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# ARGIA

THE NEWS JOURNAL OF THE DRAGONFLY SOCIETY OF AMERICA

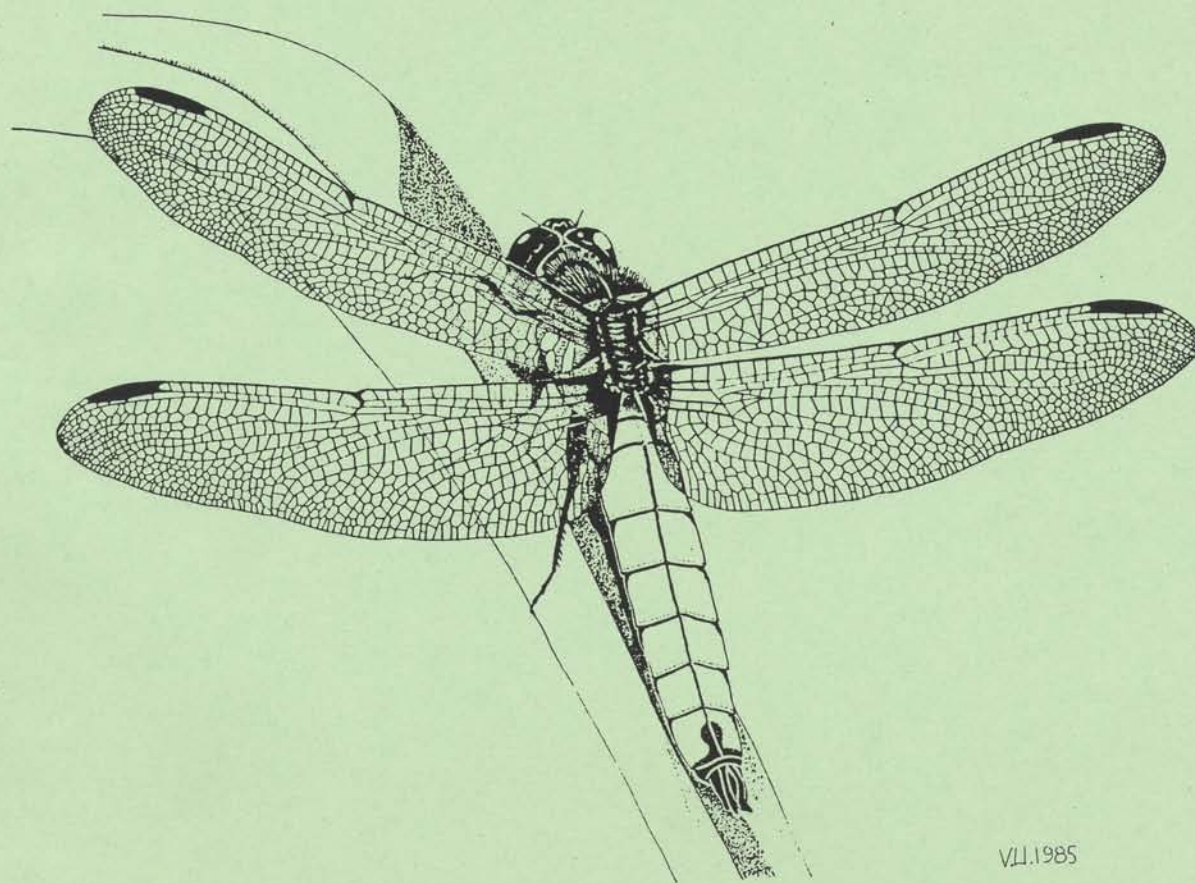
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SOCIETAS INTERNATIONALIS ODONATOLOGICA

# ARGIA - The News Journal of the D.S.A.

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It is my sad duty to report the death of **Dr. Janny van Brink**, mother of Marianne Kiauta and mother-in-law of Bastiaan Kiauta. Janny was instrumental in making the S.I.O function for many years; we will all miss her. I am certain I speak for all members of the D.S.A. in extending our condolences to the Kiautas.

