

ODONATOLOGICAL ABSTRACTS

1973

- (3582) GEIJSKES, D.C., 1973. Reisverslag van de Expeditie West Suriname 1971. [Report on the 1971 West Surinam Expedition]. *Zool. Bijdr.* 15: 1-42, pls 1-8. (Dutch). - (Rijksmus. Nat. Hist., Raamsteeg 2, P.O. Box 9517, 2300 RA Leiden, NL).

On pp. 28-29, an observation on the oviposition behaviour of *Macrostigma maculata*, made towards the evening of March 26, on the Kaboerikreek, West Surinam, is reported. A female was ovipositing in the water contained in a large bark groove of a felled *Aspidosperma* tree. Frightened away by unsuccessful attempts to photograph and catch it, it kept returning to this oviposition site, in a low flight over the ground: With reference to earlier reports on pseudostigmatids breeding in phytotelmata, it is suggested that *M. maculata* might be a "Kleingewässer" species rather than a bromelia breeder.

- (3583) ICHIBA, T., 1973. [Dragonflies of Saga Prefecture]. *Zoku-Sagano-shizen* 1973: 109-114. (Jap.). - (6-26 Nagase-cho, Saga, Saga, 840, JA).

An annotated list is given of 67 spp. known at the time from Saga Prefecture, Kyushu, Japan. For an updated review of the prefectural fauna cf. *OA* No. 3585.

1978

- (3584) CHAO, H.-f., 1978. [Odonata]. *In*: R.J. Chu et al., [Atlas of insect natural enemies], pp. 275-279. China Sci. Press, Peking. (Chin.). - (Lab.

Biol. Control, Fujian Agric. Coll., Fuzhou, Fujian, P.R. China).

The chapter contains some general notes on Odon. with illustrations of some morphological features (figs 300-310), a key to the odon. families known to occur in China, and with a brief diagnostic characterisation of the common *Pantala flavescens* (pl. 26, fig. 173) and *Crocothemis servilia* (pl. 26, fig. 174). (Author). - (*Abstracter's Note*: An Engl. translation of the book is scheduled for publication in West Germany).

- (3585) ICHIBA, T., 1978. [Dragonflies of Saga Prefecture. II.] *Sagakitako-Kiyō* [= *Bull. Sagakita High Sch.*] (4): 21-39. (Jap.). - (6-26 Nagase-cho, Saga, Saga, 840, JA).

The literature on the odon. fauna of Saga Prefecture, Japan is reviewed (167 titles), and an annotated list is given of the prefectural fauna (82 spp.). *Platynemis foliacea sasakii*, *Agriocnemis femina oryzae*, *Nihonogomphus viridis*, *Aeschnophlebia anisoptera*, and *Libellula angelina* are among the more interesting taxa. - (For the first report cf. *OA* No. 3583).

- (3586) NAGASU, F., 1978. [Odonata of Saitama]. *In*: The fauna of Saitama Prefecture, pp. 403-432. Saitama Pref. Board of Education, Urawa. (Jap., with Engl. title). - (4-9-27 Naka, Saitama, Kitakatsushika-gun, Saitama, 340-01, JA).

A brief introductory note is followed by an account of 84 spp. known to occur in the Prefecture, Japan. Among these are *Anaciaeschna martini*, *Macromia daimoji* and *Symptetrum uniforme*. The bibliographic list includes 109 references.

1979

- (3587) FUKUI, M., 1979. [Dragonflies of Shizuoka Prefecture]. *In*: M. Kamada, [Ed.], Shizuokaken no seibutsu, pp. 120-125. Haibara Senior High School, Haibara. (Jap.). - (2-1-21, Uchinodai, Hamakita City, Shizuoka, 434, JA).
86 spp. are listed, incl. *Enallagma deserti circulatum*, *Aeschnophlebia anisoptera* and *Aeshna juncea*. *Anax guttatus*, *Tholymis tillarga* and *Tramea virginia* are considered southern immigrants.
- (3588) HIROSE, M. & T. KOSUGE., 1979. [Ecology of *Mortonagrion hirosei* and its conservation at the Hinuma Pond in Ibaraki Prefecture]. *Iden* 33(11): 66-74. (Jap.). - (First Author: 3-4-7 Daikucho, Mito, Ibaraki, 310, JA; - Second Author: 1-9 Tanocho, Mito, Ibaraki, 310, JA). A note on the discovery of this sp. (by the first author) is followed by the description of the Hinuma Pond, its type locality. The subsequent sections deal with the morphology of the adult and larva, with breeding, and with the conservancy of the type locality. The importance of habitat conservation in dragonflies is emphasized, and a bibliography on the sp. is provided. - (For the original taxonomic description cf. *OA* No. 223; for an earlier paper on the same subject cf. *OA* No. 581).
- (3589) ZHU, Huiqian, 1979. [A survey of the dragonflies from Shanxi Province]. *J. Shanxi Univ.* (Nat. Sci.) 1979 (3/4): 65-66. (Chin.). - (Dept. Biol., Univ. Shanxi, Tsiyuan, Shanxi Prov., P.R. China).
The following spp. are listed: *Platycnemis foliacea*, *Ischnura asiatica*, *Calopteryx virgo*, *Anax parthenope julius*, *Anotogaster sieboldii*, *Crocothemis servilia*, *Orthetrum albistylum*, *O. triangulare*, *Pantala flavescens*, *Sympetrum kunkelii*, and *S. uniforme*. - (*Abstracter's Note*: According to the information received from the author, the following 3 above mentioned taxa should be corrected: *Ischnura asiatica* should be replaced by *I. lobata*, *Calopteryx virgo* by *Matrona b.basilaris*, and *Anotogaster sieboldii* by *A. kuchenbeiseri*).

1980

- (3590) AKIYAMA, Y., 1980. [Dragonfly fauna of Tottori Prefecture]. *Nature and Insects* 15(3): 12. (Jap.). - (c/o Y. Murayama, 135, Kita 6-chome, Koyama-cho, Tottori, 680, JA).
A list of 44 spp., with locality and collection data. - (For a full account of the odon. fauna of the Prefecture cf. *OA* No. 3609).
- (3591) ASAHINA, S., 1980. [My souvenirs entomologiques. Pt.2. Junior highschool and boyhood]. *Nature and Insects* 15(2): 12-18. (Jap.). - (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).
This is the continuation of the autobiographic series commenced with the paper listed in *OA* No. 3357. Dr Asahina's interest in dragonflies dates from the Second Field Meeting of the Tokyo Ent.Soc., held at Sekido, June 10, 1929 (the author's 14th birthday).
- (3592) BENKEN, T., 1980. Die Libellenfauna des Hahlener Moores (Gemeinde Menslage). *Inf. Natursch. Landschaftspfll., Wardenburg* 2: 163-179. - (Poststr. 2, D-4573 Lönningen, FRG).
The odon. fauna (26 spp.) of the Hahlener Moor nr Osnabrück, Federal Republic of Germany is discussed, with special reference to autecology and species composition of various types of habitats. Of particular interest is the account of the faunal succession recorded at a newly made artificial pond.
- (3593) BRELIH, S. & J. GREGORI., 1980. *Redke in ogrožene živalske vrste v Sloveniji* [Rare and threatened animal species in Slovenia]. Mus. Nat. Hist., Ljubljana. 264 pp. (Slovene). - (Publishers & Authors: Mus. Nat. Hist., Prešernova 20, YU-61000 Ljubljana).
This is an exhaustive monograph on the subject, authored by Museum Curators in the Departments of resp. Entomology and Ornithology. The senior author also has an appreciable research experience in the taxonomy and ecology of various regional vertebrate groups and in the local game biology. The practical value of the work, as a national handbook on the subject, is enhanced by verbatim citation of all the national Acts and

other legislative texts in the field of animal and game conservation. A translation of the main international conventions and declarations related to this subject is also provided. A classified list is given of all spp. and other taxa included in the Animal Conservation Act of the Federal Republic of Slovenia (Yugoslavia), and critical comments are presented. Also included is an annotated list of legally protected biotopes and natural reserves. - Reference to Odon. is made in several chapters. No odon. sp. is legally protected in the territory of Slovenia (p.15), but all of them are considered threatened by water pollution and drainage (p. 47); the decrease of larval populations is particularly noticeable in stagnicolous habitats (p.51). Although no evidence is produced that any sp. would be endangered by factors other than habitat destruction, it is argued that all odon. spp. should be included in the Conservation Act (p. 247), as indeed it was suggested during the preliminary discussions in the Diet (cf. *OA* No. 906). - (*Abstracter's Note*: As emphasized by the IUCN Species Survival Commission, at their 1981 Conference in Chur, a generalised legislation, preventing collecting of all or most odon. spp., will rather counteract their protection. Cf. *Notul. odonatol.* 1 [1981]: 125-126, and comments in *OA* No. 3112).

(3594) CZECHUGA, B. & W. MIRONIUK, 1980. Investigations on carotenoids in insects. 2. Water insects. *Acta hydrobiol.* 22(1): 29-35. (With Polish s.). - (Zakład Biologii Ogólnej, Akademia Medyczna, ul. Kilinskiego 1, PO-15-230 Białystok).

The occurrence and the total content of carotenoids were examined by means of column and thinlayer chromatography in representatives of various insect orders, incl. 9 odonate spp. referable to 6 families.

(3595) EDA, S., 1980. [A review of the Japanese odonatology during 1970-1979]. *Nature and Insects* 15(7): 7-12. (Jap.). - (3-4-25 Sawamura, Matsumoto, Nagano Pref., 390, JA).

An outline is given of the main achievements during the said period. It is organized under the following headings: 'Classification', 'Morphology, life-history studies and larval stages',

'Distribution', 'Ecology and behaviour', 'Books', and '[The Japanese] Society of Odonatology, and Societas Internationalis Odonatologica'. During the 1970's 1 new sp. was described (*Mortonagrion hirosei* Asah.), while 8 sspp. from Japan were either described as new or redefined, viz. *Mnais pruinosa costalis* Sel., *M.p.nawai* Yamamoto, *M.p.pruinosa* Sel., *Davidius moiwanus sawanoi* Asah. & Inoue, *D.m. taruii* Asah. & Inoue, *Stylogomphus ryukyuanus asatoi* Asah., *Oligoaeschna kuni-gamiensis* Ishida, and *Macromia amphigena masaco* Eda. The following 7 taxa were added to the national faunal list: *Erythromma najas baicalensis*, *Aeshna subarctica*, *Somatochlora g.greaseri*, *Hydrobasileus croceus*, *Lathrecista a. asiatica*, *Macrodiplax cora*, and *Sympetrum fonscolombei*.

(3596) EDA, S., 1980. [Review of the Japanese odonatology in 1979]. *Nature and Insects* 15(4): 29-35. (Jap.). - (3-4-25 Suwamura, Matsumoto, Nagano, 390, JA).

