Selysia

A NEWSLETTER OF ODONATOLOGY

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FOURTH INTERNATIONAL SYMPOSIUM OF ODONATOLOGY

by

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The fourth biennial symposium sponsored by the Societas Internationalis Odonatologica (S.I.O.) was held in Gainesville at the University of Florida, August 1-5, 1977. The organizing committee was composed of Mrs. Leonora K. Gloyd, Dr. Clifford Johnson, Dr. Kenneth J. Knopf, and myself. The committee of honor included Dr. George H. Bick, Mrs. Leonora K. Gloyd and Dr. B. Elwood Montgomery. The special guest of honor at the banquet was Dr. C. Francis Byers, well known for his work on the Odonata of Florida. The field trips were organized by Mr. Sidney W. Dunkle, Dr. Kenneth J. Knopf, and Dr. Kenneth J. Tennessen. Of the 75 registrants, 51 were members, of whom 43 attended, many bringing one or more members of their families. The registrants represented 12 countries (Belgium, Brasil, Canada, German Federal Republic, India, Malawi, Netherlands, New Zealand, Nigeria, Sweden, United Kingdom and United States of America). Several from other countries made inquiry but were unable to obtain visas or funds for the trip.

Some members arrived before the symposium for collecting, work in my laboratory, the collection, etc. Most arrived on July 31 or August 1 and were housed in one of the university dormitories. The opening session was on Monday evening when as chairman and secretary of the organizing committee I welcomed the participants and introduced the special speaker, Dr. Howard V. Weems, Jr. He described the organization and functions of the Florida State Collection of Arthropods in Gainesville. Later in the evening color slides of dragonflies were shown by Curtis E. Williams, Jean Belle, and Hal B. White, III.

Tuesday morning the formal presentation of papers began in the Florida Union building. Papers were given by B. E. Montgomery (describers and bibliographies of the Odonata), C. Nimz (computer model of growth of larval dragonflies), F. L. Carle (freeze drying techniques for preserving Odonata), K. J. Tennessen (diel periodicity in hatching of Epitheca eggs), and M. J. Westfall, Jr. (some interesting dragonfly nymphs from Brasil). After lunch we

SELYSIA

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Compiled at
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by

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and
Clifford Johnson

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.

continued with J. M. van Brink and B. Kiauta (chromosome studies of some South American dragonflies), K. W. Knopf (analysis of protein variation in dragonflies), J. H. Kennedy and H. B. White, III (description of the nymph of *Ophiogomphus howei*), J. -G. Pilon (Odonata of the La Grande Region, Quebec), H. Komnick (osmoregulatory role of ATPases in the rectum of dragonfly larvae), A. B. M. Machado (1. life history of *Roppaneura beckeri* Santos, and 2. larval ecology of the plant-breeding *R. beckeri*), and J. K. Waage (reproductive character displacement in two *Calopteryx* species). During the evening session Eberhard Schmidt, T. W. Donnelly, A. B. M. Machado, and D. R. Paulson presented slide programs.

Wednesday morning papers were given by R. W. Garrison (biosystematics of *Enallagma* in western U.S.), T. W. Donnelly (continental drift and biogeography of Odonata), M. L. May (thermal adaptations of dragonflies), and E. Schmidt (quantifying dragonfly decreases in West Germany). In the afternoon most people participated in a canoe and tubing trip down the beautiful Ichetucknee River north of Gainesville. This was a new and much enjoyed experience for many, and a chance to observe many species of Odonata as well as other wildlife and natural history along the river. The evening was free for discussion groups which developed naturally. Some spent many hours every night visiting and exchaning experiences.

The remaining papers were presented Thursday: M. J. Parr (ecological observations on *Ceriagrion tenellum* in southern England), R. Rudolph (aerodynamics of dragonfly wings), D. R. Paulson (adaptive significance of dragonfly coloration), T. E. Sherk (vision of adult and larval dragonflies), P. H. Carlson, T. R. White, and R. C. Fox (Odonata of natural and channelized streams in South Carolina), J. R. Voshell, Jr. and G. M. Simmons, Jr. (Odonata of a new reservoir in the southeastern U.S.), and J. K. Waage (evolutionary aspects of territorial behavior in *Calopteryx maculata*). Unfortunately papers scheduled to be given by S. Mathavan, A. T. Hassan, and R. L. Willey had to be cancelled as they were unable to attend after they registered.

The official business meeting followed the last paper session, with B. E. Montgomery presiding. There was a moment of silence in memory of odonatologists who had died recently; J. S. Armstrong, Omero Castellani, A. E. Gardner, B. M. Ingram, and J. W. Leonard. It was learned just before this meeting that one of the registrants (Dr. Byron M. Ingram) had died at his home in Clemson, S.C. August 3.

Due to inflation, library subscriptions to ODONATOLOGICA were raised to Hfl. 120, dues for ordinary members to Hfl. 60, and student members to Hfl. 30. Dr. K. J. Tennessen was elected as secretary of the Society to replace Dr. H. J. Dumont.

The banquet Thursday evening was a very pleasant occasion. Dr. B.

Kiauta served as toastmaster. Words of appreciation were addressed to the committee of honor, and a corsage was presented to Mrs. Gloyd by some of the ladies. Dr. Montgomery and Dr. Byers gave a few remarks and later Dr. Byers autographed copies of "A Contribution to the Knowledge of Florida Odonata" (published in 1930, the newly discovered publisher's remainder having been bought for this occasion). After the dinner, movies of dragonfly behavior were shown by Jean Belle and George Bick (Lothar Hornuff operating the projector in absence of Dr. Bick as he was called away by illness in his family).

On Friday, August 5, separate field trips in the greater Gainesville area were led by Sid Dunkle, Ken Knopf, and Ken Tennessen. On Saturday a number of persons went on an extended post-meeting field trip to northwest Florida led by Sid Dunkle and Ken Knopf.

Since the meetings, many letters have come from participants saying that it was the best symposium they had ever attended. This makes all the work of the local committee worthwhile. Many persons met and visited for the first time with workers they had known for years only by correspondence. The next symposium will be held in the summer of 1979 in Canada and hosted by Dr. J. -G. Pilon of the University of Montreal in Quebec. Don't miss it.

SPECIAL MESSAGE TO SYMPOSIUM PARTICIPANTS FROM DR. PHILIP S. CORBETT

"I send my warm greetings to participants in the Symposium, and greatly regret that I am unable to attend.

Toward the end of 1975 I corresponded with many odonatologists asking them for help in providing information that I planned to use for a review article on the biology of dragonflies. This article was destined for The Annual Review of Entomology. I welcome this opportunity to thank those who helped me with the provision of reprints, information and suggestions at that time.