Shortly after sending out the last issue of **ARGIA** I received the very welcome news that **Carl Cook** is convalescing at home and making impressive improvement after his long bout in the hospital. Carl tells me that he plans to make the Oregon gathering. The Odonata of Oregon can regard themselves as suitably warned!

## IN THIS ISSUE

Our big news, of course, is the upcoming trips. Plans for the **Adirondack** trip are progressing nicely, and we anticipate a fine turn out. Similarly, the **Oregon** annual gathering will headquarter in Bend, where Steve Valley has found a motel for the group. If you plan to attend either trip, then you should contact Nick Donnelly (Adirondacks) or Steve Valley (Oregon) to make final arrangements. See the registration form which is enclosed.

Steve Valley brings us some more Oregon Odonata records. Readers of **ARGIA** will surely recognize by now that the northwestern United States has a really interesting Odonata fauna, and people going to Bend are advised to plan on numerous side trips both going and coming.

It is time to vote for the next officers of the D.S.A. The nomination committee unexpectedly produced a three-way split for President. Thus, you should return your vote as soon as possible. We will announce the results in Bend.

The subject of potential restrictions on collecting is becoming more apparent every day, as Garrison's article makes clear. Many views are possible. One of the most apparent is that there is emerging among some individuals a kill-the-messenger view in which preservation is seen to consist largely of

restricting collecting. While it seems conceivable that collecting might endanger some species, this has not been shown to be the case for any odonates that I know of (possibly any insects at all - I might stand corrected here, however). I personally fear that increased restrictions on collecting are possible, and I fear especially for the future generation. Without extensive collecting much of our science will simply wither. Further, our knowledge of distribution will similarly be seriously diminished. It seems highly appropriate for us, as a society, to embrace a policy on collecting that will let the world know that we take this activity seriously and responsibly. Richard Orr has prepared a draft statement of this policy, which is presented in this issue. I urge all members to read it carefully and convey your views to Richard. We will discuss this at Bend with a view of taking formal action shortly thereafter.

Along these lines Sid Dunkle has asked us to consider reporting the Odonata of "protected areas" (parks, wildlife preserves, etc.).

Mike May brings us up to date with more news of his migration project. This promises to be an exciting activity.

Those of you who really read these issues may notice one amusing (to me, anyway) inconsistency. The dragonfly that we all know as *Tramea lacerata* is given the common name "Black Saddle Bag" by Rosser Garrison, and "Black-mantled Glider" by Mike May. Borror called it the "Common Raggedy Skimmer". If we didn't have the scientific name, we wouldn't know what we were talking about! If we are to have common names, then we should ensure that they are at least "common", and these names sure aren't. Perhaps we should consider crafting names that will be quickly comprehensible to workers. One thing we might consider is setting up a committee for common names, inviting the entire membership to participate and vote. I await your views.

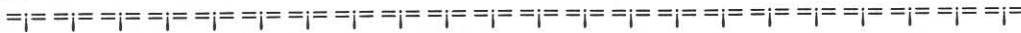
Günter Bechly brings us more news on amber insects. Perhaps it is time to dust off these specimens and do some serious taxonomy. He also

tells us of the formation of a study group on Odonata taxonomy.

Oliver Flint tells us of an interesting, early season Texas trip. The "Hill Country" of Texas has turned out to be one of the best places in the U.S. for Odonata. Perhaps we should have some further articles on this delightful area.

Rosser Garrison tells us of his formative period in Odonata study. I doubt that any member can top his tale.

Rodolfo Novelo has sent us information on the current activities of Mexican Odonatists. This amount of activity is impressive indeed and illustrates how much vigor can be created by a few workers! Perhaps some of the US workers will bring us up to date on their activities in future issues!



### ADIRONDACK TRIP UPDATE

Nick Donnelly, 2091 Partridge Lane, Binghamton NY 13903

The Adirondack trip is shaping up very well. After a truly brutal winter and very late, cold April, the month of May has been warm and sunny, and we look forward to a superb trip in June. The dates for the trip were given as Friday to Sunday, 18-20 June. However, we have the use of the facilities of a large summer camp (**Camp St. Regis**), which we can occupy for the week before the meeting and a few days after. We must be out by the 24th. The camp will provide bed frames and mattresses, but the participants will have to provide their own pillows, sleeping bags or sheets and blankets, as they prefer. We will have the use of a fully equipped kitchen, including a refrigerator, and we will plan to prepare some communal meals, as we have done on previous trips.