A chronicle of the Japanese odonatalogical achievements and events in 1979, organized under the headings 'Classification and morphology', 'Distribution', 'Ecology and behaviour', and 'Books'. The plenary annual meeting of the [Japanese] Society of Odonatology was held Oct. 13, at Kushu Univ., Fukuoka (23 participants, a group photograph and a signature card are provided).

(3597) EDA, S., 1980. [*Sympetrum infuscatum* continued tandem flying-oviposition into the water]. *Nature and Insects* 15(14): 21. (Jap.). - (3-4-25 Sawamura, Matsumoto, Nagano Pref., 390, JA).

The note refers to an observation at the Ushidomeike Pond, Nagano, Japan, Aug. 30, 1980.

(3598) EDA, S., 1980. [Tandem of *Leucorrhinia dubia orientalis* ♂ and *Sympetrum danae* ♀]. *Nature and Insects* 15(14): 21-22. (Jap.). - (3-4-25 Sawamura, Matsumoto, Nagano Pref., 390, JA).

The interspecific tandem was noticed at the Ushidomeike Pond, Nagano, Japan, Aug. 13, 1980. The copulation was not successful.

- (3599) FUJISAWA, S., 1980. [Distribution of the alpine dragonfly, *Leucorrhinia dubia orientalis* in Japan]. *Nature and Insects* 15(9): 31-32. (Jap.). - (Iiyama, Iiyama, Nagano Pref., 389-22, JA).
The distribution is mapped (49 localities in 13 prefectures of Hokkaido and Konshu, Japan); the southernmost locality known being a small pond in the Gifu Prefecture. Most of the habitats are characterized by the presence of sphagnum bogs.
- (3600) FUKUDA, K., 1980. [Memorandum on dragonflies at the Goshikinuma Pond in Okunikko]. *Insect* 31(1): 25-30. (Jap.). - (Seiwayo, 251 Nakayasuto, Kiyotakicho, Nikko, Tochigi, 321-14, JA).
The Goshikinuma Pond, Japan is situated at an elevation of 2180 m. Due to unknown causes, dead individuals of *Anisogomphus maacki*, *Aeshna juncea*, *Epiletheca bimaculata sibirica*, *Somatochlora arctica*, *S. uchidai*, *Macromia a. amphigena*, and *Pantala flavescens* were found floating on the water surface. Oviposition of *S. uchidai*, emergence of *A. juncea* and the bathing behaviour of *A. maacki* were also noticed.
- (3601) GIBO, D.L., 1980. Soaring as an energy saving strategy of migrating insects. *Abstr. Pap. 2nd int. Congr. syst. & evol. Biol., Vancouver*, p. 209. - (Dept. Zool., Erindale Coll., Univ. Toronto, Mississauga, Ont., L5L 1C6, CA).
Soaring flight and powered flight in rising air currents is commonly employed by the lepidopterans *Danaus plexippus* and *Nymphalis antiopa*, and by *Anax junius*, during their late summer migration southward from southern Ontario, Canada. The phenomenon was studied in the 3 spp. during 1977-1979. *A. junius* flew in thermals under the most favourable weather conditions (i.e. a following wind, strong lift, moderate to warm temperatures) and frequently or continuously employed powered flight. The extensive use of powered flight by *A. junius*, even when flying in thermals, is probably due to its lower efficiency at gliding flight, and its need to maintain a high body temperature. All 3 spp. significantly reduce their energy expenditure during migration by exploiting thermals. (For soaring in *Pantala flavescens* cf. OA No. 3529).
- (3602) HIBINO, T., 1980. [*Hemicordulia mindana nipponica* taken in December]. *Nature and Insects* 15(14): 28. (Jap.). - (75, Hikiyama, Inokoishi, Itaka-cho, Meito-ku, Nagoya, 465, JA).
2 ♂, 1 ♀ were taken at Iriomote Island, Okinawa Prefecture, Japan, Dec. 26, 1979. This is considered a very late record for this sp.
- (3603) HIBINO, T., 1980. [Oviposition of *Gomphus pryri*]. *Nature and Insects* 15(14): 28. (Jap.). - (75, Hikiyama, Inokoishi, Itaka-cho, Meito-ku, Nagoya, 465, JA).
Oviposition was observed at Nagakute-cho, Aichi Pref., Japan, June 22, 1980, 10.20 hr. A female perched on a grass stalk and produced an egg mass in 1-2 min. She flew up then and touched the water surface with the tip of the abdomen intermittently 2-3 times. Then she shifted a short distance and again touched upon water surface. Then she perched on grass, produced a new egg mass, and repeated the described process 3 times.
- (3604) ISHIDA, M., 1980. [On the dorsal spines in larvae of *Anisogomphus maacki*]. *Nature and Insects* 15(14): 20-21. (Jap.). - (5-759, Nishiborimaedori, Niigata, 951, JA).
All exuviae from the Shinano R. in Niigata, Japan have a small dorsal spine on the 9th abdominal segment.
- (3605) KURATA, M., 1980. [Alpine dragonflies and their biology]. *Nature and Insects* 15(9): 12-17. (Jap.). - (1475-2 Daikancho, Matsushiro-cho, Nagano, 381-12, JA).
'Alpine dragonflies' are defined as 'spp. inhabiting the aquatic habitats above the timber line'. In Japan, the following taxa fall within this definition: *Enallagma deserti circulatum*, *Nehalennia speciosa*, *Aeshna juncea*, *A. nigroflava*, *Cordulia aenea amurensis*, *Epiletheca bimaculata sibirica*, *Somatochlora arctica*, *S.v. viridiaenea*, *Leucorrhinia dubia orientalis*, and *Sympetrum danae*. Notes on phenology, ecology and life-histories are also provided. The life cycle of the 2 *Aeshna* spp.

- lasts 4 yrs (hibernations in egg and twice in larval stages), while the larval development of *Leucorrhinia* is completed in 2 yrs. Due to disturbance and/or destruction of the habitats the number of records has decreased significantly during 1960-1973. The phenomenon seems to be related to the increase of tourism during the same period. Statistical data on the subject are presented.
- (3606) LIEN, J.C., 1980. Common damselflies and dragonflies of the Quemoy Islands (Odonata; Zygoptera, Anisoptera). *Bull. Soc. Ent., Taiwan* 15: 115-126. (With Chin.s.). - (Author's temporary address: a/c Programa de Malaria, C.P. 516, Cochabamba, Bolivia; - for the permanent address cf. *OA* No. 3246). An annotated list is given of 16 spp. recorded 1975-1977 from the Quemoy Islands, Republic of China. The male anal appendages or genitalia of some of these are presented. A checklist of the odon. fauna (16 spp.) of the neighbouring Island of Amoy is also provided; only 4 of these were recorded from the Quemoy Islands as well.
- (3607) MAGO-LECCIA, F., 1980. In memoriam Janis Racenis Petersen (1915-1980). *Acta biol. venezuel.* 10(4): 523-525. (Span.). - (Inst. Zool. Tropical, Fac.Cien., Univ. Central Venezuela, Caracas, Venezuela). Obituary for Dr J. Rácenis, with a portrait, without bibliography. For another obituary cf. *OA* No. 3520; for the evaluation of his odonatol. work and for his bibliography cf. *Odonatologica* 9 [1980]: 125-129.
- (3608) MATSUI, I., 1980. [A new locality and a note on the behaviour of *Platycnemis foliacea sasaki* in Aichi Prefecture]. *Nature and Insects* 15(14): 5. (Jap.). - (Aza-ichiba 73, Moriyama, Moriyama-ku, Nagoya, 463, JA). The new locality is at Seto, Japan, and the 'cleaning' behaviour (sensu Moore, 1960) was observed there on July 28, 1980. The same behaviour has been noticed in *Lestes temporalis* at Moriyama-ku, Nagoya, on Oct. 21, 1979. - (*Abstracter's Note*: Misprints: 'XII' should read 'VII', and 'Moove' stands for 'Moore').
- (3609) MISHIMA, S., 1980. [Dragonflies from Tottori Prefecture]. *Sukashiba* (14): 21-33. (Jap., with Engl. title). - (18 Higashi-honcho, Sakaainato, Tottori, 684, JA). While until 1979 only 26 spp. were known from this odonatologically little explored prefecture, Japan, 82 spp. are listed in the present paper along with collection data and 36 references. *Agrionemis femina oryzae*, *Anisogomphus maacki*, *Aeschnophlebia anisoptera*, *Aeshna nigroflava*, and *Somatochlora clavata* are among the more interesting taxa.
- (3610) OHGAI, H., 1980. [A new record of *Sympetrum risi yosico*]. *Nature and Insects* 15(3): 13. (Jap.). - (6-61, Higashihommachi, Naba Aioi, Hyogo Pref., 678, JA). - A male from Fukagawa, Hokkaido (Aug. 15, 1979) is placed on record.
- (3611) SATO, T., 1980. [A list of dragonflies of Oita Prefecture]. Privately published, 24 pp. (Jap.). - (Author deceased Oct. 3, 1980). Only 38 spp. were recorded prior tot 1979 from this prefecture, Japan, while 84 are listed in the present report, of which 62 spp. were collected in the period June 1979 - June 1980. - (*Abstracter's Note*: *Cordulia aenea amurensis* and *Sympetrum risi yosiko* are misidentified. Consequently, the hitherto known odon. fauna of Oita Pref. consists of 82 spp.).
- (3612) SHIMIZU, N., 1980. [Triple connection of *Trigomphus melampus*]. *Nature and Insects* 15(14): 29. (Jap.). - (2-29 Nijo-cho, Minami-ku, Nagoya, 457, JA). The ♂-♀±♂ connection ('type 0' of Eda), noticed June 28, 1980, at Omachi, Nagano, Japan, is placed on record. A photograph is also provided.
- (3613) SHINDAI KONCHU-KENKYU GROUP, 1980. A new habitat of the dragonfly, *Aeschna mixta* Latreille in Ueda-chiisagata District, Nagano Pref. *New Entomologist* 29(4): 101 (Jap., with Engl. title). - (c/o Fac. Textile Sci & Technol., Shinshu Univ., 3-15-1 Tokida, Ueda, Nagano Pref., 386, JA). *A. mixta* has been thought to be threatened with extinction in this district, Japan. Unex-