Due to pressure of other commitments, I was unable to complete the review according to schedule, although considerable progress was made with the project; however, I plan to finish it in the next year or two, and possibly also produce a second edition of my book "A Biology of Dragonflies".

I should therefore be grateful if odonatologists would be kind enough to continue to send me their publications, promptly, so that I can keep up to date with new work and ideas in this field."

* * * *

AN APPRECIATION AND THANKS

Because time did not permit me to express my appreciation for the honor accorded me at the banquet last August, or to thank the ladies responsible for the beautiful corsage of roses for the occasion, I wish to do so now.

Years ago, a graduate student at Kansas State University was proudly showing me a bit of technique he had developed to seal a tube containing a specimen preserved in alcohol, without including a bubble of air. Another student stopped to listen, then dryly remarked, "Anyone could do that with the proper tools." Anyone with the same introduction to the study of Odonata I had at Michigan, probably could have accomplished more. Mr. Williamson's library and his huge authentically determined collection were the tools. Thousands of specimens from the Americas awaiting study - most still are - furnished ample material. It was Mr. Williamson himself who taught me how to use these tools and to care for them. Afrer his death in 1933, I had guidance of Dr. Calvert and Dr. E. M. Walker. Thus, I was very fortunate and to them owe special thanks. I also wish to express my thanks and appreciation to most of the odonatologists present at the meeting (and some not present) who have contributed in some way - and are still doing so - to my studies.

Gratefully yours,

Leonora K. Gloyd

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LETTER FROM

Syoziro Asahina
Department of Entomology
NATIONAL INSTITUTE OF HEALTH
10-35 Kamiasaki 2-chome,
Shinogawa-ku, Tokyo, Japan

July 25, 1977

"Dear Prof. Westfall:

I feel a great regret that I could not attend our 4th International Symposium now to be opened at your place. Please kindly convey my sincere congratulations to all the participants. I believe the Symposium will make a great success! I am recollecting the bright days and the exciting field survey I had with you in October 1963!

We, Japanese entomologists, started to organize the 1980 International Congress of Entomology to be held at our old capital, Kyoto, perhaps August 3-9. Unfortunately that year does not coincide with SIO Symposium year, we are, however, reddy to welcome odonatists if they join the 1980 Congress, and if there will be any attempt to have a symposium, or informal meeting, or annexed assembly, please inform me as a preliminary proposal to our Planning or Organizing Committee to which I belong.

P.S. The 21st Congress of International Association of Theoretical and Applied Limnology will also be held at the same place August 24-31, 1980."

FIFTH INTERNATIONAL
SYMPOSIUM OF ODONATOLOGY

Advance Announcement

The Fifth International Symposium of Odonatology will be held August 5-11, 1979 at the "Collège d'enseignement général et professional (CEGEP) Lionel Groulx", in Sainte-Thérése, Province of Quebec, Canada. Sainte-Thérése is a small town 23km north of Montreal along autoroute (Freeway) No. 15. The town is situated between Dorval airport (about 30km) and the Montreal international airport (Mirabal) (about 10 km). From both airports, bus services leave for the other airport many times a day and are going through Sainte-Thérése. In U.S.A., interstates 81, 87, 89 are normal routes of entry.

Meeting rooms, cafeteria and room accommodations are available on the small campus itself. There are also a certain number of apartments with three bedrooms for those who wish to come with their family. Montreal is only 25 minutes from the campus by bus (a bus every half hour in front of the CEGEP). At least one, possibly two, all-day field trips are planned as well as a banquet or a symposium dinner.

The Province of Quebec is mainly inhabited by French speaking people and Montreal is an attractive cosmopolitan city. Weather in August is warm (25°C) with cool nights (15°C). Rain may be expected.

A second announcement, with enrollment forms, will be sent shortly to all odonatologists known to the organizing committee. All individuals planning to attend are now urged to outline any papers they would like to give because we would like to have the abstracts available early in 1979.

Please send correspondence and inquiries to:

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Faculté des Arts et des Sciences
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Case Postale 6128
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Canada

CORRECTION

In SELYSIA, Vol. 7, #2 on page 4 I gave some records of Odonata from Arkansas. The specimens were from Yell County, not Yellow County as reported. -- M. J. Westfall, Jr.

NOTULAE ODONATOLOGICAE TO BE PUBLISHED

Beginning June 1, 1978 the Societas Internationalis Odonatologica (S.I.O.) will publish in June and December NOTULAE ODONATOLOGICAE, a new periodical, in addition to the present ODONATOLOGICA. This will be mailed in 1978 to all members and subscribers to ODONATOLOGICA at no additional charge, but in 1979 there may be a further charge for it. Non-members and institutions not interested in ODONATOLOGICA may subscribe to NOTULAE separately, this year for Hfl. 20.

January 27, 1978 Dr. B. Kiauta, Editor in Chief of ODONATOLOGICA, sent a circular to all members of the S.I.O. Executive Committee and all members of the Boards of ODONATOLOGICA. In this he explained the backgrounds for the decision to publish NOTULAE. To quote from this circular, he wrote "It is suggested that the publication program of NOTULAE ODONATOLOGICAE would include, in the first place, the following items: (1) local faunistic notes, (2) lists of odonate inventory of locally important nature reserves and other areas, (3) inventory lists of local collections, (4) breeding records, (5) brief field observations related to ecology, behaviour, migratory flights etc., (6) laboratory records whose nature does not permit publication in ODONATOLOGICA, but are nevertheless considered worthwhile being brought on record at an early stage of research, (7) brief notes on new field and laboratory techniques and equipment, 8) not rounded off notes in the field of the history of odonatology, (9) critical book reviews (since the nature of ODONATOLOGICAL ABSTRACTS lies in the field of information rather than in that of criticism), (10) notes on ethno- and anthropoodonatology (vernacular and folk names, dragonflies in arts and literature, dragonfly stamps etc.).

It is suggested that the demarcation line between SELYSIA and NOTULAE should be set up in such a way that SELYSIA will publish personal and organizational news items, descriptions of current research projects, requests for all kinds of cooperation, exchange of material, sale offers, announcements of and reports on local and other odonatological gatherings, etc., while NOTULAE should limit themselves to publication of actual "scientific matter".

The two periodicals should be strictly complementary to each other, and to achieve this aim Professor WESTFALL will act as a coordinator on the boards of both of them.

The editorial board will be announced in the June issue.

THE FOUNDATION OF THE ODONATOLOGICAL CABINET IN SIBERIA

by

A. Yu. HARITONOV

In 1951 the Siberian zoologist B. F. Belyshev published his first odonatological paper on the biology and taxonomy of *Epitheca bimaculata*. Since that time, regular study of dragonflies began in Siberia. From 1977 Dr. Belyshev and his pupils conducted odonatological research in the laboratory of Entomology in the Institute of Biology, Siberian Section of the USSR Academy of Sciences.