The gathering will consist of dividing up into small groups to collect at various bogs and ponds in the vicinity of Saranac Lake. We will try to pinpoint the most promising habitats in advance, but we have incomplete information on the local Odonata, and the collecting will be somewhat unpredictable. Some of us will have 4-wheel vehicles and canoes. I do not anticipate that these will be required at any site, but they might prove useful. We will be guided mainly by **Dan Spada**, a biologist of the Adirondack Park Agency, who is arranging access for our group to some restricted or otherwise difficult places to examine.

Prepare for black flies! These pests will be declining through the month of June, but you should anticipate being bothered. My personal

advice is to wear very light colored clothing with long sleeves.

If you have a DeLorme atlas of New York, then you will be well prepared to find the site. We will be on page 95 (Our camp is about 0.4 inch above the name "Upper St. Regis", just west of route 30.), and the nearest large community is Saranac Lake. To find Camp St. Regis: (1) approaching from the west (Tupper Lake): take route 3/30 and at the junction nearly 5 miles east of T.L. take the northern fork (route 30). Pass the Fish Creek Ponds and continue to the Lake Clear junction, which is a small community about 20 miles from Tupper Lake. At this junction turn left and follow route 30 to the north. After about 3 miles there will be a right turn; continue about 1 1/2 miles more. There will be a dirt road on the left with an overhanging sign saying "Camp St. Regis". (If you reach Heron Lane, you have gone just a bit too far; turn back.). Turn in to the camp and look for some sort of sign tacked to a tree indicating where the group is gathering.. (2) Approaching from the southeast (Saranac Lake): go north on route 86 about 5 miles; follow route 86 as it turns left and proceed about 4 more miles to the Lake Clear Junction (where it joins route 30). Then proceed as indicated above. (3) Approaching from the north (Malone). Go down route 30 to Paul Smiths. Continue a little more than 2 miles further, looking for the "Camp St. Regis" sign, which is just beyond Heron Lane.

The use of the summer camp has been arranged for us by Judy Cameron, a DSA member who lives in the vicinity, and to whom we owe much gratitude. She will act as a telephone contact, but she warns





*Gomphus kurilis* - 1 m at Freeway Lakes, Albany, Linn Co., 26 Jun 92. Normally flies from 20 May thru Jun. Several males collected at Mercer and Sutton Lakes 5 mi. north of Florence, OR coast, Lane Co., 22 Jul 89, by Bob Kemp, Shropshire, UK.

*Libellula julia* - Scout Lake, Jefferson Co., 2 mi. off HWY 20 at Suttle Lake. A small population flies most of July. The habitat is mostly restricted to less than 100 mt. of shore where several dead trees lie in the water. Doll Lake and Parish Lake, 6mi. E of HWY 22 on Road #2266, Linn Co., 7 Jul 91.

*Libellula luctuosa* - 16 m at Freeway Lks, Linn Co., 22 Sep 91, 1 m 26 Jun 92, Linn Co. I was surprised to see this species for the first time in Aug 91. This site is 2 miles from my house and I have collected there for many years. I have also seen *L. luctuosa* at other sites around Albany.

*Libellula saturata* - 7 m 3 f at Blue Mt. Hot Springs, 9 mi. SE of Prairie City, Grant Co., 2 Aug 91. (previous northernmost record Page Springs, Malheur NWR, Harney Co., OR). 1 m seen at Freeway Lks, Linn Co., 22 Sep 91. He gave me 3 swings and I missed every time.

*Octogomphus specularis* - 1 f at House Rock Forest Camp, 2 mi. E of Upper Soda on HWY 20, Linn Co. This site has a .5 mi. trail through a fine example of "old growth" temperate rain forest. *Tanypteryx hageni* has been seen here, but the larval site remains undiscovered.