- pectedly, a strong population was discovered at Ueda, in early Oct., 1980.
- (3614) SHINDAI KONCHU-KENKYU GROUP, 1980. Migration for overwintering in *Harmnia axyridis* Pallas (Coleoptera) and *Sympecma paedisca* Brauer (Odonata). *New Entomologist* 29(4): 106. - (Jap., with Engl. title). - (c/o Fac. Textile Sci. & Technol., Shinshu Univ., 3-15-1 Tokida, Ueda, Nagano Pref., 386, JA). On Nov. 6, 1980, the railway passengers have noticed a huge migration between the stations of Morimiyano-hara and Echigotazawa, Japan. It is assumed that the insects were heading for the hibernation sites.
- (3615) SHIRAIISHI, K., 1980. [Records of *Cercion sieboldii* and *Anax parthenope julius* in Hokkaido]. *Nature and Insects* 15(9): 35. (Jap.). - (1-612 Ikebukuro, Toshima-ku, Tokyo, 170, JA). *C. sieboldii* is reported from the Chubetsu R. nr Asahikawa (July 31, 1979), and *A.p. julius* from the same locality and from the Takkobunuma Pond nr Kushiro (Aug. 3, 1979).
- (3616) SHIRASAWA, R., 1980. [A new locality of *Oligoaeschna pryeri* in Nagano Prefecture]. *Nature and Insects* 15(14): 14. (Jap.). - (6305-3, Kamisakae-cho, Ohmachi, Nagano Pref., 398, JA). A marsh at Ohmachi is the third known locality of this sp. in Nagano, Japan. The adults are on wing throughout June, and on May 25, 1980, 7 exuviae were collected.
- (3617) SHIRASAWA, R., 1980. [*Aeschnophlebia longistigma* new to Nagano Prefecture]. *Nature and Insects* 15(14): 14. (Jap.). - (6305-3, Kamisakae-cho, Ohmachi, Nagano Pref., 398, JA). A male taken at Ohmachi, Japan, July 13, 1980, is placed on record. - (For a subsequent record cf. *OA* No. 3640).
- (3618) SHUKLA, G.S. & P.K. MISHRA, 1980. Toxicity of organochlorine insecticides to preadult stages of *Brachythermis* [sic!] contaminata Fabr. *J. environ. Res.* 1(2): 17-22. - (Dept. Zool., Univ. Gorakhpur, Gorakhpur-273001, India). The toxicity of the chlorinated hydrocarbon insecticides, aldrin, endrin, DDT and BHC, was studied in larvae of *Brachythermis contaminata*. It was recorded at intervals of 24, 48, 72 and 96 hr. The slope values were 1.3959, 1.3886, 1.1854 and 1.1611 resp., and they were similar regardless the length of the treatment.
- (3619) SOMEYA, T., 1980. [Mortonagrion hirosei in Iwanuma, Miyagi Prefecture]. *Nature and Insects* 15(12): 30-31. (Jap.). - (2-4313-9 Ishokawa-cho, Mito, Ibaraki Pref., 310, JA). The habitat is a muddy brackish marsh, with dense reed vegetation, and the adults occur during mid June - late July.
- (3620) SOMEYA, T. & M. HIROSE, 1980. [Dragonflies of Ibaraki Prefecture]. *Okeru* (50): 255-280. (Jap.). - (First Author: 2-4313-9 Ishikawa-cho, Mito, Ibaraki, 310, JA; - Second Author: 3-4-7 Daikucho, Mito, Ibaraki, 310, JA). 90 spp. are listed, incl. *Davidius m. moiwanus*, *Aeschnophlebia anisoptera*, *Aeshna mixta*, *Anaciaeschna martini*, and *Sympetrum uniforme*. - (*Abstracter's Note*: The type locality of *Mortonagrion hirosei* Asahina, i.e. Hinuma nr Mito, is also situated within this prefecture. Cf. *OA* No. 3588).
- (3621) SONEHARA, I., 1980. [A male triple connection in *Epitheca bimaculata sibirica*]. *Nature and Insects* 15(14): 25. (Jap.). - (Tazawa 5035, Toyoshima-machi, Minamiazumi-gun, Nagano Pref., 399-82, JA). 2 fighting territorial males have fallen into water, the third territorial male dashed there, and a triple connection ensued. Subsequently they flew up to 0.6 m above the surface. The specimens were taken for sex identification.
- (3622) SONEHARA, I., 1980. [Report on the prohibition of dragonfly collecting at the Ura-oike Pond, Komoro, Nagano Prefecture]. *Nature and Insects* 15(10): 27. (Jap.). - (Tazawa 5035, Toyoshima-machi, Minamiazumi-gun, Nagano Pref., 399-82, JA). The pond is situated within the southwestern distribution range [in Japan] of the rare *Aeshna*

mixta. Due to the activities of collectors (more than 80 of these visited it during Aug.-Oct. 1976 alone!), the population of this sp. has significantly decreased, and its very existence has been threatened by agricultural planning. Upon the author's request, the Komoro City Board of Education has recently undertaken the necessary protective measures.

primary function of this endocrine system. The resulting physiological model of emergence determination involves major evolutionary costs. The nature of the environmental variability determines the life-history model. External changes are transformed through specific physiological mechanisms, into the particular life-history strategy of the insect.

- (3623) VERVOORT, W., 1980. Verslag van de Directeur over het jaar 1978. Rijksmuseum van Natuurlijke Historie te Leiden. [Annual report of the Director, 1978. State Museum of Natural History, Leyden]. *Ned. Rijksmus.* 100: 209-274. (Dutch). - (Rijksmus. Nat. Hist., Raamsteeg 2, P.O. Box 9517, 2300 RA Leiden, NL).

The Odon. Dept is dealt with on pp. 255-256. Head of the Department is Dr P.H. van Doesburg, assisted by the Senior Assistant C. Scheffer. The former Curator, Dr D.C. Geijskes was regularly working in the Department, and the former Curator, Dr M.A. Liefinck, was a regular research guest. Among the very numerous acquisitions, the following significant material should be mentioned (incl. the name of the donator): Asia, various localities (Dr D.A.L. Davies), Australia (R.A. Maas, Dr J.A.L. Watson, incl. paratype *Notolibellula bicolor*), Bhutan (Dr W. Wittmer), Ceylon and Salomon Islands (Dr O.S. Flint), Gabon (Dr J. Legrand), India, various localities (Dr V.K. Gupta, M.A.R. Lahiri, F. Smetacek), Jordan (H. Elmosa), New Guinea and Papua (P. Blum & H. Lohmann, larvae and 1 new sp., T.W. Donnelly), etc.

- (3625) YODOE, K., 1980. [New record of *Trigomphus melampus* in Shimane Prefecture]. *Nature and Insects* 15(14): 9. (Jap.). - (1-7 Hitsugaoka 2-chome, Matsue, Shimane Pref., 690, JA).

It has been taken at Mizuho-cho, Ohchi-gun (alt. 380 m), Japan, June 24, 1979.

1981

- (3626) BLANCKE, C., H. STÖKL, K. LUTZ & M. SCHLORF, 1981. Dosenmoor 1981. *Naturk. Beitr. DJN, Hamburg* 1981 (8): 25-32. (Germ.) - (Hildesheimerweg 2 a, D-2000 Hamburg-61, FRG).

A list is given of 7 odon.spp. occurring in the Dosenmoor, Hamburg district.

- (3627) BOULARD, M., 1981. Les bases morphologiques de l'attelage en tandem chez *Coenagrion scitulum* R. (Odonata, Zygoptera). *Annls Soc. ent. Fr. (N.S.)* 17(4): 429-440. (With Engl. s.) - (*Lab. Ent., Mus. Natn. Hist. Nat., 45 rue Buffon, F-75005 Paris*).

The morphology and function of the male and female structures involved in the tandem grasp of *C.scitulum* are described, figured and discussed.

- (3624) WONG, J., 1980. Models for the evolution of life history in aquatic insects. *Abstr. Pap. 2nd int. Congr. syst. & evol. Biol., Vancouver*, p.398. - (Dept. Zool., Univ. Toronto, Ont. M5S 1A1, CA).

[Verbatim]: The control of moulting and metamorphosis in insects is determined by the relative titers of ecdysone and juvenile hormone. In certain odonates the control of juvenile hormone has evolved a secondary function, which is to extend the normal suppression of tissue differentiation so that emergence time may be delayed. Such a secondary function may be in conflict with the

- (3628) CHAO, H.-f., 1981. Odonata. In: S. Chen [Ed.], *Insects of Xizang, Vol.1*, pp. 53-55. China Sci. Press, Peking. (Chin., with Engl.s.) - (*Lab. Biol. Control, Fujian Agric. Coll., Fuzhou, Fujian, P.R. China*).

An annotated list is given of 20 spp., collected by the 'Comprehensive Scientific Expedition to the Qinghai-Xizang Plateau' of the Academia Sinica at various localities in Tibet (alt. 800-4280 m).

- (3629) CSIBY, M., 1981. A Soproni Tómalom

- Odonata faunaja. (Die Odonaten-Fauna des Mühlenteiches von Sopron). *Alpokalja természeti képe (Das Naturbild des Voralpengebietes)*, Szombathely 1: 73-74. (Hung., with Germ. s.). - (Author deceased).
25 spp. are listed, incl. *Coenagrion scitulum* and *Leucorrhinia pectoralis*. - (*Abstracter's Note*: This is the abstract of a paper presented at the 1st 'Konferenz der Forscher des [Ungarischen] Voralpengebietes'; it was published in 1982, not in 1981, as erroneously indicated on the cover. In Csiby's bibliography, published in *Notul. odonatol* 1(9) [1982]: 155-156, this paper is listed under 1982 a; the title as given there is not correct, and the term 'A:' should be omitted from the journal name).
- (3630) DANKS, H.V., 1981. *Arctic arthropods. A review of systematics and ecology with particular reference to the North American fauna*. Ent. Soc. Canada, Ottawa, VIII+608 pp. - (Biol. Surv. Project, Ent. Soc. Can., 1320 Carling Ave., Ottawa, Ont. K1Z 7K9, CA).
In the annotated list of North American Arctic spp. and their distribution, on p. 416, 6 odon. spp. are listed. (For a bibliography cf. *OA* No. 3413).
- (3631) DÉVAI, G., 1981. Újabb adatok a Barcsi borók szitakötő (Odonata) faunájához. (New data on the dragonfly fauna (Odonata) of the Juniper Woodland of Barcs, Hungary). *Dunántúli Dolg. Term. Tud. Sor.* 2: 53-58. (Hung., with Engl. and Germ. s's). - (Weszprémi u. 4 I, 4, HU-4028 Debrecen).
This is the third in a series of papers on the odon. fauna of the Juniper Woodland of Barcs (cf. *OA* Nos 2447, 2448), reporting on the results of the 1978-1980 field work. Among the 32 spp. listed, *Calopteryx splendens* and *Anax parthenope* are new for the area.
- (3632) DÉVAI, G. & J. KÁTAI, 1981. The Odonata fauna of the Hortobágy National Park. *Fauna Hortobágy Natn. Park* 1: 43-46. - (Weszprémi u. 4 I/4, HU-4028 Debrecen).
An annotated list is presented of 39 spp. so far recorded from the Hortobágy National Park, Hungary. - (*Abstracter's Note*: *Crocothemis s. servilia* should read *C. erythraea*).
- (3633) DONATH, H., 1981. Die Auswirkungen des Winters 1978/79 auf die Populationen von *Sympecma fusca* (Van der Linden) in der nordwestlichen Niederlausitz (Odonata, Lestidae). *Ent. Ber., Berl.* 1981(2): 49-52. - (Jahnstr. 6, DDR-7960 Luckau, GDR).
In the territory of the present German Democratic Republic the 1978/1979 winter was among the 8 coldest winters in the 20th century. In the Niederlausitz (= Lower Lusatia) it considerably affected the number and the strength of *S. fusca* populations. Based on systematic observations for the period, 1977-1980, the effects of the severe winter are described, analyzed and discussed.
- (3634) EDA, S., 1981. New records of *Somatochlora arctica* and other Odonata from Norikura, Nagano Prefecture. *New Entomologist* 30(2): 75. - (Jap., with Engl. title). - (3-4-25 Sawamura, Matsumoto, Nagano, 390, JA).
Records of *S. arctica*, *Cordulia aenea amurensis*, and *Sympetrum s. speciosum* are listed.
- (3635) EDA, S., 1981. [Photographs of *Epiophlebia superstes* in the prewar literature]. *Gekkan Mushi* (126): 6-9. (Jap.). - (3-4-25 Suwamura, Matsumoto, Nagano, 390, JA).
Bibliographic data on 9 Japanese papers published in the period 1929-1939, are given along with brief comments and reproductions of photographs of *E. superstes* included therein - (For the title of a paper on the same subject, by the same author, but without photographs cf. *OA* No. 2739).
- (3636) HIRUKAWA, N., 1981. New localities of a dragonfly, *Nannophya pygmaea* in Nagano Prefecture (I). *New Entomologist* 30(2): 76-77. (Jap., with Engl. title). - (6161 Tamoto, Yasuoka-mura, Shimoina-gun, Nagano Pref., 399-18, JA).
3 localities are stated - (*Abstracter's Note*: In *OA* No. 2464, the author's name is erroneously given as K. Hirukawa).
- (3637) JURITZA, G., 1981. Erster Entwurf einer Roten Liste der in Baden-Württemberg gefährdeten Libellenarten (Odonata). *Veröff. Naturschutz Landschaftspflege Bad.-Württ.*