In December 1977 an odonatological Cabinet was founded by the order of the directorate of the Institute of Biology. The members of the Cabinet are two Scientific Officers--Doctor Biol. Nauk B. F. Belyshev and Kandidat Biol. Nauk A. Yu. Haritonov,and also a laboratory assistant.

At the present time, research by the Cabinet follows two main directions: 1) zoogeography and history of the Holarctic dragonfly fauna and 2) ecology and taxonomy of dragonflies in the Asiatic part of the USSR. Within the next few years the members of the Cabinet are going to expand significantly these researches and present their results in two monographs on the zoogeography and ecology of dragon - flies.

The odonatological Cabinet was founded in official acknowledgement of Dr. Belyshev, the chief odonatologist,

and the Institute of Biology, the centre of odonatology in the USSR. This acknowledgement was made by the USSR Academy of Sciences in August 1977. We hope that the Cabinet in Novosibirsk will serve the further progress of odonatological science in Siberia and elsewhere.

DRAGONFLY STAMP

Japan features the red dragonfly (*Boninthemis insularis*) as the subject of its 17th Nature Conservation Series on a 50-yen stamp introduced on Sept. 14. Produced in four-color photogravure in 30 million copies, the design of Motoharu Morita shows a "shimaakane" on a tree branch. There are roughly 5,000 species of dragonflies presently identified, according to the Japanese postal administration.

From - Linn's Stamp News 50(38): 1
September 19, 1977

FLYING CREATURE REMAINS FOUND

LONDON (UPI) - The remains of the oldest known flying creature - a dragonfly with an 8.5-inch wingspan that buzzed over Britain 300 million years ago - has been found in a lump of coal, officials disclosed Thursday.

"*Erasipteron bolsoveri*" was discovered in a mine shaft 3,000 feet below the surface in the Bolsover region by a worker who noticed piece of coal shaped like an insect's wing.

The Coal Board sent the specimen to London's Natural History Museum, which eventually identified it as a species of dragonfly that flitted over the countryside in a era before birds had evolved.

As such it predated the pterodactyl, said Paul Whallen of the museum's paleoentomology department Thursday.

Although later dragonflies evolved with wingspans up to 2 feet, "*Erasipteron bolsoveri* must have been a fearsome sight," Whallen said.

The Latin name given it by the museum means "graciously winged creature of Bolsover."

March 10, 1978

DRAGONFLIES vs. MOSQUITOES

Some publicity in the press has been given to a project in Wells, Maine to control mosquitoes by introducing dragonfly nymphs into local waters. In the April 21, 1976 York County Coast Star an article appeared entitled "Goodbye biocide" stating that April 24 was the last day for citizens to place their orders for dragonfly nymphs. The cost was $5 for 25 nymphs. There were some exaggerated statements in the article such as "adult dragonflies consume their own weight hourly."

In the same paper there were extensive articles with pictures April 6 and May 11, 1977. A picture showed one of the nymphs used and it was obviously one of the Aeshnidae, probably *Aeshna* or *Anax*. The source of supply was said to be Connecticut Valley Biological Supply Co., Inc., Valley Road, Southampton, Mass. Most of the people who bought dragonflies the first year were planning to buy them again, believing that the project was a success.

Another article that appeared in EXTRA, New York 1(7): 4 (October, 1977) was entitled "Mosquitoes Lost to Dragonflies." It was "Wells, Maine - The Chamber of Commerce imported dragonfly nymphs again this year to eat the local mosquitoes. The town first used baby dragonflies last year after voters rejected a $6,000 request to hire a helicopter to spray the mosquitoes. Instead nearly 200 residents spent $2,400 to place 11,500 dragonfly nymphs in the waters in which the mosquitoes breed. A survey of 40 of the persons who bought dragonflies last year indicated success. Townspeople found that the dragonflies not only cost less than spraying, but they fight mosquitoes all summer. The mosquitoes often become immune to spraying. The dragonfly nymphs may eat as many as 3,000 mosquito larvae in an hour."

A similar program was initiated in Bedford, N.H. (Post-Bulletin of Rochester, Minn., March 16, 1978).

PRELIMINARY SPECIES LIST OF VIRGINIA ANISOPTERA

by

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I am currently preparing a Research Division Bulletin, "The Anisoptera of Virginia" to be published in the Insects of Virginia Series at Virginia Polytechnic Institute and State University. The following list contains species that I have collected in Virginia; asterisks indicate species known from less than ten localities.

New unpublished species records for Virginia or surrounding states, and also records for those species marked with an asterisk will be greatly appreciated. All contributors will be fully acknowledged.

Petaluridae
*Tachopteryx thoreyi**

Gomphidae
*Aphylla williamsoni**
*Arigomphus furcifer**
*Arigomphus villosipes**
Dromogomphus spinosus
Erpetogomphus designatus
*Gomphus (Gomphurus) fraternus**
*Gomphus (Gomphurus) lineatifrons**
*Gomphus (Gomphurus) vastus**
*Gomphus (Gomphurus) ventricosus**
*Gomphus (Gomphus) borealis**
*Gomphus (Gomphus) descriptus**
Gomphus (Gomphus) exilis
Gomphus (Gomphus) lividus
*Gomphus (Gomphus) quadricolor**
*Gomphus (Hylogomphus) abbreviatus**
*Gomphus (Hylogomphus) brevis**
*Gomphus (Hylogomphus) parvidens**
*Gomphus (Hylogomphus) viridifrons**
Hagenius brevistylus
*Lanthus parvulus**
*Ophiogomphus aspersus**
*Ophiogomphus carolus**
*Ophiogomphus howei**
*Ophiogomphus mainensis**
*Ophiogomphus rupinsulensis**
Progomphus obscurus
Stylogomphus albistylus
*Stylurus amnicola**
Stylurus laurae
*Stylurus notatus**
*Stylurus plagiatus**
*Stylurus scudderi**
Stylurus spiniceps

Aeshnidae
*Aeshna canadensis**
*Aeshna constricta**
*Aeshna mutata**
*Aeshna tuberculifera**
Aeshna umbrosa
*Aeshna verticalis**
Anax junius
*Anax longipes**
Basiaeschna janata
Boyeria grafiana
Boyeria vinosa
*Coryphaeschna ingens**
Epiaeschna heros
*Gomphaeschna antilope**
*Gomphaeschna furcillata**
*Nasiaeschna pentacantha**

Cordulegastridae
*Cordulegaster erronea**
Cordulegaster maculata
*Cordulegaster obliqua**
*Cordulegaster diastatops**

