



Selysia

A NEWSLETTER OF ODONATOLOGY

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THIRD INTERNATIONAL SYMPOSIUM OF ODONATOLOGY

By
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The University of Lancaster, Lancaster, England was the site of the Third International Symposium sponsored by the Societas Internationalis Odonatologica (S.I.O.) July 14-18, 1975. The symposium was organized by the university in conjunction with the Department of Biological Sciences, and the committee included Dr. T. T. Macan (secretary), Mr. R. M. Gambles, Dr. P. J. Mill, and Dr. M. J. Parr. Mrs. Macan graciously took charge of assigning rooms to members and planning activities for their families. Guest of honor was Miss Cynthia Longfield, whose many years of service to Odonatology were recognized. We also planned to honor Dr. D.E. Kimmins

but he was unable to be present.

Unfortunately, the general financial situation made it difficult for many to obtain funds to attend, and the change from an announced August meeting date to July further prevented others on the Continent from coming. Members were registered from Belgium, Canada, France, German Federal Republic, India, Italy, Netherlands, Nigeria, Sweden, United Kingdom, and the United States of America. A few early registrants were unable to attend due to illness or other reasons. Only Mrs. Leonora K. Gloyd and I were in attendance from the States. We were accompanied by my wife and daughter.

Members arrived Monday afternoon and were housed in the dormitories of the new university. Excellent meals were served in the University Cafeteria in the morning, and in a private dining room for noon and evening meals. Mid-morning coffee and afternoon tea afforded a social break in the full schedule.

Tuesday morning Dr. Macan gave the introductory welcome. During ensuing

S E L Y S I A

A Newsletter of Odonatology

Compiled at
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and
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Issued at intervals as available
news and information warrant

This newsletter is designed to disseminate facts and news about the activities of Odonatologists and Odonatology. It is not intended as a journal nor an organ for the publication of articles or technical papers. The name is based upon that of the "Father of Odonatology", Baron Edmond de Selys Longchamps.

lecture sessions on Tuesday and Thursday, the following papers were presented: DR. L. CAILLERE (Villeurbanne, France): Field Evaluation of the feeding rate in *Cordulegaster annulatus* Larvae (with a movie); PROF. C.I. CONSIGLIO (Rome, Italy): The space behavior of *Anax imperator*; MR. R. M. GAMBLES (Berkshire, England): 1. History of Odonatology in Great Britain. 2. The Problem of *Lestes pallidus*; DR. A.T. HASSAN (Ibadan, Nigeria): The effect of food on the larval development of *Palpopleura lucia lucia* (Drury); DR. N. W. MOORE (London, England): The Conservation of Odonata in Great Britain;

DR. U. NORLING (Lund, Sweden): 1. Seasonal regulation in *Leucorrhinia dubia*. 2. Spring species and summer species at different latitudes; DR. M. J. PARR (Lancashire, England): Some aspects of the population ecology of the damselfly *Enallagma cyathigerum* (Charp.); DR. P. PELLERIN, PROF. J. G. PILON, DR. D. RIVARD (Montreal, Canada—three papers read by Dr. Pellerin and Dr. Rivard in absence of Prof. Pilon): 1. (Pellerin) Interspecific differences and intraspecific variation in the morphology of Zygoptera during larval development. 2. (Rivard) Principal component analysis as a means to explain growth patterns in *Enallagma vernale* Gloyd. 3. (Pilon, read by Rivard) Effect of constant temperature environments on egg development of *Enallagma boreale* Selys; DR. R. RUDOLPH (Münster, German Federal Republic): Die Flugmechanik bei *Calopteryx splendens*; PROF. M. J. WESTFALL (Gainesville, Florida, USA): Taxonomic Relationships of *Diceratobasis macrogaster* (Selys) and *Phyllestes ethelae* Christiansen of the West Indies as Revealed by their Larvae.

The symposium committee distributed to those registering a copy of abstracts of the papers submitted. The papers for which manuscripts are prepared for publication will appear in the March issue of ODONATOLOGICA.

Cynthia Longfield led an interesting discussion on Problems of Nomenclature, and Dr. H. J. Dumont gave a slide presentation of his trip to the Sahara and Ethiopia. Prof. B. Kiauta showed slides made at the second symposium in Karlsruhe in 1973. Also some good demonstrations were presented.

On Wednesday Dr. M. J. Parr led an all day excursion by bus to Delamere Forest, which was highly successful. Those of us with nets collected a number of species of Odonata, some of which we had not seen alive.

The executive committee met for an extended session Wednesday night.

