.,

e.g. on p. 227 a table is given of wing-beat frequencies in various orders (Libellula 20 Hz, Aeshna 22-28 Hz, "Agrion" 29 Hz), on p. 230 flight speeds are listed for members of 5 orders (Libellula: 4-10 m/sec = 14-36 km/h, Anax: 8 m/sec = 28.8 km/h), etc.

1974

- (3477) PRASAD, M., 1974. The Odonata of Garhwal Hills. *Bull. Ent.* 15: 41-55. — (Zool. Surv. India, 14 Madan Str., Calcutta-700072, India).

22 spp. of Zygoptera and 27 spp. of Anisoptera are reported from Garhwal Hills, India. New for the area are *Aciagrion pallidum*, *Anisogomphus occipitalis*, *Anax nigrolineatus* and *Tramea virginia*. The locality names and numbers of specimens (but not the capture dates) are listed along with brief descriptive notes. *Calicnemis miles* is among the more interesting items on the list.

1975

- (3478) BUENO SORIA, J. & C. MARQUEZ MAYAUDON, 1975. Algunos insectos acuaticos de la presa de Valle de Bravo. *Revta Soc. mexic. Hist. nat.* 36: 351-363. (With Engl. s.). — (Dept. Zool., Inst. Biol., Univ. Nac. Auton. México, Apartado Postal 70-153, 04510-México, D.F., México). *Hetaerina americana* and 3 not identified spp. of the genera "Coenagrion", "Enal-

lagma" and "Ischnura" are listed from the Valle de Bravo Damp, Estado de México. Their role as indicators of water pollution is emphasized.

- (3479) CHOWDHARY, S.K. & S.M. DAS, 1975. Notes on life-history of *Coenagrion kashmirus* n. sp. (Odonata, Zygoptera, Coenagrionidae). *All-India Congr. Zool.* 3: 60-61. — (Dept. Zool., Kashmir Univ., Srinagar, Kashmir, India).

The adult male, female and larva are described (without figs) from "eutrophic and mesotrophic lakes of Kashmir". — (*Abstracter's Notes*: Most of the characters stated are not distinctive, but the reference to female polychromatism makes it rather clear that the sp. concerned is one of the "blue" *Ischnura* or *Agriocnemis* spp. occurring in Kashmir. It is amazing that the "new *Coenagrion*" is compared to the North American *C. resolutum* and to the predominantly Ethiopian and also non-regional *Ceriagrion glabrum* (listed here as "*Coenagrion*"). In view of the numerous printing errors the figures for wing lengths (f.w. 20 mm, h.w. 12 mm!) should not be taken seriously. There are no bibliographic references, and the holotype is not designated. This is an entirely incomprehensible paper).

- (3480) GATTER, W., 1975. Massenwanderung der Libellen *Sympetrum vulgatum* und *Sympetrum flaveolum* am Randecker Maar, Schwäbische Alb. *Atalanta* 6 (4): 193-200. (With Engl. s.). — (Hans-Thoma-Weg 31, D-7312 Kirchheim, GFR).

In southern Central Europe, odon. migrations in a southerly direction predominate, involving almost exclusively various *Sympetrum* spp. that migrate in the late summer and autumn. The migratory flight of 'several hundred thousand' individuals of *S. vulgatum* and *S. flaveolum*, recorded Sept. 17, 20, 21, 1974, at the Randecker Maar Biol. Station, Schwäbische Alb. Federal Republic of Germany, is described and discussed. Meteorological conditions suggest the origin of the migration to be in northern Bavaria, in the German Democratic Re-

public, or even further NE.

- (3481) NOSER, H. & J.-M. SCHADLER, 1975. Beitrag zur Odonatenfauna im Naturschutzgebiet St. Katharinenbrunnen, Balzers. *In*: M.F. Broggi & J. Biedermann Eds, Liechtensteins Jugend forscht, p. 9. Liechtenstein. Ges. Umweltschutz, Vaduz. — (c/o Dr J. Biedermann, FL-9494 Planken, Liechtenstein).

Chronologically, the paper listed in *OA* No. 1099 is the first publication on the odon. fauna of the Principality of Liechtenstein. The present note, however, is a report on the first systematic dragonfly inventarisation of a Liechtenstein locality. It was carried out (Sep. 12-Oct. 19, 1973) by 2 high school students, in the framework of a local youth contest in "scientific research". 9 spp. are listed from the small Nature Reserve 'St. Katharinenbrunnen' nr the village of Balzers.

1978

- (3482) BRØNDEGAARD, V.J., 1978. Alt ved guldsmeden er fabelagtigt... [Everything about dragonflies is fabulous...]. *Frederiksborg Amts Avis*, issue of Aug. 12, no page number. (Danish). — (Author's address not stated).

Daily's article on dragonflies, with emphasis on dragonfly folk names in various languages, given here in Danish verbatim translation.

1979

- (3483) STENSON, J.A.E., 1979. Predator-prey relations between fish and invertebrate prey in some forest lakes. *Rep. Inst. Freshw. Res., Drottningholm* 58: 166-183. — (Dept. Zool., Univ. Göteborg, Box 25059, S-400 31 Göteborg).

The feeding habits of 2 types of fish populations, with differences in species composition and density, were examined in some Swedish forest lakes, the names and location of which are not stated. The larger number of *Asellus aquaticus*, Trichoptera

and Odon., the higher frequency of emerging specimens, and the regular presence of Hemiptera and Coleoptera in the salmonid diet, when compared to the perch and roach diet, indicate a predatory influence on the spatial distribution and abundance of these groups. The selection for invertebrate predators (e.g. odon. larvae) may change the balance and numeric relations between predators and prey in the benthic community.

The new taxa described and illustrated are *Macromidia hangzhouensis* sp. n. (♂ holotype: Hangzhou, I-VI-1974; closely allied to *M. ishidae*), and *Somatochlora lingyinensis* sp. n. (♂ holotype: Hangzhou, 8-VI-1974; differs from *S. dido* and *S. viridiaenea* in the shape of caudal appendages). The types are deposited in the Zhejiang Mus., Hangzhou, P.R. China.

1980

- (3484) VAN LEEUWENHOEK, A. [& B. KIAUTA (annotations)], 1979. Letter No. 140 (85), dated Nov. 30, 1694, addressed to Petrus Rabus. In: L.C. Palm, [Ed.], The collected letters of Antoni van Leeuwenhoek. A complete edition of the works of Van Leeuwenhoek, annotated and considered in the perspective of the history of science and medicine, with special reference to general and biological microscopy, Vol. 10 (1694-1695), pp. 152-165. Swets & Zeitlinger, Lisse. (Bilingual: Dutch/Engl.). — c/o Dept. Anim. Cytogenet. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL). The original manuscript is lost. Here the contemporary Dutch (17th century) text (as originally published by A. van Leeuwenhoek, 1696, *Vijfde Vervolg der Brieven...*, pp. 5-15, Van Krooneveld, Delft) is given along with a modern Engl. translation. The annotations are bilingual (Dutch/Engl.). A bibliography of earlier published Dutch and Latin versions of the letter, and that of French, English and Dutch excerpts is also provided. — The letter deals with the eyes of the dragonfly, a study of the cornea, "blood vessels" (tracheae) in the dragonfly intestine, and with the number of dragonfly eggs. Comparisons with the eye of a crab and with the cornea of vertebrates are also made, and generatio spontanea is rejected. — (For another "dragonfly letter" of A. van Leeuwenhoek cf. *OA* No. 1862).
- (3485) ZHOU, Wenbao & Jinlai WEI, 1979. Two new species of the order Odonata in Zhejiang. *Hangzhou Univ. J.* 1979 (4): 110-113. (Chinese, with Engl. s.). — (Zhejiang Mus., Hangzhou, P.R. China).
- The new taxa described and illustrated are *Macromidia hangzhouensis* sp. n. (♂ holotype: Hangzhou, I-VI-1974; closely allied to *M. ishidae*), and *Somatochlora lingyinensis* sp. n. (♂ holotype: Hangzhou, 8-VI-1974; differs from *S. dido* and *S. viridiaenea* in the shape of caudal appendages). The types are deposited in the Zhejiang Mus., Hangzhou, P.R. China.
- (3486) BRANTJES, N.B.M., 1980. Parende *Lestes dryas* libellen in Haren (Gr.) [Pairing *Lestes dryas* dragonflies in Haren (Groningen)]. *Levende Nat.* 82 (2): 81-82. (Dutch). — (Author's address not stated). Photographs and a brief description of pairing and oviposition, as observed Aug. 14, 1979, in Haren, Groningen Prov., are provided. It is stated that this is the northernmost known locality of this sp. in the Netherlands.
- (3487) COUTIN, R. & J.L. DOMMANGET, 1980. Tourbière et aménagement touristique dans Le Queyras (06): évolution de la faune entomologique du Lac de Roue. *Cah. Liaison O.P.I.E.* 14 (1/4): 119-132. — (Second author: 7 rue Lamartine, F-78390 Bois d'Arcy). The ecology and insect fauna of the Lac de Roue, Arvieux, France (alt. 1847 m) are described, and a list is given of 9 odon. spp. recorded there during 1972-1978. After 1974, only *Enallagma cyathigerum*, *Aeshna juncea* and *Libellula quadrimaculata* were noticed at the locality. The records are discussed in some detail.
- (3488) DEL CARMEN PADILLA, M. & E. GONZÁLEZ, S., 1980. Estudio preliminar del comportamiento sexual y territorial de una población de *Erythrodiplax connata* Burmeister (Odonata): Libellulidae). *Folia ent. mexic.* 1980 (45): 32-33. — (Dept. Zool., Inst. Biol., Univ. Nac. Auton. México, Apartado Postal 70-153, 04510-México, D.F., México). The observations were carried out (May-