Macromiidae
Didymops transversa
*Macromia alleghaniensis**
*Macromia georgina**
Macromia illinoiensis
*Macromia taeniolata**

Libellulidae, Corduliinae
Epicordulia princeps
*Helocordulia selysii**
Helocordulia uhleri
*Neurocordulia obsoleta**
*Neurocordulia virginiensis**
*Neurocordulia yamaskanensis**
*Somatochlora elongata**
*Somatochlora filosa**
*Somatochlora georgiana**
Somatochlora linearis
*Somatochlora provocans**
Somatochlora tenebrosa
*Somatochlora williamsoni**
Tetragoneuria cynosura
*Tetragoneuria semiaquea**
*Tetragoneuria spinosa**
*Tetragoneuria "williamsoni"**

Libellulidae, Libellulinae
*Brachymesia gravida**
Celithemis elisa
Celithemis eponina
*Celithemis martha**
*Celithemis monomelaena**

*Celithemis ornata**
*Celithemis verna**
Erythemis simplicicollis
*Erythrodiplax berenice**
*Erythrodiplax connata minuscula**
*Ladona deplanata**
*Ladona julia**
*Leucorrhinia frigida**
*Leucorrhinia intacta**
*Libellula auripennis**
*Libellula axilena**
Libellula cyanea
*Libellula flavida**
Libellula incesta
Libellula luctuosa
Libellula needhami
Libellula pulchella
Libellula semifasciata
Libellula vibrans
Pachydiplax longipennis
Pantala flavescens
*Pantala hymenaea**
Perithemis tenera
Plathemis lydia
Sympetrum ambiguum
*Sympetrum (Tarnetrum) corruptum**
Sympetrum obtrusum
Sympetrum rubicundulum
Sympetrum semicinctum
Sympetrum vicinum
Tramea carolina
Tramea lacerata
*Tramea onusta**

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NOTES FROM

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ARE THERE NOCTURNAL ODONATES?

A number of N.A. Anisoptera fly until very late in the evening including the crepuscular *Neurocordulias, Gynacantha nervosa,* and *Triacanthagyna trifida.* Other more diurnal species of Aeschnids in particular fly just as late on occasions. In all cases but one that I observed, the activities of the dragonflies ceased by the time darkness made them invisible to my eyes. None were visible, therafter using artificial lights. The one exception occurred when, intermittently using a lantern, I saw 2 *G. nervosa* patrol a small flood plain pool until about 5 minutes after total darkness.

Odonates are sometimes found in light traps or hunting around artificial lights at night. However these appear to be abnormal situations caused by the dragonflies being disturbed at night or a result of the steady light source. I have heard rumors of a Gomphid (*Macrogomphus ?*) that flies at night in SE Asia. Tillyard (1926) in Insects of Australia and New Zealand states that the Aeschnid *Telephlebia godeffroyi* flies..."in shady gullies from late afternoon until midnight,..." I would be very interested in hearing about any cases where Odonates were observed flying in darkness under natural conditions. How about those cases of *Pantala flavescens* flying far out at sea, for example?

Another intriguing aspect of this question is that I have noticed that dragonfly activity stops just before or simultaneously with the appearance of the first insectivorous bats at dusk. Is this coincidental, programmed through natural selection, or do the dragonflies sense the bat's sonar? Do the bats in fact attack crepuscular dragonflies? Also, I have seen a few times the Caprimulgid bird, the Chuck-Will's-Widow, cruising among *Neurocordulia virginiensis* when their flight times overlapped for a few minutes at dusk. I was unable to see if the birds caught any of the dragonflies.

CORDULEGASTER OBLIQUA, FASCIATA, AND EYE COLOR

From my own specimens and from the literature, I have found overlap in practically all characters between *C. obliqua* and *C. fasciata.* Not yet demonstrated to overlap are HW length (41-50 mm in *C. obliqua*, 53-60 in *C. fasciata*), abdomen length (48-62 and 64-72), cells in male anal triangle (3 and 4+), HW antenodal and postnodal crossveins (10-24:11-17/10-17:10-16 and HW intermedian crossveins (8-11/5-7 and 11-12/9-10). All these differences relate to the larger size of the southern *C. fasciata.* The most intriguing difference is in eye color. *C. obliqua* in E. Texas and in Ohio has the eyes grey-green above. *C. fasciata* at two

Florida locales has the eyes bright aqua-blue above. I would much appreciate any data or specimens you have which show intergradation between these two species or forms especially from specimens along a zone between the Carolinas and Louisiana. *Cordulegaster maculata* shows a somewhat similar variation in eye color. Walker (1958, pg. 294) states that in Canada the eyes are green. Other Odonatologists have told me that the eyes are blue in Wisconsin, and that in Kentucky the eyes are grey to pinkish grey in tenerals becoming grey-green when mature. In North Florida and Louisiana I found their eyes were aqua-blue above. I would like to receive any information you have on eye color, including age changes, in any species of *Cordulegaster*.

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NOTES FROM

Dennis R. Paulson
Washington State Museum
University of Washington
Seattle, Washington 98195

ODONATA COLLECTION INVENTORIES

After discussion with a number of odonatologists, I feel we have given short shrift to one aspect of our collecting and keeping dragonfly specimens--that of keeping accurate inventories of our primary resources, our dragonfly collections. Virtually no one with whom I have spoken knows (sometimes not even approximately) how many species or how many individuals are currently in his or her collection. All have some idea of their geographic representation, their strengths and weaknesses, but these are very poorly if at all quantified.

I find, having inventoried at least the processed specimens in my collection, that these figures are very helpful to me in making decisions about where to collect, what to collect, with whom and for what to exchange specimens, which museums to visit, etc. More than that, I can send a copy of the inventory to some other worker and that person will then have an accurate assessment of my collection as a resource for future use. If someone wants to do a study of the variation of *Orthemis ferruginea*, for example, I can immediately tell them how many males and females I have from each U.S. state and each country. It may be argued that I could go to the collection and count them when the request was made, rather than using my time in advance. This argument is probably based on the feeling that one doesn't have time for such inventories; rather, valuable and limited time should be used for the acquisition or processing of more specimens, or other responsibilities. It is difficult to argue with this assessment, as I understand the shortness of time and know how many people with odonate collections work professionally at something other than odonate biology.

If you <u>are</u> willing to respond to this request, the simplest sort of inventory would consist of a listing of how many specimens you have of each species, by sex. A further, quite valuable but quite time-consuming, step would involve the inventory of each species by state and province for North America and by country for the rest of the World (or as finely divided as you wish to make it). Even a list of total number of specimens of all species for each geographic region would be of value. If you cannot exactly quantify your regional holdings, at the very least a statement of the areas that are well represented is essential.

