ODONATOLOGICAL ABSTRACTS

1971

(719) BOSSAGLIA, R. & A. HAMMACHER, 1971. Mazzucotelli. Wasmuth, Tübingen. 123 pp. (Text in Ital., Germ. and Engl.). – *(Author's address unknown).*
The book is a richly illustrated review of the work of the well known Italian "ornamental smith", Alessandro Mazzucotelli (born: December 30, 1865, Milan; deceased: January 29, 1938, Milan). The maximum physical presence, bordering on the monstrous, he achieved in certain portrayals of insects, particularly because of the alarming impression made by their exaggerate dimensions. As to the technical procedure we have the artist's own explanation of the execution of the dragonflies on his famous lamp (reproduced here on fig. 42 A): "The body is formed with a flat piece of iron modelled when hot, the large eyes, wings and legs are welded on. The wings are cut in sheet iron".

(720) BULIMAR, F., 1971. Neue Beiträge zum Studium der Odonaten-Larven (Ordn. Odonata, Cl. Insecta) aus der Moldau. Einige Merkmale der Metamorphose bei Arten des Unterordens Anisoptera Selys. Anal. ştiinţ. Univ. Al. I. Cuza (II) 17 (2): 345-349, pls. 1-8. (Roumanian, with German s.). – *(Lab. Zool., Univ. "Al. I. Cuza", Iasi, RU).*
An account is given of observations on structural changes in the ultimate instar larvae of Anax imperator, and on the ecdysis of Aeshna cyanea and Sympetrum striolatum.

(721) BULLA, L.A., 1971. Consideraciones sobre el género Argentagrion Fraser, 1947 con la descripción de una nueva especie (Odonata, Coenagriidae). [Considerations on the genus Argentagrion Fraser, 1947, with description of a new species (Odonata, Coenagriidae)]. Revta Soc. Ent. Argent. 33 (1-4): 49-55. (Spanish, with Engl. s.). – *(Inst. Limnol., Fac. Cienc. Nat. y Museo, Pase del Bosque, La Plata, Argentina).*
The redefinition of Argentagrion by Racenis (Acta Biol. Venez. 2 [1958]: 179-226) and his inclusion of Acanthagrion cheliferum and A. lindneri in Argentagrion are rejected. The spp. recognized as comprised in Argentagrion are ambiguum (type) and silviae sp. n. (♂ holotype: Paraguay). The latter is described and illustrated.

(722) CIRDEI, F., M. POPESCU, I. FIRU & B. BOBIRNAC, 1971. Contribuţii la studiul odonatelor (Insecta) din Oltenia (I). Studii Cerc. Comet. Cult. Educ., Craiova 1971: 131-135. (Roumanian, with French s.). – *(The first author deceased; reprints can be requested from Dr. F. Bulimar, Lab. Zool., Univ. "Al. I. Cuza", Iasi, RU).*
Annotated list of 30 spp., collected in various biotopes of the District Oltenia, Roumania. 5 of these are new for the area. *(Abstracter's note*: Due to an error, this paper has not been listed in Dr. Cirdei's bibliography as published in Odonatologica 1 [1972], pp. 165-166).

(723) JAHN, K., 1971. Biologische Beobachtungen an Libellen (Odonata) des unteren Saaletales im Kreis Bernburg. Naturk. Jber. Mus.

Heineanum 5-6 (1970-1971): 23-43. – *(Hohe Str. 22, DDR-435 Bernburg, GDR)*. 28 spp. were recorded during 3 years at various localities in the district of Bernburg, German Democratic Republic. Notes on habitats and ecological observations are stated.

(724) OLIGER, A.I., 1971. K faune strekoz severnogo Prisur'iya. (On the dragonfly fauna of the northern Sura Basin). Mater. 1. nauch. konf. faun., ekol., biocenol., ohran. prir. zhivotnyh Prisur'iya) (Abstr. Pap. 1st Sci. Conf. Sura Basin fauna, ecol., biocenol., anim. conserv.), pp. 36-37. Gorky State Pedagog. Inst., Saransk. (Russian). – *(Dept. Zool., Donetsk Univ., 46 Shchors Str., 340055 Donetsk, USSR)*.
A list of and dominance indices for 29 spp., collected at various localities in the Ulianovsk and Gorky provinces, USSR, are given.

(725) PAVLYUK, R.S., 1971. Gregariny, porazhayushchie strekoz (Insecta, Odonata) zapadnyh oblastey Ukrainskoy SSR. (Dragonfly invading gregarines of the western provinces of the Ukrainian SSR). Mater. 1. s'ezda Vsesoyuz. obshch. protozool. (Abstr. Pap. 1st All-Union Congr. Protozool. Soc.), pp. 294-295. Elm, Baku. (Russian). – *(Mus. Zool., Lvov Univ., 4 Shcherbakov Str., 290005 Lvov, USSR)*.
Gregarines were recorded in 32, mainly zygopteran, spp. When the invasion intensity approaches 300-500 parasite specimens per dragonfly, the gut wall of the latter breaks and the host dies. The parasite's encystation and emergence from the host are related with starvation and sickness or with ecdysis of the dragonfly.

(726) VANCEA, S., 1971. Prof. dr. docent Filimon Cirdei. Cronica, Iasi 6 (51): 11. (Roumanian). – *(c/o The Editors, Casa Presel, V. Alecsandri 8, Iasi, RU)*.
Obituary for prof. F. Cirdei (born: August 6, 1903, Bilca-Radauti, Roumania; deceased: November 13, 1971, Iasi). He was one of the leading Roumanian odonatologists and professor at the University of Iasi. Next to odonatol. publications, among which the odon. volume in the series of the "Fauna Rep. Pop. Române", his bibliography includes papers on Pseudoscorpionidea, Opilionidea, and Formicidae. In the quality of Director of the Iasi Nat. Hist. Museum he organized a remarkable invertebrate collection. A portrait is also provided, but the bibliography is not listed.

1972

(727) KRAMEK, W.C., 1972. The food of the frog Rana septentrionalis in New York. Copeia 1972 (2): 390-392. – *(Agric. Tech. Coll., State Univ., Cobleskill, N.Y. 12043, USA)*. During August-September, 1968, 159 frog stomachs from Setback Pond, Wanakena, N.Y., USA, were examined. They contained mainly Odon. (Coenagrionidae, Calopterygidae, Aeshnidae), Coleoptera and Homoptera. (Cf. also *OA* No. 749).

(728) MAMAEV, B.M., 1972. Opredelitel' nasekomyh po lichinkam. Posobie dlya uchitelei. (Key to the insect larvae. Handbook for teachers). Prosveshchenie, Moscow. 400 pp. (Russian). – *(Author's address unknown)*. The well illustrated book (186 figs, 16 col. pls.) covers (a part of) the fauna of the European USSR. 15 pp. are devoted to Odon., of which order 53 spp. are keyed. *(Abstracter's note*: The original price amounts to 1.29 Rubles).

(729) SCOPOLI, I.A., 1972 *(reprint)*. Entomologia carniolica exhibens insecta Carnioliae indigena et distributa in ordines, genera, species, varietates. Methodo linnaeana. With an Introduction (biography and bibliography) by O. Guglia. Akademische Druck- u. Verlagsanstalt, Graz. Introduction (German): 33 pp., 7 pls. (incl. portrait); Reproduction of the original text (Latin): 458 pp., 43 pls. Photostatic reprint of the book published originally in 1763 by I.T. Trattner, Vienna. The volume represents one of the first treatises on a regional insect fauna, published after the 10th ed. of the Linnaean Systema Naturae (1758). It is dealing with the fauna of the former Austrian province

Krain (Lat.: Carniolia), at present western Slovenia, Yugoslavia (southeastern Limestone Alps). The author gives descriptions of 1153 consecutively numbered arthropodan spp., Nos. 677-682 referring to the Linnaean odon. taxa. In addition 22 odon. "varieties" are described, bringing the total number of recognizable odon. spp. to 14. The new spp. were not recognized by the author as such, they remained unnamed and are classified as "varieties" of the known Linnaean spp. The particular attraction of the present reprint is the addition of the 43 plates, illustrating 653 insect spp. According to the author's own statement in the book, these were prepared at a later date than the text. In 1785 a note appeared in the Neues Mag. Ent. 2: 364 to the effect that Scopoli did not agree with the technical execution of his illustrations, hence they have never been published; a few copies were known in the form of printers' proofs only. 8 dragonflies appear on pls. 36, 42 and 43. (*Abstracter's note*: For detailed comments on Scopoli's Odon. cf. Hagen, 1854, Stettiner ent. Ztg. 15: 81-91; and Kiauta, 1963, Kronika, Ljubljana 11: 57-60. – Price DM 97.–).

1973

(730) AKIMUSHKIN, A., 1973. Animal travellers. 2nd Ed. Mir, Moscow, V + 375 pp. – (Publisher's address: *2 Pervy Rizhsky Pereulok, Moscow, USSR*).
A popular account on animal migration, prepared for the readers in the Countries in Development. On pp. 158-160 appears a chapter entitled "Where dragonflies appear hens stop laying eggs", dealing with odon. migrations. As the largest European migration is considered that which took place in Ireland in 1947; it is described in some detail. Reference is made also to migrations in Africa, Asia, and both Americas. Unfortunately the book has neither a subject index nor a list of bibliographic references.

(731) ARMSTRONG, J.S., 1973. Odonata of the Kermadec Islands. N.Z. Entomol. 5 (3-4): 277-283. – (*3 Titiraupenga Street, Taupo, NZ*).
The 5 spp. occurring on the Kermadec Islands, South Pacific, are keyed. Brief notes on their locality and distribution are given. The spp. involved are Ischnura a. aurora, Aeshna brevistyla, Hemianax papuensis, Hemicordulia australiae and Trapezostigma (Tramea) transmarina.