- Oct. 1979) in the Los Tuxtlas region, Veracruz, Mexico. The principal function of the territory is the protection of the female during copulation (duration 3 sec) and oviposition (accompanied by male; 9 sec). No other details are mentioned.
- (3489) DEL PILAR VILLEDA CALLEJAS, M. & E. GONZÁLEZ S., 1980. Zigópteros (Odonata: Zygoptera) de la Sierra de Los Tuxtlas, Veracruz. *Folia ent. mexic.* 1980 (45): 29-30. — (Dept. Zool., Inst. Biol., Univ. Nac. Auton. México, Apartado Postal 70-153, 04510-México, D.F., México).
The number of spp. recorded from the State of Veracruz, Mexico (48) is considered high as compared to those known from the State of Nayarit (10), Baja California (12) and Yucatán (11). 13 genera, characteristic of various habitats, are mentioned, but a list of spp. is not given.
- (3490) DOMMANGET, J.L., 1980. Vers une protection des odonates (libellules) de France. Un exemple: *Macromia splendens* Pictet. *Cah. Liaison O.P.I.E.* 14 (1/4): 109-117. — (7 rue Lamartine, F-78390 Bois d'Arcy).
An appeal is made for conservation of some wetland habitats in France, and a case of a threatened population of *M. splendens* (riverine gravel exploitation at Le Tarn) is described in detail.
- (3491) GONZÁLEZ S., E. & R. NOVELO G., 1980. El comportamiento sexual de *Palaemnema paulitoyaca* Calvert (Odonata: Platystictidae). *Folia ent. mexic.* 1980 (45): 33-34. — (Dept. Zool., Inst. Biol., Univ. Nac. Auton. México, Apartado Postal 70-153, 04510-México, D.F., México).
The ecology and behaviour were studied at La Playa del Jicacal, N of Catemaco, Veracruz, Mexico (Jul.-Aug., 1979). The maximal activity takes place around 09.30 hr, the mean duration of copula is 54.58 sec, the ovipositing female is accompanied by the male, and the mean duration of oviposition is 43.20 min. The substrate vegetation consists of *Siparuna nicaraguaensis* (Monimiaceae), *Licardia peckii* (Lauraceae), *Amphitecna tuxtensis* and (occasionally only) of 5 other plant spp.
- (3492) GONZÁLEZ-SORIANO, E. & R. NOVELO-GUITIÉRREZ, 1980. Reproductive behaviour of *Palaemnema paulitoyaca* Calvert. *Abstr. Pap. XVth Int. Congr. Ent.*, Kyoto, p. 461. — (Dept. Zool., Inst. Biol., Univ. Nac. Auton. México, Apartado Postal 70-153, 04510 México, D.F., México).
[Verbatim]: A cinematographic record of the reproductive behaviour of *P. paulitoyaca* is presented. The most outstanding feature of this sp. is the uncommon type of oviposition, using as a substrate several non-aquatic woody plants. This is the first film record of this type of behaviour.
- (3493) GONZÁLEZ VELÁZQUEZ, S. & E. GONZÁLEZ S., 1980. Observaciones sobre la dinámica de una comunidad de libélulas (Insecta: Odonata) en la región de Los Tuxtlas, Veracruz. *Folia ent. mexic.* 1980 (45): 30-31. — (Dept. Zool., Inst. Biol., Univ. Nac. Auton. México, Apartado Postal 70-153, 04510-México, D.F., México).
The dynamics of an adult odon. population (17 spp.) was studied at Plaza Escondida, Catemaco, Veracruz, Mexico (Sept.-Oct., 1979). No details are presented.
- (3494) HSIA, Pang-ying, 1980. Taxonomic features of the insect egg. *Entomotaxonomia* 2 (4): 247-256, figs 1-17 excl. (Chin., with Engl. s.). — (Address given as: "Inst. Zool., Acad. Sinica", P.R. China; — Editors: c/o N.W. Coll. Agric., Wugong, Shaanxi, P.R. China).
It is argued that the submicrostructure and ultrastructure of the insect eggshell and chorion and their amino-acid composition are excellent characteristics for insect egg taxonomy. Examples are given for 9 spp. of 5 orders, incl. *Sympetrum infuscatum* and *S. frequens*.
- (3495) HU, Shiu-ying, 1980. *An enumeration of Chinese materia medica.* XXIV + 288 pp. Chinese Univ. Press, Hong Kong. — Price:

US \$ 21.50. — (Author's address not stated). This lexicon makes possible a speedy identification of Chinese materia medica. It contains 2 major parts and 4 appendages, viz. Pt I: alphabetic list of Chinese medicines, with taxonomic names and their Engl. and pharmaceutical equivalents; Pt. II: Systematic list of plants, animals, minerals and miscellaneous preparations; the Appendages mostly deal with the transliteration systems. Op p. 124, the "damselly nymph" is listed under the Chinese terms "Ti-ku-niu" ("*Chiao-ch'ing-ling*", "*Chin-sha-niu*"), with the pharmaceutical equivalent "Myrmeleon".

- (3496) KÖHLER, D. & J. SCHULZE, 1980. Libellenbeobachtungen im NSG Wernsdorfer See (Bezirk Frankfurt Oder). *Naturschutzarb. Berlin Brandenb.* 16 (2): 52-55. — (Authors' addresses not stated).

An annotated list is given of 31 spp. recorded during 12 yrs in the Nature Reserve Wernsdorfer See, Frankfurt/Oder, German Democratic Republic, and the composition of the fauna is discussed.

- (3497) KUMAR, A., 1980. Studies on the life history of Indian dragonflies, *Ceragrion coromandelianum* (Fabricius) (Coenagrionidae: Odonata). *Rec. zool. Surv. India* 76: 249-258. — (Northern Reg. Stn, Zool. Surv. India, 13 Subhash Rd, Dehra Dun-248001, U.P., India).

Life history was studied in the field (Gorakhpur, Dehra Dun, northern India) and in the laboratory. A detailed account and illustrations are provided of the principal structural features of all 12 instars, and various notes on biology are given.

- (3498) LE DUCHAT D'AUBIGNY, J., 1980. Bibliographie des inventaires faunistiques de France 1758-1979. Odonatoptères. *Invent. Faune Flore, Paris* (Bibl.) 6: 50-66. — Price: fFr 60.— (bound up with pts 3-8). — Publishers: Société pour l'Inventaire de la faune et de la Flore, 57 rue Cuvier, F-75231 Paris).

The bibliography (1758-1979) contains close

to 100 titles, organized chronologically into general sections and under the headings of political Departments and geographic regions. Maps, showing the bibliographic and faunistic coverage per region are also included. The earliest papers listed are those of Boyer de Fonscolombe (1837-1838, *Ann. Soc. ent. Fr.* 6: 129-150, 7: 75-106, 547-575). — (*Abstracter's Notes*: At a quick glance one has the impression that at least 50% of the papers related to the subject are missing. This applies particularly to the numerous notes and papers published in the British and other foreign periodical literature, such as e.g. close to a dozen of notes by W.J. Lucas in the *Entomologist* (1904-1926), a note on the Chamonix fauna (not covered by any other paper!) by R. McLachlan (1902, *Ent. mon. Mag.* 13: 87), the important paper (and map) on the distribution of *Platycnemis latipes* in France by A. Heymer (1968, *Beitr. naturk. Forsch. SW-Dtl.* 27: 35-36), many other papers by the same author on the fauna of Banyuls-sur-Mer, etc. The preselysian workers, (such as e.g. P.A. Latreille), many selysian-period papers, and even the libelluline monograph of F. Ris (1909-1916) are also omitted, though the latter represents the most complete account of the French libellulide fauna so far published. It is unfortunate that, apparently, no odonatologist has checked the bibliography prior to publication, nor the assistance has been requested from the International Odonatological Society. — On the other hand, it should be emphasized that the publication program of the French Fauna and Flora Inventory is logistically better and far more ambitious than anything so far published in the framework of the European Invertebrate Survey. It consists of 6 series, viz. "Bibliography", "Atlas", "Methodology", "Natural Zones", "Monographs", and of a series of "Red Books", though only a part of the first series has so far been realized).

- (3499) LÓPEZ, R.A. & E. GONZÁLEZ S., 1980. Estudio de una población de *Perithemis domitia* (Drury) (Odonata: Libellulidae) con

especial referencia al comportamiento territorial y al reproductivo. *Folia ent. mexic.* 1980 (45): 31-32. — (Dept. Zool., Inst. Biol., Univ. Nac. Auton. México, Apartado Postal 70-153, 04510-México, D.F., México).

Notes are presented on field observations (10 days in July and Nov., 1979 Ebitrolotú, Veracruz, Mexico) on territorial and reproductive behaviour of *P. domitia*. Data are given on duration of diurnal activities (08:30-14:45 h; max. 10:00-11:30), duration of the defence of territory (5-8 days), territory size (diametre 1.5-2.0 m), and on the duration of copula (32 sec).

- (3500) MIKKOLA, K., 1980. Direction of insect migrations in relation to the wind. *Abstr. Pap. XVth Int. Congr. Ent.*, Kyoto, p. 461. — (Inst. Zool., Univ. Helsinki, P. Rautatiekatu 13, SF-00100 Helsinki-10).

Little attention has been paid to the role of wind as factor determining the direction of insect migration. Most immigrant Lepidoptera arrive in Finland with warm S-SE air currents, mainly from the Russian steppe area. Wasps, bumble bees and Odon. often migrate at the same time upwind, i.e. in the opposite direction. Upwind orientation requires visual contact with the ground or water surface: the same insects may migrate downwind at a higher level, but return upwind close to the surface, as observed in syrphids.

- (3501) MITRA, T.R. & A.R. LAHIRI, 1980. Note on the medio-anal link in *Agriocnemis dabreui* Fraser (Insecta: Odonata: Coenagrionidae) of Calcutta. *J. zool. Soc. India* 30 (1/2) [1978]: 79-81. — (398 Dum Dum Park, Calcutta-700055, India).

The well-known variation in the medio-anal link in *Agriocnemis* is discussed on the basis of *A. dabreui* material from Calcutta, and an appeal is made for a reconsideration of the status of *Agriocnemis*, *Mortonagrion* and *Agriocnemis*.

- (3502) NARASIMHAMURTI, C.C., S.N. AHMED & C. KALAVATI, 1980. Two new species of microsporidia from the larvae of

Tramea limbata (Odonata: Insecta). *Proc. Indian Acad. Sci. (Anim. Sci.)* 89 (6): 531-535. — (Dept. Zool., Andhra Univ., Waltair-530003, India).

A list is given of the microsporidian spp. earlier reported from dragonflies, and *Nosema limbata* sp. n. and *Thelohania limbata* sp. n. are described and illustrated. The new spp. were discovered in the adipose tissue of larvae collected in the dairy farm area, Visakhapatnam and the Andhra Univ. Campus at Waltair resp., both India. Their systematic position is discussed.