- 53/54: 149-154. - (Bot. Inst. I, Univ. Karlsruhe, Kaiserstr. 12, D-7500 Karlsruhe FRG). This is a preliminary draft of the odon. Red List for the State of Baden-Württemberg, Federal Republic of Germany. It contains a classed list of 49 spp., a discussion on possible causes of a threat, and annotations on a number of spp.
- (3638) [KOYAMA, N., S. EDA, T. ANDO, S. FUJISAWA, F. ITO, M. KURATA, D. KURIBAYASHI, W. MIYATA, I. SONEHARA & T. TAKIZAWA], 1981. [Additions to the 'Dragonflies of Nagano Prefecture' (1)]. *New Entomologist* 30(2): 78. (Jap.). - (First author: Fac. Textile Sci. & Technol., Shinshu Univ., 3-15-1 Tokida, Ueda, Nagano Pref., 386, JA).
Aeschnophlebia longistigma and Onychogomphus viridicostus should be added to the list of taxa appearing in the volume listed in *OA* No. 2072. Locality data and bibliographic references are provided along with those referring to 5 recent regional records of Nannophya pygmaea.
- (3639) [KOYAMA, N., S. EDA, T. ANDO, S. FUJISAWA, F. ITO, M. KURATA, D. KURIBAYASHI, W. MIYATA, I. SONEHARA & T. TAKIZAWA], 1981. [Additions to the 'Dragonflies of Nagano Prefecture' (2)]. *New Entomologist* 30(4): 96. (Jap.). - (First author: Fac. Textile Sci. & Technol., Shinshu Univ., 3-15-1 Tokida, Ueda, Nagano Pref., 386, JA).
Supplementary notes on Epiophlebia superstes, Anisogomphus maacki, Davidius fujiama, Stylogomphus suzukii and Oligoaeschna pryeri, to be added to the data appearing in the volume listed in *OA* No. 2072.
- (3640) KURIBAYASHI, D., 1981. Dragonflies of Aeschnophlebia longistigma Selys and Stylogomphus suzukii Oguma were collected in Nagano city. *New Entomologist* 30(1): 26. - (Jap., with Engl. title). - (Koshoku Junior High Sch., 100 Sakurada, Koshoku, Nagano Pref., 387, JA).
This is the second record of A.longistigma in Nagano Pref., Japan (Nagano City, July 31, 1980; for the first record cf. *OA* No. 3617). Another specimen was noticed at the same locality, along with a number of S.suzukii, on Aug. 7, 1980.
- (3641) LANDMANN, A., 1981. Beitrag zur Odonatenfauna Nordtirols (Insecta: Odonata, Libellulidae). *Ber. naturw.-med.Ver.Innsbruck* 68: 107-109. (With Engl. s.). - (Inst. Zool., Univ. Innsbruck, Universitätsstr. 4, A-6020 Innsbruck).
The literature on the odon.fau. of North Tyrol, Austria is reviewed, and records of Orthetrum brunneum and Libellula depressa (Sept. 4, 1980) are discussed. The latter is of interest in view of the late season.
- (3642) LUTZ, K. & R. VÖLKER, 1981. Himmelmoor 1981. *Naturk. Beitr. DJN, Hamburg* 1981 (8): 3-7. - (Volksparkstr. 43, D-2000 Hamburg-54, FRG).
A list is given of 14 odon. spp. occurring at the Himmelmoor nr the city of Hamburg.
- (3643) NARAOKA, H., 1981. Reproductive behaviour of a dragonfly, Sympetrum eroticum eroticum Selys (Libellulidae, Odonata) (1). *New Entomologist* 30(2): 14-21. (Jap., with Engl. s.). - (36-71, Aza Motoizumi, Oaza Fukunoda, Itayanagi-cho, Kita-gun, Aomori Pref., 038-36, JA).
The reproductive behaviour was studied in detail at a small pond in the Aomori City, Japan. The territorial type is 'perting', the copulation is completed after 'perting', arrival at the oviposition site in copula, the oviposition occurs in tandem. (For the definitions cf. *OA* No. 892).
- (3644) NENTWIG, W., 1981. Insekten, Spinnennetze und Netzspinnen. Inaug.-Diss. Philipps-Univ. Marburg/Lahn. *Marburg. ent. Publ.* 1(5):1-139. - (Author's address not stated).
Using 6 collection techniques, the composition of a local invertebrate fauna was studied from the point of view of its potential role as spider prey. Coenagrion puella, Aeshna sp. and Sympetrum danae are the only odon. spp. mentioned.
- (3645) PRITYKINA, L.N., 1981. Novye triasovye strekozy Sredney Azii. [New Triassic dragon-

flies form Central Asia]. In: V.N. Vishnyakova, G.M. Dlusskiy & L.N. Pritykina, *Novye iskopaemye nasekomye s territorii SSSR*, pp. 5-42, pls 1-10. Nauka, Moscow. (Russian). - (Inst. Palaeontol., USSR Acad. Sci., Profsoyuznaya 113, USSR-117321 Moscow).

Using the nomenclature and classification as outlined briefly in the paper listed in *OA* No. 3274, 1 new infraorder, 3 superfamilies, 5 families, 14 genera and 29 new spp. are described and illustrated from various Triassic localities of Central Asia, viz.: Meganeuromorpha: Triadotypidae: *Triadotypus sogdianus* sp.n.; - Triadophlebiomorpha infraorder n.: Triadophlebioidea superfam.n.: Triadophlebiidae fam.n.: *Triadophlebia* gen.n.: *T.madygenica* sp.n., *T. distincta* sp.n., *T. minuta* sp.n., *T. magna* sp.n., *T. honesta* sp.n., *T. modica* sp.n.; *Neritophlebia* gen.n.: *N. elegans* sp.n., *N. vicina* sp.n., *N. longa* sp.n.; *Cladophlebia* gen.n.: *C. parvula* sp.n., *C. brevis* sp.n.; *Paurophlebia* gen.n.: *P. lepida* sp.n., *P. angusta* sp.n.; *Nonymophlebia venosa* gen.n., sp.n.; *Mitophlebiidae* fam.n.: *Mitophlebia enormis* gen.n., sp.n.; *Zygophlebioidea* superfam.n.: *Zygophlebiidae* fam.n.: *Zygophlebia ramosa* gen.n., sp.n.; *Zygophlebiella curta* gen.n., sp.n.; *Mixophlebia mixta* gen.n., sp.n.; *Cryptophlebia sinusa* gen.n., sp.n.; *Xemonophlebioidea* superfam.n.: *Xemonophlebiidae* fam.n.: *Xemonophlebia ornata* gen.n., sp.n.; - *Kennedyomorpha*: *Kennedyidae*: *Kennedyia carpenteri* gen.n., sp.n.; *K. gracilis* sp.n.; *Protomyrmeleontidae*: *Terskeja* gen.n.: *T. paula* sp.n., *T. pumilio* sp.n., *T. tenuis* sp.n.; *Batkeniidae* fam.n.: *Batkenia pusilla* gen.n., sp.n.; - *Heterophlebiomorpha*: *Triasolestidae*: *Triasolestodes asiaticus* gen.n., sp.n.; *Triasoneura primitiva* sp.n.

- (3646) REDMOND, B.L. & J. HOCHBERG, 1981. The stylostome of *Arrenurus* spp. (Acari: Parasitengona) studied with the scanning electron microscope. *J. Parasitol.* 67(3): 308-313. - (Electron Microsc., Dept. Biol., St. Univ. New York, New Paltz, N.Y. 12562, USA). The acarine material originates from *Ischnura verticalis*.

- (3647) ROWE, R.J., 1981. A new species of

Xanthocnemis Tillyard (Odonata: Coenagrionidae) from the Chatham Islands, New Zealand. *Rec. Auckland Inst. Mus.* 18: 205-209. - (Dept. Zool., Univ. Canterbury, Christchurch-1, NZ).

X. tuanuii sp.n. is described and illustrated (♂ holotype, ♀ allotype, in copula with holotype: forest stream on S bank of the Tuku-a-tamatea R., Chatham; 22-1-1980; deposited in the Auckland Inst. & Mus.; various paratypes of both sexes). The most obvious point of contrast with *X. zealandica* is the shape of the male superior appendage. Also the percentage of androchrome females in the new sp. is considerably higher than in *X. zealandica*.

- (3648) SARKAR, N.K. & D.P. HALDAR, 1981. Cephaline gregarine *Actinocephalus ellipsoidus*, sp.n. parasite of an odonate *Ischnura delicata* Hagen from India. *Acta protozool.* 20(1): 121-128. - (Dept. Zool., Rishi Bankim Chandra Coll., Naihati-743165, 24 Parganas, West Bengal, India). *A. ellipsoidus* sp.n. (Protozoa: Sporozoa) is described and illustrated from the midgut of *I. delicata*. It is compared with the other 2 congeneric spp. described from the Odon.