(732) ASAHINA, S., 1973. Notes on Chinese Odonata, IV. D.C. Graham collection from Szechuan and T.H. Cheng collection from Fukien. Kontyu 41 (4): 446-460. – (*Totsuka III-123, Shinjuku-ku, Tokyo, 160, JA*).
15 spp. of Graham's and 5 spp. of Cheng's collection, all in the U.S. National Museum, Washington, D.C., were studied. Bayadera brevicauda continentalis n. ssp. is described and figured (♂ holotype: 1-V-1946, Kuatun, 2300 m, Fukien; ♀ allotype: 6-V-1946, ditto; paratypes: 26♂, 14♀). Pyrrhosoma tinctipenne (MacLachl.), Neurobasis andersoni Sjöst. and Euphaea opaca Sel. (♀ allotype) are redescribed and illustrated. Needham's description of P. tinctipenne (1930, Zool. Sinn., A 11, 1) does not fit the present material. As far as available, the Japanese folk names are stated for each sp.

(733) BERDNIKOV, V.A., F.L. GOREL' & V.A. ZLOCHEVSKIY, 1973. The histones of some invertebrates. Biohimiya 38: 1208-1214. (Russian, with Engl. s.) – (*Inst. Cytol. Genet., Siber. Sect. USSR Acad. Sci., Novosibirsk, USSR*).
Electrophoresis on polyacrylamide gel was used to compare the histones of some insects and amerians. Among the former Anax imperator was also studied. All histones examined contain 5 main fractions. The mobility of most individual fractions varies from sp. to sp.

(734) BEREZINA, N.A., 1973. Rol' nekotoryh predstavitelei Odonata, Hemiptera i Coleoptera v trofike presnyh vodoemov. (The role of some representatives of Odonata, Hemiptera and Coleoptera in the fresh water trophic system). In: Trofologia vodnyh zhivotnyh. Itogi i zadachi. (Trophology of aquatic animals. Results and problems). Nauka, Moscow. pp. 206-211. (Russian). –

(Kaliningrad Technical Institute of Fishery Industry and Economy, 236000 Kaliningrad, USSR).

The diets of larval Odon. include a number of planctonic and benthic invertebrates as well as fish larvae and fry. Mass occurrence of odon. larvae feeding on carp fry is coupled with a growth rate reduction of the former, due to malnutrition. Though odon. larvae possess a rather broad diet spectre, there is a certain food preference. Thus, Enallagma cyathigerum prefers Daphnia, and Anax imperator carp fry. The larvae are extremely voracious: Anax and Aeshna spp. consumed daily 30-52 carp fry of 10-20 mm length. On the other hand they are capable of long starvation; in the author's experiments they survived 82 days without food.

(735) BULIMAR, F., 1973. Ecological observations on Odonata larvae (Odonata, Insecta) from the Delta of Danube. Anal. ştiinţ. Univ. Al. I. Cuza, II, 19 (1): 171-178. – (Roumanian, with Engl. s.). – *(Lab. Zool., Univ. "Al. I. Cuza", Iasi, RU).*

Among the 40 spp. listed, 30 are new for the Delta of Danube, Roumania. An ecological classification of the recorded spp. is also attempted. This is the first paper dealing exclusively with the larval Odon. of the area.

(736) BULIMAR, F., 1973. Contributions to the study of internal morphology of Odonata larvae (Insecta, Odonata). Anal. ştiinţ. Univ. Al. I. Cuza, II, 19 (2): 385-392. (Roumanian, with Engl. s.). – *(Lab. Zool., Univ. "Al. I. Cuza", Iasi, RU).*

New and/or additional data and illustrations on the internal structure of the larvae of Calopteryx virgo, Aeshna grandis, Somatochlora metallica and Libellula depressa are presented.

(737) CAILLÈRE, L., 1973. Comportement de capture chez la larve d'Agrion (Calopteryx Auct.) splendens (Odonates): comparaison entre la larve âgée et la larve de premier stade. Rev. Comp. Animal. 7 (4): 289-312. – *(Dép. Biol. anim. et Zool., Univ. Claude Bernard Lyon I, 43 bd. du 11-novembre-1918, F-69621 Villeurbanne).*

In the prey-catching behaviour of old or first instar Calopteryx splendens larvae, nine or seven sequences can be recognized, according to the level of the stimulation (antennae or tarsi). When capture takes place, the response is said to be complete. If the response of the animal is limited to an exploration of longer of shorter duration, the response is said to be incomplete. The capturing sequence is stereotyped: the projection of the mask, preceded by the convergence of the caudal lamellae, the release of the post-mentum, and the opening of the labial palps, are synchronous with the dorso-ventral contraction of the abdomen, and a piston movement of the digestive tract. The retraction of the mask is accompanied by the slackening of the abdomen, the return of the digestive tract to its initial position, and the divergence of the caudal lamellae. The variations in the behaviour of the prey can produce, on the part of the animal, a permanent correction of the body: the exploration and orientation sequences alternate until the adjustment of the capture is effected. Escape behaviour can occur in the course of sequences preceding capture, and after a failure of a capture. The larva, after having brought the prey to its mouth parts, may reject it. An escape response then ensues. In this case, a particular antennal posture (inhibition posture) precedes the return to the resting position. The behaviour of C. splendens larvae is the same when a dummy is substituted for a prey, except that the rejection of the dummy, after an attempt at ingestion, constitutes a necessary modification of the cycle. Contrary to observations on old larvae, an intense exploratory behaviour characterises the first instar larvae, with each sequence passing slowly. Furthermore, it is only the sequence of displacement that is dispensable, while in old larvae the capturing cycle can be reduced only to the bending of the antennae immediately followed by the capture. Thus, the differences observed lead us to investigate the processes by which the predatory behaviour develops during ontogenesis. (Author).

(738) CHINERY, M., 1973. A field guide to the insects of Britain and northern Europe. Collins, London. 352 pp., 60 col. pls. – (Publishers' address: *W. Collins & Co., St. James' Place, London, UK*).
The volume appeared in the well known Collins' series of Pocket and Field Guides. Pp. 63-72 and pls. 2-3 are devoted to Odon. Aside from a few general paragraphs on the order, the families are fairly well characterized, but identification of spp. will not be possible on the basis of this book, the principal aim of which is to give a brief, general review of the insect world of the area.

(739) IGNATOWICZ, S., 1973. Anomalia odwłokowa u samca Ischnura elegans Lind. (An anomaly of the abdomen in male Ischnura elegans Lind.). Przegl. zool. 17 (3): 399-400. (Polish). – (*Dept. Zool., Inst. Biol., UMK, ul. Gagarina 9, PO-87-100 Turón*).
A ♂ I elegans captured in Poland 1972 had the abdominal segments posterior to segment VI bent to the left at an angle of ca 95°. Segment VI was itself of abnormal structure. Such a ♂ would not be able to mate. Its flight was slower than that of normal ♂♂, and the animal was also of less than normal size. Larval Arrenurus (Acari) were present on the deformed segments.

(740) ILYUSHINA, T.L., 1973. Vodnye nasekomye Karasukskoi sistemy ozer kak dopolnitel'nye hoziaeva trematod. (Aquatic insects of the Karasuk lakes system as the second intermediate trematodes hosts). Trudy Gel'mint. Lab. 23: 55-64. (Russian). – (*Biol. Inst., Siberian Branch USSR Acad. Sci., 21 Frunze Str., 630091 Novosibirsk, USSR*).
Metacercariae from adult and larval insects of the floodland lakes of the Karasuk R., western Siberia, USSR, are listed. Odon. appear most heavily parasitized, particularly so Aeshna juncea, Sympetrum flaveolum and S. vulgatum. The most frequent invaders are the bird parasites, Prosthogonimus ovatus and Plagiorchis laricola, and the amphibian trematodes, Prosotocus confusus, Pleurogenes claviger and Pleurogenoides medians. A few specimens of Opisthioglyphe sp., Pneumonoecus sp. and Asymphylodora sp. were also recorded, and are described and illustrated. The invasion intensities of all odon. spp. by all trematode spp. are stated.

(741) KAWAGUCHI, S., 1973. (Unusual occurrence of Anax guttatus in Shizuoka). Nature and Insects 8 (10): 29. (Japanese). – (*2-16 Oitecho, Shizuoka, JA*).
3 ♂ were captured on July 15, 1973.

(742) KRING, T., 1973. Odonata from the island of Laesø. Ent. Meddr 41: 159-160. (Danish, with Engl. s.). – (*Engvej 168, 2 st., DK-2300 København S*).
Odon. collected in July 1968 and 1969 on the island of Laesø, northern Kattegat, Denmark, are listed, 2 spp. being new for the island: Lestes dryas and Libellula depressa. 5 of the 12 spp. collected are associated with a feature characteristic of Laesø, viz. small pools which dry up in summer: Ischnura elegans, L. dryas, Aeshna juncea, L. depressa and Sympetrum flaveolum.

(743) LOMBARDO, C.A., 1973. On the presence of two coxal sense organs in Pterygota insects. Monit. Zool. Ital. 7 (4): 243-246. – (*Ist. Policattedra Biol. Anim., Univ. Catania, Via Androne 81, I-95124 Catania*).
The presence of 2 proprioceptor organs at the base of each of the 3 pairs of legs is reported for spp. from all pterygotan orders, including Odon. These were previously known only in Blattodea and Hymenoptera.

(744) MIYOSHI, K., 1973. (A record of Tholymis tillarga from Yamaguchi). Nature and Insects 8 (9): 28-29. (Japanese). – (*720-115 Nijigaoka, Hikari, Yamaguchi, JA*).
A ♀ attracted by light was captured at 10.00 p.m. on July 12, 1973. (Cf. also *OA* No. 794).