- (3503) PRASAD, M. & M.K. BISWAS, 1980. A note on the dragonflies (Odonata: Insecta). *J. Bombay nat. Hist. Soc.* 77 (2): 353. — (Zool. Surv. India, 14 Madan Str., Calcutta-700072, India).

An incidental case of predation of *Orthetrum s. sabina* on *Acisoma p. panorpoides* in Sibpur, Howrah Distr., West Bengal, India is briefly described.

- (3504) RODRIGUES CAPITULO, A., 1980. Contribucion al conocimiento de los Anisoptera de la Republica Argentina. I. Descripcion de los estadios preimaginales de *Aeshna bonariensis* Rambur (Insecta Odonata). *Limnobiós, La Plata* 2 (1): 1-21. (With Engl. s.). — Casilla de correo 55, 1923 Berisso, Prov. Buenos Aires, Argentina.

The larval stages (11 instars) of *A. bonariensis* are described and illustrated. The differential morphological features of ultimate instars of *A. bonariensis* and *A. diffinis* are enumerated, and some notes are provided on eggs, endophytic clutches and on larval behaviour. Observations were carried out in the field (Buenos Aires Prov.) and in the laboratory. (Cf. also *OA* No. 2523).

- (3505) SARKAR, N.K. & D.P. HALDAR, 1980. Cephaline gregarine, *Hoplorhynchus ramidigitus* sp. n. (Protozoa: Sporozoa), parasite in an odonate *Agriocnemis pygmaea* (Rambur) from India. *Acta protozool.* 19 (4): 345-350. (With Fr. s.). — (Second Author: Protozool. Lab., Dept. Zool., Univ. Kaly-

- ani, Kalyani-741235, West Bengal, India). The new sp. is described from the midgut of adult *A. pygmaea*, collected at Chinsurah, West Bengal. Camera lucida figures of various stages are provided and the affinities of the protozoan are discussed. This is the first record of a *Hoplorhynchus* in India, and the 9th member of the genus, of which 3 other spp. are also described from dragonflies, viz. *H. oligacanthus* (Siebold) (*Gomphus vulgatissimus*, *Onychogomphus uncatu*: A. Schneider, 1875, Arch. Zool. exp. 4: 493-604; for other odon. spp. cf. *OA* Nos 1, 861, 1603), *H. orthetri* Hoside (*Orthetrum albistylum speciosum*: H. Hoside, 1953, J. Sci. Yamaguti Univ. 4: 81-91), and *H. hexacanthus* Obata (*Coenagrion quadrigerum*: K. Obata, 1953, J. Sci. Hiroshima Univ., Zool. 14: 1-34).
- (3506) SHUKLA, G.S. & P.K. MISHRA, 1980. Bioassay studies on effects of carbamate insecticides on dragonfly nymphs. *Indian J. environ. Hlth* 22 (4): 328-355. — Dept. Zool., Univ. Gorakhpur-273001, India). Bioassay experiments were carried out to assess LC_{50} values for the larvae of *Brachythemis contaminata* to the insecticides Furadon, Zectran and Carbaryl. Carbaryl was most toxic and Furadon was least toxic to the ultimate instars. The safe, harmless concentrations of Furadon, Zectran and Carbaryl were resp. 0.02673×10^3 ppm, 0.04128×10^3 ppm, and 0.01729×10^4 ppm.
- (3507) SINGH, A. & M. PRASAD, 1980. A new species of *Tholymis* Hagen (Odonata: Libellulidae: Libellulinae) from Uttar Pradesh, India. *Zool. Beitr., Berlin* 26 (1): 65-68. (With Germ. s.). — Editorial processing of the issue closed on Nov. 14, 1980; the issue published almost certainly not until 1981. — (Eastern Reg. Stn. Zool. Surv. India, Risa Colony, Shillong-793003, India). *T. paratillarga* sp. n. (♂ holotype: Bihari-garh, Distr. Saharanpur, Uttar Pradesh, India; 14-VIII-1967) is described and illustrated. There are 2 paratype males from the same locality. The holotype is in the coll. of the Zool. Surv. India, Calcutta. — (*Ab-*
- stracter's Note*: The new sp. is almost certainly a synonym of *T. tillarga*).
- (3508) SMYTH, J.D. & M.M. SMYTH, 1980. *Frogs as host-parasite systems. I. An introduction to parasitology through the parasites of Rana temporaria, R. esculenta and R. pipiens*. X + 112 pp. MacMillan, London-Basingstoke. — (Dept. Zool. & Appl. Ent., Imperial Coll., Univ. London, London, UK). A novel approach is adopted in which the frog and its parasites are used as a model host-parasite system for an introduction to the concepts of parasitology. With references to the primary publications, 11 digene trematode spp. of the families Gorgoderidae, Lecithodendriidae, Hemiuridae, Plagiorchidae, and Haematoloecchiidae, using the Odon. as the 2nd intermediate host, are mentioned, and the life-cycles of some of them are described in detail.
- (3509) WEBB, D.W., 1980. Primary insect types in the Illinois Natural History Survey Collection, exclusive of the Collembola and Thysanoptera. *Bull. Illinois nat. Hist. Surv.* 32 (2): 55-191. — (c/o Nat. Hist. Survey Div., Illinois Inst. Natur. Resour., Urbana, Ill., USA). The Odon. are represented by the holotype males of *Gomphus lentulus* Needham, 1902 (*Can. Ent.* 34: 275), and *Somatochlora macrotona* Williamson, 1909 (*Ent. News* 20: 78).
- 1981**
- (3510) (Anonymous), 1981. Charles Francis Byers. *Gainesville Sun*, issue of Oct. 28, no page number. Obituary notice, with a brief biography and portrait of Dr C.F. Byers of Johnston, Pa, Emeritus Professor of the University of Florida, Gainesville, deceased Oct. 27, 1981, Gainesville. He was the author of numerous odonatol. papers; his 1930 monograph, A contribution to the knowledge of Florida Odonata (*Univ. Fla Publ., Biol. Sci.* 1 (1): 1-328) still remains the cornerstone of

Florida odonatology.

- (3511) BAKER, R.L., 1981. Erratum: Use of space in relation to feeding areas by zygopteran nymphs in captivity. *Can. J. Zool.* 59 (10): 2048. — (Inst. Anim. Resource Ecol., Univ. British Columbia, 2075 Wesbrook Mall, Vancouver, B.C., V6T 1W5, CA).
A corrective note on the paper listed in *OA* No. 2996.
- (3512) BEUTLER, D. & H. BEUTLER, 1981. Notizen zur Libellenfauna einiger Tagebaugewässer in der Niederlausitz (Insecta, Odonata). *Naturschutzarb. Berlin Brandenb.* 17 (2): 38-41. — (Biol. Heimatsmus., Frankfurter Str. 23, DDR-123 Beeskow, GDR).
The odon. fauna of some open-cast-mining ponds, Cottbus Distr., Niederlausitz, German Democratic Republic, is discussed. In all, 25 spp. are listed, and the acidophilous character of the fauna is emphasized.
- (3513) BIEDERMANN, J., 1981. Die Libellenfauna des Fürstentums Liechtenstein. I. Nachtrag. *Ber. Zool.-bot. Ges. Liechtenstein-Sargans-Werdenberg* 79: 93-95. — (FL-9494 Planken, Liechtenstein).
This is the first supplement on the paper listed in *OA* No. 1099. Records are presented for 10 spp., bringing the status of the odon. fauna of the Principality of Liechtenstein up to 29 known spp. — (*Abstracter's Note*: *Calopteryx splendens*, listed in *OA* No. 3408, is not mentioned here. Consequently, 30 odon. spp. are so far known to occur in Liechtenstein).
- (3514) Bps, 1981. Libellen — Kleinodien unserer Gewässer. Symposium und Ausstellung. *Bündner TagBl., Chur* 129 (185): 2 (Aug. 11).
A local daily's article, announcing the Sixth Int. Symp. Odonatol. (cf. *OA* No. 3450), and a Dragonfly Exhibit (cf. *OA* No. 3515).
- (3515) Bps, 1981. Morgen wird Libellen-Ausstellung eröffnet. *Bündner TagBl., Chur* 129 (192): 12 (Aug. 19).
Announcement of the public opening (Nat. Hist. Mus., Chur, Aug. 20, 1981) of Dr H.R. Wildermuth's exhibit, 'Libellen — Kleinodien unserer Gewässer' (= 'Dragonflies — pearls of our waters'), with a portrait of the author. For the explanatory booklet cf. *OA* Nos 3336, 3337. Prior to the official opening, the exhibit was available to the participants of the Sixth Int. Symp. Odonatol. (cf. *OA* No. 3450), hence a brief reference to the Symposium is also made. For other notes on the exhibit in Chur cf. *OA* Nos. 3455, 3514, and for articles on the same in the Principality of Liechtenstein cf. *OA* Nos 3537, 3538, 3557). The exhibit was sponsored by the Swiss Union of Nature Conservation (SBN).
- (3516) CARFI, S., 1981. Odonati. In: Grande enciclopedia illustrata degli animali, Invertebrati 2, pp. 9-16. Mondadori, Milano. — (Ist. Zool., Univ. Firenze, Via Romana 17, I-50125 Firenze).
This is a general account of the order, published in the well-known Italian animal encyclopaedia. In 6 chapters the morphology, biology, behaviour and systematics are briefly dealt with, and the text is illustrated by numerous colour drawings and aquarelles.
- (3517) CORBET, P.S., 1981. *Water lizards and aerial dragons*. Inaugural Lecture, Univ. Dundee. VI + 16 pp. — (Dept. Biol. Sci., Univ. Dundee, Dundee, DDI 4HN, Scotland, UK).
A general talk on dragonflies by one of the leading odonatologists. The Lecture was delivered on Nov. 17, 1981. — (*Abstracter's Note*: Xerox copies are available from the Editors of *Odonatologica*).
- (3518) COWAN, C.F., 1981. Scottish dragonflies: a correction. *Ent. Rec. J. Var.* 93 (11/12): 241. — (4 Thornfield Terrace, Grange-over-Sands, Cumbria, LA11 7DR, UK).
A corrective note on the paper listed in *OA* No. 3265. *Aeshna caerulea* really was an *A. juncea*.
- (3519) DE MARMELS, J., 1981. Caballitos del