- (3649) SARKAR, N.K. & D.P. HALDAR, 1981. Cephaline gregarine (Protozoa: Sporozoa) *Ramicephalus olivacum*, sp.n. parasite of an odonate *Ceriagrion olivacum* Laidlow from India. *Acta protozool.* 20(2): 185-192. - (Dept. Zool., Rishi Bankim Chandra Coll., Naihati-743165, 24 Parganas, West Bengal, India).

R. olivacum is described and illustrated from the midgut of *Ceriagrion olivacum* Laidl. from West Bengal.

- (3650) SARKAR, N.K. & D.P. HALDAR, 1981. Cephaline gregarine *Tetractinospora victoris*, gen.n., sp.n., parasite of an odonate *Ceriagrion coromandelianum* (Fabricius) from India. *Acta protozool.* 20(2): 193-200. - (Dept. Zool., Rishi Bankim Chandra Coll., Naihati-743165, 24 Parganas, West Bengal, India).

The morphology and life history of the new sp. are described and illustrated. *Tetractinospora* is characterized by globular epimerite with

several vertical lamellae and biconical spores with 4 short sharp and stout spines, 2 at each pole. A comparative study of the different genera, incl. the new one, under the Acanthosporinae Léger, 1892 emend. Grassé, 1953 is also presented to establish the distinctiveness of the new genus.

- (3651) SARKAR, N.K. & D.P. HALDAR, 1981. Observations on four new species of actinocéphalid gregarines (Protozoa: Sporozoa) under a new genus *Odonaticola* from odonate insects. *Arch. Protistenkd.* 124(3): 288-302. - (Dept. Zool., Rishi Bankim Chandra Coll., Naihati-743165, 24 Parganas, W. Bengal, India).
A new genus, *Odonaticola*, is proposed to include 4 new spp. of cephaline gregarines from the midgut of various odon.spp. from West Bengal, India, viz. *O.hexacantha* sp.n. (type sp.) (from *Brachythemis contaminata*), *O. longicollara* sp.n. (from *Diplacodes trivialis*), *O.orthetri* sp.n. (from *Orthetrum sabina*), and *O.rodgii* sp.n. (from *Neurothemis t.tullia*).
- (3652) SARKAR, N.K. & D.P. HALDAR, 1981. Observations on two new species of cephaline gregarine (Protozoa: Sporozoa) of the genus *Ancyrophora* Léger, 1892 from odonate insects. *Z. Parasitenkd.* 65(2): 217-223. - (Dept. Zool., Rishi Bankim Chandra Coll., Naihati-743165, 24 Parganas, West Bengal, India).
The morphology and life history of *A.ischnuræ* sp.n. and *A.ovoides* sp.n. are described from the midguts of resp. *Ischnura senegalensis* and *I.delicata*, from West Bengal, India. A brief discussion on the diagnostic features of *Ancyrophora* Léger, 1892 is also included.
- (3653) SAVARD, M., 1981. Notes sur la présence de *Macromia illinoensis* (Macromiidae, Odonata) au Saguenay-Lac-Saint-Jean. *Fabrerries* 8(1): 1-3. - (245, rue Melançon ouest, Alma, Quebec, G8B 4G2, CA).
The record of *M.illinoensis* on the Lac Sébastien, Saint-David-de-Falardeau, Chicoutimi Co., Quebec, Canada (July 24, 1980) is discussed.
- (3654) SHUKLA, G.S. & P.K. MISHRA, 1981. Rogor toxicity to preadult stages of *Brachythermis [sic] contaminata* (Fabr.). *J.adv. Zool.* 2(1): 57-60. - (Dept Zool., Univ. Gorakhpur, Gorakhpur-273001, India).
Rogor was used to assess LC₅₀ values to the larvae of *Brachythermis contaminata*. For 48 hr treatment the LC₅₀ value was 0.100 x 10⁻⁴ ppm. The safe harmless concentrations were also calculated.
- (3655) SHUKLA, G.S. & P.K. MISHRA, 1981. Toxicity of six organophosphorous insecticides on nymphs of dragon fly, *Brachythermis [sic] contaminata* (Fabr.). *J.environm. Biol.* 2(1): 11-19. - (Dept. Zool., Univ. Gorakhpur, Gorakhpur-273001, India).
The insecticides Diazinon, Dimecron, Metasystox, Methylparathion, Navan and Parathion were used to assess LC₅₀ values to the larvae of *Brachythermis contaminata*. For 48 hr of treatment these values were 0.5385x10⁻³ ppm, 0.1045x10⁻² ppm, 0.8808x10⁻³ ppm, 0.8215x10⁻³ ppm, 0.1941x10⁻³ ppm and 0.1524x10⁻⁴ ppm, respectively. It was seen that Parathion was most toxic and Dimecron was the least toxic. Safe harmless concentrations for these insecticides were also calculated. (Authors).
- (3656) STONE, S.L. & R.L. CHAPPELL, 1981. Local circuit generation of OFF responses in photoreceptors and second order cells. *Invest. Opth. Vis. Sci.* (Suppl.) 1981, 1 p. [reprint]. - (Dept. Biol. Sci., Hunter Coll., City Univ. New York, 695 Park Ave., Box 210, New York, N.Y. 10021, USA).
[Verbatim]: Previously reported anatomical, electrophysiological and pharmacological studies indicate that the prominent OFF oscillations recorded intracellularly from photoreceptors and second-order neurons (L-neurons) of the dragonfly ocellar retina are generated by synaptic interactions within its single plexiform layer. In the present note additional evidence supporting this hypothesis is presented. - In photoreceptors, a transient OFF hyperpolarization was observed when recording close to the region of the soma and receptor terminal but was not seen when recording more distally, closer to the rhabdomeric end of the cell. The receptor OFF response was enhanced by increasing the duration of test flashes and could

be induced in dark-adapted preparations in response to antidromic stimulation of the ocellar nerve. This photoreceptor response to antidromic stimulation was blocked during illumination (when the L-neurons are hyperpolarized) and for up to 800 ms following light off (when the conductance in the L-neuron is increased). Neither the hyperpolarizing OFF response in the photoreceptor nor the depolarizing OFF response in the L-neuron can be attributed to electrical activity originating in the brain since they were not eliminated when isolated from the brain by cutting the ocellar nerve. Furthermore, severing the ocellar nerve did not abolish the large conductance increase associated with the L-neuron OFF response. - Although the antidromic stimulation experiments support the idea of synaptic feedback from L-neuron dendrites onto receptor terminals, the prolonged conductance increase at 'OFF' in the L-neuron leads to the suggestion that lateral synaptic interactions between adjacent L-neuron dendrites may tend to depolarize the L-neuron following light off.

- (3657) STONE, S.L. & R.L. CHAPPELL, 1981. Synaptic feedback onto photoreceptors in the ocellar retina. *Brain Res.* 221: 374-381. - (Dept. Biol. Sci., Hunter Coll., City Univ. New York, 695 Park Ave., Box 210, New York, N.Y. 10021, USA).

Intracellular studies from photoreceptors and second-order neurons in the dragonfly ocellar retina suggest that the hyperpolarizing OFF oscillation in the photoreceptor reflects synaptic feedback from second-order neurons onto receptor terminals. The receptor OFF response was normally observed when recording more proximally, closer to the nuclear and synaptic region, but it was not seen when recording more distally, closer to the rhabdomeric end of the cell. Both the hyperpolarizing OFF response in the receptor and the depolarizing OFF response in the second-order cell are apparently generated in the ocellar plexiform layer because they were not eliminated when the second-order processes were isolated from the brain. In both intact and cut nerve preparations, the receptor OFF response was blocked by curare and enhanced by picrotoxin, the same drugs that

were reported to selectively modify the response of the second-order cell. In addition, a normal-appearing OFF response was recorded intracellularly from the dark-adapted photoreceptor in response to the application of brief hyperpolarizing current pulses to the ocellar nerve. These results support a model of sign-conserving feedback from second-order neurons onto receptor terminals and are consistent with the hypothesis that the receptor transmitter may be acetylcholine and the feedback transmitter could be GABA. (Authors).

- (3658) TERZANI, F., 1981. Note di odonatofauna toscana. *Redia* 64: 103-115. (With Engl. s.). - (Mus. Zool. 'La Specola', Univ. Firenze, Via Romana 17, I-50125 Firenze).

Annotations on morphology, biology and distribution are given for 10 spp. These include the description and figures of terminalia of *Cordulegaster pictus intermedius* from the Firenze prov., and a comparison of morphometric data of *Ceragrion tenellum* from various Italian populations and from the surroundings of Dubrovnik, Dalmatia, Yugoslavia.

- (3659) VERVOORT, W., 1981. Verslag van de Directeur over het jaar 1979. Rijksmuseum van Natuurlijke Historie te Leiden [Annual report of the Director, 1979. State Museum of Natural History, Leyden]. *Ned. Rijksmus.* 101: 175-221. (Dutch). - (Rijksmus. Nat. Hist., Raamsteeg 2, P.O. Box 9517, 2300 RA Leiden, NL).

The Odon. Dept is dealt with on pp. 206-207. The staff situation remained the same as mentioned in *OA* No. 3623. In view of the extraordinary importance of the Department, the staff situation is far from being satisfactory. Various acquisitions include large material obtained through Dr M.A. Liefinck.

- (3660) VERVOORT, W., 1981. Verslag van de Directeur over het jaar 1980. Rijksmuseum van Natuurlijke Historie te Leiden. [Annual report of the Director, 1980. State Museum of Natural History, Leyden]. *Ned. Rijksmus.* 102: 195-250 (Dutch). - (Rijksmus. Nat. Hist., Raamsteeg 2, P.O. Box 9517, 2300 RA Leiden, NL).

The Odon. Dept is dealt with on pp. 228-229.

The staff situation remained the same as in *OA* No. 3623. Among the various significant acquisitions, the following should be mentioned (incl. the name of the donator): Australia (J.A.L. Watson), Chile (T. Cekalovic), Fiji (T.W. Donnelly), Madagascar (P. Stelleman), The Philippines (R.B. Rodriguez), etc.

- (3661) ZÜHLKE, D., [Ed.], 1981. *Burger und Lübbenauer Spreewald. Ergebnisse der heimatkundlichen Bestandsaufnahme in den Gebieten von Burg und Lübbenau*. XII+220 pp. Akademie-Verlag, Berlin. - (Editor: Arbeitsgr. Heimatsforsch., Inst. Geogr. & Geoökol., Akad. Wiss., Augustusstr. 2, DDR-8010 Dresden, GDR).