(745) MONTGOMERY, B.E., 1973. Why Snakefeeder? Why Dragonfly? Some random observations on etymological entomology. Proc. Indiana Acad. Sci. 82 (1972): 235-241. – (*906 North Chauncey Ave., West Lafayette, Indiana 47906, USA*).
This paper lists 95 English and 23 Celtic

names for the Odon. Almost all of these are associative and/or descriptive. Although the names may be grouped into 13 categories from their connections or associations (some of which are fanciful or false) with familiar objects or ideas, the most numerous group are "associated" with snakes (or dragons); another large group includes names connected with the devil. The origin of such names is attributed to the reputation of the insect and the folklore that anything bad is of the devil combined with the identity of the devil and a snake in the Judeo-Christian myth from the Garden of Eden. The origin of the idea that dragonflies are harmful is questioned as "almost any textbook of Entomology will furnish the information that they are entirely harmless to man and cannot bite or sting". However, this is not literally true, and examples of biting and "stinging" by individuals of some of the large dragonfly species are given. (Author).

(746) MONTGOMERY, B.E., 1973. Some observations on the nature of insect names. Great Lake Ent. 6 (4): 121-128. – *(906 North Chauncey Ave., West Lafayette, Indiana 47906, USA).*

General considerations on the subject include a few references to the Odon. In the appended annotated list of insect names by ancient Greek and Latin authors the term "Libellula" is listed as originating from the ancient "Libella" (used by Pliny and the Vulgate of the 2nd century AD) and it is stated that it may have been applied to Odon. in ancient times.

(747) MUIRHEAD-THOMSON, R.C., 1973. Laboratory evaluation of pesticide impact on stream invertebrates. Freshwat. Biol. 3 (5): 479-498. – *(Blair Res. Lab., P.O.B. 8105, Causeway, Salisbury, Rhodesia).*

Laboratory techniques are described for testing the reactions of representative stream invertebrates to known time/concentrations of pesticides under conditions of water flow and continuous circulation and replacement. A 1-hr exposure to serial dilutions of pesticide, followed by a 24-hr holding period in clean water, formed the first basis of comparison between the reactions of different spp. DDT was found to have a marked differential effect on predator invertebrates such as odon. larvae and Nepa (Het., Nepidae) on the one hand, and prey organisms such as Baetis (Ephem., Baetidae) and Simulium (Dipt., Simuliidae) larvae on the other. Many odon. larvae could survive an exposure to 20 ppm DDT for 1 hr (and live long enough to produce adults), while concentrations as low as 0.05 ppm for 1 hr could produce nearly 100% mortality in Baetis and Simulium larvae. Lebaycid (fenthion) produced strikingly different reactions in that its lethal effect on odon., Baetis and Simulium larvae was nearly uniform with no obvious differential effect. Odon. larvae proved to be even more susceptible to fenthion than were net-spinning larvae of Hydropsyche (Trich., Hydropsychidae). The uniform impact of fenthion on test invertebrates was not evident on other organophosphorus compounds tested, all of which (as well as the carbamate Baygon) showed varying degrees of differential effect. In experiments in which concentration x period of exposure was kept constant, Odon. larvae were found to be more tolerant to long exposures of low concentrations of Lebaycid (fenthion) than to short exposures (1 hr) of correspondingly higher concentrations. Whereas both coenagrionid and libellulid larvae were equally affected by short (1-hr) exposures to fenthion, coenagrionids appeared to be rather more tolerant than libellulids to long exposures (24 and 48 hr) at correspondingly lower concentrations. In the case of DDT, the situation was reversed in that libellulid larvae were more tolerant to prolonged exposures to very low concentrations than those of Coenagrionidae. The implications of these observations are discussed with particular reference to pesticide impact on predator/prey relationships in freshwater ecosystems.

(748) PANDIAN, T.J. & M.R. DELVI, 1973. Energy extraction efficiency in some chosen insects. Oecologia 13 (4): 397-401. – *(Dept. Zool., Sri Palaniandavar Arts Coll., Madurai*

Univ. P.G. Centre, Palni, Tamil Nadu, India).

The terms "energy extraction efficiency" and "absorption/assimilation efficiency" are defined. For Pyrrhosoma nymphula the values of the two were identified on the basis of literature data. Literature data also indicate that the energy extraction efficiency increases markedly with high ash content of the food organism, e.g. P. nymphula fed on Asellus (Amphipoda) and the dipteran Hedriodiscus truquii fed on algal material.

(749) PAVLYUK, R.S., 1973. O stepeni troficheskoy konkurencii zemnovodnyh s rybami zapadnyh oblastey Ukrainy. (On the trophic competition degree between amphibians and fish in the western provinces of Ukraine). Vopr. gerpetol., Autoref. Dokl. 3. Vsesoyuz. Gerpetol. Konf. (Problems Herpetol., Abstr. Pap. 3rd All-Union Herpetol. Conf.), pp. 139-140. Nauka, Leningrad. (Russian). – (*Mus. Zool., Lvov Univ., 4 Shcherbakov Str., 290005 Lvov, USSR*).

Unidentified odon. larvae were found in 62% of Triturus cristatus, and in 25% of T. vulgaris stomachs (max. 38 and 22 specimens per stomach respectively). Imaginal Libellulidae were recovered from 15% of Rana esculenta, and 11% of R. ridibunda, and adult Zygoptera from 5% of Hyla arborea stomachs examined. (Cf. also *OA* No. 727).

(750) PETERS, G., 1973. Gibt es Konkurrenz zwischen Libellenarten (Odonata)? Ent. Ber., Berlin 1972 (2): 104-107. – (*Mus. Naturk., Humboldt Univ., Invalidenstr. 43, DDR-104 Berlin, GDR*).

Interspecific competition was studied in the field on the following spp. pairs: Anax imperator – A. parthenope. (German Democratic Republic), Anax junius – A. amazili (Mexico), Anax junius – A. longipes (Cuba), and Aeshna juncea – A. subarctica (German Democratic Republic).

(751) PROCTER, D.L.C., 1973. The effect of temperature and photoperiod on larval development in Odonata. Can. J. Zool. 51 (11): 1165-1170. – (*Inst. Resource Ecol., Univ. British Columbia, Vancouver, BC, Canada*).

Enallagma boreale, a summer sp., and Leucorrhinia glacialis and Libellula quadrimaculata, both spring spp., were reared at various temperature and photoperiods. E. boreale developed fastest at all temperatures, supporting the hypothesis that summer spp. have higher thermal coefficients for growth than spring spp., but refuting that which holds spring spp. to grow faster at low temperatures. Photoperiod affected the development rate of L. glacialis and L. quadrimaculata at low temperatures, but it did not affect E. boreale at any temperature, supporting the hypothesis that spring spp. are those most likely to use photoperiod in regulating development. The striking growth-rate responses of the spring spp. to photoperiod at low temperatures suggest that photoperiod is important in regulating development in temperate regions.

(752) REHFELD, H., 1973. Ein Beitrag zur Libellenfauna des Helsunger Bruches (Kreis Quedlinburg). Naturk. Jber. Mus. Heineanum 8: 9-18. – (*Dorothea-Erxleben-Str. 5, DDR-43 Quedlinburg, GDR*).

27 spp. were collected at various peatbog localities in the surroundings of Blankenburg, Harz, German Democratic Republic. Data on frequency and phenology are added.

(753) SAWCHYN, W.W. & N.S. CHURCH, 1973. The effects of temperature and photoperiod on diapause development in the eggs of four species of Lestes (Odonata: Zygoptera). Can. J. Zool. 51 (12): 1257-1265. – (*Saskatchewan Res. Counc., Saskatoon, Sask., CA*).

L. disjunctus, L. unguiculatus and L. dryas diapause late in embryogenesis when the embryo is almost fully formed. L. congener enters diapause just before blastokinesis. L. disjunctus, L. unguiculatus and L. congener undergo a primarily temperature-controlled phase of diapause development, which proceeds most rapidly at 10°C. In the field it is completed in most eggs by the end of Oct. in L. disjunctus and L. unguiculatus, and by

the end of Nov. in L. congener. Subsequent development in L. disjunctus and L. unguiculatus is inhibited by photoperiods shorter than 12-14 hr. There is apparently some overlap between the temperature- and photoperiod-controlled phases. The inhibitory effects of short photoperiods gradually disappear during the winter. In L. congener there is no significant photoperiod-controlled 2nd phase of diapause. Diapause development in L. dryas is probably similar to that in L. disjunctus and L. unguiculatus.

(754) SCHEFFLER, W., 1973. Zur odonatologischen Characterisierung der Moortypen im Stechlinsee-Gebiet. Ent. Ber., Berlin 1973 (1): 1-4. – *(Abt. Limnologie, Zentralinst. f. Mikrobiol. u. exp. Therapie, Forschungszentrum f. Molekularbiol. u. Medizin, Akad. Wiss. DDR, DDR-1431 Neuglobsow, GDR)*.
The principal types of moorland lakes situated in the area between Rheinsberg and Fürstenberg/H., German Democratic Republic, are ecologically analyzed and odonatologically characterized. The study is based on observations carried out during 6 successive years.

(755) SENDA, Y., 1973. (New record of Boyeria maclachlani from Iwate Prefecture). Nature and Insects 8 (12): 8. (Japanese). – *(143 Minamidoda, Kimosawa-machi, Kimosawa-gun, Iwate Pref., JA)*.
2 ♀ taken on August 14, 1973, represent the first record of this sp. for Iwate Prefecture, Japan.

(756) SMOGORZHEVSKIY, L.A. & L.I. KOTKOVA, 1973. Characterization of the food of the fledglings of some species of insectivorous synanthropic birds. Vest. zool., Kiev 1973 (3): 34-39. (Russian, with Engl. s.). – *(Dept. Biol., State Univ., 252000 Kiev, USSR)*.
The food organisms, including Odon., of Hirudo rustica, Delichon rubra, Motacilla alba and Muscicapa striata in the Kaneva Nature Reserve, Ukraine, USSR, are listed and discussed from studies in spring and summer, 1970.

(757) THEISCHINGER, G., 1973. Eine zweite Art der Gattung Austrocordulia Tillyard (Odonata: Anisoptera). Annln naturh. Mus. Wien 77: 387-397. – *(St. Margarethen 45, A-4020 Linz a. D.)*.
A. leonardi sp. n. (♂, ♀, exuvia) from Woronora River near Heathcote, New South Wales, Australia is described and illustrated. The ♂ holotype, ♀ allotype and 9 paratypes are in the author's collection; a ♂ and a ♀ paratype in the collections of the Nat. Hist. Mus. of Vienna, Austria. Distinctive characters of A. leonardi sp. n. and A. refracta Till. are tabulated for the adult ♂ and ♀ and for the exuvia.