- diablo del Parque Nacional El Avila. *Natura, La Salle* 1981 (70/71): 26-29. — (Dept. & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay 2101-A, Aragua, Venezuela). A list is given of 31 spp. recorded at the Quebrada Pasaquire, El Avila National Park, Venezuela (alt. 1100 m), and the ecology and composition of the fauna are discussed. Colour photographs of *Euthore fasciata* (♂) and ovipositing *Aeshna cornigera* are also provided. — (*Abstracter's Notes*: The black-and-white fig. on p. 29 represents a copula of *Brechmorhoga nubecula*, not *Hetaerina capitalis*, and should be turned 90° in a clock-wise direction. — No reprints are available from the author. For a copy of the journal issue apply to: Sociedad de Ciencias Naturales La Salle, Av. Boyacá, Maripérez, Apdo 1930, Venezuela; price: Bs. 10.—).
- (3520) DE MARMELS, J., 1981. Dr. Janis Rácenis 1915-1980. *Natura, La Salle* 1981 (70/71): 64. (Span.). — (Dept. & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay 2101-A, Aragua, Venezuela). Obituary for the late Dr Rácenis, the text of which is largely identic to the Engl. original as published in *Odonatologica* 9 [1980]: 125-129. — (*Abstracter's Note*: No reprints are available from the author. For a copy of the journal issue apply to: Sociedad de Ciencias Naturales La Salle, Av. Boyacá, Maripérez, Apdo 1930, Venezuela; price: Bs. 10.—).
- (3521) DE MARMELS, J., 1981. Hallazgos de Odonata nuevos para Venezuela o poco conocidos. *Boln Ent. venezol.* (N.S.) 2 (1): 11-12. — (Dept. & Inst. Zool. Agric., Fac. Agron., Univ. Central Venezuela, Apdo 4579, Maracay 2101-A, Aragua, Venezuela). Records are listed for 9 spp., 6 of which are new to the fauna of Venezuela, viz. *Telebasis sanguinalis* (Coenagrionidae), *Sciotropis cyclanthorum* (Megapodagrionidae), *Aphylla producta*, *Desmogomphus tigrivensis*, *Progomphus brachycnemis* (all Gomphidae), *Aeshna psilus* (Aeshnidae), and *Brechmorhoga vivax* (Libellulidae).
- (3522) DONATH, H., 1981. Verbreitung und Ökologie von *Lestes barbarus* (F.) in der nordwestlichen Niederlausitz (Odonata, Lestidae). *Novius, Berlin* 3: 33-36. — (Jahnstr. 6, DDR-7960 Luckau, GDR). A review is given of the known records of *L. barbarus* in Niederlausitz, Brandenburg, German Democratic Republic, and the ecology of the sp. in this area is discussed.
- (3523) DONNELLY, T.W., 1981. A new species of *Archilestes* from Mexico and Central America, with further notes on the status of *Cyptolestes Williamson* (Odonata: Lestidae). *Fla Ent.* 64 (3): 412-417. (With Span. s.). — (Dept. Geol. Sci., St. Univ. New York, Binghamton, N.Y. 13901, USA). *A. latialatus* sp. n. is described and illustrated (♂ holotype, ♀ allotype: San Pedro Sula, Rio Piedras, Cortez Prov., Honduras; 16-VII-1971; deposited in Fla Coll. Arthr., Gainesville). It is the 6th member of the genus, and occurs in Mexico, W. Honduras, E. Guatemala and N. Nicaragua. It is closely related to *Cyptolestes Wllmsn*, which has recently been designated a synonym of *Archilestes* (cf. *OA* No. 3118). The characteristics of the new sp. strongly suggest that it and *tuberalatus* (Wllmsn) (not *tuberculatus*, of Gloyd) be referred to the subgenus *Cyptolestes* (new status).
- (3524) DOWDLE, W., 1981. *Feeding ecology of predatory insects in Remus Pond, Cass. B. Sc. thesis, Univ. Canterbury, Christchurch. III + 95 pp.* — (c/o Dept. Zool., Univ. Canterbury, Christchurch-1, NZ). The prey of 7 predatory insects spp. (incl. *Austrolestes colenonis* and *Xanthocnemis zealandica*), occurring in a montane pond in Canterbury, New Zealand, was examined in the field and laboratory feeding experiments were performed. Field sampling indicates that none of the predators studied is a habitat specialist, but that density-dependent population-regulating mechanisms and abiotic factors are likely to limit the abundance of predator populations, re-

- ducing in this way the likelihood of competition.
- (3525) FERRERAS ROMERO, M., 1981. Un odonato nuevo para la fauna Ibérica, *Trithemis annulata* (Palisot de Beauvois, 1805) (Anisoptera, Libellulidae). *Bol. Asoc. esp. Entom.* 4 [1980]: 191-193. (With Engl. s.). — (Dep. Zool., Fac. Cien., Univ. Córdoba, Córdoba, Spain).
Adults and larvae from 6 localities on Río Guadiato, Río Retortillo and Río Guadalmellato, all Spain, are brought on record, and figures are given of the larval stage. — (*Abstracter's Note*: The first Spanish record of *T. annulata* was published in the paper listed in *OA* No. 2986; cf. also *OA* No. 3116).
- (3526) GARRISON, R.W., 1981. Description of the larva of *Ischnura gemina* with a key and new characters for the separation of sympatric *Ischnura* larvae. *Annls ent. Soc. Am.* 74: 525-530. — (Calle Iris UU-18 B, Borinquen Gardens, Rio Piedras, Puerto Rico 00926, USA).
The final-stage larva is described, figured and compared with larvae of *I. cervula*, *I. denticollis*, *I. erratica* and *I. perparva*. Males are distinguished by the shape and size of the pharate caudal app. (cerci), which are more reliable than the traditionally used characters of the prementum and caudal gills. Female larvae of all spp., except *I. erratica*, have similarly shaped cerci and are more difficult to segregate. A combination of gill, prementum, and antennal characters is used to separate females. Figs of the cerci for male and female larvae are included.
- (3527) GATTER, W., 1981. *Insektenwanderungen. Neues zum Wanderverhalten der Insekten. Über die Voraussetzungen des westpaläarktischen Migrationssystems*. Kilda-Verlag, Greven. 94 pp. — Price: DM 14.80. — (Author: Hans-Thoma-Weg 31, D-7312 Kirchheim, GFR).
The book contains numerous data on, and new interpretations of dragonfly migrations in the Western Palearctic region.
- (3528) GENT, C.J., 1981. [Records]. Odonata — dragonflies and damselflies. *Vasculum* 66 (4): 52. — (c/o Editor, T.C. Dunn, The Poplars, Chester-le-Street, Dorset, UK).
Aeshna juncea is reported from Seaton Burn, UK.
- (3529) GIBO, D.L., 1981. Some observations on slope soaring in *Pantala flavescens* (Odonata: Libellulidae). *Jl N.Y. ent. Soc.* 89 (3): 184-187. — (Dept. Zool., Erindale Coll., Univ. Toronto, Mississauga, Ontario, L5L 1C6, CA).
Slope-soaring behaviour of *P. flavescens* is described, and some of the physical and airflow properties of a soaring site are analyzed. It is suggested that the ability to slope-soar may have a significant impact on the energy budget of the dragonfly.
- (3530) [GOUDRIAAN, T.], 1981. *Een bescheiden onderkomen*. *Historisch overzicht van de studie van de Oosterse talen en culturen aan de Rijksuniversiteit te Utrecht*. [An outline of the history of the studies of Oriental languages and cultures at the State University of Utrecht]. Inst. Orient. Languages & Cult., Univ. Utrecht, 192 pp. (Dutch). — (Inst. Orient. Lang. & Cult., Univ. Utrecht, Lucas Bolwerk 5, 3512 EG Utrecht, NL).
The review and evaluation cover the period 1650-1980. On p. 167, a paragraph is devoted to the etymological work on Tibetan expressions for 'dragonfly' of Mrs M.A.J.E. Kiauta. Some of her papers on the subject are listed.
- (3531) HALKKA, L., 1981. Ultrastructural changes in kinetic relationships of the secondary nucleolus and nuclear bodies in previtellogenic oocytes of the dragonfly *Cordulia aenea*. *Hereditas* 95 (2): 259-268. — (Dept. Genet., Univ. Helsinki, P. Rautatiekatu 13, SF-00100 Helsinki-10).
Previtellogenic oocytes were studied before, during and after diapause by means of cytochemical, histochemical, electron-microscopical and cinemicrographical methods. The secondary nucleolus (SN) consisted of a loose basic protein matrix into which sparse

RNP grains were embedded. The proteinaceous matrix of SN was mobilized in post-diapause oocytes passing to late previtellogenesis. The possible role of SN in production and storage of oogenetic 5S RNA is discussed. A granular nuclear body (GNB), often associated with SN, is believed to be the source of RNP granules of SN. A dotted nuclear body (DNB) was found either free in the nucleoplasm or intimately connected with the SN. DNB probably represents a transport vehicle of SN material. In cinemicrographs, a nuclear body was found moving free in the nucleus or rolling or knocking on the surface of S.N.

32 spp. recorded there since 1855, only 26 were evidenced during 1969-1979. Among the locally interesting taxa are *Aeshna viridis* and *Anaciaeschna isosceles*.