If a collection is expanding very slowly, a single inventory would suffice, perhaps revised every five years. However, with more rapid expansion I suggest a system of processing specimens in bunches and adding them to the inventory as they are added to the collection. I do this and find it a reasonably efficient and rapid method. Each species is entered on a 3x5 card, with males and females tallied for each state, province or country. Then at intervals of a year or so I type up a complete inventory of my collection by species. I would be happy to provide anyone with a copy of this for 75¢, the cost of copying it.

The Association of Systematics Collections, based at Fort Hays State University, Hays, Kansas 67601, has begun the task of registering all systematics collections in North America. Knowledge of vertebrate collections is in an advanced state now, but insect collections need much attention. Collections of dragonflies seem to me to be amenable to such registration, and there are few enough of them so that we have a chance of attaining such a goal. I am willing to act as liaison between anyone wishing to inventory his or her collection and the official registry at Fort Hays.

I realize this will entail considerable effort on the part of everyone, and I can only guess the effort will be much appreciated by the community of odonate students in general. In addition, the ASC needs our cooperation for its endeavors to be successful. If there is any favor I can do for you in response to your cooperation or any way I can facilitate your efforts, please let me know. I look forward to the time when a national registry of dragonfly collections exists. Until that time I hope we can make our own start toward that goal. Any level of inventory is better than where we are now.

DRAGONFLY FIELD GUIDE

While a field guide to the dragonflies of North America is hardly with us yet, at least its planning has become a reality. Sidney Dunkle, Rosser Garrison, Christopher Leahy, Paul Miliotis and I have progressed to what we consider a satisfactory stage since the inception of this project during the August dragonfly symposium. We have outlined the proposed book in moderate detail, some introductory material and a few dozen species accounts have been written, paintings and range maps are being prepared, and we are communicating with a prospective publisher. A list of proposed common names for all 400+ North American species has been generated, taxonomic problems have been outlined (see note in this Selysia), and we are tackling the literature.

We plan to have a rather extensive introductory section along with accounts of families, genera and species, with as much ecological and behavioral information as we can include. Range maps are envisioned for every species, in as much detail as we can extract from the literature and collections. The illustrations will consist of a series of color plates with paintings depicting all those species that are recognizably different in the field. Additional species most easily identified at very close range or in the hand will be differentiated by line drawings, as will many structural and color-pattern details.

Needless to say, even with five of us participating in this venture, there are many gaps in our collective knowledge and resources. We envision needing much help in all three areas: species accounts, illustrations and range maps. We know dragonfly workers possess masses of unpublished information, the publication of which would greatly aid the species accounts and distribution maps of this field guide. There are still undescribed species of Odonata in North America, and we place high priority on their description. So our first request of the community of odonatologists is to describe your new species, to write up your state lists (with distributions summarized at the county level if possible) and your papers on life histories and behavior. We understand that you may not be able to finish all your intended manuscipts in the next few years (in fact, we understand all too well what an ephemeral commodity time is), and we hope you will be willing to furnish unpublished information on subjects about which there are substantial gaps in our knowledge.

Lacking up-to-date distributional lists for many states we will have to do considerable work in collections, and we hope we will be able to gather distributional data from some of the fine private collections as well as the institutional ones. Finally, color photographs of North American Odonata, taken in life, will be absolutely essential resources for our artists. We have a substantial collection of such photographs among us, but there are many gaps which we hope to fill either in the field ourselves or by using the photographs of others. As we progress with this work, we will have an increasingly better idea of

exactly what we do need from our colleagues, and we will be making requests either individually or collectively.

All we can offer you in return is our sincere thanks; acknowledgement in the field guide; financial remuneration for expenses incurred while complying with our requests--for example, for duplication of slides, xeroxing of information, or postage for mailing information, photographs or specimens; and, most important, a final product of which we can all be proud and with which we will provide ourselves and those to follow with a basis for better understanding dragonflies.

I can think of no better way to interest people in the Odonata than by this medium--a book that allows them to recognize these beautiful animals in the field. Roger and Isabelle Conant, in their Field Guide to Reptiles and Amphibians of Eastern and Central North America, acknowledge about 150 people for many forms of help, and I think North American herpetologists can be proud of such a cooperative effort. There are fewer of us, but I hope we are no less enthusiastic.

This announcement is intended to reach as wide a group as possible and takes the place of the personal contact we would otherwise have made with many of you. We look forward to hearing from anyone with comments about this project.

POTENTIAL CHANGES IN THE LIST OF NORTH AMERICAN ODONATA

As plans for a field guide to North American Odonata crystallize, it is obvious that we need a checklist of North American Odonata as a basis for deciding what to include in such a field guide. After spending some time thinking about such a checklist I realized there were surprisingly many unresolved questions of taxonomy and nomenclature, in addition to a number of undescribed species, that would preclude the production of a really useful checklist. In compiling the present list of problems, I am struck by the fact that there is enough work here to keep odonate systematists and potential systematists busy for some time. Now that classical systematics is not in vogue, fewer and fewer students enter the field, even when they might have a predilection to do so. The reader may pause for a moment and try to recall how many taxonomic papers on odonates of North America have appeared in the past few years. It would be satisfying if this trend could be reversed, and perhaps this list will succinctly inform all of us of the need for this. If anyone has any suggestions about any of these matters, or about other possible problems, please communicate them to me. It would be fantastic if we could get all, or at least most, of them resolved during the next half decade.

CALOPTERYGIDAE

Hetaerina--the question of whether *tricolor* is a species distinct from *titia* should be cleared up.

LESTIDAE

Lestes--might *disjunctus* and *australis* be separate species?
--is *simplex* a synonym of *alacer?*

COENAGRIONIDAE

Amphiagrion--a new species to be named.
Anomalagrion--should this be included in *Ischnura?*
Argia--at least two species to be named.
Enallagma--this genus should be split into several smaller ones, of which the *signatum* group stands out as immediately the most distinct.
--is *boreale* a synonym ("subspecies") of *deserti?*
--has anyone actually synonymized *culicinorum, laurenti* or *piscinarium?*
--why are people still confused about *vernale?*
Ischnura--*utahensis* should be synonymized with *barberi.*

AESHNIDAE

Aeshna--are we satisfied that *septentrionalis* is not a race of *coerulea?*
--are we satisfied that *mutata* is not a race of *multicolor?*

GOMPHIDAE

Aphylla--confusion about what is *"ambigua"* and *"protracta"* and exactly what names to apply to the two species occurring in Texas; one, perhaps both, undescribed.

Erpetogomphus--one possibly new species from Texas/New Mexico; we need to determine whether this could be one of the "lost" Mexican species.

--is *natrix* a synonym of *lampropeltis?*

--*diadophis* should be synonymized with *eutania*..