(758) URBAUER, D. & K.P. PRUESS, 1973. Drift of terrestrial arthropods in an irrigation canal following a wide-area application of ULV malathion. J. Econ. Ent. 66 (6): 1267-1268. – *(Dept. Ent., Univ. Nebraska. Lincoln, Nebraska 68503, USA)*.
The numbers of arthropods drifting in an irrigation canal were recorded at 30-min intervals during and after an upstream application of ULV malathion. Flower-visiting and parasitic Hymenoptera were the first insects to increase. Diptera exhibited a delayed response, as did adult Odon. The latter order appears among the least susceptible insects.

(759) USUI, T., 1973. (A triple-connection of Trigomphus melampus). Nature and Insects 8 (10): 15. (Japanese). – *(c/o Kaito, Odateno, Kanazawa, Ishikawa, 920, JA)*.
3 photographs, with explanatory text. (Cf. also *OA* No. 698).

(760) WAAGE, J.K., 1973. Reproductive behavior and its relation to territoriality in Calopteryx maculata (Beauvois) (Odonata: Calopterygidae). Behaviour 47 (3-4): 240-256. – *(Div. Biol. & Med. Sci., Brown Univ., Providence, Rhode Island 02912, USA)*.
Pair-forming, courtship, mating, and postcopulatory behaviors are described for populations of C. maculata in the central and N.E. United States. 2 pair-forming displays were noted: (1) a display of the ♂ wings and abdomen (the cross display) at an

oviposition site in his territory to an approaching ♀; and (2) a hovering courtship flight before a perching ♀. Similar displays are performed by C. aequabilis, C. splendens, and C. virgo, although intra- and interspecific variations occur in the cross display and its position in the pair-forming sequence. Both displays present the species and sex-specific color patterns of the ♂ wings and abdomen to the ♀ early in pair formation. Pair formation differs in the three types of ♂-♀ encounters observed: (1) ♀ flies into the ♂ territory; (2) ♂ discovers an ovipositing ♀; and (3) ♂ discovers a ♀ on shore. The first type involves only territorial ♂♂ and is the only one on which the cross display is performed. The other encounters involve both territorial and nonterritorial ♂♂. Courtship flight is present in the pair-forming sequences of all three encounter types. The cross display identifies a particular ♂ with an oviposition site in his territory. This makes it possible for ♀♀ to choose among ♂♂ on the basis of the suitability of these oviposition sites. ♀♀ mating with territorial ♂♂ benefit from reduced interference from other ♂♂ during oviposition. The selective advantage of territoriality for a Calopteryx male are: (1) an increase in his mating frequency by the exclusive occupation of an oviposition area attractive to ♀♀; (2) an increase in the number of eggs he fertilizes by protecting mated ♀♀ during their oviposition. It is likely that territorial behavior in Calopteryx functions primarily in obtaining and selecting mates and secondarily in reducing interference with pair formation and oviposition. Sexual selection among ♂♂ for attracting mates and lessening sperm competition may have been an important factor in the evolution of territorial behavior in Calopteryx. (Author).

(761) WESTFALL, M.J., jun. & K.J. TENNESSEN, 1973. Description of the nymph of Lestes inaequalis (Odonata: Lestidae). Fla Ent. 56 (4): 291-294. – *(Dept. Zool., Univ. Florida, Gainesville, Florida 32601, USA).*
The larva of L. inaequalis is described and illustrated, and notes are given on habitat and emergence. Comparisons are made between this previously undescribed larva and that of L. vigilax, to which it is most closely related.

(762) WHITCOMB, W.H., A. BHATKAR & J.C. NICKERSON, 1973. Predators of Solenopsis invicta queens prior to successful colony establishment. Environ. Entomol. 2 (6): 1101-1103. – *(Dept. Entomol. Nematol., Univ. Florida, Gainesville, Florida 32601, USA).*
An investigation was made in N. Florida, USA, of the biotic factors affecting ♀ S. invicta (Hymenoptera: Formicidae) from the beginning of the nuptial flight until the emergence of workers in newly established colonies. Many predators attacked while the queen was airborne. In order of the increasing height at which the attacks are usually made, the following spp. of Odon. preyed on the queens: Pachydiplax longipennis, Tramea carolina, Anax junius and Somatochlora provocans.

(763) WIGGLESWORTH, V.G., 1973. Evolution of insect wings and flight. Nature 246 (5429): 127-129. – *(Dept. Zool., Univ. Cambridge, Cambridge, UK).*
The paper is a summary of a contribution to the Symposium on Insect Flight, organized by the Royal Entomological Society of London, September 20-21, 1973. Disputes during the 19th century as to whether insects wings originated from gills of the paranotal lobes ended with almost universal acceptance of the paranotal theory. The author, however, here gives evidence that the thoracic styli were perhaps the precursors of insect wings, and describes a theory on the origin of insect flight. Wigglesworth's "dispersal theory" of the origin of flight has been put forward in 1963, but without considering the morphological origin of wings. In the present paper he attempts to re-state it with special reference to the hypothesis that winged insects arose from a secondarily aquatic ancestor. The fact that in odon. larvae some of the spiracles remain functional in aerial respiration fits well in the organization of his hypothetical aquatic prepterygote.

(764) YAMADA, K., 1973. (Anax parthenope julius from north-eastern Hokkaido). Nature and Insects 8 (12): 8. (Japanese). – *(110 Kitahama, Abashiri, Hokkaido, JA).*
3 ♂ were captured on August 24, 1972 at Abashiri, Hokkaido, Japan.

(765) ZIMMERMANN, W., 1973. Erste Zusammenkunft der Interessengemeinschaft 'Libellen" in Gotha am 15. und 16. September 1972. Ent. Ber., Berlin 1972 (2): 101-103. – *(Museum der Natur, Parkallee 15, DDR-58 Gotha, GDR).*
This is the official report on the First Colloquium of the Dragonfly Workers of the German Democratic Republic (14 participants, 4 lectures, 1 excursion), held in the Gotha Natural History Museum, September 15-16, 1972. The main conclusions are summarised in 7 points, including plans for faunistic inventarisation of the German Democratic Republic, central card index of odonatological literature (to be set up in the Gotha Nat. Hist. Mus.), and forms of mutual contact and cooperation among the DDR odonatologists. A list of addresses and specialisms of 21 DDR dragonfly workers is appended. The Second Colloquium was scheduled to be held in July-August, 1973 at Erlangen, German Democratic Republic. Anyone interested in Odon. and odonatology of the DDR is requested to contact the author. (*Abstracter's note*: So far 3 out of the 4 lectures have appeared in print and are listed in *OA* under Nos. 750, 754 and 766).

(766) ZIMMERMANN, W., 1973. Zur Kenntnis der Kleinen Pechlibelle, Ischnura pumilio (Charp.) (Odonata). Ent. Ber., Berlin 1972 (2): 108-112. – *(Museum der Natur, Parkallee 15, DDR-58 Gotha, GDR).*
In the German literature I. pumilio is usually considered as a local and generally scarce sp., consequently, very little is known on its biology. The lack of adequate observations, however, does not imply eo ipso that the sp. is as scarce as generally believed and the author arrives at the conclusion that the scanty knowledge on its biology is due in the first place to inadequate interest so far payed to this sp. The paper deals with its ecology, phenology, reproductive behaviour and morphology. A list of records from Western Thuringia, German Democratic Republic, is added.

1974

(767) ARAI, Y., 1974. (Display of the female of Ischnura asiatica). Nature and Insects 9 (9): 25. (Japanese). – *(c/o Orikawa, 215 Koizuka, Kumagaya, Saitama, 360, JA).*
The ♀ display towards a ♂ and ♀ of the same and other sp. can be divided into 6 types, viz. (1) WW, wing warning, (2) WWRA, wing warning and abdomen raising, (3) WWBA, wing warning and abdomen bending, (4) BA, abdomen bending during flight, (5) WWAC, wing warning and ventral abdominal curving, (6) AC, abdominal curving during flight.

(768) ASAHINA, S., 1974. The insects obtained at the Meteorological Station on the summit of Mt. Fuji. In: Report on the scientific survey of the western slope of Mt. Fuji, pp. 106-114. (Japanese, with Engl. s.). – *(Totsuka III-123, Shinjuku-ku, Tokyo, 160, JA).*
During the 1971 summer more than 60 insect spp. were observed at the summit of Mt. Fuji (alt. 3776 m), Japan. 19 of these were already previously known, but 21 are new to the fauna of this locality. All of them are considered to be brought up from the forest zone, presumably along the Osawa Valley, by the prevailing W. winds of this season. The list includes 4 odon. spp., among which Epitheca bimaculata sibirica Belyshev is new to the local fauna. It is interesting that for the second time a hybrid Sympetrum specimen has been captured at this locality (cf. *OA* No. 650).

(769) ASAHINA, S., 1974. 1973 unusual occurrence of a tropical dragonfly, Anax guttatus, in Japan, Kontyû 42 (1): 39. (Japanese, with Engl. translation of the title). – *(Totsuka III-123, Shinjuku-ku, Tokyo, 160, JA).*
Adult and larval specimens of A. g. were obtained from Ezuko Lake, Kumamoto;

Shizuoka-shi; Nakamura-shi; Kochi; and from Nagasaki. A single adult ♂ was captured also in Tokyo. (Author).

(770) ASAHINA, S., 1974. An additional note to the Odonata of Iraq. Kontyû 42 (2): 107-109. – *(Totsuka III-123. Shinjuku-ku, Tokyo, 160, JA).*
9 spp., taken in 1970 at Basrah and Sarsang, Iraq, are brought on record. Onychogomphus lefebvrei (Ramb.) is new to the Iraqi fauna (Cf. also *OA* No. 556).