- (3532) HÄMÄLÄINEN, M., 1981. *Nehalennia speciosa* (Charp.) (Coenagrionidae) Tammissaaresta. [*Nehalennia speciosa* (Charp.) (Coenagrionidae) from Tammissaari]. *Notul. entomol.* 61 (4): 221. (Finnish). — (Tullilaboratorio, Tekniikantie 13, SF-02150 Espoo-15).
Since 1954 *N. speciosa* has not been any more recorded from Finland. In the present note, a female, taken July 11, 1981 at Tammissaari, southern Finland, is brought on record.
- (3533) HANCOCK, D.L., 1981. Insects from the Chete-Chizarira Expedition. *Falcon, Zimbabwe* 7 (2): 75-76. — (Natn. Mus., P.O.B. 240, Bulawayo, Zimbabwe).
24 odon. spp. were collected, but specific reference is made to *Pseudagrion nubicum*, *Macromia bifasciata* and *Brachythemis lacustris* only. The expedition area is situated on the Zimbabwe side of the Kariba Lake. The material was identified by Dr E. Pinhey.
- (3534) KÖNIGSTEDT, D. & D. SCHMIDT, 1981. Zur Kenntnis der Libellenfauna der Umgebung von Greifswald (Insecta, Odonata). *Faun. Abh. Mus. Tierk. Dresden* 8 (3): 51-61. (With Engl. s.). — (Erich-Weinert-Str. 9, DDR-2200 Greifswald, GDR).
The odon. fauna of the Greifswald area, northern German Democratic Republic, is discussed in considerable detail. Out of
- (3535) KUMAR, A., 1981. Biology of Indian dragonflies with special reference to seasonal regulation and larval development. *Bull. Ent. 17* [1976]: 37-47. — (Northern Reg. Stn, Zool. Surv. India, 13 Subhash Rd, Dehra Dun-248001, U.P., India).
For the abstract of the advance summary cf. *OA* No. 1994.
- (3536) KURECK, A. & C. KLEFF-RING, 1981. Die Fauna der Bruchwaldtümpel in der Rietmaar, einem Feuchtgebiet der Ville bei Weilerswist. *Decheniana* 134: 292-299. (With Engl. s.). — (Inst. Zool., Univ. Köln, Weyertal 119, D-5000 Köln-41, GFR).
The fauna is described of some periodic forest ponds nr Bonn, German Federal Republic. *Aeshna cyanea* is the only odon. sp. mentioned. The larvae collected in the autumn continued their development in the laboratory if long-day conditions were provided.
- (3537) [Liechtensteinische] G[esellschaft für] U[mweltschutz], 1981. Libellen — Kleinodien unserer Gewässer. Zu einer Wanderausstellung im Schulzentrum Unterland. *Liechtenstein. VolksBl., Schaan* 103 (Nov. 12): 3.
Daily's article on the occasion of the opening of the Dragonfly Exhibit, mentioned in *OA* No. 3515, in the Principality of Liechtenstein. Cf. also *OA* Nos. 3538, 3557. A reference is also made to the talk on dragonflies, given by Prof. J. Biedermann (address: FL-9494 Planken, Liechtenstein), a well-known authority on the Liechtenstein Odon.
- (3538) [Liechtensteinische] G[esellschaft für] U[mweltschutz], 1981. Aus dem Leben der Libellen. Eine informative und schöne Ausstellung in Eschen und Balzers. *Liechtenstein. VolksBl., Schaan* 103 (228): 2 (Dec. 1).
Daily's article on the exhibit, mentioned in *OA* No. 3515 shown in Eschen (Nov. 16-Dec. 5, 1981; cf. *OA* Nos. 3537, 3557) and

in Balzers (Dec. 7-18, 1981).

- (3539) MATSUDA, R., 1981. The origin of insect wings (Arthropoda: Insecta). *Int. J. Insect Morphol. Embryol.* 10 (5/6): 387-398. — (Biosyst. Res. Inst., Central Exp. Farm, Ottawa, Ont., CA).

The theory of paranotal origin of insect wings is not supported by facts. The alternative theory of the pleural origin of wings cannot be applied to all pterygote insects, because comparable rudiments in different insects may differ vastly in morphogenetic potential. Abdominal gills in mayflies are tergal in origin. Odonata are synapomorphic in certain characters with non-lepismatine Thysanura and Diplura; they differ from the rest of the Pterygota by their development of many autapomorphic characters. Ephemeroptera are synapomorphic with Lepisma in the tergal division of their wing-bearing segments and share, in common with members of other orders, essentially the same axillary sclerites and principal flight muscles. These facts lead me to postulate a diphyletic origin of wings in insects. A review of several recent theories regarding the phylogenetic origin of insect wings is presented. Inaccuracies in interpretation of structures and unfounded attempts to make facts fit the idea of a monophyletic origin of wings are discussed. (Author). — (Cf. also *OA* Nos 2122, 3551).

- (3540) MATTILA, J., 1981. Harvinainen sudenkorentolaji Kilpiäisten lahdesta. [On the occurrence of *Leucorrhinia pectoralis* (Charp.) at Kilpiäinen Bay, Lahti]. *Salpausselän Luonnonystävät ry. Luontotiedote* 1981 (1): 5-6. (Finnish). — (c/o Salpausselän Luonnonystävät ry., Lahdenkatu 4, SF-15110 Lahti-11).

The occurrence of *L. pectoralis* at the Kilpiäinen Bay, close to the city centre of Lahti, Finland, is reported and the distribution of this sp. in Finland is discussed. — (Abstracter's Note: The bay is well-known for its aquatic vegetation and bird fauna. It is seriously threatened by human activities, hence urgent conservatory measures are

under consideration).

- (3541) MOUZE, M., J.-G. PILON & J. LAVOIE-DORNIK, 1981. Une nouvelle méthode de marquage pour certains groupes d'Insectes et de Crustacés. *Hydrobiologia* 85: 77-83. (With Engl. s.). — (Inst. Biol. Anim., Univ. Sci. & Techn. Lille I, B.P. 36, F-59650 Villeneuve d'Ascq).

A new technique of labelling, based on making series of microscars on the compound eye of immature insects, incl. Odon., allows to recognize individual specimens, even after several moults.

- (3542) MURDOCK, L.L. & D. OMAR, 1981. N-acetyldopamine in insect nervous tissue. *Insect Biochem.* 11 (2): 161-166. — (Dept. Ent., Purdue Univ., West Lafayette, Indiana 47907, USA).

By means of alumina absorption and reversed-phase high-performance liquid chromatography with electrochemical detection, N-acetyldopamine was shown to be present in cerebral ganglia from adults of *Periplaneta americana* and members of 5 other orders, incl. *Plathemis lydia* (0.30 µg/g wet) but with the exception of cuticle and tracheae, non-nervous tissues contained little, if any, of the substance. The situation in the cockroach is dealt with in detail.

- (3543) NORLING, U., 1981. *Evolutionary traits in life cycles and gill development in Odonata*. PhD thesis, Univ. Lund. 190 pp. — (Dept. Zool., Univ. Lund, Helgonavägen 3, S-223 62 Lund).

[Verbatim text of the abstract released for the press by the University]: As a basically warm-adapted insect order of tropical origin, Odon. has evolved different life-cycle patterns in forms colonizing temperate areas. These patterns can be intricately regulated by photoperiod and temperature. To illuminate the evolution and modification of these patterns in the colonization of higher latitudes, the life-cycle and larval photoperiodic responses were examined in some spp. with different seasonal patterns, but all overwintering as larvae: *Aeshna*

viridis in S Sweden, *Coenagrion hastulatum* and *Leucorrhinia dubia* in S and N Sweden. Although voltinism and phenology varied between species and populations, the same basic 2-step pattern of photoperiodic responses, interacting with temperature, regulated development: Long-day diapause (which prevents autumn emergence) — short-day diapause (hibernation) — long-day stimulation (which produces emergence in spring and early summer). Differences in the developmental stages where these responses could occur and the intensities of the responses produced the different phenologies and adapted populations of a sp. to different climatic conditions. These adaptations to life in a temperate climate and the evolution of different life-cycle patterns are discussed. — Four types of tracheal gills exist in Odon. larvae. Lateral abdominal gills, a type more common in some other orders, is restricted to 2 families. The ontogeny, ultrastructure and histology of the lateral and caudal gills in Euphaeidae were examined, and the origin and evolution of the lateral gills in particular are discussed. The main conclusion depends on the interpretation of other structures.

- (3544) *NOTULAE ODONATOLOGICAE*. Semi-annual bulletin of the International Odonatological Society. Published by the Societas Internationalis Odonatologica (S.I.O.), Utrecht, Vol. I, No. 8 (Dec. 1, 1981). — Annual subscription Hfl. 25.— net. — (c/o Dept. Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL).

[*Editorial*]: Policy of the International Society concerning faunistic surveys and publication of distributional records (125-126); — *Hilton, D.F.J.* (Dept. Biol. Sci., Bishop's Univ., Lennoxville, Que. J1M 1Z7, CA): Flight periods of Odonata inhabiting a Black Spruce-Sphagnum bog in south-eastern Quebec, Canada (127-130); — *Larsen, T.B.* (IPPF, 18-20 Lower Regent Str., London, SW1Y 4PW, UK): Butterflies as prey for *Orthetrum austeni* (Kirby) (Anisoptera: Libellulidae) (130-133); — *Gloyd,*

L.K. (Div. Insects, Mus. Zool., Univ. Michigan, Ann Arbor, Mich. 48109, USA): Records of Odonata from El Salvador (133); — *Kiauta, M. & B. Kiauta* (Dept. Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL): Aspirator for collecting small zygopterans close above water surface and among dense vegetation (133-134); — *Paulson, D.R.* (Washington St. Mus., Univ. Washington, Seattle, Wash. 98195, USA): Peculiar wing position in *Dysphaea dimidiata* Selys (Zygoptera: Euphaeidae) (134-135); — *Stanford, D.F. & P.K. Lago* (Dept. Biol., Univ. Mississippi, University, Mississippi 38677, USA): Additions to the list of dragonflies of Mississippi (Anisoptera) (135-136); — *Tennessee, K.J.* (1949 Hickory Ave., Florence, Alabama 35630, USA): A hybrid male in the genus *Leucorrhinia* (Anisoptera: Libellulidae) (136-137); — *Tyagi, B.K.* (Malaria Res. Cent., UGH 61-70, Sector VI, Ukai-394680, Dist. Surat, Gujarat, India): Adult dragonflies as human food in the Nagaland State, India (137-138); — *Utzeri, C. & R. Raffi* (Ist. Zool., Univ. Roma, Viale dell'Università 32, I-00100 Roma): Reproductive behaviour of *Lestes barbarus* (Fabr.) and *L. virens* (Charp.) at a temporary pond (Zygoptera: Lestidae) (138); — *Utzeri, C., R. Raffi & N. Falchi* (address above): Observations on the oviposition of *Aeshna affinis* (Vander L.) at a dried up pond (Anisoptera: Aeshnidae) (139); — *Rudolph, R.* (Biol. und ihre Didaktik, Univ. Münster, Fliegerstr. 21, D-4400 Münster, GFR): [Book review] Grundlagenstudien zur Ökologie und Faunistik der Libellen des Rheinlandes, von R. Kikillus und M. Weitzel (139-140).