Thursday afternoon the business meeting of S.I.O. was held, and I was persuaded to act as chairman. A moment of silence was observed in memory of the Odonatologists who had passed away since the Second Symposium, notably Dr. Alois Bilek of Munich, Germany. It was decided to keep the annual membership dues at 50 guilders for the next two years, and a new membership category was initiated for students who will pay half the fee assessed to regular members. With the great increase in costs of publication, more members are needed to insure the fine quality of our journal ODONATOLOGICA. It is urged that all members make an effort to see that the libraries where they have influence subscribe to the journal and also to invite friends who are interested in Odonata to join. The Symposium Dinner was held after the business meeting, and it was a delightful occasion.

Friday morning the Congress dispersed. Some members were taken by Dr. Macan to the famous Lake District, and the tour I understand was a great success.

During the business meeting, I was elected to the Editorial Board of ODONATOLOGICA to represent North America and to facilitate in the handling of papers from the States. If readers in America have manuscripts suitable for the journal, I would be glad to see them.

It was also decided at the meeting to have the Fourth Symposium in 1977 at the University of Florida in Gainesville. I hope you will begin making plans now to attend. The European members talked of chartering a plane. Let's have a big representation from the States. Dates, etc., will be announced later.

It seems again that the summer will be the best time to have it, as we have been assured of the use then of a dormitory for housing. WILL EACH OF YOU PLANNING TO ATTEND PLEASE WRITE SOON AND TELL ME WHAT APPROXIMATE DATES WOULD BE BEST FOR YOU? We wish to choose a time that will fit in with the plans of the largest number possible.

NOTES FROM CARL COOK

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PROGRESS ON GOMPHIDAE IDENTIFICATION MANUAL.

About ten years ago, my work in the highway engineering field took me to Brazil and Chile where I became enchanted with neotropical gomphids, but somewhat exasperated by the lack of a good reference work for their identification. Thus was born the idea to personally undertake the preparation of such a work, and as a first step, I set about building up a synoptic collection of world Gomphidae and bringing together all possible literature concerning them in the original, microfilm or photocopy. This has developed into a monumental task with the end still far into the future! The scope of the work will cover descriptive text, illustrations of diagnostic structures, identification keys and distributional data for each taxon, and what is known of the bionomics of each species. Presently, the illustrations have been made for 138 species, and 1,200 pages of manuscript have been typed (none has yet been revised and edited into final form). It is not planned that new taxa will be described in the identification manual; such findings in the course of preparation will be published in other media. It is not possible at this stage to set any realistic target date for completion, but I would be pleased if this can be accomplished in another five to ten years.

ARE SOME NORTH AMERICAN DRAGONFLIES ALREADY EXTINCT?

When I first collected dragonflies, more than thirty years ago here in Kentucky, farmers and land owners were aware of the need for better soil management. Erosion control was every farmer's total commitment. Nearly all small streams were clear of silt and sediment; they were a dragonfly collector's delight. One of these beautiful little streams was Sassafras Creek in the eastern coal area, and on one June day in 1946 I collected four species of *Gomphus*, two of *Macromia*, a *Cordulegaster* and *Helocordulia*. In June of 1972 after the area had been mined extensively by "benching" the high slopes, I walked down the stream for a mile or more. The bottom was now covered with silt, and I saw no dragonflies. Of course those species I collected in 1946 are in no real danger of becoming extinct as they are still common on many other Kentucky streams. The real concern is for a species restricted (so far as we now know) to one particular habitat. For an example, *Gomphus kurilis* has seemingly disappeared from its one known habitat at Donner Lake, California, and *Gomphus adelphus* seems not to have been seen on the Hudson River of New York for many years. If indeed any species of North American Odonata has already succumbed to the "progress" of mankind these two would seem the most likely candidates.

THE EXCHANGE OF SPECIMENS.

I am anxious to conduct an exchange of Odonata specimens in all families throughout the world. In particular I wish to obtain any and all possible material of the family Gomphidae. I will be glad to determine material in the family Gomphidae from any part of the world, and will be glad to hear from anyone who will

permit me to examine their collections in connection with the project outlined above. I now have a worldwide collection of more than 100,000 specimens and I can offer many quite rare species in exchange for needed ones. In addition, I am listing the twenty Nearctic species not represented in my collection and which I am very anxious to obtain through exchange or purchase: *Argia alberta*, *Aeshna persephone*, *Aphylla protracta*, *Arigomphus maxelli*, *Gomphus adelphus*, *Gomphus hodgesi*, *Gomphus kurilis*, *Ophiogomphus edmundo*, *O. howei*, *Stylurus potulentus*, *Cordulegaster fasciata*, *Macromia margarita*, *M. wabashensis*, *Epithea costalis*, *Neurocordulia xanthosoma*, *Somatochlora brevicincta*, *S. ozarkensis*, *S. sahlbergi*, *S. septentrionalis*, and *Williamsonia fletcheri*.

NOTES FROM LEONORA K. GLOYD
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A NOTE ON MENDING SPECIMENS OF ODONATA.