(771) ASAHINA, S. & S. EDA, 1974. (Dragonfly collecting and photographing trip to Hokkaido. I. Chimikkep Lake; II. Akan Lake and Kushiro Marsh). Gekkan Mushi 1974 (35): 9-13. (Japanese). – *(Totsuka III-123, Shinjuku-ku, Tokyo, 160, JA).*
Erythromma sp., Aeshna subarctica, Epitheca bimaculata sibirica, Somatochlora japonica, Macromia amphigena and Epophthalmia elegans were collected and photographed at the 3 localities in Hokkaido, Japan, from June 25 through July 4, 1973. (Cf. also *OA* No. 772).

(772) ASAHINA, S. & S. EDA, 1974. (Dragonfly collecting and photographing trip to Hokkaido. I. Chimikkep Lake; II. Akan Lake and Kushiro Marsh). Science Rep. Kushiro Municipal Mus. 227: 15-17 (Japanese). – *(Totsuka III-123, Shinjuku-ku, Tokyo, 160, JA).*
This is the same text as that of the paper listed in *OA* No. 771.

(773) ATKINSON, E.T., 1974. *(reprint).* Fauna of the Himalayas. Containing species of Kumaon, Garhwal, Nepal and Tibet. Cosmo Publications, Delhi. X + 266 pp. – (Publishers' address: *10178 Library Road, Delhi-6, India).*
The book is a reprint of chapters I and II of the Himalayan Gazetteer (1973). The latter, in its turn, has been first published under the title "The Himalayan districts of the North Western Provinces of India" (forming vol. XI of the Gazetteer N.W.P.), Allahabad, 1882. The original intention of the two chapters, reprinted here as a separate book, was to give a comprehensive, though not complete, list of the fauna known from the Himalayan territories in the eighties. The list of Odon. appears on pp. 182-183 and includes 44 spp., referred to 12 genera. The general distribution in India, as known at that time, is also stated. The publication has a historic value only. *(Abstracter's note:* The publishers' note on the cover of the book may mislead the uninformed reader. It presents the volume, in miserable English, in such a way that one gets the impression that the book is the result of the most modern achievements of research, its purpose being "inspiring scholars to do more work in this field". – Price Rs 75.–).

(774) BELYSHEV, B.F., 1974. Zoogeographical correlation in odonatofauna (Odonata, Insecta) of Equatorial Africa. Izv. sib. Otdel. Akad. Nauk SSSR, ser. Biol., (1974) 10 (2): 76-81. (Russian, with Engl. s.). – *(Biol. Inst., Siberian Branch USSR Acad. Sci., Ul. Frunse 11, Novosibirsk – 91, USSR).*
The present division of the Ethiopian Region is criticised, and a new division, based on odon. distribution, is proposed. The author distinguishes 4 subregions, viz. the Guinean, the Eastern, the Cape and the Malgasian.

(775) CARNELUTTI, J., 1974. Žuželke v Triglavskem narodnem parku in okolici. (Insects in the Triglav National Park and its surroundings). Proteus, Ljubljana 36 (9-10): 440-442. (Slovene). – *(Inst. Biol., Slovene Acad. Sci. Arts, Novi Trg 3, YU-61000 Ljubljana).*
This is a brief review of the history of entomological research in the Triglav National Park and its surroundings, Julian Alps, Slovenia, Yugoslavia, traced from 1761 onwards. Odon. are one of the few orders hitherto faunistically monographed in the region (33 spp.), though a few of the more "popular" larger orders have also been extensively studied, but the results mostly remained unpublished. Aeshna juncea is the only sp. referred to specifically.

(776) DYE, L., 1974. An investigation of the genus Aeshna as a predator on young-of-

year Orconectes virilis. Titles & Abstr. Pap. 22nd Ann. Meet. Midwest Benthol. Soc., Cincinnati, Ohio. pp. 2-3. – (*Dept. Ent., Ohio State Univ., 1735 Neil Ave., Columbus, Ohio 43210, USA*).
Field and laboratory experiments were conducted during the summer of 1973 at the Pigeon River Trout Research Station, Otsego county, Michigan, USA. Weekly sampling of two lakes with a cylindrical box-sampler established the relative numbers of Aeshna and crayfish. During the three week period after independence of yg-of-yr crayfish, the ratio of Aeshna to crayfish was approximately 1.6 to 1.0 in North Twin Lake and 0.08 to 1.0 in West Lost Lake. Field experiments were conducted in 3x6 foot enclosures planted with Carex aquatilis to provide shelter in 25% of the area. With crayfish density at 4/sq. ft. and Aeshna densities of 0.55 and 0-28/sq. ft. (ratios of 0.14 and 0.07 to 1.0 crayfish), the survivorship of the 4-6 mm crayfish was very significantly reduced in a week's time even though alternate prey was provided; $P_{\alpha} = 0.002$ and 0.02 respectively. Reduction of survivorship was not as significant with 7-12 mm crayfish; $P_{\alpha} = 0.05$ and 0.20. Detailed laboratory observations of feeding behavior in which Aeshna umbrosa were given four prey choices, showed the following: (1) more crayfish were caught in proportion to availability, than other prey types, (2) crayfish provided 73% of the weight of food obtained while requiring only about 53% of the effort expended in pursuit time, eating time, and distance covered in pursuit. In attempting to associate experimental observations with normal feeding habits, the potential daily ration was determined to be around 0.10 gm and the total gut capacity to be 0.16 gm. This knowledge enabled us estimation of hunger state of seven Aeshna fed with known weights of food within one hour after collection from North Twin Lake. Hunger in 5 of the 7 was equivalent to 2 or 3 days starvation. (Verbatim).

(777) EDA, S., 1974. (Review of odonatology in Japan in 1973). Nature and Insects 9 (1): 4-5. (Japanese). – (*Dept. Oral Pathol., Matsumoto Dental Coll., 1780 Gobara, Hirooka, Shioziri, Nagano, 399-07, JA*).
Chronicle of the Japanese odonatological achievements and events in 1973, with report of a new record of Erythromma sp. from Hokkaido, and announcement of a celebration of Dr. S. Asahina's 60th anniversary. (For the chronicle of 1971 and 1972 cf. *OA* Nos. 233, 235 and 565).

(778) GHENCIU, V., 1974. Traits limnologiques du lacul Roşu (Carpathes Orientales). Anal. ştiinţ. Univ. Al. I. Cuza (II) 20 (1): 189-194. – (*c/o Lab. Zool., Univ. "Al. I Cuza", Iasi, RU*).
The abiotic and biotic conditions of the lake Rosu, eastern Carpathians, Roumania, are summarized. Among the dominant invertebrate spp. Aeshna grandis and Somatochlora metallica are mentioned.

(779) HELLINGA, W., 1974. Inventarisatie entomofauna Zuid-Holland. (Inventarisation of the insect fauna of Zuid-Holland). Ent. Ber., Amsterdam 34 (8): 137. (Dutch). – (*c/o Netherlands Ent. Soc., Plantage Middenlaan 64, Amsterdam, NL*).
In order to gain a better insight into the environmental conditions prevailing in the highly industrialized Dutch province of Zuid Holland, the Netherlands Entomological Society is planning a systematic inventarisation of several insect orders, incl. Odon. The project will be carried out in cooperation with the responsible provincial authorities. Detailed information can be obtained from H. Overbeek, Bleulandweg 138, Gouda, the Netherlands.

(780) HOCKING, B., 1974. Environmental quality and biting fly control: problems and possibilities. Pap. Symp. Biting Fly Control and Environ. Quality, pp. 9-14. Univ. Alberta, Edmonton. – (*Dept. Ent., Univ. Alberta, Edmonton, Alberta, CA*).
In the text reference is made to an unpublished PhD thesis, (G. Pritchard, 1963. Predation by dragonflies [Odonata: Anisoptera]), of the Univ. of Alberta, in which Odon. are considered as being of moderate impor-

tance as predators on adult mosquitos in the area of the Elk Island National Park, Canada.

(781) IGNATOWICZ, S., 1974. The occurrence of larvae of water mites of the genus Arrenurus Dugès (Arrenuridae, Hydrachnellae) on some dragonflies of the suborder Zygoptera. Bull. Ent. Pol. 44 (2): 307-314. (Polish, with Engl. s.). – *(Dept. Zool., Inst. Biol., UMK, ul. Gagarina 9, PO-87-100 Torún).*
61.7% of specimens of 5 coenagrionidan spp. collected during the second half of June, 1972 at the Lake Narie, Olsztyn prov., Poland, were infested with Arrenurus larvae. Ischnura elegans was the most frequently attacked (89.7% of specimens), followed by Coenagrion pulchellum (59.0%), Enallagma cyathigerum (55.9%) and C. puella (37.5%). The mean number of mites per infested dragonfly was also highest in I. elegans (24.0), while for C. pulchellum, E. cyathigerum and C. puella the values were 10.4, 9.0 and 3.0 respectively. On a single C. hastulatum examined no mites were found. The mites were not identified specifically.

(782) IGUCHI, A. & H. MIZUSHIRI, 1974. (Emerging positions of two dragonfly species). Nature and Insects 9 (2): 30. (Japanese). – *(Biology Club, Taikyu High Sch., Wakayama, JA).*
The emergence positions of Anax nigrofasciatus (situated between 6-25 cm from water, but most of them 13 cm), and of Libellula quadrimaculata asahinai (3-20 cm, 10 cm) are described.

(783) JOLY, P., F. SCHALLER, J. HOFFMANN, L. JOLY & D. ZACHARY, 1974. Rapports entre l'ecdysone, la glande prothoracique et la mue chez les insectes. Arch. Anat. Hist. Embr. norm. exp. 56 (1973): 195-208. – *(Lab. Biol. Gén., Univ. Louis Pasteur, 12 rue de l'Université, F-67000 Strassbourg).*
The endocrine control of moulting in Locusta migratoria (Orthoptera) and Aeshna cyanea appears more complex than had been previously assumed. While the exact role of the prothoracic glands of these insects in the conversion of cholesterol to ecdysone remains conjectural, these glands elaborate a protein, probably implicated in the preparation of moulting. In addition, the radiosensitive cells of the hemocytopoietic tissue produce one or several substances requested for the synthesis of ecdysone. (Authors).