- (3545) *OLBERG, R.M.*, 1981. Parallel encoding of direction of wind, head, abdomen, and visual pattern movement by single interneurons in the dragonfly *J. comp. Physiol.* (A) 142 (1): 27-41. — (Dept. Zool., Univ. Washington, Seattle, Wash. 98195, USA). (1) The self-movement detectors whose detailed properties are introduced here are among the largest interneurons in the ventral

nerve cord of *Anax junius*. They combine information from a wide variety of sensory structures including the compound eyes, mechanosensory frontal hairs, antennae, neck proprioceptors, and wind-sensitive hairs in the neck region. They fall into 8 classes, each with a specific pattern of multimodal inputs. — (2) Their visual receptive fields are large, anteriorly weighted, and selective for animal rotation in a given direction. — (3) They show directionally selective responses to air puffs delivered to the front of the head and to shifts in direction of a stream of air onto the head. — (4) They show directionally selective responses to air puffs from the sides, above, and below the animal into the neck region. — (5) They respond directionally to rotations of the head in still air in the dark. The receptors mediating these proprioceptive responses are probably different from those mediating the responses to air puffs to the neck. — (6) Four of the 8 classes respond when the animal actively flexes its abdomen. — (7) Within each modality, they are inhibited by stimulation in the non-preferred direction. Pairwise presentations of stimuli to different inputs showed that each sensory channel is capable of inhibiting self-movement-detector responses to stimulation through any other channel. — (8) For each class, the receptive fields of the various inputs are all aligned to detect rotation of the animal or the head within the same plane in space. 2 classes are aligned in the horizontal plane, and the other 6 in oblique planes. — (9) The precise alignment of directional selectivity of several input modalities within the same plane, combined with the finding that individual self-movement detectors drive adjustments in wing position indicates that these interneurons are critical elements of a feedback control system for flight control. (Author).

- (3546) PETERS, G., 1981. Trockenzeit-Libellen aus dem indischen Tiefland (Odonata). *Dr. ent. Z. (N.F.)* 28 (1/3): 93-108. (With Engl. s.). — (Mus. Naturk., Humboldt-Univ., Invalidenstr. 43, DDR-1040 Berlin, GDR).

42 spp., collected April/ May 1979 in the area of Delhi, Calcutta, Madras and Trivandrum are enumerated and briefly discussed, and *Agriocnemis keralensis* sp.n. is described (in Engl.) and illustrated (♂ holotype, paratype, first ♀: nr Trivandrum, 25/26-V-1979).

- (3547) PINHEY, E., 1981. Two interesting species of *Aeshna* Fabricius from Zambia (Odonata: Aeshnidae). *Arnoldia, Zimbabwe* 9 (4): 61-66. — (Wye View Villa, Gloucester Rd, Tutshill, Chepstow, Gwent, NP6 7DH, UK).
A. wittei Fraser was hitherto known from a single pair, with appendages lost in both sexes. The male from North Mwilunga, Zambia, is here redescribed and the appendages are figured. — From the same province *A. moori* sp. n. is described and illustrated (♂ holotype: Kamankundju R., Sakei-Shaba Rd, 19 Apr. 1972; ♀ allotype: Isombo R.; both deposited in the Natn. Mus., Bulawayo, Zimbabwe). The new sp. is referable to the rileyi group.
- (3548) PINHEY, E., 1981. A new *Prodasineura* Cowley from Zambia (Odonata: Protoneuridae). *Arnoldia, Zimbabwe* 9 (5): 69-72. — (Wye View Villa, Gloucester Rd, Tutshill, Chepstow, Gwent, NP6 7DH, UK).
P. flavifacies sp. n. is described and illustrated (♂ holotype: Isombo R., Ikelenge Distr., N. Mwinilunga, NW Zambia, Apr. 1963; ♂ allotype, 1 ♀ paratype: all from the same district; all deposited in the Natn. Mus., Bulawayo, Zimbabwe). The new sp. is near *P. vittata* (Sel.) and *P. odzala* Aguesse. Variation in length of the anal vein suggests that *Prodasineura* should probably be considered as a subgenus of *Elattona* Cowley.
- (3549) PINHEY, E., 1981. Notes on the distribution of *Tetrathemis polleni* (Selys) and a new subspecies of *Zygonyx torrida* (Kirby) (Odonata: Libellulidae). *Arnoldia, Zimbabwe* 9 (6): 73-76. — (Wye View Villa, Gloucester Rd, Tutshill, Chepstow, Gwent, NP6 7DH, UK).
T. polleni occurs in Continental Africa from

the southern end of Natal to the northern end of Uganda. Westerly records are sparse, those available being from Zaire, N. Angola and Nigeria. No morphological differences are detected between continental and Madagascar forms. — *Z.t. insulana* ssp. n. is described (♂ holotype: Riv. du Rempart, Mauritius, deposited in the Natn. Mus., Bulawayo, Zimbabwe; 2 ♂ paratypes). The Mauritian males differ from the continental nominate form in having pale yellow basal rays. (Cf. also *OA* No. 1644).

- (3550) PRASAD, M. & A. KUMAR, 1981. Studies on the intraspecific variations in *Trithemis festiva* (Rambur) (Odonata: Libellulidae). *J. Bombay nat. Hist. Soc.* 77 (2): 238-246. — (*Zool. Surv. India*, 14 Madan Str., Calcutta-700072, India).
The variation in various size parameters, nodal index, and in various markings was examined in material from 32 localities (10 districts) in Western Himalaya, India.
- (3551) RASNITSYN, A.P., 1981. A modified parantotal theory of insect wing origin. *J. Morph.* 168 (3): 331-338. — (*Inst. Paleontol., USSR Acad. Sci., Profsoyuznaya 113, USSR-117321 Moscow*).
The theory of J. Kukalova-Peck (cf. *OA* No. 2122) is examined and rejected except for the hypothesis of the partially pleural origin of wings. Data suggest that the arthropods ancestral to insects left the water, and that movable precursors of the wings, possibly exopodites, were immobilized and fused with the tergum to form part of the complex paranota. Later, during insect adaptation for flight, part of the complex paranota were separated secondarily and became wings. The paper contains a previously unpublished drawing of the fore wing of *Permothemis libelluloides* (Martynov), "Permothemistida", Upper Permian, Archangelsk Reg., Soyana River, USSR (holotype No. 2334/7).
- (3552) RODRIGUES CAPITULO, A., 1981. Presencia de *Anax amazili* Burmeister (Odonata Anactinae) en la Republica Argentina. Algunos datos acerca del comportamiento y determinacion del metabolismo energetico de las ninfas. *Limnobiós, La Plata* 2 (4): 207-214. (With Engl. s.). — (Casilla de correo 55, 1923 Berisso, Prov. Buenos Aires, Argentina).
The hitherto known southern range of *A. amazili* (Rio de Janeiro, Brazil) is extended (Buenos Aires, Argentina; Canelones, Uruguay), the larval behaviour is described, and the metabolic rates at different temperatures are presented.
- (3553) ROWE, R.J., 1981. An annotated key to the New Zealand Odonata. *Mauri Ora* 9: 71-81. — (Dept. Zool., Univ. Canterbury, Christchurch-1, NZ).
An illustrated key is presented of all spp. recorded from the New Zealand region except members of the genus *Xanthocnemis* which are currently under revision. Comments are made on nomenclature. *Uropetala chiltoni* Till. is reinstated as a sp. distinct from *U. carovei* (White).
- (3554) ROWE, R.J. & M.J. WINTERBOURN, 1981. Observations on the body temperature and temperature-associated behaviour of three New Zealand dragonflies (Odonata). *Mauri Ora* 9: 15-23. — (Dept. Zool., Univ. Canterbury, Christchurch-1, NZ).
Temperatures and thermoregulatory behaviour of *Xanthocnemis zealandica*, *Austrolestes colenisonis* and *Procordulia smithii* were investigated at a pond at Cass in the central South Island. Thoracic temperatures recorded for the 3 spp. ranged resp. between 18-24°C, 19-28°C, and 23-32.5°C, at ambient air temperatures 14.5-26°C. No thermoregulatory behaviour was observed in *X. zealandica*, heliothermy was exhibited by *A. colenisonis*, while *P. smithii*, which is an active flier, exhibited bouts of wing whirring when perched. Some *P. smithii* were voluntarily active at an air temperature of 14°C, whereas the 2 zygopteran were not voluntarily on the wing until ambient temperatures reached at least 18 or 19°C.
- (3555) SCHMIDT, E., 1981. [Faunistisch-Ökolo-