The Lübbenauer Spreewald is a small area in the Niederlausitz (Lower Lusatia), situated halfway between Dresden and Berlin, German Democratic Republic. The Lower Lusatia is the home of the last remnants (some 200.000 souls) of the autochthonous westernmost Slavic people, the Sorbians (=Lusatians or Wendish). On p. 70 it is stated that 48 odon. spp. are known from the Spreewald; some of these are listed, and the Sorbian dragonfly folk names are stated, viz. 'kóniky' (= 'little horses') and 'kobilica' (derived from the term 'kobyła' i.e. 'mare').

1982

- (3662) ASAHINA, S., 1982. Survey of the relict dragonfly *Epiophlebia laidlawi* Tillyard in Nepal, May 1981. *Rep. Odon. Specialist Group Int. Un. Conserv. Nat.*, No. 1, 10 pp., 1 pl. incl. - (Takadanobaba 4-4-24, Shinjuku-ku, Tokyo, 160, JA).

An account is given of the investigation of the *E.laidlawi* habitat in the Siwapuri Hills, Kathmandu Valley (alt. 2300-2732 m), May 22-28. This is probably the only habitat of this sp. in the Kathmandu Valley. The flight season is probably between May and early July, and the oviposition plant is likely to be *Elastostema hookerianum*. The conservancy problematics of the area is briefly discussed.

- (3663) BAKER, R.L., 1982. Effects of food abundance on growth, survival and use of space by

nymphs of *Coenagrion resolutum* (Zygoptera). *Oikos* 38: 47-51. (With Russ. s.). - (Inst. Anim. Resource Ecol., Univ. British Columbia, 2204 Main Mall, Vancouver, Brit. Columbia, V6T 1W5, CA).

In the laboratory, larvae of *C. resolutum* fed large and frequent meals grew faster, emerged earlier and had higher survivorship than those fed small and less frequent meals. When given a choice of feeding areas, larvae tended to remain near areas of food concentration, though this has not always been the case.

- (3664) BELLE, J., 1982. Odonata collected in the Canary Islands. *Ent. Ber., Amst.* 42(5): 75-76. - (Onder de Beumkes 35, 6883 HC Velp, NL). Material collected Feb. 15-24, 1981 in the Gran Canaria is placed on record. *Ischnura saharensis* is new to the Canary Islands, and *Anax parthenope* and *Hemianax ephippiger* are recorded for the first time from Gran Canaria. A tabular review is given of the 11 spp. known to occur in the archipelago, and the regional bibliography is supplied.

- (3665) CANNINGS, R.A., 1982. Dragonfly days. *Nature Canada* 11(2): 12-17. - (Dept. Ent., Brit. Columbia Prov. Mus., Victoria, B.C., V8V 1X4, CA).

A well-balanced account on the biology of dragonflies, directed at the general reader, and illustrated by a number of colour photographs.

- (3666) CHAPMAN, M.A., 1982. The fauna of peaty lakes in the Waikato Valley. *N.Z. Ent.* 7(3): 283-286. - (Dept Biol. Sci., Waikato Univ., Private Bag, Hamilton, NZ).

There are over 50 lakes in the Waikato Valley between Karapiro and Te Kauwhata, New Zealand. The history, limnology and biotic communities of the peaty lakes studied are briefly outlined, and a list of the recorded Odon. (5 spp.) is given.

- (3667) *CONTACTBLAD NEDERLANDSE LIBELLENONDERZOEKERS* [Newsletter of the Dutch Dragonfly Workers], No.3 (Apr., 1982). Issued by the Werkgroep Nederlandse Libellenonderzoekers (Association of the Dutch Dragonfly Workers), Bussum: edited by M.

Verdonk & J.W. Schoorl. — (Dutch). — Subscription for 1982: Hfl. 11,-. — (c/o M. Verdonk, Florialiaaan 47, 1402 NJ Bussum, NL; - for order conditions cf. *OA* No. 3214). The 'Editorial' and various news items, related to the Netherlands Section of the European Invertebrate Survey (*M. Verdonk*), Dragonfly Study Group of the Netherlands Youth Federations (*L. Beukeboom & H. Oloff*), and to the Seventh Colloquium of Dutch Dragonfly Workers [Leiden, May 8, 1982] (*M. Wasscher*), are followed by 2 technical papers, viz.: *Wasscher, M.* (I.B. Bakkerlaan 117-11, 3582 XP Utrecht, NL): Nederlandse libellenamen [Dutch vernacular dragonfly names] (4-8): - *Hogerheijde, H.* (Afd. Dialectologie, P.J. Meertens-Inst., P.O. Box 19888, 1000 GW Amsterdam, NL): Insect en dialect: benamingen voor de libel in de Nederlandse dialecten [Insect and dialect: the dragonfly terminology in the Dutch dialects] (9-17, map incl.). - The *anonymous* section of 'Observations' (18-19) contains a list of records (1979-1981) of 8 locally interesting spp. (contributed by various collectors), and a note on the migration of *Libellula quadrimaculata* [Peize, May 21, 1981] (by *P. Venema*). - The list of the addresses of the 23 new members of the Werkgroep concludes the issue.

- (3668) CORBET, P.S., 1982. Water lizards and aerial dragons. *Contact, Univ. Dundee* 7(3): 47-50. - (Dept Biol., Univ. Dundee, Dundee, DDI 4HN, UK).

Identic to that listed in *OA* No. 3517, but with a different portrait and without the list of slides used in the address.

- (3669) DE SOUZA BUENO, A.M., 1982. *Estudos cromossômicos na orden Odonata*. VI+140 pp. M.Sc.thesis, Univ. Estad. Paulista, Rio Claro. (Port., with Engls.). - (Dep. Biol., Univ. Fed. Santa Catarina, Caixa Postal 476, BR-88000 Florianópolis, S.C., Brazil). The male germ cell chromosomes of 50 spp. from the Brazilian states of Acre, Rio de Janeiro, Sao Paulo and Santa Catarina are described and illustrated. Among these, 21 (asterisked) were not studied earlier. The following is the list of taxa studied, incl. the chromosome numbers and the statement on the

occurrence of the *m*: Coenagrionidae: *Meleptobasis selysi Santos** ($n=14,m$), *Leptagrion perlongum Calv.** ($n=14$), *Ischnura fluviatilis Sel.* ($n=14,m$), *Enallagma cheliferum Santos* ($n=14$), *Acanthagrion minarum Sel.* ($n=14$), *Oxyagrion simile Costa** (Boracéia and Itatiaia $n=14$), *O. evanescoens Calv.** ($n=14$), *O. hempheli Calv.** ($n=14,m$; $15,m$), *Argia croceipennis Sel.** ($n=13,m$); - Lestidae: *Lestes paulistus Calv.** ($n=13,m$); - Megapodagrionidae: *Megapodagrion conortum Sel.* ($n=13,m$), *Heteragrion sp. a* ($2n=26$, $n=12$, 13), *Heteragrion sp. b* ($2n=26$, $n=13$); - Calopterygidae: *Hetaerina carnifex Sel.** ($n=13,m$; $n=14$), *H. brightwelli Sel.** ($n=13,m$); - Gomphidae: *Progomphus intricatus* (Hag.) ($n=12$), *Phyllocyca sp.* ($n=12$); - Aeshnidae: *Staurophlebia r. reticulata Kirby** ($2n=27$, $n=14,m$); - Libellulidae: *Orthemis ferruginea Uhler* (Boracéia: $n=12$; Florianópolis: $2n=23$, $n=12$), *Dasythemis venosa Calv.* ($n=14,m$), *D. minki Karsch** ($n=13,m$), *Perithemis lais Hag.* ($n=9$), *P. mooma Kirby* ($n=13,m$), *Uracis fastigiata Erichson** ($2n=25$, $n=13,m$), *Oligoclada laetitia Ris** ($n=11$, 12), *O. pachystigma Karsch** ($2n=23$, $n=12$, 13), *Micrathyrina hypodydima* (Calv.)* ($2n=23$, $n=12,m$), *M. starwiski Santos** ($2n=23$), *M. artemis Ris* ($2n=25$, $n=13,m$), *M. hesperis Ris* ($2n=25$, $n=13,m$), *M. catenata Calv.** ($2n=25$, $n=13,m$), *M. ocellata dentiens Ris* ($2n=25$, $n=13$), *Erythrodiplax anomala Brauer** ($n=13$, m), *E. castanea Ris* (Boracéia: $n=13,m$); *Cruzeiro do Sul*: $n=12$), *E. paraguayensis Foerst.* ($2n=25$, $n=12$, 13), *E. media Borrer* ($n=11,m$), *E. famula lativittata Borrer** ($n=13,m$), *E. pallida Ris** ($n=13,m$), *E. connata fusca Brauer*, 1868 (Boracéia and Florianópolis $n=13,m$), *E. juliana Ris** ($n=13$), *Rhodopygia cardinalis Kirby* ($2n=25$, $n=13,m$), *Brachymesia furcata Kirby* (Rio Claro and Florianópolis $n=13$), *Pantala flavescens Hag.* ($2n=25$, $n=13,m$), *Trapezostigma cophysa Sel.* ($2n=25$, $n=13,m$), *T. binotata Hag.* (Boracéia and Florianópolis $2n=25$, $n=13,m$), *T. abdominalis Ramb.* (Rio Claro and Boracéia $n=13,m$), *Dythemis multipunctata Kirby* ($2n=25$, $n=13,m$), *Macrothemis musiva Calv.* ($2n=26$, $n=13,m$), *M. hemichlora Kirby* ($2n=6$, $n=3$), *M. imitans*

Karsch ($2n=25$, $n=13$, m). — [Verbatim]: The m -chromosomes are considered as having been derived from a common ancestral form, from which they spread to the present populations. Chromosome rearrangements (numerical and morphological) were found at the species, population and individual levels. The reasons for the appearance of chromosomal polymorphism could not be determined but the phenomenon appears to be closely related to the nature of the odon. centromere. Chromosomal evidence was found in some spp. that favours the hypothesis of localized centromeres. However, much more work, using electron microscopy and banding techniques, should be done to clarify this point. Five kinds of chromosomal complements were identified that appeared through the mechanism of numerical reduction including: (1) the m -bivalents, (2) the m -bivalents of some populations, (3) the X univalent, (4) the X and m -bivalent and (5) other autosomes. The sex determination in most spp. is of the XO (δ)/XX(φ) type, save for 2 spp. that showed the neo-XY mode.

- (3670) DOMMANGET, J.-L., 1982. Premières considérations sur la faune des libellules (odonates) de la Brenne (Indre). *Bull. Soc. versail. Sci. nat.* (IV) 9(1): 1-13. - (7 rue Lamartine, F-78390 Bois d'Arcy).
Various aquatic habitats of the Brenne area, Dép. Indre, France are described and the regional odonate fauna is discussed. In all, 52 spp. were recorded during 1976-1981.

