

THE NEWSLETTER OF THE SOCIETAS INTERNATIONALIS ODONATOLOGICA AND THE U.S. NATIONAL OFFICE

VOL. 18, NO. 2

Johnson City, Tennessee

September 1, 1989

A NEW ODONATOLOGICAL ASSOCIATION THE AMERICAN DRAGONFLY SOCIETY

IS FORMED

Carl Cook 469 Crailhope Road Center, KY 42214, USA

At the recent Tenth International Symposium of Odonatology in Johnson City, Tennessee, several late-night discussions produced a consensus that the time was auspicious for american countries to follow in the footpath of several other S.I.O. membership groups by forming their own affiliated regional organization.

The response was overwhelmingly favorable, from both the general membership and officers of S.I.O., during several preliminary discussions. On the evening of August 11, 1989, at 10:30 P.M., in the lobby of Luntsford Apartments, East Tennessee State University, an organizational meeting was held with Carl Cook presiding. Discussions ensued regarding the name, purpose, objectives, and other aspects of the society's establishment. It was decided by vote of members that the name of the society will be *THE AMERICAN DRAGONFLY SOCIETY*; and that membership shall be open to all persons interested in any aspect of odonatology.

Objectives for which the society shall strive are: 1) comradeship among all odonatologists; 2) interchange between amateur and professional disciplines; 3) establishment of our society's own newsletter; 4) support for wetlands and habitat conservation; 5) support for moderation of restrictions on collecting, and recognition of the essential role scientific collecting plays in the census of species populations; 6) the establishment of a species recording scheme for North, Central, and South America, with the annual publication of a "season summary" volume of species lists and collecting data submitted by field collectors; and 7) establishment of an attractive dues rate more affordable to the student and

By the formation of this society we are broadening the horizons of the "off-year collectors' gatherings" which have become such enjoyable events for the participants. I believe it is the desire of those of us who actively collect odonates to have a forum from which to speak in these days when "collecting" seems to be becoming a dirty word among some

factions of conservationists. I make no apology for my actions in prudently collecting specimens of dragonflies, and I make no apology for helping to organize a society oriented to the needs of the dragonfly collecting fraternity. How otherwise will innumerable undescribed species doomed to extinction by actions of man be made known to science?

It was decided the society would sponsor and continue the series of "off-year collectors' meetings" in mid-summer for collecting and comradship, and also hold the society's biannual business meeting in conjunction therewith. George H. Harp will host the 1990 meeting in Arkansas (see related article in this issue).

Motions were made from the floor nominating officers to transact the society's business. Elections were then held, with the following persons elected to office: President, Carl Cook; President-Elect, Thomas W. Donnelly; Secretary-Treasurer, Jerrell J. Daigle; S.I.O. Representative, Minter J. Westfall, Jr.; Newsletter Editor, Carl Cook. These elected officers shall comprise the Executive Council, of which the society President shall act as Chairman, empowered to write a Constitution and Bylaws for the approval of the membership, and to transect any and all business of the society.

Coordinators for the annual season summary were nominated and elected as follows: Canada, Robert A. Cannings; Central America, Rodolfo Novelo-Gutierrez; Northeast U.S., Frank Louis Carle assisted by Tim Vogt; Southeast U.S., Kenneth J. Tennessen assisted by R. Duncan Cuyler; Northwest U.S., Dennis Paulson; Southwest U.S., Rosser W. Garrison; South America, open.

The cost of membership was discussed from the floor, and it was agreed that it was important to keep dues as low as possible, and even provide some means for gratuitous membership in countries with balance-of-payment problems. Regular membership dues have been established at \$3.00 U.S. per year for members in hard currency countries, and the society gratefully acknowledges a grant-in-aid in the amount of \$200 U.S. from our parent society, *Societas Internationalis Odonatologica*, which will permit gratuitous memberships in areas of special need.