- gische Mitteilungen 11] (Odonata) Zur Odonatenfauna dreier Eifelmaare. *Pfälzer Heimat* 32 (4): 186-187. — (Seminar Biol. & ihre Didaktik, Päd. Fak., Univ. Bonn, Römerstr. 34, D-5300 Bonn-1, GFR). Lists are given, along with the data on abundance, of spp. recorded at Holzmaar nr Gillenfeld, Dürres Maar on the Holzmaar, and at the Kratersee Windsborn on the Mosenberg, all in Pfalz, Federal Republic of Germany.
- (3556) SCHMIDT, E., 1981. Quantifizierung und Analyse des Rückganges von gefährdeten Libellenarten in der Bundesrepublik Deutschland (Ins. Odonata). *Mitt. dt. Ges. allg. angew. Ent.* 3: 167-170. (With Engl. s.). — (Seminar Biol. & ihre Didaktik, Päd. Fak., Univ. Bonn, Römerstr. 164, D-5300 Bonn-1, GFR). The odon. fauna of the Federal Republic of Germany is being mapped in accordance with the European Invertebrate Survey system, using the UTM grid and 3 status classes, viz. large continuous populations, small continuous populations, and temporary populations/guests. The decrease is quantified by comparing 3 time classes: last record prior to 1920, 1921-59, after 1959, and by noting the status changes within the last period. The degree of threatening is expressed in terms of the degree of decrease, considering the population status, eco-ethology of the sp. involved, and the intensity of recording. The case of *Leucorrhinia albifrons* is discussed in detail. Due to the habitat destruction and climatological changes this sp. became almost extinct in the territory of Western Germany.
- (3557) S[schweizerische] B[und für] N[aturschutz]/L[iechtensteinische] G[esellschaft für] U[mweltschutz], 1981. Libellen — Kleinodien unserer Gewässer. *Liechtenstein. Umwelt-Ber., Vaduz* 1981 (9): 2. A general article on dragonflies, published on the occasion of the opening of the Dragonfly Exhibit, mentioned in *OA* No. 3515, in the Principality of Liechtenstein (Eschen, Nov. 16, 1981). Two local dragonfly folk names, '*Wasserjupfara*' and '*Rossangel*', are also stated.
- (3558) SIOJA. [Information Bulletin of the S.I.O. National Office in Japan], Osaka. Nos 1 and 2 (both dated Dec. 1, 1981). (Jap.). — Basically for internal communication among the Japanese membership of the International Odonatological Society (S.I.O.) only; — free upon application to the Editors of *Odonatologica*. Compiled by K. Inoue (5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA). It is the objective that the bulletin will serve as a vehicle for business and other communication between the National Office and the SIO membership in Japan. — Contents of the present two issues: *No. 1*: 4 business items; — *No. 2*: a brief outline of, and some statistical data on the development of SIO in Japan in the period 1971-1981, which is mainly based on the report submitted by the National Representative at the Plenary Business Meeting of the Society, Chur, Switzerland, Aug. 18, 1981.
- (3559) STARK, W., 1981. Rote Liste gefährdeter und seltener Libellenarten der Steiermark (Odonata). *Steier. NaturschutzBr.* 1981 (Sonderh. 3): 59-62. — (Burgenländisches Landesmus., Museumgasse 5, A-7000 Eisenstadt). Out of the 64 odon. spp. hitherto known from Styria, Austria, 4 (6.3%) are considered extinct, 3 (4.7%) are heavily threatened, and 4 spp. are threatened. Of the remaining spp. it is said that 18 (28.1%) are represented by weak populations only. The spp. extinct in the province are *Nehalennia speciosa*, *Cordulegaster b. boltoni*, *Libellula fulva* and *Sympetrum meridionale*.
- (3560) STARK, W., 1981. Weitere bemerkenswerte Libellenfunde aus dem Burgenland (Ins., Odonata). *Natur & Umwelt Burgenland* 4 (2): 48-50. (With Engl. s.). — (Burgenländ. Landesmus., Museumgasse 5, A-7000 Eisenstadt). With reference to the papers listed in *OA* Nos 3140 and 3327, additional records are

reported for 7 spp.

- (3561) STRAKA, V., 1981. K poznaniu vážok (Odonata) Muránskej Planiny. (Notes on the dragonflies (Odonata) of the Muráň Highlands). *Biológia, Bratislava* 36 (11): 961-965. (Slovak, with Engl. & Russ. s's.). — (Turčianske múzeum, Engelsova 2, CZ-03601 Martin).
19 spp. are recorded from various localities in the Murán Highlands, Slovakia, Czechoslovakia. The stagnicolous associations, *Lestes-Sympetrum-Aeshna mixta*, and *Orthemtrum-Libellula depressa*, are distinguished. An annotated list of the records is given, and the composition of the fauna is discussed.
- (3562) SUZUKI, K. & A. TAMAISHI, 1981. Ethological study on *Calopteryx cornelia* Selys (Odonata, Calopterygidae). I. Analysis of adult behavior by marking-reobservation experiments. *J. Coll. lib. Arts, Toyama* (nat. Sci.) 14 (1): 25-40. (With Jap. s.). — (Dept. Biol., Coll. Liberal Arts, Toyama Univ., 3190 Gofuku, Toyama, 930, JA).
The observations were carried out in the Hokuriku Distr., central Honshu, Japan (1977). The following are the main subjects discussed; (1) phenology (June 3-Sept. 4), — (2) sex ratio ($\delta:\text{♀} = 1.4:1.0$), — (3) recapture rate ($\delta: 83.6\%$, $\text{♀}: 78.3\%$), — (4) average/maximum number of recaptures per individual ($\delta: 6.0/27.0$, $\text{♀}: 4.5/19.0$)—(5) average/maximum life span of adults ($\delta: 16.3/52.0$, $\text{♀}: 14.2/40.0$ days), — (6) assumed physiological life span of adults (under 60 days in both sexes), — (7) average/maximum moving distances of adults in life ($\delta: 346.1/1565$ m, $\text{♀}: 351.7/2545$ m), — (8) the same, per day ($\delta: 20.1/142.3$ m, $\text{♀}: 16.7/79.5$ m). The population density was also estimated.
- (3563) TOMBO. *ACTA ODONATOLOGICA*. Published by the Society of Odonatology, Tokyo. Vol. 24, Nos 1/4 (Dec. 20, 1981). — Annual subscription/membership for individual bona fide odonatologists Y 2000. — (orders to: Dr S. Eda, Dept. Oral Pathol., Matsumoto Dental Coll., 1780 Gobara, Hirooka, Shiojiri, Nagano, 399-07, JA), for institutional subscribers Y 4000. — (orders to: Japan Publication Trading Co., Central P.O.B. 722, Tokyo, JA). — Mostly in Engl., Jap. papers with Eng. s's.). — (c/o Editor: Dr S. Asahina, Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
Eda, S. (address above): A female of *Orthemtrum albistylum speciosum* laying eggs into the running water being guarded by the partner frontispiece col. photograph; — *Asahina, S.* (address above): A revision of the Chinese dragonflies of the genus *Cephalaeschna* and its allies [incl. descriptions of *C. risi* sp.n. and *C. needhami* sp. n.] (2-12); — Seasonal variation in *Neurothemis tullia* (Drury) (12-16); — Further records of interspecific hybrid[s] among Odonata (17-22); — *Asahina, S. & M. Sugimura*: Oviposition of *Epiophlebia superstes* into bryophytes (22-23); — *Svihla, A.* (555 Indian Trail, Palm Springs, Ca. 92262, USA): Notes on *Tanypteryx hageni* Selys in the Olympic Peninsula of Washington (24); — *Suzuki, K.* (Dept. Biol., Coll. Lib. Arts, Toyama Univ., Gofuku 3190, Toyama, 930, JA): *Mnais-damselflies* (Odonata: Calopterygidae) in southwestern Niigata Prefecture, central Honshu, Japan (25-28); — *Arai, Y.* (3-72 Ishiwaru, Kumagaya, Saitama Pref., 360, JA): Oviposition behaviour of four species of Japanese Gomphidae (29-31); — *Inoue, K.* (5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA): Two additional species to the odonate fauna of Yakushima Is., Kagoshima Prefecture (31); — *Watanabe, K. & M. Inagawa* (145-1, Maesato, Ishigaki, Okinawa Pref., 907, JA): A record of *Neurothemis terminata* Ris from Ishigaki Island, the Ryukyus (32); — *Watanabe, K.* (address above): Description of the larva of *Agrionoptera insignis insignis* from Iromote Island (33-34); — *Trithemis aurora* Brauer from Ishigaki Island, the Ryukyus (34-35); — *Yamaguchi, H.* (27-9, Minami 2-chome, Nishi 20-jo, Obihiro, 080-24, JA): Record of *Anax guttatus* from Obihiro, Hokkaido (35); — *Ishikawa, H. & N. Ito* (c/o the Editor): Contributions to the odonate fauna of Yamanashi Prefecture (36): —

- Osada, M.* (c/o the Editor): Agrion [recte: Coenagrion] lanceolatum and Cordulia aenea amurensis in Fukui Prefecture (37); — *Inoue, K.* (address above): New record of Mnais p. pruinosa ♂-f esakii from Amami, Osaka Pref. (38); — *Tsuda, S. & K. Kitagawa* (Habikigaoka 7-17-9, Habikino, Osaka Pref., 583, JA): Dead dragonflies picked up from highway of Hokkaido (38); — *Tennessee, K.J.* (1949 Hickory Ave., Florence, Alabama 35630, USA): The Sixth International Symposium of Odonatology (39-41); — *Inoue, K.* (address above): Congratulations to Dr S. Asahina nominated to the First President of S.I.O. (41); — *Eda, S.* (address above): The 1981 Annual Meeting of the Society of Odonatology, Tokyo (42); — *Asahina, S.* (address above): Territorialism of Orthetrum triangulare melania larvae? (43); — New Members (43); — Change of address (43); — [Editorial and Business notes] (44).
- (3564) **TYAGI, B.K.**, 1981. Dragonflies feeding on houseflies. *J. Bombay nat. Hist. Soc.* 77 (3): 531. — (Malaria Res. Cent., UGH 61-70, Sector VI, Ukai-394680, Dist. Surat, Gujarat, India).
The odon. spp. reported are Anax immaculifrons and Orthetrum sabina. The latter sp. need up to 1 min to devour a fly specimen.
- (3565) **UBUKATA, H.**, 1981. Survivorship curve and annual fluctuation in the size of emerging population of Cordulia aenea amurensis Selys (Odonata: Corduliidae). *Jap. J. Ecol.* 31: 335-346. (With Jap. s.). — (Dept. Sci. Educ., Kushiro Coll., Hokkaido Univ. Educ., Kushiro, 085, JA).
The survivorship curve from egg to mature adult is reported for a population of C. a. amurensis from Hôrai-numa, Sapporo, Japan, 1966-1973. The mortality is higher during the early aquatic stages and in winter. About 99.8% of the initial population (eggs laid) died during the 5-yr aquatic period; Aeshna nigroflava being the principal predator. The number of mature individuals arriving at the reproduction site was estimated at 0.07% of the initial population.
- A considerable stability was evidenced in the size of the emerging population; the maximum size was 2.2 times the minimum one among the 6 year-classes. It is suggested that the stability is conditioned by the switching of prey selection by predators and/or it is the result of the available refuge space during the aquatic period.
- (3566) **ULVINEN, A.**, 1981. In memoriam Lauri Tiensuu 3.7.1980. *Kymenlaakson Luonto* 22 (1): 6. (Finnish). — (Kulosaaren puistotie 44 A 1, SF-00570 Helsinki-57).
Text almost identical to that of the paper listed in *OA* No. 3567.
- (3567) **ULVINEN, A.**, 1981. Lehtori Lauri Tiensuu in memoriam. *Notul. entomol.* 61 (2): 112. (Finnish). — (Kulosaaren puistotie 44 A 1, SF-00570 Helsinki-57).
Obituary note for the late Lauri Tiensuu (born: 1913; deceased: July 3, 1980), a well-known Finnish entomologist. No portrait and no bibliography. — (*Abstracter's Note*: L.T. published extensively on Dipt. and Ephemeropt., but his bibliography contains also 7 titles on Odon. (1933-1960). His voluminous field diaries are deposited in the Zool. Mus. Univ. Helsinki, and contain also rich odonatol. material).
- (3568) **VAN TOL, J. & D.C. GEIJSKES**, 1981. Changes in abundance and distribution of dragonflies (Odonata) in the Netherlands during this century. *Nieuwsbr. Europ. Invert. Surv.-Ned.* 10: 47-53. — (Rijksmus. Nat. Hist., Raamsteeg 2, Leiden, NL).
68 spp. are known from the Netherlands: 66 were recorded prior to 1950, and 59 since then. The data here presented indicate that the number of records of spp. of undisturbed habitats has severely decreased and the distributional patterns changed during this century. The interpretation of the data is discussed in terms of relative abundance, and it is concluded that human activities are largely responsible for changes in the distributional patterns and faunal composition.