- (3671) DYAKONOV [D'YAKONOV], A.M., 1982 (réprint). *Nashi strekozy. Ekskursionnyy opredelitel'*. [Our dragonflies. A field guide]. Ekskursionnaya biblioteka. Gosud. Izdat., Moscow-Leningrad, 1926. II+72 pp. - Reprinted by: De Bosbespers, Oosterbeek & Scientia, Zutphen. (Russ.). - Price: Hfl. 22.50 net. - (Available from 'Scientia', P.O. Box 137, 7200 AC Zutphen, NL).

This slim volume is among the greatest bibliographic rarities in the Russian odonatological literature. Due to the political conditions prevailing in the USSR during the 1920's, very few, if any copies of the original edition

have ever found their way abroad. During the World-War-II Leningrad siege the stock has been destroyed, hence the booklet is hardly available even from the Soviet libraries. Though the largest, it is the least known odonatological work of Dyakonov. The present (photostat) reprint edition is technically very nicely produced. - The booklet is a field guide of the odon. fauna of the Leningrad district, giving a brief outline of the history and bibliography (1798-1922) of the regional odon. faunistics, a general characterisation of the Order, and identification keys (adults and larvae) to the regional taxa.

- (3672) GASSNER, D. & H. KOMNICK, 1982. The loop diuretic furosemide as a non-competitive inhibitor of $\text{Cl}^-/\text{HCO}_3^-$ -ATPases of vertebrate kidneys and insect rectum. *Comp. Biochem. Physiol.* (C)71(1): 43-48. - (Inst. Cytol., Univ. Bonn, Ulrich-Haberland-Str. 61 a, D-5300 Bonn-I, FRG).

(1) The effect of the diuretic drug furosemide was studied in detail on ouabain-insensitive, SCN^- and OCN^- sensitive $\text{Cl}^-/\text{HCO}_3^-$ -ATPase in homogenates from larval dragonfly rectum (*Aeshna cyanea*), frog (*Rana temporaria*) and mouse (*Mus musculus*) kidney. — (2) The *in vitro* inhibition by the drug studied on the HCO_3^- -activated enzyme is non-competitive with an inhibitor constant of $K_i = 4.3$ mM furosemide in the case of insect rectum and $K_i = 0.9$ mM furosemide in the case of frog and mouse kidney. — (3) Furosemide even at 10 mM concentration which completely inhibits the anion-dependent ATPase has only a little inhibitory effect on the Na^+/K^+ -ATPase of the 3 tissues. — (4) The data suggest that furosemide may affect an active chloride transport system involving a $\text{Cl}^-/\text{HCO}_3^-$ -ATPase. (Authors).

- (3673) IRSCH, W., 1982. Kiesgrube: Kleinod oder Schandfleck? *Tier Tierwelt* 1982 (3): 23-27. - (Fachber. Biol., Univ. Saarbrücken, D-6600 Saarbrücken, FRG).

General considerations are given on the fauna of the gravel pits in the area between Remersch and Wintringen on the Meuse R., Luxembour, incl. a reference to Odon. - (For

- an account of the odon. fauna of this locality cf. *OA* No. 3119; for a small 'monograph' on gravel pits as habitat of aquatic organisms, directed at the general reader cf. *OA* No. 3468).
- (3674) KOPPELSTÄTTER, H., 1982. Rückzugsfläche für seltene Vögel, Schmetterlinge, Libellen und Pflanzen. Schutz der Auwälder als einzigartige Naturrefugien. *Bad. neuste Nachr., Karlsruhe* 37 (48): 1 p.; issue of Feb. 27. - (c/o Publishers: Badendruck GmbH, Postfach 1469, Lammstr. 1b-5, D-7500 Karlsruhe, FRG).
Crocothemis erythraea is reported from the Upper Rhine (the Rastatt area?), Federal Republic of Germany. This is a regional daily's news item, hence no exact locality is stated, nor is the primary source of information given, but it is mentioned that 45 odon. spp. are known from the Rastatt region.
- (3675) *LIBELLULA. Mitteilungsblatt der Arbeitsgemeinschaft Deutscher Odonatologen*. Vol. 1, No. 2 (Feb. 5, 1982). Edited by, and available from Dr. R. Rudolph, Biol. Didaktik, Univ. Münster, Fliegerstr. 21, D-4400, FRG.
Gerken, B. (Inst. Biol. II Geobotanik, Univ. Freiburg, Schänzlestr. 1, D-7800 Freiburg/Br): Zweites Treffen deutschsprachiger Libellenkundler in Freiburg/Breisgau am 14. u. 15. Februar 1981 (1-5); - *Altmüller, R.* (Niedersächs. Landesverwaltungsamt Naturschutz, Postfach 107, D-3000 Hannover-1): Libellenkartierung in Niedersachsen, Grundlage für das Niedersächsische Artenschutzprogramm (5-7); - *Buchwald, R.* (Sickingenstr. 6, D-7800 Freiburg/Br): Ökologische Untersuchungen an Libellen im westlichen Bodenseeraum (8-13); - *Knebel, R.* (Mühlbachstr. 2, D-776 Radolfzell-Möggingen): Zum Stand der Kenntnis der Libellenfauna im westlichen Bodenseegebiet (13-15); - *Gerken, B.* (address cf. above): Neue Funde von *Ischnura pumilio* Charp. (Insecta, Odonata) in der Oberrheinaue und die derzeit bekannte Verbreitung der Art in Baden-Württemberg (16-18); - *Schmidt, E.* (Biol. Didaktik, Pädagog. Fak., Univ. Bonn, Römerstr. 164, D-5300 Bonn-1): Zur Differenzierung bei der Bestandsaufnahme der Odonatenfauna ausgewählter Biotope (19-20); - *Schmidt, E.* (address cf. above): Zur Odonaten-fauna des Hinterzartener Moores (21-26); - *Gerken, B.* (address cf. above): Der Beitrag der Libellenfaunistik zur Biotopkartierung in Baden-Württemberg: Vorschläge zur Organisation (27-28); - *Heidemann, H.* (Au in den Buchen 66, D-7520 Bruchsal-5): Schützenswerte Biotope in Nordbaden und Pfalz (29-32); - *Schmidt, E.* (address cf. above): Änderungsvorschläge zur Bundesartenschutzverordnung vom 25.8.1980 aus odonatologischer Sicht (33-36); - *Kull, R.* (Gierstenstr. 15, D-7564 Forbach-3): Fragen zum Rückgang der Blauflügel-Prachtlibelle unter Berücksichtigung ihrer Ansprüche an den Lebensraum (37-39); - *Schmidt, E.* (address cf. above): Libellenfotos als Beleg für die Artbestimmung (40-48); - *Heidemann, H.* (address cf. above): Geschlechtliche Verirrungen einheimischer Libellen (49-51); - *Dirnfelder, L.* (Theresienplatz 27, D-8440 Straubing): Beitrag zur Libellenfauna der niederbayerischen Donauebene und des angrenzenden Bayerischen Waldes (52-55); - *Rohde-Arndt, D.* (Sarwücker Str. 6, D-7800 Freiburg/Br): Libellenseminar veranstaltet vom Bund für Umwelt und Naturschutz Deutschland in Radolfzell-Möggingen (56-57). - The issue also contains a number of announcements and personal notes.
- (3676) LOUTON, J.A., 1982. *Lotic dragonfly (Anisoptera: Odonata) nymphs of the southeastern United States: identification, distribution and historical biogeography*. PhD thesis, Univ. Tennessee, Knoxville. XVII+357 pp. - (Dept. Zool., Univ. Tennessee, Knoxville, Tenn. 37916, USA). - Microfilm or xerox copy available at University Microfilms International, Dissertation Copies, P.O.B. 1764, Ann Arbor, Mich. 48106, USA.
 [Verbatim]: An identification guide to the southeastern United States lotic dragonfly larvae is constructed. Descriptions, figures, keys, verification tables, and distribution maps are provided to facilitate identification of families, genera, and species. Information developed in the study of larvae is utilized to evaluate arrangements of taxa that have been traditionally based solely on adult characters. Traditional arrangements are supported except

(1) subgenera of the genus *Gomphus* s.l. are highly distinctive in the larval stage and should be elevated to generic rank and (2) two species, *Gomphurus consanguis* and *G. rogersi* are improperly placed and as a group deserve generic rank.

A study of ranges of North American species led to an analysis of the historical biogeography of the genera. An analysis of the worldwide distribution of genera of the North American fauna led to the following conclusions: (1) the Nearctic fauna is composed of relicts of a once continuous Holarctic Tertiary fauna, a few Jurassic relicts, and minor lineages derived from the Neotropical realm, (2) species of the modern fauna are considered to have differentiated by late Tertiary or early Pleistocene times and (3) certain other nominal species or yet unrecognized taxa are considered of subspecific rank and of late Pleistocene age.

- (3677) MEYER-ROCHOW, V.B., 1982. Electrophysiological studies on the insect compound eye. *N.Z. Ent.* 7(3): 296-304. - (Dept Biol. Sci., Univ. Waikato, Private Bag, Hamilton, NZ).

The experimental equipment and techniques are described, and the basic anatomy of the insect compound eye is outlined. On p.300, a reference is made to Uropetala.

- (3678) MOKRUSHOV, P.A., 1982. Territorial'noe povedenie chetyrehpyatnistoy strekozy (*Libellula quadrimaculata*) (Odonata, Anisoptera). (Territorial behaviour of the Four-Spotted Dragonfly, *Libellula quadrimaculata* (Odonata, Anisoptera)). *Vestn. Zool., Kiev* 1982 (2): 58-62. (With Engl.s.). - (Inst. Zool., Acad. Sci. Ukrainian SSR, Ul.Lenina 15, USSR-252000 Kiev-30).

The territory size guarded by the male of *L. quadrimaculata* during the reproductive period depends on the rivals' density at a pool. The larger the odon. population, the smaller the territory. When the population density exceeds the threshold value of 2-3 indiv./m², 2 groups of males appear: territorial and non-territorial. Territorial male behaviour at high population density is characterized by short chasing flights and prolonged periods of perching; at low density they guard the territories in hovering

flight. A possible role of optical signs in the choice of an appropriate zone on the bank and of the territory within it is discussed. It is assumed that the limits of the territory are defined by a possible chase distance. The return to the perching site is probably facilitated by sun-compass orientation. (Author).

- (3679) *NOTULAE ODONATOLOGICAE. Semi-annual bulletin of the International Odonatological Society.* Published by the Societas Internationalis Odonatologica (S.I.O), Utrecht. Vol. 1, No. 9 (June 1, 1982). - Annual subscription Hfl. 25,- net. - (c/o Dept Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht NL).