Gomphus--a new species of *Gomphurus* to be described.

--one (or more?) new species of *Hylogomphus* to be described.

--*brimleyi* should be synonymized with *cavillaris*.

--*flavocaudatus* should be synonymized with *exilis*.

--what is the status of *williamsoni?*

--do any of the subgenera have valid status as genera?

Ophiogomphus--is *edmundo* a synonym of something else?

--there are rumors of an undescribed eastern species.

Phyllogomphoides--are our (and other) species not really congeneric with the type of this genus?

Progomphus--a new species to be named.

Stylogomphus/Lanthus--do *albistylus* and *parvulus* really belong in different genera?

CORDULEGASTRIDAE

Cordulegaster--*deserticola* should be synonymized with *dorsalis*.

--*fasciata* should be synonymized with *obliqua*.

MACROMIIDAE

Macromia--*rickeri* should be synonymized with *magnifica*.

--the eastern "species" related to *georgina* are badly in need of study to determine their validity.

CORDULIIDAE

Epitheca--there is still question about the synonymy of *Epicordulia* and *Tetragoneuria* with this.

--*regina* should be synonymized with *princeps;* a very interesting study of geographic variation awaits someone here.

--is there an undescribed species that people have been calling *"williamsoni"?*

LIBELLULIDAE

Celithemis--is *monomelaena* a synonym of *fasciata?*

--could *amanda* and *martha* possibly be conspecific?

Erythrodiplax--*connata, minuscula* and *fusca* are probably not conspecific, at least there is very little evidence to indicate they are: *connata* of Mexico and southwestern U.S. may not be conspecific with *connata* of southern South America and would need a new name (although it may be the same as *connata* of the West Indies, for which the name *fraterna* is available).

Libellula--is this one genus or several? A careful study will be necessary to refute the single-genus concept, and Old-world species will have to be taken into account; a comparison with *Orthemis* and/or *Orthetrum* would be instructive; *Ladona* appears to be the most distinct group.

Perithemis--*seminole* should be synonymized with *tenera*.

Sympetrum--*atripes* needs to be synonymized, presumably with *costiferum*.

--is the form in the Northeast that looks like *rubicundulum* but has hamules like *internum* an undescribed species? (It is not *decisum*).

Tramea--the Florida and West Indian species is not *binotata* and will have to be called *insularis;* true *binotata* is propably what is being called *walkeri* now.

--*cophysa* is probably restricted to southern South America, and our species going under that name will have to be called *calverti*.

Note that some of these problems are very straightforward, others are totally subjective and will engender controversy. It would be pleasant if we could generate a concensus about any of the subjective ones. When I write "should be synonymized" I don't necessarily imply the two forms are identical, just that they

belong under the same species name. Where a statement is made rather than a question asked, my attitude is clearly indicated; I welcome disagreement, with evidence to back it up.

PROGRESS ON TAXONOMIC AND NOMENCLATURAL PROBLEMS OF VIRGINIA ANISOPTERA: A REPLY TO DENNIS R. PAULSON

by

Frank Louis Carle
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Virginia Polytechnic Institute
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Blacksburg, Virginia 20461

In the process of preparing the bulletin "The Anisoptera of Virginia" it has been necessary to study several taxonomic problems. The following list includes questions, suggestions, and in some cases explanations. I would like to examine specimens which might clear up any of the following problems, and in turn make my collection available to anyone who wishes to do the same.

AESHNIDAE

Aeshna -- are there intermediates between *Aeshna multicolor* and *A. mutata;* the two seem so distinct. Confusion may be related to the accidental reversal of the figures in Needham and Westfall (1955).

GOMPHIDAE

Gomphus (Hylogomphus) -- Confusion here because the figures labeled *Gomphus parvidens* in Needham and Westfall (1955) are actually that of the then undescribed *G. (H.) apomyius.*

Gomphus/Arigomphus/Stylurus/Gomphurus/Hylogomphus -- *Arigomphus* and *Stylurus* are certainly distinct enough to be recognized as genera, although in *Stylurus* this distinctness apparently lessens when Old World species are considered. *Gomphurus* and *Hylogomphus* together may also represent a group deserving generic rank. The remainder of North American *Gomphus* fall into still other subgroups, none of which seem to contain *G. vulgatissimus?* Could *G. vulgatissimus* be closer to *Hylogomphus-Gomphurus?*

Ophiogomphus -- *Ophiogomphus mainensis* collected in Virginia seem to be typical, but the form of the epiproct is suspiciously variable. Could the West Virginia form be the long synonymized *O. johannus.* I have not collected *O. edmundo* or *O. carolinus* in Virginia, however both seem distinctive.

Stylogomphus/Lanthus -- These genera certainly resemble one another, but after considering the *Stylogomphus* spp. of the Far East, the distinctness of the two genera becomes more apparent. Useful characters include the structure of the anal appendages, anterior hamule, penis, and nymphal antennae.

CORDULEGASTRIDAE

Cordulegaster obliqua/fasciata -- *Cordulegaster obliqua* apparently intergrades with *C. "fasciata"* on the coastal plain and piedmont of Virginia and North Carolina, respectively.

MACROMIIDAE

Macromia -- *Macromia georgina, M. illinoiensis* and *M. alleghaniensis* have been collected from the same locality in Virginia and show no intergradations other than in color pattern. *M. taeniolata* has been collected from the coastal plain of Virginia and is distinct from other Virginia *Macromia.*

LIBELLULIDAE

Epicordulia/Epitheca/Tetragoneuria -- After a study of these groups I have decided not to follow the suggestion of Walker and Corbet (1966). The ovipositing behavior of *Epicordulia* is still in doubt. I have observed females of both "species" tapping over open water in the manner of *Helocordulia uhleri,* which also shares the strap-like vulvar lamina.

Epicordulia princeps/regina -- Although I have studied specimens of *Epicordulia princeps* which approach *E. "regina"* in wing coloration patterns, I have not observed a correlated increase in the attenuation of the cerci as seen in *E. "regina".* Specimens from North and South Carolina will probably solve this problem.

Celithemis fasciata/monomelaena -- Of these two "species" only *Celithemis "monomelaena"* has been collected in Virginia.

Erythrodiplax/Sympetrum/Tarnetrum -- If we recognize *Erythrodiplax* as being distinct from *Sympetrum*, it seems we must also recognize *Tarnetrum*? Is the *"Sympetrum"* of the Far East really *Sympetrum* in the strictest sense?

Sympetrum rubicundulum/internum -- I have collected a few males of what appear to be *Sympetrum rubicundulum*, but which have the internal lobes of the hamules as in *S. internum*. I once collected a *S. internum* male in copulation with a *S. rubicundulum* female. Whether or not the aberrant males represent an undescribed species, hybrids, or the natural variability of *S. rubicundulum* is not known.