(784) KAISER, H., 1974. Intraspezifische Aggression und räumliche Verteilung bei der Libelle Onychogomphus forcipatus (Odonata). Oecologia 15: 223-234. – *(Zool. Inst., Univ. Köln, Weyertal 119, D-5000 Köln-41, GFR).*
Intraspecific aggression and spatial distribution in O. forcipatus were studied on the banks of the Dreisam River (near the town of Freiburg im Breisgau, German Federal Republic) and the rivulet Rosandra (near Triest, Italy). Sexually mature ♂♂ perch on stones along the shoreline of rivulets waiting for mates. They react aggressively towards conspecific ♂♂. From time to time they fly around, mostly fighting other ♂♂. At uniform shorelines they often do not return to perch on the same site, but apparently choose perches at random. This is confirmed by a statistical analysis of the distribution of perching sites along the shoreline. It is concluded that ♂♂ of O. forcipatus do not defend distinct territories but are aggressive without site attachment. This type of behaviour is considered as phylogenetically primitive in Odon. (Author).

(785) KAISER, H., 1974. Verhaltensgefüge und Temporialverhalten der Libelle Aeschna cyanea (Odonata). Z. Tierpsychol. 34: 398-429. – *(Zool. Inst., Univ. Köln, Weyertal 119, D-5000 Köln-41, GFR).*
Behavioural patterns and temporial behaviour were studied in A. cyanea. The results may be summarized as follows: (1) During feeding flight dragonflies fly at varying heights along forest fringes and hedges catching insects. They hardly react to conspecifics which cross their path; – (2) ♂♂ that are ready to copulate visit ponds for mating. They fly along the shore line in a patrol flight characterized by constant height, frequent hovering, fighting with other ♂♂, and attempts to mate with ♀♀; –

(3) The frequency of hovering declines during the course of a patrol, the other characteristics of patrol flight also become less noticeable; – (4) A ♂ may visit a pond several times a day, each visit lasting up to 40 min. A visit may terminate spontaneously or after a fight; – (5) In searching for suitable places for oviposition the ♀♀ fly along the shoreline similarly to the ♂♂. They oviposit into damp mossy earth on the shore, near the water. They return to the pond every 1 to 3 days and stay up to 2 hours; – (6) In mating the ♂ grasps the ♀ from above and behind while flying and gets into copulatory position with it. The pair leaves the water area for copulation. Non-receptive ♀♀ may refuse to attain the copulatory position. The ♂♂ recognize ♀♀ mainly by flight movement. Copulation lasts about 2 hours; – (7) The dragonflies rest by hanging down from twigs of trees or shrubs. When basking they raise their abdomen. Eye cleaning is done with the forelegs during rest. Cleaning of wings and abdomen occurs in mid-flight, mainly as displacement activity; – (8) The behaviour of A, cyanea is typical for the genus and the whole family of Aeshnidae. Interspecific differences exist mainly as ecological adaptations; – (9) Switching from feeding flight to patrol flight and vice versa may be explained by increasing and decreasing of a patrol flight drive; – (10) ♂♂ of A. cyanea show intraspecific aggression but they do not found territories. Their behaviour is explained as temporial behaviour; and (11) In comparison to the well known territorial behaviour is postulated the concept of temporial behaviour, i.e. intraspecific aggression is not bound to a limited area, but is time dependent, and causes a temporal sharing of a certain area. (Author).

(786) KANSAI RESEARCH GROUP OF ODONATOLOGY (ed.: I. Hiura), 1974. Dragonfly fauna of the Kinki District, Central Japan. Part 1: Epiophlebiidae, Petaluridae and Gomphidae. Spec. Pubs Osaka Mus. Nat. Hist. 6: 1-27. (Japanese, with Engl. translation of the title). – *(c/o Dr. I. Hiura, Osaka Mus. Nat. Hist., Nagai Park, Higashinagai-cho, Higashisumiyoshi-ku, Osaka, 546, JA).*

This is the first part of a series on the odon. fauna of the Kinki District, Japan. It is the result of work of 47 members of the Group, commenced in 1967 (cf. Abstracter's note in *OA* No. 307, where the organization is called by its Japanese name, Kansai Tombo Group). The paper deals with 24 spp. of the 3 families (Epiophlebiidae 1, Petaluridae 1, Gomphidae 22). In addition to the usual collection data and field observations, histograms of seasonal occurrence are given for 11 spp. *(Abstracter's note*: An Engl. translation of the "Introductory remarks" and "Preface" is available from the Editor of Odonatologica or from the S.I.O. representative in Japan, K. Inoue, 5-9, Fuminosato 4-chome, Abeno-ku, Osaka, 545, JA).

(787) KUFLIKOWSKI, T., 1974. The phytophilous fauna of the dam reservoir at Goczałkowice. Acta hydrobiol., Krakow 16 (2): 189-207. – *(Inst. Aquat. Biol., P.A.N., Goczałkowice, PO).*

From 1964 through 1967 a quantitative and qualitative study was performed of the phytophilous fauna. Dragonflies were rather rarely found and do not appear to be of great importance. The sole exception is Erythromma najas, which occurred in large numbers on Elodea canadensis (46 specimens per litre), representing 84% of the total number of Odon. on Elodea. The other spp. recorded are Coenagrion sp., Ischnura elegans, Lestes sponsa and Somatochlora metallica.

(788) LIEFTINCK, M.A., 1974. Dragonflies collected by the Noona Dan Expedition in the southwestern Philippine Islands (Insecta, Odonata). Steenstrupia 3 (12): 111-147. – *(Nwe Veenendaalseweg 224, Rhenen, NL).*

A summary is given of the Odon. occurring in the islands surrounding the Sulu Sea, S.W. Philippines. 5 new Zygoptera are described and illustrated: Rhinocypha latimacula (Tawi Tawi), Amphicnemis circularis (Tawi Tawi), Drepanosticta ceratophora (Palawan), Teinobasis rubricauda (Palawan), and

Coeliccia axinocercus (Balabac). The habitat "New Guinea" of the monobasic genus Asthenocnemis is corrected and should be Palawan, from which island a total of 45 taxa are recorded. (Author).

(789) MANI, M.S., 1974. Fundamentals of high altitude biology. Oxford & IBH Publ. Co., Delhi-Bombay-Calcutta. XII + 196 pp. – *(Sch. Ent., St. John's Coll., Agra Univ., Agra, India).*
This is a brief outline of the subject (incl. plants, animals and man) by the well known specialist on high altitude entomology. Among the lowland animals found occasionally at high altitudes 2 groups are distinguished, viz. the aeolian derelicts and the summit-seeking spp. On p. 78, Odon. are listed in the former. (*Abstracter's note*: By "aeolian derelicts" the author understands [p. 78] "the wind-blown organic particles [incl. insects] on mountain slopes. They represent material not of local origin at high altitude, but matter transported passively by air currents from the plains .... [p. 80]. The aeolian derelicts reach the high altitude more or less dead and frozen." This being so, dragonflies should certainly not be listed in this category. Since they also cannot be characterized as "Summit seeking", a third category should be recognized for these migrants, usually flying actively against strong air currents, and found commonly in the Himalaya, near elevations of 4000 m, and occasionally even above the 6000 m mark. – Price Rs. 42.–).

(790) MATSUI, I., N. SHIMIZU & K. UDONO, 1974. (Odonata of Tono, Gifu Prefecture. First Report). New Insect 8 (1): 11-22. (Japanese). – *(Aza-ichiba 73, Moriyama, Moriyama-ku, Nagoya, 463, JA).*
67 spp. were collected, including Platycnemis foliacea sasakii, Trigomphus melampus, Anaciaeschna martini, Macromia daimoji and Sympetrum maculatum.

(791) MIELEWCZYK, S., 1974. B.F. Bielyshev [sic!]: The dragonflies of Siberia. Przegl. zool. 18 (2): 276-277. (Polish, title also in Engl.). – *(Inst. Zool., P.A.N., ul. Swierczewskiego 19, Poznań, PO).*
Extensive book review of the volume listed in *OA* No. 473.

(792) MIELEWCZYK, S., 1974. B.M. Mamaev, Opredelitel' nasekomych po ličinkam. Posobie dla učitelej. Bull. Ent. Pol. 44 (2): 467-468. (Polish). – *(Inst. Zool., P.A.N., ul. Swierczewskiego 19, Poznań, PO).*
Book review of the volume listed in *OA* No. 728.

(793) MINELLI, A. & F. PAVAN, 1974. On the optics of dragonflies eye – an apparatus for water and air. Zool. Anz. 192 (1-2): 10-14. – *(Ist. Biol. Anim., Univ. Padova, Via Loredan 10, I-35100, Padova).*
The dioptrical devices were studied in larval and adult Coenagrion puella. The results are confirming and extending the previously available evidence on other spp. It appears that larval and adult ommatidia differ only morphometrically in this sp.

(794) MITRA, T.R., 1974. Note on vertebrate enemies of dragonflies (Odonata). Ent. News 85: 61. – *(398 Dum Dum Park, Calcutta-55, India).*
The house sparrow (Passer domesticus) was often observed preying in August upon Crocothemis servilia and Trithemis pallidinervis. The other common predator in Calcutta, India, is the house gecko (Hemidactylus brooki). A number of geckos are always around on the room walls, laying in wait for insects attracted by light. Among the latter are regularly 3 odon. spp., viz. Crocothemis servilia, Brachythemis contaminata and Tholymis tillarga. Only the former 2 of these are attacked by geckos. It is suggested that the disregard of the lizzards for the latter is due to the peculiar wing coloration of T. tillarga, resembling a hymenopteran. (For phototactic behaviour of T. tillarga cf. also *OA* No. 744).