Now that there is a tendency to file specimens in envelopes like so many library cards, the percentage of breakage, according to my observations, is greater than ever before, and so is the possibility of a total loss of some important parts by crushing if the envelope is reinforced by a card, and the specimens not mended when broken. If you value your specimens it is important to keep them mended.

The method of mending I learned years ago was with a household cement, and the insertion of a hog bristle in the abdomen (an insect pin should never be used for this purpose). The objection to this was the too rapid drying of the cement and when a solvent was used to permit adjustment of a broken part, or to reactivate the cement, a white residue was left where the solvent had moistened the surface. As a substitute adhesive Elmer's Glue and

similar ones proved to be too slow setting.

For the past two years I have found Gane's No. 1, Casing-in-Paste (obtained from a print-shop) to be very satisfactory. It is water soluble and its consistency can easily be adjusted to fit the need. For attaching an antenna, a broken part of an eye, a claw, a leg, or an abdominal appendage, it needs to be rather "runny" so that a small amount applied with a pin or a very small brush will not dry before the detached part can be picked up and put in place. A thicker paste (about the consistency of thick honey) is needed for attaching heads and putting an abdomen together. The latter can often be done without the use of a bristle, as follows: With a small fine-tipped brush, insect pin, or a straightened out paper clip apply a "bead" of paste to the open end of the broken abdomen still attached to the thorax, pumping it in with a gentle in and out motion and leaving a protruding rounded cone of paste when withdrawing the applicator. Next touch the free end of the broken-off piece to the cone of paste and pump in the excess until the parts fit snugly. This makes a sort of plug and often is the only reinforcement necessary. Any paste that gets on the outside of the abdomen or accidentally on a wing, can be removed with a dampened brush. If a bristle is needed in assembling several abdominal segments, I rob one from the brush of a typewriter eraser (the kind with black bristles from some animal). Even a poor job of mending is better than none.

The Casing-in-Paste is also wonderful for use on paper as it is a non-warp paste.

OBITUARY.

Dr. Justin W. Leonard, 65, University of Michigan professor of Natural Resources and Zoology, and interna-

tionally recognized aquatic entomologist, conservationist, and ecologist died May 26th of a heart attack while visiting relatives in Logan, Iowa.

He received his master's degree in 1932, and his doctorate in Zoology and Entomology in 1937, both from the University of Michigan. His doctorate thesis, "A revisionary study of the genus *Acanthagrion* (Odonata: Zygoptera)" was unfortunately never published. Only two of his papers are on the Odonata: viz.: "A new *Anisagrion* from Panama, with notes on related species (Odonata: Zygoptera)" Occ. Papers. Mus. Zool. Univ. Mich. 1937, no. 354, and "*Lanthus albistylus* (Hagen) a new record for Michigan, with ecological notes on the species (Odonata: Gomphinae)." Occ. Papers Mus. Zool. Univ. Mich. 1940, no. 414. After joining the Michigan Department of Conservation in 1934, interrupted by military service (from which he was discharged as a colonel), his work dealt largely with fisheries and ecology. He is the author of 70 bulletins and articles, and co-author of the books "Mayflies of Michigan Trout Streams (with his wife Fannie), "Conserving Natural Resources" (with S. W. Allen), and "The Rampart Dam and Economic Development of Alaska" (with Dr. Stephen Spurr, former University of Michigan vice president.

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Mrs. Leonard is now in the process of selling his books and reprints on the Odonata. Among the not yet sold are the following:

Byers, C. Francis 1930 A contribution to the knowledge of Florida Odonata.

Corbet, P.S. 1962 A biology of dragonflies.

Needham, J.G. & Hortense B. Heywood 1929 A handbook of the dragonflies of North America.

Robert, A. 1962 Les Libellules du Quebec.

Walker, E.M. 1958 The Odonata of Canada and Alaska, vol. 2.

Anyone interested in purchasing these should write to Mrs. J.W. Leonard, 1041 Arlington Blvd., Ann Arbor, Michigan 48104, or to Mrs. L.K. Gloyd, Museum of Zoology, University of Michigan, Ann Arbor, Michigan 48104. No price has been set as yet and bids would be welcome.

MRS. GLOYD AND PROFESSOR WESTFALL
VISIT BRITISH MUSEUM

By
M. J. Westfall, Jr.

Following the S.I.O. symposium at Lancaster, England, Mrs. Leonora K. Gloyd and I spent a most profitable week at the British Museum of Natural History in London. Mrs. Gloyd was especially interested in studying the types of *Argia*. The collections of the late Col. F. C. Fraser are there, and contain many type specimens. The holdings of this museum are very extensive, and the Odonata types contained in the collections were nicely listed by Dr. D. E. Kimmins in four numbers of the Bulletin of the British Museum (Natural History) from 1966 to 1970, just before his retirement. These are exceedingly helpful to the visitor, and facilitated my work of comparing directly with the types many specimens I had brought from the Florida State Collection of Arthropods. Some interesting discoveries were made in making these comparisons and Mrs. Gloyd and I will be detailing them in future publications. Since the retirement of Dr. Kimmins, the supervision of the Odonata collections has been taken over by Mr. Peter Ward, who made us welcome and kindly assisted in our work by providing space, microscopes, lights, etc. At the end of the week, Mrs. Gloyd and I reluctantly left with a strong desire to return for a longer period of time.