SELYSIA A Newsletter of Odonatology

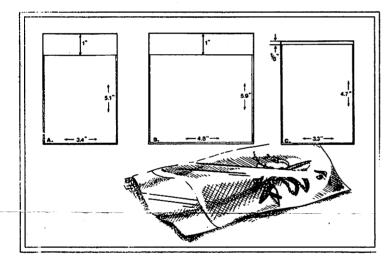
Edited by
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This newsletter is designed to disseminate facts and news about the activities of Odonatologists and Odonatology. It is not intended as a journal nor an organ for the publication of articles or technical papers. The name is based upon that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

SELYSIA was founded in 1963 by Dr. B. Elwood Montgomery at Purdue University, and edited from 1970-1986 by Dr. Minter J. Westfall, Jr., at the University of Florida. With V. 13, #1 (1 March 1984) it was recognized as the official newsletter of the Societas Internationalis Odonatologica as well as the U.S. National Office of S.I.O.

SELYSIA is issued semi-annually, 1 March and 1 September. Items submitted should reach the editor no later than one month before publication date.

This newsletter is produced as a public service of the Department of Biological Sciences, East Tennessee State University.



NEOTROPICAL ODONATA

Rosser W. Garrison 1030 Fondale Street Azusa, CA 91702-0821, USA

For many years, my interest in Odonata has focused on the neotropical fauna, and I have been collecting literature and specimens from the region. I would like to correspond with anyone who shares my interest. Knowledge of the dragonflies of the area is largely dependent on having a good synoptic collection. I am building such a collection and would be happy to exchange for various species I currently lack.

DRAGONFLY ENVELOPES AVAILABLE

Christine S. Allen

University Products, Inc. P.O. Box 101, Holyoke, MA 01041-0101, USA

University Products has, for 20 years, been producing archival supplies for preservation of documents, books, photos, textiles, etc. This year we have started branching out to reach the natural history collections market. We have produced a Mylar dragonfly envelope for Chris Guppy at the Royal British Columbia Museum and for Brad Hubley at the Royal Ontario Museum which I thought you might be interested in. It is listed on page 4 of our brochure (as a Mylar Seed and Cone Envelope). If you could let your readership know of this new product it might benefit all concerned. I would be more than happy to mail free catalogs to any interested person and can be reached toll-free at 1-800-628-1912 or (in Massachusetts) 1-800-336-4847 with any questions or suggestions.

Mylar Seed and Cone Envelopes

These clear, archival quality envelopes of Mylar® can be used to safely store and display seeds, cones, and fragments. One inch flaps on styles A & B can be folded over or attached to a mounting sheet. Style C has only 1/8° extension on back for ease in opening. Made of 1 mil Mylar®, with three edges sealed.

Cat. No.	Style	Dimensions (W x H)	Price/100		
			100	1,000	10,000
895-3451	Ä	3.4" x 5.1" with 1" flap	\$16.50	\$14.85	\$12.90
895-4859	В	4.8" x 5.9" with 1" flap	19.95	18.35	15.95
895-3347	C	3.3" x 4.7"	14.50	13.25	11.95

[Editor's note: This may be the solution, for some of you, to the dragonfly-envelope problem described by Rosser Garrison in SELYSIA 17(2):9. Rob Cannings is using these (Style A) at the Royal British Columbia Museum and likes them very much. Sid Dunkle and Rosser Garrison agree that they are good envelopes, though they think that Style A is a little short for a 3x5 card to really fit, and there is some difficulty getting a good fold and seal. All three agree that Mylar is an excellent material, if you can afford it! Meanwhile, Rosser is proceeding with plans to produce cellophane envelopes (see following notice).]

ODONATA ENVELOPES: FINAL NOTICE

Rosser W. Garrison 1030 Fondale Street Azusa, CA 91702-0821, USA

Herman Real and I have commitments for just over 200,000 1.4 mil cellophane envelopes. We are planning to order them before the end of the year. While at Johnson City, I received a list of interested parties who want to buy various quantities of the envelopes. We do not yet have a firm price, but we think it will be \$50-60/1000. We should get a slightly lower rate for an order of 250,000 or more.

I again ask all those who have not contacted me to write as soon as possible, if you wish to "get in on the deal." I can be reached at 818-575-5469 (8 AM-4:30 PM) or 818-966-2889 (5:30-10:00 PM). This will be the last notice for orders of these envelopes. As we have much trouble securing a manufacturer to make the envelopes at a reasonable cost, we expect our order to be a one-time event.

1990 NORTH AMERICAN ODONATOLOGIST'S MEETING

George L. Harp Biological Sciences, P.O. Box 599 Arkansas State University State University, AR 72467

The next meeting of North American odonatologists will convene in Jonesboro, Arkansas, in the land of *Gomphurus ozarkensis*, *Ophiogomphus westfalli, Macromia pacifica* and *Somatochlora ozarkensis*. The first two species are early fliers, but NABS is scheduled for 23-25 May, so I suggest that we meet during 1-3 June.