(795) MITRA, T.R., 1974. Another record of migratory flights of the dragonfly Pantala flavescens (Fabricius) (Odonata, Libellulidae) in Calcutta. Ent. Rec. J. Var. 86 (2): 53-54. – *(398 Dum Dum Park, Calcutta-55, India).*
On September 17, 1972, a swarm was ob-

served heading due E. from Calcutta. Several thousand individuals were involved flying app. 10 m above the ground in irregular lines 6-10 deep.

(796) MITRA, T.R. & A.R. LAHIRI, 1974. Notes on the distribution of some dragonfly species (Odonata, Anisoptera) of Bengal. Ent. Rec. J. Var. 86 (3): 73-74. – *(398 Dum Dum Park, Calcutta-55, India).*
Hemianax ephippiger, Anax imperator, Tholymis tillarga and Macrodiplax cora are recorded as new for West Bengal, India.

(797) MOUZE, M., 1974. Interactions de l'oeil et du lobe optique au cours de la croissance postembryonnaire des insectes odonates. J. Embryol. exp. Morph. 31 (2): 377-407. – *(Inst. Biol. anim., Univ. Sci. Techn. Lille-I, B.P. 36, F-59650 Villeneuve d'Ascq).*
Different types of experiments have been performed in Aeshna cyanea and Anax imperator in order to disturb or to destroy the relations between the eye and the optic lobe and then to study these isolated organs. The results show that growth and differentiation of the eye are independent of the optic lobe. However, the structure of ommatidia whose post-retinal fibres have been sectioned is markedly modified. The growth of the optic lobe is closely related to the presence of the eye and more precisely to the connexion with the post-retinal fibres. The volume of the optic lobe, especially the more external optic ganglia, is reduced after its relations with the eye are disturbed. Moreover numerous abnormalities in its structure evince a disordered organization of new nerve fibres, which are attracted by the newly constituted zone of the lamina and exert a mitogenic action in the outer growing zone of the optic lobe. These fibres seem to exert a regulatory effect upon the differentiation and final position of the new ganglion cells. (Author).

(798) OSBORN, A.W. & G.N.R. FORTEATH, 1974. Biology, dispersion, and natural enemies of Inopus rubriceps. Environ. Entomol. 3 (1): 29-32. – *(CSR Res. Lab., Roseville, NSW, AU).*
Hemianax papuensis and Notoaeschna sagittata were found to be preying on adult I. rubriceps (Diptera: Stratiomyidae).

(799) PICKARD, R.S. & P.J. MILL, 1974. Ventilatory movements of the abdomen and branchial apparatus of dragonfly larvae (Odonata: Anisoptera). J. Zool., Lond. 174: 23-40. – *(Dept. Zool., Univ. Coll., Cardiff, Wales, UK).*
The study was performed on the larvae of Anax imperator, Aeshna cyanea and A. juncea. Use of cine-photography in the analysis of ventilatory movements has necessitated a reappraisal of the ventilatory patterns previously described in dragonfly larvae. Movements of the abdominal exoskeleton, monitored by cine-photography, phototransistor and strain gauge, are discussed in relation to known muscular activity. Internal movements of the branchial apparatus, which consists of two chambers and three valves, are also illustrated in the intact animal. The mechanism of "gulping" ventilation in dragonfly larvae is discussed. (Authors).

(800) PINHEY, E., 1974. A revision of the African Agriocnemis Selys and Mortonagrion Fraser (Odonata Coenagrionidae). Occ. Pap. natn Mus. Rhod. (B) 5 (4): 171-278. – *(National Mus., P.O.B. 240, Bulawayo, Rhodesia).*
Structurally, the genus Agriocnemis and the sibling taxon Mortonagrion are very intriguing. They not only include amongst them the smallest African spp. of Odon. but venationally they are very distinct; they exhibit greater polychroism than other genera, but this is shown to be maturational; polymorphism is exceptionally strong in the mid-thoracic region; and their male anal appendages are comparatively more diverse in form than in other African genera. The prothoracic hindlobe in both sexes is usually tripartite, sometimes less noticeably modified. In some spp. there is a ventral or "inferior lip" on the lobe which stiffens it. The dorsal arms of the mesostigmal laminae are more strongly developed into a ridge in the ♀♀ of a few spp. The possible roles played

by these structures in tandem linkage are discussed. The generic diagnosis is given with some additions to earlier descriptions, including the prophalli and bursae. There has been some confusion in the past over the true type sp. of Agriocnemis. A. lacteola Selys is given here, but rufipes and pygmaea of Rambur have both been employed previously in this capacity. 16 African spp. of Agriocnemis are recognized as well as some sspp.; also the single African Mortonagrion, M. stygium (Fraser). New taxa described are: Agriocnemis angolensis spatulae ssp. n. (single ♂, N.W. Zambia), A. falcifera transvaalica ssp. n. (♂ holotype and ♀ allotype: Woodbush, Transvaal), A. aligulae sp. n. (♂ holotype and ♀ allotype: Garamba, Zaire), and A. angustirami sp. n. (♂ holotype: Mt. Coffee, Liberia). A neallotype ♀ is described for A. ruberrima albifrons. The status of Mortonagrion as a distinct genus is discussed and shown to be dubious. A descriptive survey and a key to both sexes are made of all the African spp. and specific distribution is discussed from tables of available data. Short biological notes are also added.

(801) PITTAWAY, A.R., 1974. An expedition to eastern Austria – July/August 1975 [sic!]. Bull. amat. Ent. Soc. 33 (304): 115-121. – *(c/o Amateur Entomologist's Soc., 355 Hounslow Rd., Hanwoth, Feltham, Middlesex, UK.* – In correspondence refer to the author's *Membership No. 4802*).
This is an account of entomol. collections made during a trip to eastern and southern Austria. Coenagrion puella, Calopteryx splendens and C. virgo are listed from the surroundings of Hainsdorf nr. Mureck, Styria. A sketch map of the area is added.

(802) PRICE, C.D. & N.A. RATCLIFFE, 1974. A reappraisal of insect haemocyte classification by the examination of blood from fifteen insect orders. Z. Zellf. Mikr. Anat. 147 (4): 537-549. – *(Dept. Zool., Univ. Coll., Singleton Park, Swansea, Wales, UK).*
A simplified classification was formulated based on light microscopic examination of the haemolymph. The orders studied include also Odon. 6 cell types or developmental stages are distinguished. The structure and occurrence of the haemocytes are described together with the structural variations which occur in each cell type. Due to considerable overlap in structure and the presence of numerous intermediates, the 6 cell types may represent different developmental and/or functional stages of one basic cell type. The available evidence for this unitarian hypothesis is discussed.

(803) ROSSER, B.L., 1974. A study of the afferent pathways of the dragonfly lateral ocellus from extracellularly recorded spike discharges. J. Exp. Biol. 60 (1): 135-160, 1 pl. – *(M.-P.-I. für biologische Kybernetik, Spemannstrasse 38, D-74 Tübingen).*
Studies were performed on the adults of both sexes of Aeshna cyanea. The results are summarized as follows: (1) The lateral ocellar nerve of adult dragonflies contains at least two kinds of afferent nerve fibres: the 'giant' afferent and small afferents. Efferent fibres are also present, but are not described here; – (2) The afferent fibres and receptor axons were studied by extracellular recording of their spike discharges. Experiments using light and electrical (D.C.) stimulation and the application of magnesium were performed; – (3) Responses of the giant afferent were analysed into a number of exponential components. The number could be altered experimentally; – (4) The giant afferent shows the phenomenon of 'delayed response", a delayed onset of the off-response to brief light stimuli. A qualitative model for delayed responses, incorporating the exponential components, is described; – (5) It is concluded that the small afferents behave in accordance with Ruck's model of ocellar functioning but that the giant afferent does not. It is proposed that inhibition in the giant afferent fibre is produced electrotonically, but there may be a synaptic contribution also. (Author).

(804) SADA, T., 1974. (Unusually early oviposition and late emergence of Sympetrum speciosum). Nature and Insects 9 (5): 14. (Japanese). – *(Shohara, Shoritsu, Omurota, Fukuoka, JA).*

The 2 extreme dates observed at Omurota, Kyushu, Japan, are July 8 and September 12, 1973 respectively.

(805) SELYS-LONGCHAMPS, E. de, 1974 (*reprint*). Synopsis des Agrionines. S.I.O. Series of Reprints of Classical Odonatological Monographs, Ghent, Vol. 3, 567 pp.
Photostatic reprint of the papers published under this title from 1860 through 1877, bound in one volume, but retaining the original reprint pagination. (*Abstracter's note*: The book can be obtained from the Office of the Secretary of the Society, Dr. H.J. Dumont, Inst. Zool., Univ. Ghent, Ledeganckstraat 35, B-9000 Ghent, at the price of FrB. 1500.–). Cf. also *OA* Nos. 806 and 807.

(806) SELYS-LONGCHAMPS, E. de & H.A. HAGEN, 1974 (*reprint*). Monographie des Caloptérygines. S.I.O. Series of Reprints of Classical Odonatological Monographs, Ghent. Vol. 1, 292 pp., 14 pls.
Photostatic reprint of the monograph, published originally in 1854. (*Abstracter's note*: The book can be obtained from the Office of the Secretary of the Society, Dr. H.J. Dumont, Inst. Zool., Univ. Ghent, Ledeganckstraat 35, B-9000 Ghent at the price of FrB. 900,–). Cf. also *OA* Nos. 805 and 807.

(807) SELYS-LONGCHAMPS, E. de & H.A. HAGEN, 1974 (*reprint*). Monographie des Gomphines. S.I.O. series of Reprints of Classical Odonatological Monographs, Ghent. Vol. 2, 460 pp, 23 pls.
Photostatic reprint of the monograph, published originally in 1857. (*Abstracter's note*: The book can be obtained from the Office of the Secretary of the Society, Dr. H.J. Dumont, Inst. Zool., Univ. Ghent, Ledeganckstraat 35, B-9000 Ghent, at the price of FrB. 1400.–). Cf. also *OA* Nos. 805 and 806.