Gloyd, L.K. (Mus. Zool., Univ. Mich., Ann Arbor, Mich. 48109, USA): Bibliography of Doctor Mike Wright (141-143); - *Kiauta, B. & M. Kiauta* (Dept Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL): The chromosome numbers of sixteen dragonfly species from the Arun Valley, eastern Nepal (143-145); - *Kumar, A.* (Northern Reg. Stn, Zool. Surv. India, 13 Subhash Rd, Dehra Dun-248001, India): An annotated list of Odonata from the Pithoragarh District, Western Himalaya, Uttar Pradesh, India (145-147); - *Mielewczyk, S.* (Dept Agrobiol., Polish Acad. Sci., Swierczewskiego 19, PO-60-809 Poznan): Polish translation of the 'Aka- Tombo' ['Red Dragonflies'] song of Rofu Miki (147); - *Yazicioglu, T.* (Dept. Syst. Zool., Aegean Univ., P.K. 74, Izmir, Turkey): Dragonflies from the Ergene River Basin, Trace Turkey (148-150); - *Blom, W.L.* (deceased): List of Odonata collected during various lepidopterological trips in Iran (1971-1974) (150-151); - *De Abenante, Y.P. & M.E. Philippi* (First author: Depto Artrópodos, Fac. Hum. y Cien., Univ. Republica, Tristán Narvaja 1674 Montevideo, Uruguay): Lista preliminar de los odonatos del Uruguay (151); - *Johnson, J.H.* (Nez Perce Fish. Resource Manag., P.O. Box 365, Lapwai, Idaho 83540, USA): Diet composition and prey selection of *Cordulegaster maculata* Sel. larvae (Anisoptera: Cordulegasteridae) (151-153); - *Landmann, A.* (Inst. Zool., Univ. Innsbruck, Universitätsstr. 4, A-6020 Innsbruck): Second

- record of *Cercion lindenii* (Sel.) in Austria (Zygoptera: Coenagrionidae) (153-154); - *Mielewczyk, S.* (address cf. above): Der Zug von *Libellula quadrimaculata* L. durch Gniezno, Westpolen im Jahr 1975 (154); - *Sangal, S.K. & B.K. Tyagi* (Second author: Malaria Res. Centre, I.C.M.R., Ukai-394680, Distr. Surat, Gujarat, India): The spermatocyte chromosomes of *Anax immaculifrons* Rambur from India (Anisoptera: Aeshnidae) (154-155); - *Tóth, S.* (Bakonyi Természet-Tudományi Műz., Postafiók 36, HU-8420 Zirc): [Obituary] Maria Csiby [German].
- (3680) PENNY, N.D. & J.R. ARIAS, 1982. *Insects of an Amazon forest*. Columbia Univ. Press, New York. XXII+270 pp. - (Authors: c/o Natn. Res. Inst. Amazonia, Brazil).
The results of a systematic study of the diversity and density of all arthropods in a central Amazonian forest over a 13-month period are reported. The area studied is a 90 sq km Ducke Forest Reserve, 26 km NE of the city of Manaus. The Odon. are dealt with on pp. 46-47, but no specific names are stated.
- (3681) PINHEY, E.C.G., 1982. Odonata. In: S.B. Parker [Ed.], *Synopsis and classification of living organisms*, pp. 338-348, pls 103-106 excl. McGraw-Hill Book Co., New York. - (Author: Wye View Villa, Gloucester Rd, Tutshill, Chepstow, Gwent NP6 7DH, UK).
Concise characterisations are given of the order and the higher taxa, by one of the foremost specialists. Considering the technical terminology, the review is directed at a professional entomologist rather than at a general reader. - (*Abstracter's Note*: No reprints were supplied by the publishers. Xerox copies, without plates, are available from the Editors of *Odonatologica*).
- (3682) PINHEY, E., 1982. Preliminary list of little known or vanishing afrotropical Odonata. *Rep. Odon. Specialist Group Int. Un. Conserv. Nat.*, No. 2, 4 pp. - (Wye View Villa, Gloucester Rd, Tutshill, Chepstow, Gwent, NP6 7DH, UK).
36 taxa of 8 families are briefly discussed.
- (3683) *REPORTS OF THE ODONATA SPECIALIST GROUP, SPECIES SURVIVAL COMMISSION, INTERNATIONAL UNION OF CONSERVATION OF NATURE AND NATURAL RESOURCES (I.U.C.N.)*. Publication commenced in 1982. Published by the International Odonatological Society (S.I.O.), edited by N.W. Moore. - (Standing and issue orders to the Editors of *Odonatologica*: Dept Anim. Cytogen. & Cytotaxon., Univ. Utrecht, Padualaan 8, Utrecht, NL; - Editor: Prof. Dr. N.W. Moore, The Farm House, Swavesey, Cambridge, CB4 5RA, UK).
The series appears at irregular intervals. Each issue (size: 15 x 21 cm) contains a single paper and has a separate pagination. For Nos 1, 2 cf. *OA* Nos. 3662, 3682. The price of each issue depends on the volume of the paper concerned.
- (3684) RETTIG, K., 1982. Zum Vorkommen einiger Insektenarten in Ostfriesland. Teil VII. *Jber. dt. Bund Vogelschutz Emden* 1981 (2): 55-57. - (Danziger Str. 11, D-2970 Emden, FRG).
New distributional records from Eastern Frisia, Federal Republic of Germany are given for 8 odon. spp. - (For other odonatol. notes in this series cf. *OA* Nos. 2679, 2731, 3043, 3134, 3452).
- (3685) RETTIG, K & R. FRANK., 1982. Faunistische und floristische Beobachtungen in 1981 im DBV-Schutzgebiet der Gandersumer Bahnkolke. *Jber. dt. Bund Vogelschutz Emden* 1981 (2): 34-39. - (Danziger Str. 11, D-2970 Emden, FRG).
A list is given of 9 odon. spp (German names only) from the Gandersumer Bahnkolke nr Emden, Federal Republic of Germany. Of interest are the earliest and the latest 1981 records of *Libellula depressa*, viz. May 18 and Sept. 12, resp.
- (3686) ROBERTSON, H.M., 1982. Mating behaviour and its relationship to territoriality in *Platycypha caligata* (Selys) (Odonata: Chlorocyphidae). *Behaviour* 79 (1): 11-27. (With Fr.s.). - (Dept. Zool., Univ. Witwatersrand, 1 Jan Smuts Ave., Johannesburg-2001, South Africa).
P.caligata has males with abdomens coloured

blue dorsally, and laterally expanded tibiae coloured white anteriorly and posteriorly. The females are cryptically brown coloured. The males are strongly territorial and centre their territories around potential oviposition sites (driftwood or treeroots in the water). Territorial interactions involve a complex, hierarchical series of flights which include flash displays of the white and red surfaces of the tibiae. Most successful mating interactions followed a central sequence: (1) a male intercepts a female passing through his territory, (2) by displaying his blue abdomen behind him he attracts her to his oviposition side, (3) she lands and makes probing oviposition movements on it, apparently testing its suitability for oviposition (possibly on the basis of softness), while he courts her by displaying his white tibiae while hovering around her, (4) if she accepts the site she flies up slowly, perches, and they copulate, whereafter he returns her in tandem to the site to oviposit. Females apparently rejecting the site decamped rapidly. Sometimes males courting already ovipositing females were successful. All other interactions, especially those away from oviposition sites were unsuccessful (only 104 of 564 observed interactions led to copulation). This mating behaviour is compared with that of other Odonata, and especially Calopteryx maculata. It is speculated that the evolution of this female choice of oviposition site prior to mating and the elaborate male courtship resulted from male territorial defence of the only available suitable oviposition sites. The adaptation of Platycypha caligata to oviposition on driftwood and treeroots (the discreet, scare, defensible sites invoked as the first step in this theory) may have been associated with their occupation of mountain streams which have no emergent vegetation. (Author).

- (3687) *SELYSIA. A newsletter of Odonatology.* Compiled by M.J. Westfall & M.S. Westfall, Dept Zool., Univ. Florida, Gainesville, Fla. Vol. 11, No. 1 (March 1, 1982). - Sent free of charge to all members of the International Odonatological Society and to anybody else expressing to the Editors the desire to receive it. - (c/o Dr M.J. Westfall, Jr., Dept Zool. Univ. Florida, Gainesville, Fla 32611, USA).

Westfall, M.J. (address above): Sixth International Symposium of Odonatology (1-3); - Committees of S.I.O. as established at the Meeting of the Council, August 19, 1981, Chur (3-4); - *Pritchard, G.* (Dept Biol., Univ. Calgary, Alberta, T2N 1N4, CA): Seventh International Symposium of Odonatology. Preliminary Announcement (4-5); - *Donnelly, T.* (Dept Geol. Sci., St. Univ. New York, Binghamton, N.Y. 13901, USA): Informal northeastern Odonata meeting (5); - (*Westfall, M.J.*): *Fraseria* appears (5); - List of S.I.O. members [updated to Dec. 1981, containing some 350 names and addresses in 47 countries] (5-19); - *Davies, D.A.* (Crofton Lodge, 8 Drury Lane, Mortimer, Reading, UK): *Rarus, rarior rarissimus* (20); - *Dunkle, S.W.* (c/o Editor): Dragonfly odor not repulsive to mosquitoes (20-21); - (*Westfall, M.J.*): George Doerksen dies (21); - Charles Francis Byers dies (21); - North American dragonfly manual available at reduced price (21).

- (3688) THOMS, S., G. JURZITZA & R.-U. ROESLER, 1982. Ökofaunistische Untersuchungen an Libellen (Odonata) in ausgewählten Biotopen des Bienwaldes. In: R.-U. Roesler (Ed.), *Das Landschaftsschutzgebiet Bienwald in der Südpfalz*, pp. 179-202. Pollichia, Bad Dürkheim. - (second author: Bot. Inst. I, Univ. Karlsruhe, Kaiserstr. 12, D-7500 Karlsruhe-1, FRG).

A rounded-off account is given of the odon. fauna (44 spp.) of the Bienwald, Pfalz, Federal Republic of Germany. The history of odonatol. research in the region is traced from 1850 onwards, various features of the local fauna are analysed, and the conservancy aspects are considered in detail.

- (3689) WINSTANLEY, W.J. 1982. Some insects in the Rangitoto Range, New Zealand. *N.Z. Ent.* 7(3): 323-324. - (Zool. Dept, Victoria Univ., Private Bag, Wellington, NZ).

The odon. fauna (7 spp.) encountered Jan. 9, 1981 in the upper catchment of the Waipa River, is recorded.

- (3690) ZIEBELL, S., 1982. Zum Nachweis von *Gomphus flavipes* (Charpentier, 1825) und

anderer Gomphiden durch Exuvienfunde im Departement Cher in Frankreich (Odonata). *Articulata* 1(19): 212-214. (With Eng.s.). - (Habbrügger Weg 21, D-2875 Ganderkesee-1, FRG).

Only few and sporadic records of Gomphus flavipes are known from the territory W of the

Rhine. In the present paper a larval habitat is described from the Loire, nr Cosne, Dép. Cher, France, and notes are provided on *G. pulchellus*, *G. vulgatissimus*, *Onychogomphus forcipatus*, *O. uncatus* and *Ophiogomphus uncatus*, occurring in different microhabitats, within the same general area.