The first night may be passed in Jonesboro where either an inexpensive motel or a dorm room might be to your liking. A tour of the Biology Department, slide presentations and specimen exchanges are possible activities that night. A good place to collect Saturday is on the South Fork of Spring River, less than two hours' drive from Jonesboro. The four previously mentioned odonate species occur there, and in the evening Neurocordulia virginiensis and xanthosoma may drop by.

Saturday night may also be spent in Jonesboro, or we could stay in dorm facilities at the Meadowcreek Project near Fox, AR (northcentral Arkansas). The Project is a nonprofit organization established for education and research in applied ecology, agriculture, renewable energy systems, forestry, wildlife, as well as the ethical, social, economic and political aspects of sustainability. They practice what they teach and expect to become absolutely independent of outside resources in the near future—a neat place!

• Please contact me if you are interested in attending the meeting. Let me know if 1-3 June is a good time, and whether a night at Meadowcreek is worth arranging. I look forward to seeing many of you next year.

HETAERINA, ERPETOGOMPHUS, MNESARETE

Rosser W. Garrison 1030 Fondale Street Azusa, CA 91702-0821, USA

My synopsis of the genus *Hetaerina* has been completed and is in formal review. I am currently working on:

- 1. Monograph of Erpetogomphus. All figures and several new descriptions are complete. The paper will contain keys, descriptions, a cladistic analysis, and numerous figures for all know species. I have received the cooperation and help of many odonatists. If you have material or records you would like to submit, I will be happy to include them. I would also be happy to identify any unknown specimens of the genus.
- 2. A synopsis of the genus *Mnesarete*. I plan to fashion this paper much as I did for *Hetaerina*. I have examined examples and/or some type material for almost every described species. I have seven undescribed species. I solicit correspondence with anyone who has material and/or information on the genus. I hope to commence work on the paper early next year after completing the *Erpetogomphus* monograph.

PROFESSOR SANTOS DIES IN BRAZIL

Angelo Machado Departamento de Zoologia Universidade Federal de Minas Gerais Belo Horizonte, Minas Gerais, BRAZIL

I very much regret to inform you that Professor Newton Santos died in March 1989 in Rio de Janeiro. About two years ago he had a heart attack while pushing a truck in a muddy Amazonian road during a collecting trip. His death by another heart problem is a great loss for Odonatology and especially for me that was initiated by him in the study of dragonflies 37 years ago.

I think his last paper was the one in collaboration with Costa describing the larvae of *Heliocharis amazonia* which came out in the June 1988 issue of *ODONATOLOGICA* [17(2):135-139]. However I know he has an important catalogue on the neotropical larvae accepted for publication in *Acta Amazonica*. It is going to be a tremendous shock for me visiting the Museum as I have done for more than 40 years and not finding him anymore.

DR. R.H. FLOWER, PALEONTOLOGIST, DIES

Donald L. Wolberg

New Mexico Bureau of Mines & Mineral Resources Socorro, NM 87801, USA

I would like to inform you of the death of Dr. Rousseau H. Flower, February 27, 1988. Although the bulk of Rousseau's lasting contributions were in cephalopod paleontology, to the end he maintained a lively interest in odonatology and, indeed, took an M.A. degree in Entomology at Cornell under Dr. J.G. Needham. Rousseau authored more than 150 papers and monographs in paleontology and was known as a colorful individual; Rousseau will be missed.

TIMETRAVELER DRAGONFLY

Bruce A. Noll RR 1, Box 175A Volin, SD 57072, USA

Connections of summers come forth from mud on cellophane whispers.