(808) SELYSIA. A Newsletter of Odonatology. Vol. 6, No. 2 (July 1, 1974). Compiled by M.J. Westfall Jr. and C. Johnson). – (*c/o Prof. M.J. Westfall Jr., Dept. Zool., Univ. Florida, Gainesville, Fla 32611, USA*).
Donelly, T.W.: Odonata collecting "down under" (= impressions from dragonfly collecting in Fiji, Australia and New Guinea, with notes on "Dragonflies and Continental Drift"); – *Gloyd*, L.K.: Why "dragonflies and damselflies"?; – *Westfall*, M.J.: Second International Symposium of Odonatology; – *Westfall*, M.J.: Smith-Hodges Odonata collection now in Gainesville; – *Miscellaneous news* on current work and informative communications by K.J. Tennessen, R.W. Garrison, K.J. Deacon, J. Peterson, and K.W. Knopf.

(809) SHARMA, K.C., 1974. Numbers of species of insects in the Entomological Museum, determined, confirmed and authoritatively identified. Ministry of Agriculture, Division of Entomology, Lalitpur. 4 pp. (mimeographed). – (*Div. Ent., Khumal Tar, Lalitpur, Nepal*).
According to the list, the Museum possesses 12 spp. of Odon., referable to 5 families. (*Abstracter's note*: In September, 1974 we had the opportunity to visit the large and, under the local conditions, extremely well organized Nepalese entomological research institute and museum. Aside from a relatively large entomological library, the museum houses by far the largest collection of Nepalese insects in Nepal. The odon. collection [adults only] is arranged in a separate, medium sized entomological chest of drawers and contains certainly more than 200 specimens, referable to at least 30 spp. Most of these originate from the Kathmandu Valley, though many are also from other Nepalese provinces. All material is pinned, properly labelled, but for the most part unidentified. Though some specimens are in poor condition, good care is taken of the collection by a specially trained entomology technician).

(810) SKELTON, M.J., 1974. Orthoptera, Dictyoptera and Odonata. Preliminary distribution maps. Biological Records Centre, Abbots Ripton. III + 73 pp. – (*Biological Records Centre, Nature Conservancy, Monks Wood Expl. Stn, Abbots Ripton, Huntingdon, PE17 2LS, UK*).
The booklet contains provisional distribu-

tion maps of the representatives of the three orders native to the British Isles, (including 40 odon. spp.). Of the migratory dragonflies, only those maintaining breeding populations in the British Isles have been included. Maps are shown for some spp. of which there are no recent records. Coenagrion hastulatum is thought to be merely underrecorded, but the status of C. armatum and Oxygastra curtisii is uncertain. The temporary colonist, Coenagrion scitulum, which has not been seen for several years, is omitted. Though "preliminary" the booklet will be extremely useful not only to British odonatologists, but to anyone interested in odon. zoogeography in general. (Cf. also *OA* Nos. 368 and 392).

(811) SMIT, A., 1974. Beekjuffers aan de Ourthe. (Calopterygidae on the Ourthe). Natura 71 (4): 44-46. (Dutch). – *(Lugtenbergweg 38, Nunspeet, NL).*
A popular narrative on the behaviour of Calopteryx splendens and C. virgo as observed in June 1973 on the Ourthe near the village of Houffalize, Ardennes, Belgium. The only other sp. noticed on the rivulet was Pyrrhosoma nymphula, while at a stagnant water basin nearby numerous Coenagrion puella were observed. At the said locality the Ourthe rivulet harbours very strong populations of the 2 Calopteryx spp. Black-and-white photographs of all spp. mentioned are added.

(812) ST. QUENTIN, D., 1974. Die Gomphidenfauna Südamerikas (Ordn.: Odonata). Annln naturh. Mus. Wien 77 (1973): 335-363. – *(Richard Kralikplatz 2, A-1180 Wien).*
The paper gives a review of the South American Gomphidae, with diagnoses of all genera and with keys to all spp., known up to March, 1972. An attempt is made to analyze the composition and to trace the origin of the South American gomphid fauna. Three spp. of the genera Zonophora and Progomphus are described as new, viz. Z. machadoi (♂ holotype: "Top of Serra do Cipo", Minas Gerais, Brazil), Z. rokitanskyi (♀ holotype and 2 ♀ allotypes: "Manaus, Amazonas, Brazil), and P. victor (♂ holotype: "Ponta Grossa", Paraná, Brazil). The types of the new spp. are in the collection of Prof. Dr. A.B.M. Machado (Instituto de Ciencias Biológicas, Universidade Minas Gerais, C.P. 2486, BR-3000 Belo Horizonte, Brazil).

(813) STEHLÍK, J.L., 1974. Seventy fifth birthday of Professor Dr. Vladimir Teyrovský. Acta ent. bohemoslov. 71 (1): 53-55. – *(c/o Inst. Ent., Czechoslovak Acad. Sci., Vinična 7, CS-12800 Praha-2).*
Extensive biography and bibliography of the well known Czechoslovakian odonatologist (born March 15, 1898, Prague; at present retired from the Palacký University, but still working at the Nat. Hist. Mus. of Brno). A portrait is added. The appended bibliography of his works covers the period 1958-1971. His earlier bibliography has appeared in Sb. Vys. sk. pedagog. Olomouc 2 (1958): 19-24, and in Acta Soc. ent. Cechoslov. 60 (1963): 267-269.

(814) SUGIMURA, M., 1974. (Observations on Anax guttatus in Nakamura, Kochi). Nature and Insects 9 (9): 23-24. (Japanese). – *(13 Higashishitamachi, Nakamura, Kochi, 787, JA).*
A note on breeding from larvae collected at a pond in Nakamura, Shikoko, Japan. At room temperature ecdysis took place on November 8.

(815) THEISCHINGER, G., 1974. Winkelmann, F., Sympetrum vulgatum – Heidelibelle. Ent. NachrBl., Wien 19 (3) [1972]: 132. (German). – *(St. Margarethen 45, A-4020 Linz a. D.).*
Book review of the publication listed in *OA* No. 614.

(816) UEDA, T., 1974. (Odonata of Kyoto). In: Wild Animals of Kyoto, pp. 1-11. (Japanese). – *(Dept. Zool., Fac. Sci., Kyoto Univ., Sakyo, Kyoto, JA).*
94 spp. are known from Kyoto, Japan. The more interesting among these are: Epiophlebia superstes, Stylurus annulatus, S. nagoyanus, S. oculatus, Davidius moivanus taruii, Anax guttatus, Sympetrum depressiusculum and S. cordulegaster.

(817) VELDE, G. van der & P.J.G. POLDERMAN, 1974. Enige notities over de entomofauna van de Nollekreken te Vlissingen. (Some notes on the insect fauna of the Nolle creeks near Vlissingen). Ent. Ber., Amsterdam 34 (7): 126-130. (Dutch, with Engl. s.). – *(c/o Netherlands Ent. Soc., Plantage Middenlaan 64, Amsterdam, NL).*

During a survey carried out bimonthly in 1971 at the inland brackish creeks Nollekreken near Vlissingen, Zeeland Prov., the Netherlands, Ischnura elegans was the only odon. sp. recorded. It occurs at two creeks in which the chloride concentrations amount to 2.5-3.0‰ and 1.24-9.83‰ respectively.

(818) WEIR, J.S., 1974. Odonata collected in and near seasonal pools in Wankie National Park, Rhodesia, with notes on the physico-chemical environments in which nymphs were found. J. ent. Soc. South Afr. 37 (1): 135-145. – *(Sch. Nat. Resour., Univ. New England, Armidale, NSW, AU).*

Collections were taken from semi-arid aeolian sand regions in which the only aquatic environments range from ephemeral rainpools to larger seasonal lakes. Both imaginal and larval collections include large numbers of a few spp. Hemianax ephippiger, Pantala flavescens and Palpopleura sp. comprise 90% of the larvae identified. Lestes pallidus f. ochraceus, Ceriagrion suave, Hemianax ephippiger, Brachythemis leucosticta and Philonomon luminans predominate among imaginal forms. The range of physico-chemical conditions under which larvae were found is recorded, and the probable breeding success of certain spp. in these pools is discussed. Comparison with previous records of Odon. from temporary rainpools in Africa suggests that spp. are highly adapted to such habitats by the dispersal mechanisms of the imago which ensure efficient colonisation of such habitats, by the rapid larval growth rates which enable the life history to be completed before the pools dry up, and by the larval tolerance of rapid fluctuations and wide ranges in environmental conditions.

(819) WYNIGER, R., 1974. Insektenzucht. Methoden der Zucht und Haltung von Insekten und Milben im Laboratorium. Ulmer, Stuttgart. 368 pp. – *(Author's address unknown).*

On pp. 103-107 a brief characterization is given of 9 European odon. families and a rearing technique is described for Aeshna cyanea. The introductory chapters deal with various general aspects, including field collecting techniques and equipment, transportation of living material, technical utensils for insect rearing, various aspects of feeding, insect pathology etc.

(820) YAMAMOTO, Y., 1974. (An interesting posture of two males of Orthetrum albistylum speciosum). Gekkan Mushi 1974 (35): 28. (Japanese). – *(Inafune Bldg., 1-2, Inafune-dori, Chikusa-ku, Nagoya, 464, JA).*

A mature ♂ mounted on top of another mature ♂, and kept in this position for about a minute; then they separated and took on wings. A photograph is added.

(821) YAMAMOTO, Y., 1974. (Oviposition of Polycanthagyna melanictera in rain). Gekkan Mushi 1974 (37): 31. (Japanese). – *(Inafune Bldg., 1-2, Inafune-dori, Chikusa-ku, Nagoya, 464, JA).*

A note on 5 ♀ ovipositing in rain on July 23, 1973. 2 photographs are added.

ERRATUM

In the title of the paper, H.J. DUMONT, *Ischnura intermedia spec. nov. from Turkey, and its relations to I. forcipata Morton, 1907 and I. pumilio (Charpentier, 1825)*, published in the third issue, pp. 153-165, the term Anisoptera should be replaced by ZYGOPTERA.