Libellulini -- I have begun a study of adult Libellulini and thus far agree with the groupings of Kennedy (1922), although I am inclined to recognize *Ladona* and *Plathemis* as genera, with *(Platetrum)* a subgenus of *Plathemis*. This arrangement seems to be reinforced by nymphal morphology.

ODONATA ENVELOPES STILL AVAILABLE

The transparent cellophane envelopes which have been used in recent years in so many collections are still available. They are 7" long with flap, 3.25" wide, and made from DuPont's HB-20 cellophane. The price is $21.00 per thousand and can be ordered from Robert P. Herold, 3063 Hazelwood Ave., Santa Clara, California 95051. Rosser Garrison reports that he has used them with very good results.

SPECIMENS DESIRED

Mr. G. Theischinger (OE Landesmuseum, Museumstr. 14, A-4010, Linz, Austria) would like to obtain larval and/or exuvial specimens (thus not imagoes) of *Gomphomacromia paradoxa*. If you can supply such please write to him.

REQUEST FOR INFORMATION ON *ENALLAGMA*

I would be interested in corresponding with persons who have definite records of the following western *Enallagma* from the following states:

E. anna	Colorado, New Mexico, Arizona
E. basidens	Nebraska
E. boreale	Nebraska
E. carunculatum	New Mexico, Mexico
E. civile	Idaho
E. clausum	Arizona, Idaho, New Mexico
E. cyathigerum	Nebraska
E. ebrium	Idaho

I would be glad to enter into correspondence with anyone with these or other records from various western states. Information is needed for a Ph.D. thesis to be finished by June 1979.

-- Rosser W. Garrison, Division of Entomology and Parasitology, 201 Wellman Hall, University of California, Berkeley, California 94720.

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RECORDS OF ODONATA FROM ALABAMA WANTED

I am gathering records of Odonata for Alabama with the hope of someday publishing an account of the distributions within the state. Aside from the quite extensive collections by Septima Smith and Robert Hodges in Tuscaloosa County in the 1930s, very little has been done on the dragonfly fauna of this state. Published data are scarce. With limited collecting, I have already added three species of damselflies to the state list. I would greatly appreciate hearing from those colleagues who have collected Odonata in Alabama. Any records thus acquired will be duly acknowledged.

-- Dr. Ken Tennessen, 1949 Hickory Ave. Florence, Alabama 35630.

PROTEIN VARIATION IN *GOMPHUS* (ODONATA: GOMPHIDAE)

Abstract of Dissertation

by

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December 1977

Protein variation in the dragonfly genus *Gomphus* was studied using starch gel electrophoresis. A phylogeny was proposed for 23 species using genetic distance estimates derived from analysis of 22 genetic loci. An additional 23 species of Odonata from a wide variety of families were analyzed for comparison with *Gomphus*.

Average heterozygosities ($\bar{H}$) for 23 species of *Gomphus* ranged from 0.0000 - 0.0852, with a grand mean of 0.0221. Six species of *Gomphus* has no apparent variability. Nine species of Libellulidae had a mean $\bar{H}$ of 0.0491. These $\bar{H}$ values are much lower than most other insects that have been investigated.

The range of genetic distance levels for local populations was 0.0000 - 0.0191, for sibling species 0.0438 - 0.0868 and for genera 0.5023 - 1.733. In general, the proposed phylogeny agreed rather well with the existing classification of Odonata as established from conventional morphological studies. On the basis of genetic distance *Arigomphus* was raised from subgeneric to generic rank. *Gomphus brimleyi* Muttkowski, identical at all 22 loci with *G. cavillaris* Needham, was synonymized.

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PUBLICATIONS ON ODONATA

COLLECTING AND STUDYING DRAGONFLIES

This small booklet by D. Keen is published by the Amateur Entomologists' Society as Leaflet No. 12, with IV + 24 pp. The price is quoted as 1.60 pounds (postage extra) and it can be ordered from the Society's Publication Agent, L. Christie, 137 Gleneldon Road, Streatham, London S.W. 16, U. K.

THE DRAGONFLIES OF GREAT BRITAIN AND IRELAND

We have received the announcement of the publication of this volume by C. O. Hammond. It contains 116 pages, including 20 color plates, 23 text figures and 44 distribution maps. It was published by Curwen Books (Curwen Press Ltd.), North Street, Plaistow, London E13 9HJ and is obtainable from all bookshops and specialist entomological booksellers. One such dealer is L. Christie, 137 Gleneldon Road, Streatham, London S.W. 16, U.K. The price is quoted as 9.75 pounds or $22.50 in U.S.

DRAGONFLIES OF BRITISH COLUMBIA

In SELYSIA Vol. 7, #2, it was announced that Mr. Robert A. Cannings had a book in press on the Odonata of British Columbia. This is now off the press and we have a copy. It is an excellent work and the low price makes it possible for everyone to have a copy. The title is Dragonflies of British Columbia by Robert A. Cannings and Kathleen M. Stuart- It is a paperback of 254 pages, with 44 figures (most containing many separate illustrations) plus a distribution map for each species. The price is $2.00 (price subject to change without notice) and orders should be addressed to PUBLICATIONS, British Columbia Provincial Museum, Victoria, B.C., V8V 1X4. Checks or money orders should be made payable to the Minister of Finance, Province of British Columbia.

REVISIONARY STUDY OF ACANTHAGRION

This volume is also available now, its publication having been delayed longer than expected. For those who wish to buy it, the data is Justin W. Leonard, 'A revisionary study of the genus *Acanthagrion* (Odonata: Zygoptera) , Misc. Publ., Mus. Zool., Univ. Mich., No. 153, p. vii + 173, pls. 1-19, issued October 7, 1977. The price is $6.95 plus 50¢ for postage and handling. Address orders to the Secretary

of the Museum of Zoology, University of Michigan, Ann Arbor, Michigan 48104. Checks or money orders should be made out to the Museum of Zoology, University of Michigan. Those who are on the mailing list to receive Odonata publications from the museum will eventually receive a copy free.

FLORIDA ODONATA

by C. F. Byers (1930)

S.I.O. has purchased the publisher's remainder of this paperback book - C. Francis Byers, 1930, A contribution to the knowledge of Florida Odonata - Univ. Fla. Publ. No. 1, 327 pp., 11 pls., 19 text-figs. We still have 23 copies personally autographed by Dr. Byers which can be ordered at the price of $6.00 (postage included) from Minter J. Westfall, Jr., Dept. of Zoology, Univ. of Florida, Gainesville, Fla. 32611, USA.