Carried in flight, mysteries Mesozoic flash in the light—

secrets fluorescent hovering in air a time capsule sent

retying me to swamps long forgotten and soft warm milieu. Bruce Alan Noll

THE TENTH INTERNATIONAL SYMPOSIUM OF ODONATOLOGY

Dan M. Johnson Biological Sciences, E.T.S.U. Johnson City, TN 37614-0002, USA

The Tenth International Symposium of Odonatology was held in Johnson City, Tennessee, U.S.A., during 6-12 August 1989. Registration records show that 113 registrants (including 15 spouses) attended the symposium; they represented 28 states and 16 foriegn countries. This just exceeds the 109 participants reported at the Sixth Symposium (Chur, Switzerland, 1981). The Committee of Honor for the Tenth Symposium included: Hsiu-fu Chao, People's Republic of China (in absentia); Kiyoshi Inoue, Japan; Jean-Guy Pilon, Canada; Gordon Pritchard, Canada; J.A.L. (Tony) Watson, Australia; and Minter J. Westfall, Jr., USA. S.I.O. Members of Honor in attendance were Janny van Brink, Philip Corbet, Bastiaan Kiauta, and Minter Westfall. Tony Watson was elected a Member of Honor during the symposium. The I.U.C.N. Odonata Specialists Group, chaired by Norman Moore, met on Sunday, 6 August, just prior to the symposium.

Most symposium events occurred in the auditorium of the D.P. Culp Center at East Tennessee State University. The Inauguration Ceremony commenced at 9:00 hrs on Monday, 7 August, with Dan M. Johnson, Organizing Secretary, presiding. Following welcoming remarks by Robert Alfonso, Vice-President for Academic Affairs, ETSU, the participants enjoyed a film by Georg Ruppell which was accompanied by music from the traditional Japanese folk-song "Aka-tombo". In keeping with the historical nature of a tenth symposium, Philip Corbet presented "A brief history of Odonatology", identifying significant stages in the development of our science. Francois Schaller, S.I.O. President, reviewed some of the history and purposes of the society, and paid respect to those odonatologists who had died since the last symposium.

After a break for refreshments, and spirited conversation, the Scientific Program commenced with the following papers presented in a PHYSIOLOGICAL ECOLOGY session chaired by Gordon Pritchard:

- M.L. MAY (USA): Thermal Adaptations of Dragonflies, Revisited
- J.M. BAIRD & M.L. MAY (USA):Behavioral Ecology of Foraging by the Blue Dasher (*Pachydiplax longipennis*); by J.M. Baird
- J. WAAGE & J.H. MARDEN (USA): Energetics of Damselfly Territorial Disputes; by J. Waage
- J.H. MARDEN (USA): Bodybuilding Dragonflies: Costs and Benefits of Maximizing Flight Muscle
- N.K. MICHIELS (Belgium): Dispersal of Mature Adults in Sympetrum danae

After lunch, the scientific program continued with two sessions.

ADULT BEHAVIOR chaired by Ola Fincke:

- H.M. Robertson (USA): The Andromorph Females of North American *Ischnura*
- S.D. Oppenheimer (USA): Functions of Courtship in Calopteryx maculata
- H. HADRYS (Federal Republic of Germany): Aggressive Tandem Splittings by Males in Anax junius
- G. REHFELDT (Federal Republic of Germany): Oviposition Site Selection in *Pyrrhosoma nymphula*
- P.L. MILLER (United Kingdom): The Occurrence of Courtship in some Libellulids

ADULT ECOLOGY chaired by Jonathan Waage:

- O.M. Fincke (USA): Measuring Lifetime Reproductive Success in the Odonata
- G.R. SUSANKE & G.L. HARP (USA): Selected Biological Aspects of *Gomphurus ozarkensis*; by G.L. Harp
- W.J. COOK & B.P. SMITH (Canada): Interaction of parasitic larval mites (Acari:Hydrachnidia;Limnochares americana) with a dragonfly community; by W.J. Cook
- M.R.L. FORBES & R.L. BAKER (Canada): Do Ectoparasitic Mites Influence Mating Success of Male *Enallagma ebrium*?; by M.R.L. Forbes
- D.J. THOMPSON (United Kingdom): The Effects of Weather on Lifetime Egg Production in the Damselfly Coenagrion puella

On Monday evening, Helen K. Roseberry, Director of the Reece Museum at ETSU, presided over a short session of talks about art. After welcoming remarks by John Ostheimer, Dean of the College of Arts & Sciences, ETSU, we heard two talks: "Art in the Service of Science" by Arwin Provonsha, a scientific illustrator in the Entomology Department at Purdue University; and "Insect Sculptor: Work, Studio, Methods" by Patrick Bremmer, a sculptor from New Paltz, New York. There followed an opening reception for "Fascination: Scientific and Artistic", an exhibit of dragonflies in art and science at the B. Carroll Reece Museum. The exhibit included a fascinating diversity of photographs, sculpture, poetry, jewelry, pottery, paintings, scientific illustrations, etc., all featuring odonate larvae and adults. On this evening it was augmented by the mobile art worn by more than one-hundred odonatologists!