- (3569) WASSCHER, M., 1981. Libellenverspreiding rond vennen [Dragonfly distribution in the heaths]. *Amoeba* 1981 (8): 4-7. (Dutch). — (c/o Jan Sluitersweg 6, 5645 JC Eindhoven, NL).
The faunal composition and the micro-distribution of Odon. in the heaths of Cartierheide (nr Eerse, Noord-Brabant prov.,) and Kraloërheide (nr Dwingeloo), the Netherlands are briefly discussed.
- (3570) WESTMAN, K., 1981. Ny fyndplats för *Coenagrion puella* (L.) (Coenagrionidae) i Kymnedalen. [A new locality of *Coenagrion puella* (L.) (Coenagrionidae) in Kymenlaakso]. *Notul. entomol.* 61 (4): 221. (Swedish). — (Koulukatu 10 a 20, SF-65100 Vaasa-10).
July 4, 1980, *C. puella* was discovered at a small stream in Vehkalahti, SE Finland. This locality is situated some 10 km from another small stream, where the sp. has been known since 1958.
- 1982**
- (3571) INOUE, K., 1982. Odonatological chronicle 1981, mainly on overseas situations. *Gekkan Mushi* 132: 2-5. (Jap., with Engl. title). — (5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).
New locality data for some Japanese taxa are briefly mentioned, and some of the main 1981 odonatological events and achievements in the world are reported. The items dealt with are: (1) Election of Dr S. Asahina (Tokyo) to the office of the President of the International Odonatological Society (S.I.O.), (2) Sixth Int. Symp. Odonatol., Chur (with a photograph showing Drs G.M. Carchini, K. Higashi, C. Utzeri and K. Miyakawa), (3) Review of the development of the S.I.O. membership in Japan, 1971-1981, (4) Brief abstracts of some noteworthy papers published in *Odonatologica*, vol. 10, (5) Enumeration of National Odonatological Associations, set up in affiliation with S.I.O., and a list of periodicals published by these and by the S.I.O. National Offices, (6) Notes on 2 taxonomic catalogues published by S.I.O. in 1981, and (7) Notes on some non-S.I.O. odonatological publications.
- (3572) JURZITZA, G., 1982. Im Gespräch: Artenschutz mit Pferdefuss. *Tier Tierwelt* 1982 (2): 20. — (Zehntwiesenstr. 40, D-7505 Ettlingen, GFR).
Critical comments on the Species Conservation Act (cf. *OA* 3112), with emphasis on the Odon. The author is the leading authority on Odon. in the Federal Republic of Germany; his portrait is also provided.
- (3573) KIAUTA, B., 1982. Ongewervelden in het hooggebergte [The invertebrates of the upper region of the mountains]. In: J.G. van Gelderen, J. van den Kam & C. Laban, [Eds], *Encyclopedie van de natuur van Europa. 4. Flora en fauna op het land.*, pp. 1000-1001. Spectrum, Utrecht-Antwerpen. (Dutch). — (Dept. Anim. Cytogenet. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL).
A general review of the invertebrate high-altitude adaptations, distributions and fauna composition, with a passing reference to the Odon.
- (3574) NAGASE, K., 1982. [Insects of Ikue-cho, Asahi-ku, Osaka: revival of *Stylurus annulatus*]. *Nature Study* 28 (1): 10-11. (Jap.). — (4-11-205, Abiko 2-chome, Sumiyoshi-ku, Osaka, 558, JA).
Over 20 exuviae of *S. annulatus* were found in 1981 along the Yodogawa River at Ikue-cho, Japan, incl. a freshly emerged ♂, July 21 (situation photograph included). Among the other 16 recorded spp. are *Ictinogomphus clavatus*, *Sieboldius albardae* and *Symphetrum striolatum imitoides*.
- (3575) OMORI, T., 1982. [A record of *Anaciaeschna martini* from Gumma Prefecture]. *Gekkan Mushi* 132: 35. (Jap.). — (3-5-5, Tode, Saiwai-ku, Kawasaki, 210, JA).
A ♀, taken Aug. 26, 1980, at Tomioka, Gumma Prefecture, Japan, is brought on record.

- (3576) SCHNEIDER, W., 1982. *Crocothemis sanguinolenta arabica* n. subsp. (Odonata: Anisoptera: Libellulidae), ein afrikanisches Relikt in der südlichen Levante. *Ent. Ztschr., Frankfurt/Main* 92 (3): 25-31. (With Engl. s.). — (Inst. Zool., Univ. Mainz, Saarstr. 21, D-6500 Mainz, GFR).
C. s. arabica ssp. n. is described and illustrated from southern Jordan (♂ holotype: Dead Sea, 7-VI-1918, No. 25566 in coll. Ris, Senckenberg Mus.; first ♀ various paratypes of both sexes). The new ssp. is considered another relict of a Pleistocene immigration of African elements into the Levant.
- (3577) SRIVASTAVA, B.K. & B. SURI BABU, 1982. On the predatory efficiency of the dragonfly nymph, *Anax immaculifrons* (Rambur) (Odonata: Aeshnidae). *Proc. 69th Indian Sci. Congr.* 1982 (3): 24. — (Zool. Dept., Univ. Saugar, Sagar-470003, M.P., India).
 [Verbatim]: The present investigation is concerned with evaluation of the predatory efficiency of *A. immaculifrons* on *Culex fatigans* larvae. Identifiable remains of the latter and of *Anopheles culicifacies* larvae have been found in the gut contents of the dragonfly larva. The 'predatory capacity' of the odon. larva is 47 larvae (4th instar) of *C. fatigans*. The observations were made over a period of 1 h, at 10 min intervals. The 'predatory efficiency' decreased from 81% during the first 10 min to 56%, 50%, 38% and 25% during the successive 10 min intervals, ultimately reaching to 4% during the last 10 min. The rate of attack was 2.52/min during first 10 min of which 2.05/min was successful. During the last phase the rate of attack was 0.24/min of which only 0.01/min was successful. The larvae fed after 6, 12, 18, 24, 36, 42, and 48 hours of deprivation consumed 9, 24, 31, 40, 47, 47 and 47 larvae respectively. The maximum appetite returned after 36 h of deprivation. Comparative analysis suggests that among larvivorous fishes and other aquatic insectan predators the dragonfly larvae rank as best potential larvivorous predators for mosquito larvae.
- (3578) SRIVASTAVA, V.K. & B.K. SRIVASTAVA, 1982. The musculature of the ninth abdominal segment in female Zygoptera (Odonata: Insecta). *Proc. 69th Indian Sci. Congr.* 1982 (3): 42-43. — (Dept. Zool., C.M.P. Degree Coll., Univ. Allahabad, George Town, Allahabad, U.P. India).
 [Verbatim]: The musculature of the 9th abd. segm., bearing the ovipositor, was described in detail in females of 9 zygopteran spp. The general plan of musculature reveals remarkable consistency in all the spp. studied, and consists of the following 7 paired muscles: (1) Longitudinal muscle of the first valvifer, (2) Dorsoventral muscle of the first valvifer, (3) Anterior apophysial muscle of the lateral valve, (4) Posterior apophysial muscle of the lateral valve, (5) Anterior intervalvular muscle, (6) Muscle of the second valvule, and (7) Longitudinal tergal muscle. In addition to these, an unpaired transverse sternal muscle is also present within the limit of the 9th segment. — On the basis of muscle action, the functional mechanism of the ovipositor during copulation and oviposition has been described anew.
- (3579) SUZUKI, K., 1982. [An appeal for the conservation of the natural ecosystems in the Kureha Hills, with] A list of Odonata species from Kureha Hills, Toyama, Japan. Circular, issued (Feb. 10) by Coll. Liberal Arts, Toyama Univ., Toyama. 4 pp., topogr. map excl. — (Dept. Biol., Coll. Liberal Arts, Toyama Univ., 3190 Gofuku, Toyama, JA).
 A well-documented appeal is made for the conservation of the natural ecosystems of the Kureha Hills, with emphasis on the interesting composition of the local odon. fauna (29 spp. listed). The latter includes *Mnais pruinosa nawai* (one of the northernmost localities), *Nannophya pygmaea* (generally very limited distribution), and such taxa as *Jagoria pryleri*, *Aeschnophlebia longistigma*, *Somatochlora viridiaenea*, *Epophthalmia elegans*, *Libellula quadrimaculata asahinai* and *Rhyothemis fuliginosa*, the habitats of all of which show a recent rapid decrease in the Toyama Pre-

lecture. — (Copies available from the Editors of *Odonatologica*).

- (3580) VAN VEEN, M., 1982. Inventarisatie Duin en Kruidberg en Middenherenduin [Inventarisation of the Duin, Kruidberg and the Middenherenduin]. *Stridula* 1982 (1): 15-24. (Dutch). — (Kruidbergerweg 89, 2071 RC Santpoort, NL).
The area is located in the Noord-Holland prov., the Netherlands, and 4 common spp.

are listed, without any further data.

- (3581) VAN VEEN, M., 1982. Libellen, roof- en blaaskopvliegen rond Weert [Dragonflies, Asilidae and Conopidae in the area of the city of Weert]. *Stridula* 1982 (1): 34-36. (Dutch). — (Kruidbergerweg 89, 2071 RC Santpoort, NL).
9 odon. spp. are listed from this region (June-Aug.), Limburg prov., the Netherlands.