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CONCERNING C. H. KENNEDY'S DOCTORAL DISSERTATION

Several people have asked about the possibility of obtaining a copy of Dr. C. H. Kennedy's doctoral dissertation on the penes of the Zygoptera. The E. B. Williamson Library has a copy made years ago by the University Microfilms, but now the office in Ann Arbor, Michigan has no record of having made such a copy. In 1974 the estimate for making new copies was $40.00 for the first copy and considerably less for additional copies if several were ordered at the same time.

I would like to know how many people would like to have a copy if the average cost were $25.00 or less. Please let me know not later than the end of July. Address replies to my Michigan address, Division of Insects, Museum of Zoology, University of Michigan, Ann Arbor, Michigan 48109.

I would also like to know if you would like a list of duplicate reprints on Odonata that I have for free distribution.

L. K. Gloyd

DRAGONFLIES OF SWITZERLAND

Dr. B. Kiauta has just called our attention to a recent book published in French by the Service des forêts et de la fauna in Lausanne, Switzerland. It is by C. Dufour, 1978, entitled "Etude Faunistique des odonates de Suisse romande", II + 215 pp. Dr. Kiauta writes, "It gives a review of the fauna of the French speaking parts of Switzerland, including the distributional maps and lists of all localities of all species, and brings the total number of species known to occur in Switzerland to 76".

EXHIBITION OF DRAGONFLY PHOTOGRAPHS

From May 8 to June 29, 1978 an exhibition of dragonfly photographs entitled "Einheimische Libellen und deren Entwicklung vom Ei zum Ei" (Our dragonflies and their development from egg to egg) is being shown in Bern, Switzerland. It was organized by Otto Strub and Irene Siegenthaler whose home is in Thun, a city near Bern. Otto Strub (age 72 years) is a professional photographer who for the past eight years has specialized, among other things, in dragonfly photography. These two have so far organized four such exhibitions and are also the authors of the book "Das Libellenjahr" (The Dragonfly Year) published in 1976. For further details see abstract No. 1563 in ODONATOLOGICA Vol. 6, No. 1 (March 1, 1977).

Dr. B. Kiauta delivered the opening address on May 17 in Bern on behalf of the Societas Internationalis Odonatologica (S.I.O.). Dr. Kiauta has written us that it was actually a review of the history of odonatology in Switzerland, with slides. He says an English version will appear in ODONATOLOGICA. Further he states that at the opening there were some 120 guests present, including a number of Swiss dragonfly workers. Dr. Kiauta says further that some of the photographs are unique, if nothing else, for the size, the largest being close to 1.5 by 3 meters. They also sell them for the decoration of public buildings, schools, etc. The largest may cost as much as sFr. 5000.-

NEW ADDRESSES FOR COLLEAGUES

Dr. Michael L. May has accepted a teaching position and as of June 1 should be addressed at the Dept. of Entomology & Economic Zoology, Cook College, Rutgers University, New Brunswick, New Jersey 08903.

Mr. Sidney W. Dunkle is back in Gainesville to pursue studies for the Ph.D. He may be addressed c/o Dr. M. J. Westfall, Dept. of Zoology, University of Florida, Gainesville, Fla. 32611.

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B. E. MONTGOMERY HONORED

We have been informed that Professor Emeritus B. Elwood Montgomery received the Honorary Doctor of Science Degree from his alma mater, Oakland City College, at Oakland City, Indiana May 27, 1978. The Entomology Staff of Purdue University also held a reception for "Monty" and his wife, Esther May 24, in West Lafayette, Indiana. Congratulations "Monty."

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DROMOGOMPHUS DISTRIBUTION

M. J. Westfall and Kenneth J. Tennessen have a paper ready for press on *Dromogomphus*. For the three species we have the following distributions:

armatus - UNITED STATES: Ala., Fla., Ga., La., Miss., N.C., and S.C.

spinosus - CANADA: Ont., Que.,; UNITED STATES: Ala., Ark., Conn., Del., Fla., Ga., Ill., Ind., Kans., Ky., La., Maine, Md., Mass. Mich., Minn., Miss., Mo., N.H., N.J., N.Y., N.C., Ohio, Okla, Pa., S.C., Tenn., Tex., Vt., Va., W.Va., and Wis.

spoliatus - UNITED STATES: Ala., Ark., Ill., Ind., Kans., Ky., La., Mo., Ohio, Okla., Tenn., and Tex.

D. spinosus obviously has the greatest range. Rhode Island seems to have been missed, and perhaps Iowa. *D. spoliatus* is likely to occur in Mississippi. If you have specimens which establish additional state records for any of the species, we would appreciate hearing from you. If you reply quickly enough we may be able to include your records in the paper.

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WESTFALL SPENDS MONTH IN GUATEMALA

June 15-July 15, 1977, Minter J. Westfall was in Guatemala at Finca El Salto and Finca Moca Grande, Depts. of Escuintla and Suchitepequez, respectively. Many interesting species of Odonata were collected and reared.

STUDENT FROM ROCKEFELLER UNIVERSITY RESEARCHING IN GAINESVILLE

Margaret E. McVey, a graduate student working under the direction of Dr. Peter Marler of Rockefeller University, has been studying odonate behavior here in Gainesville this Spring. She has been using the fish ponds in Austin Carey Memorial Forest as her study site for doing research on the relationships between life-history strategies and mating systems in a field context. We will be looking forward to seeing the results of this study.

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CROCOTHEMIS SERVILIA IN FLORIDA

The June number of NOTULAE ODONATOLOGICAE carries the report of Dennis Paulson's having found the oriental species *Crocothemis servilia* (Drury) in Miami in August of 1977 after the symposium. He wrote to me about them as "flaming scarlet creatures" which he recognized at once as being different from species normally taken in south Florida. Ken Tennessen wrote, after learning of this, that he had gone back through his collections from Ft. Lauderdale in 1975 and found a male of this species. He apparently mistook it for *Brachymesia furcata* at the time. Thus we now know it from Dade and Broward counties. Collectors in Florida should watch for it in other counties.

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RECENT ODONATA ADDITIONS TO THE F.S.C.A.

During the past year the Florida State Collection of Arthropods at Gainesville has received a number of contributions. Notable among them is a collection of 2,612 adult specimens of 295 species from many parts of the world brought to us by Dr. Dennis R. Paulson who is a frequent contributor. Dr. George H. Bick also presented a number of collections during the past few years. In 1977 he brought us 134 reared specimens of 43 species, 224 nymphs of 68 species, and 828 adult specimens principally from North and South Dakota. Mr. R. Duncan Cuyler brought us 2,044 adults representing 118 species from North Carolina. Other smaller collections came from Mr. Frank L. Carle, Dr. D. A. L. Davies, Mr. Rosser Garrison, and others.