On Tuesday, 8 August, the lobby of the Culp Center Auditorium was filled with activities—odonate specimen trading, an arts & crafts sale featuring at least 10 local artisans and a consignment booth with plenty of T-shirts, etc., and a scientific poster session featuring the following presentations:

- K.J. TENNESSEN (USA):T.V.A. and the Tennessee River Multipurpose System
- A. CORDERO-RIVERA (Spain): The Inheritance of Female Polymorphism in the Damselfly *Ischnura graellsi*
- N. HOUSE (Canada): The Ecology of Leucorrhinia hudson-ica in Newfoundland Bog Pools
- C. UTZERI (Italy): Does Marking Affect Longevity in Dragonflies?
- R.L. BAKER (Canada): Condition of Larval Damselflies: a Field Study of Food Limitation
- P.H. CROWLEY, W.S.C. GURNEY & R.M. NISBET (USA & United Kingdom): Modeling Seasonal Population Dynamics of Damselflies; by Philip H. Crowley
- M.A. ARRINGTON (USA): Anti-predator Strategies of two Enallagma Species; in absentia
- M. MAHATO (Nepal & USA): *Dromogomphus spinosus* invasion of the Bays Mountain Lake Dragonfly Assemblage
- D.M. JOHNSON (USA): Direct and Indirect Effects of Predation by Dragonfly Larvae and Small Sunfish
- R. BAUERFEIND & H. KOMNICK (Federal Republic of Germany): Biochemical and morphological characterization of lipophorin of *Aeshna cyanea* larvae; by H. Komnick
- S. KUKEL & H. KOMNICK (Federal Republic of Ger-/many): Lipid Storage in the Malpighian Tubules of Aeshna cyanea Larvae; by H. Komnick
- E. C. COOK (USA): The Status of a little known Dragonfly, Macromia wabashensis

- C. ESQUIVEL (Costa Rica): A New Species of Psaironeura from Costa Rica
- R.W. GARRISON (USA): A New Computer Key MALEHET, using MEKA (Multiple Entry Key Algorithm): a Means for Identifying *Hetaerina* Damselflies

M D.F.J. HILTON (Canada): The Odonata of Prince Edward Island

J.A.L. WATSON, R. ROWE & C. YULE (Australia): The Gills of Lieftinckia

On Tuesday afternoon, we returned to the more traditional scientific session format, with two sessions.

FUNCTIONAL MORPHOLOGY chaired by Michael May:

- R. WOOTTON (United Kingdom): The Functional Morphology of the Wings of Odonata
- G. RUPPELL (Federal Republic of Germany): Assymetric Flight Maneuvers of Odonates
- S.W. DUNKLE (USA): The Evolution of Dragonfly Eggs
- M.T. SIVA-JOTHY (United Kingdom): Spermatodesm Structure and Function
- V.K. SRIVASTAVA (India): Studies on the Sperm Material in the Primary Genitalia of Male *Ischnura rufostigma*

SYSTEMATICS chaired by Arwin Provonsha:

- m H.K. PFAU (Federal Republic of Germany): Contributions of Functional Morphology to the Phylogenetic Systematics of Odonata
- T.W. DONNELLY (USA): Studies of the Fijian Zygoptera of the Nesobasis Group
- J. ZLOTY & G. PRITCHARD (Canada): Electrophoretic Analysis of Coenagrionid Populations; by J. Zloty
- K.J. TENNESSEN (USA): Epitheca, Tetragoneuria, and Epicordulia Revisited: a Generic Study
- G.H. BICK (USA): Studies on the Neotropical Genus Cora

On Tuesday evening, Sid Dunkle chaired an informal showing of slides and films on the following topics:

- S.W. DUNKLE (USA): Rare Odonata of South America
- R.A. CANNINGS & S.G. CANNINGS (Canada): Dragonflies of the Yukon Territory, Canada
- J. SILSBY (United Kingdom): Dragonflies from Southern India
- G. SAHLEN (Sweden): Some Swedish Dragonflies and their Eggs
- M.T. SIVA-JOTHY (United Kingdom): Reproduction of Epiophlebia superstes
- G. RUPPELL (Federal Republic of Germany): Reproductive Behaviour of *Leucorrhinia rubicunda*
- C. ESQUIVEL (Costa Rica): Costa Rican National Parks
- E. GONZALEZ-SORIANO (Mexico): Opportunities to Study Dragonfly Behavior in the Tropics

On Wednesday, 9 August, most participants took part in the traditional Mid-Symposium Collecting Trip to Bays Mountain Park, a nature preserve owned by the City of Kingsport in Sullivan County, Tennessee. As a result of their efforts, we can add at least ten species of Odonata to the list reported by Johnson, Coney & Westfall (1980). Marcel Wasscher, who camped at the park for two weeks prior to the symposium and thus added the most species to the list, has agreed to coordinate preparation of a manuscript to be submitted to *Notulae Odonatologicae*. Any participants who

discover un-listed species among their collections from the park should contact Marcel to have them included in the report. The most memorable additions to the list are Tachyopterx thoreyi, Cordulegaster erronea, and Sympetrum internum?

Following a hard day of collecting, we enjoyed a barbeque dinner and then a concert by the E.T.S.U. Bluegrass Band. The weather, food, and music were all excellent, and the entire group seemed to return to Johnson City relaxed and eager for another two days of formal presentations.

Scientific sessions resumed on Thursday, 10 August, with two sessions focusing on larvae.

LARVAL ECOLOGY chaired by Philip Crowley:

- P.J. MORIN (USA): Interspecific Interactions and the Ecology of Larval Odonates
- T.H. MARTIN & D.M. JOHNSON (USA): Fish-mediated Alternate Life History Strategies in *Tetragoneuria cynosura*; by T.H. Martin
- L.R. SHAFFER & J.V. ROBINSON (USA): Ontogenetic Patterns of Agonistic Intraspecific Behavior in *Ischnura* posita larvae by L.R. Shaffer
- J.V. ROBINSON, L.R. SHAFFER, D.D. HAGEMEIER & N.J. SMATRESK (USA): The Role of Gill Autotomy in Intraspecific Interactions among *Ischnura posita*; by J.V. Robinson
- O.M. FINCKE (USA): Cannibalism and the lack of Territoriality in the Larvae of a Treehole-dwelling Damselfly
- B. ANHOLT (USA): Larval Survival as a Function of Oviposition Timing: Better Never Late?
- A.K.Z. AHMED & R.G. MICHAEL (India): Colonization of Artificial Substrates by Odonate Larvae in Fishponds; by A.K.Z. Ahmed

LARVAL PHYSIOLOGY chaired by Francois Schaller:

- M.L. MOORMAN, J.V. ROBINSON & D.D. HAGEMEIER (USA): Experiments with Gill Injury and Autotomization in larval *Enallagma civile*; by M.L. Moorman
- S. MATHAVAN (India): Effect of Temperature on the Bioenergetics of the Dragonfly Nymphs *Brachythemis* contaminata and Orthetrum sabina
- D.B. TEMBHARE & R.J. ANDREW (India): Hormonal Regulation of Intermediary Metabolism during Metamorphosis of the Last Instar Larva of *Tramea virginia*; by D.B. Tembhare
- H. KOMNICK (Federal Republic of Germany): Utilization of Dietary Fatty Acids by Larval Aeshna cyanea
- V. FARBER & H. KOMNICK (Federal Republic of Germany): Peroxisomes and their Putative Role in the Midgut Epithelium of Larval Aeshna cyanea; by H. Komnick
- B.K. TYAGI (India): Effects of Mosquito Control on Dragonfly Larvae

On Thursday afternoon, Philip Corbet, moderated his traditional Plenary Seminar, focusing particular attention on discussions of larval ecology. As usual, the edited transcript of that session will be published in the S.I.O. Rapid Communications series. After Corbet's seminar, Gordon Pritchard chaired the S.I.O. Business Meeting, which concluded with the election of Tony Watson as a Member of Honor of S.I.O.