After returning to Gainesville, I learned from Curtis Williams of Marlin, Texas that he visited the museum shortly after we left, and was also welcomed by Peter Ward. Mr. Williams has a remarkable collection of color slides he has made of Odonata, and he showed some of them to Mr. Ward who is going to "handle" them in his business, "Natural Science Photos". We have seen many of the pictures in Gainesville, and hope we can persuade Curtis to come in 1977 for the Fourth International Symposium of Odonatology, so that many more of you can see them.

REPRODUCTIVE BEHAVIOR AND ISOLATION OF
TWO SYMPATRIC COENAGRIONID
DAMSELFLIES IN FLORIDA

Abstract of Dissertation

By

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August, 1975

The coenagrionid damselflies *Enallagma pollutum* (Hagen) and *E. signatum* (Hagen) are sympatric throughout most of Florida and may be called sibling species. Reproductive activity at water begins early in the afternoon in spring and fall, but the species are semicrepuscular in summer. Males usually appear at water before females, and *E. pollutum* males usually before *E. signatum*. Behavior and location of individuals prior to their appearance at water are unknown. Males interact vigorously in order to maintain a position at the water; prey capture at water is uncommon. Males and probably females are capable of sex recognition; the male's orange ninth abdominal segment is an important sex-recognition character. Pairing occurs only at water, without courtship displays. The

male flies directly to the female and grasps her by the thorax with his legs. After clasping her with the abdominal appendages, the pair flies in tandem to a perch. In response to the female's "abdominal probing," the male transfers sperm, followed by copulation which averages 20 minutes. Individuals may mate once in a day, but rarely mate on two successive days. Oviposition usually occurs in tandem shortly after copulation, at or below the water surface.

Enallagma pollutum and *E. signatum* are very effectively isolated. Flight seasons and daily mating times are concurrent. Partial isolation is gained by differences in microhabitat: *E. pollutum* males usually perch whereas *E. signatum* males usually hover over open water; *E. pollutum* females usually remain on or near vegetation, and although *E. signatum* females are also found there, they usually fly toward open water. These differences lessen the probability of interspecific meetings. However, many exceptions occur and males attempt tandem with females of either species; 25 percent of the pairings observed were interspecific. Males are incapable of visually distinguishing females. Isolation occurs during tandem, as non-conspecific males release their grasp upon "refusal motions" by the female. Evidence indicates that tactile stimuli, provided by the shape of the male superior appendages, are releasers of mating behavior in females, and may isolate the species; this proposed mechanism is ethological. Males with altered appendage shape were unsuccessful in mating, and while the observations are not as controlled as desired, the results suggest a tandem period of species recognition. The female thoracic parts contacted by the appendages bear numerous trichoid and other sensillae. The function of specialized, secretory cells in the male superior appendages is unknown; chemical isolation is unreported in Odonata, but the possibilities should

be investigated.

I propose that the nongenitalic mechanical isolation theory, in which the male abdominal appendages, because of structure, are supposedly unable to securely hold a heterospecific female, is untenable for Coenagrionidae. Clearly, ecological and ethological isolation is operative.

RECENT BOOKS

We have recently received a copy of volume three of Dr. Edmund M. Walker's "Odonata of Canada and Alaska". This volume includes families Macromiidae, Corduliidae and Libellulidae. It was completed and coauthored by Dr. Philip S. Corbet after Dr. Walker's death in 1969 at the age of 91. The enclosure received from the publisher, University of Toronto Press, gives the price as \$25 and publication date as June 14, 1975.

Also there recently came to us a reprint copy of "A Manual of the Dragonflies of North America (Anisoptera)" by Needham and Westfall. The manual was published in 1955 by the University of California Press in an edition of 2,500 copies and has been out of print. The original price of \$12.50 was later raised to \$15. The California Library Reprint Series Edition of 1975 has a green binding, and the color frontispiece of the original is reproduced in black and white only. We have no indication of the price.

NEW LOOK ON PAGE ONE

We have the new design on page one thanks to Dr. Kenneth Tennessen who recently completed his Ph.D. here at the University of Florida and has now moved to a job. His new address is Muscle Shoals T.V.A., E and D Building, Muscle Shoals, Alabama 35660. He will be glad to hear from his many friends.

PLEASE SEND NEWS ITEMS
FOR AN EARLY SPRING NUMBER