Society functions continued Thursday evening with a banquet of rainbow trout served at the Garden Plaza Hotel. Toastmaster Peter Miller kept nearly-perfect control of innumerable toasts, after which Bastiaan Kiauta presented "A history of Societas Internationalis Odonatologica", a slide-show he

had prepared for the Inauguration Ceremony, but had been unable to give because he lost his voice. Carlo Utzeri invited participants to the XI International Symposium to be held somewhere in Italy (popular concensus favored Sardinia) sometime in 1991. Bastiaan Kiauta then presented some slides of the IX Symposium in Madurai, India.

The final three scientific sessions were held on Friday, 11 August.

CONSERVATION chaired by Sid Dunkle:

- K. INOUE (Japan): Conservation of Dragonflies in Japan
- M.Th. WASSCHER (The Netherlands): The Importance of Mesotrophic Waters for some Rare Odonate Species in The Netherlands
- V.A. CARPENTER (USA): The Status of Enallagma recurvatum and Enallagma laterale in Massachusetts and Rhode Island
- D.P. KLARBERG (USA): Dragonfly Conservation Efforts in Central Park, New York City
- E.D. CASHETT (USA): Discovery of the Ohio Emerald (Somatochlora hineana) in Illinois
- N.W. MOORE (USA): Recent Developments in the Conservation of Odonata in Great Britain

TAXONOMY chaired by Ken Tennessen:

- K. INOUE (Japan): Larval Taxonomy of the Japanese Mnais Damselflies
- R. NOVELO-GUTIERREZ (Mexico): Advances into the Knowledge of the Juvenile Stages of the Genus *Argia* in Mexico
- R.W. GARRISON (USA): Species Resolution among *Hetaerina* Females: Use of a New Morphological Character and its Interspecific Variation among Sympatric Groups
- M.J. WESTFALL, JR. (USA): The True *Micrathyria eximia* and related new species
- O.S. FLINT, JR. (USA): The Odonata Collection of the National Museum of Natural History, Washington, USA

BIOGEOGRAPHY chaired by Syd Cannings:

- J. VAN TOL (The Netherlands): Distribution Patterns of Odonata Endemic to Sulawesi
- E. GONZALEZ-SORIANO (Mexico): The Odonata of the Los Tuxtlas Tropical Biological Station, Veracruz, Mexico
- C. ESQUIVEL (Costa Rica): Odonata Diversity and Seasonality in a Neotropical Wet Forest Site
- R.W. GARRISON (USA): Using Ordination Methods with Geographic Information: Species Discrimination in a Partially Sympatric Complex of Neotropical *Tramea* Dragonflies
- M.J. SAMWAYS (South Africa): Odonata Taxon Turnover across a 3000m Altitudinal Gradient in Southern Africa
- J.A.L. WATSON (Australia): Australian Odonatology

Bastiaan Kiauta presided over a Closing Ceremony in which he thanked Dan, Karol Lynn, Amber and Reid Johnson for their efforts in organizing and running the symposium. Dan Johnson recognized his Organizing Committee (Phil Crowley, Sid Dunkle, Ola Fincke, Mike May, Arwin Provonsha, and Ken Tennessen), his family (Karol Lynn, Amber, and Reid), and two graduate assistants (Karen McGlothlin and Mahendra Mahato), thanking them all for help in planning and running the symposium. He also acknowledged the National Science Foundation (Ecology Program) for awarding a \$10,000 grant to provide partial travel grants to selected participants. In the

last official activity of the X Symposium, previous symposium organizers who were present (Minter Westfall, Jean-Guy Pilon, Gordon Pritchard, and S. Mathavan) helped Dan Johnson pass the society's flag to Carlo Utzeri, Organizing Secretary of the / XI International Symposium of Odonatology.

On Friday evening, in the lobby of Luntsford Apartments, one final scientific paper whose author had arrived too late to be included in the morning CONSERVATION session was presented to a die-hard audience of about 30 participants:

■ F.L. CARLE & D. SCHWEITZER (USA): The Prioritization of Species Conservation Needs, with Preliminary Global Rankings for North American Odonata; by F.L. Carle

Later that evening, in the same location, *The American* Dragonfly Society was formed (see related note in this issue).

While most participants departed for home on Saturday morning, a group of about 40 followed Ken Tennessen on a Post-Symposium Tour to Great Smoky Mountains National Park, returning to Johnson City on Sunday evening.

S.I.O. MEMBERSHIP OF COMMITTEES 1989-91

Gordon Pritchard

Department of Biology, University of Calgary Calgary, Alberta T2N 1N4, CANADA

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