*Ophiogomphus occidentis* - 1 m at Freeway Lks, Linn Co., 31 May 92. 3 m at Yakima River, 10 mi. N of Richland, Benton Co., Washington, 18 Jul 92.

*Ophiogomphus morrisoni* - 1 f at Todd Lake, Deschutes Co., 30 Jul 91. My wife, Robin, found this very teneral specimen resting on a trail bordering the east side of the lake. This determination was from life. It did not preserve well. Todd Lake lies at elevation 6150 ft., so we were surprised to see an *Ophiogomphus*! We have seen no more specimens.

*Sympetrum corruptum* - 1 m at Freeway Lks, Linn Co., 10 Mar 92. This was the earliest record I have for any dragonfly. They were quite numerous within a week and were still flying in mid Sept.

*Tanypteryx hageni* - I have collected and studied this species for many years at 2 sites in OR. Snow Peak, Linn Co., Jun thru Jul. Several of my study sites in this area have been clearcut (private forest) and the fate of these populations is unknown. I have seen none in 91 or 92. Todd Lake, Deschutes Co., Jul 10 thru Aug 15. This is the largest population I have found. There are many larval sites in the spring-fed bogs on the hills surrounding the lake. Marked males have been recaptured after 5 weeks at the same sites. One was recaptured 1 mile from the site 1.5 hours after being marked. The stealthy can observe and photograph copulation and oviposition from close range. **Anyone visiting this site is asked to restrict collecting to 3 males and 1 female.**

*Tramea lacerata* - 3 m at Freeway Lks, Linn Co., 22 Sep 91. Common late June until late Sept.

[*Libellula julia* is sometimes placed in the genus *Ladona*; *Epitheca* spp. are also placed in *Tetragoneuria*. ed.]

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## THE ROLE OF AMATEUR AND PROFESSIONAL INSECT COLLECTING

Rosser W. Garrison

With the increasing amount of urbanization and habitat destruction in our country, some people have noticed and commented upon a corresponding decrease in the diversity and abundance of our Odonata. The response from some people and conservation agencies not only in the U.S. but abroad has been to promote various means of

preserving our rich heritage of species and habitats. We owe it not only to ourselves, but to all of mankind, to preserve, if possible, our legacy of earth's evolution. These issues are not confined to the scientific community. The November 30, 1992, issue of *U.S. News & World Report*, for example, profiles distinguished entomologist E. O.

Wilson of Harvard University, who warns of the irreplaceable scientific and spiritual loss we face in light of man's aggression against our ecosystem. Lay people are becoming more interested in the larger invertebrates (especially butterflies) as witnessed by the proliferation and popularity of insect zoos and butterfly houses throughout the U.S. Yet the loss of critical habitat and decline of once common species continue.

Curiously, we seem, at least in this country, to be faced with a corresponding decline of systematic entomologists: we are finding it increasingly harder to document, identify and describe new species that are disappearing right under our noses. Few academic positions exist nor does there seem to be support for training systematists.

Recently, there has been concern expressed about collecting dragonflies and its impact on the environment. In response to this, several countries have enacted laws to control the collecting and exporting of various animals, including dragonflies. Carl Cook expressed concerns about whether collecting dragonflies is becoming too regulated. Richard Orr and Robert Glotzhofer state that it is better to work within the regulatory system, as it exists here and elsewhere rather than to disregard these laws and collect as one pleases. I think the majority of us feel, as do the latter two authors, that both amateur and professional collectors want to work within the current framework of rules and regulations. The days of unlimited, unrestricted, do as you please collecting are over. We must cooperate with government agencies that will continue to restrict such activities.

My purpose here is to address a concern that I feel is gradually becoming entrenched in the public's mind concerning the impact of collecting on various species. Specifically, are we placing too much emphasis on the harmful effects of collecting? Does sampling of a natural population (even a restricted deme) cause irreversible detrimental effects on that population? Some of my concern also stems from aggressive policies recently initiated by the U.S. Fish and Wildlife Service (USFWS). Law enforcement agents of this organization have recently raided private residences and confiscated certain specimens which they believe were illegally obtained or collected. Agents have served subpoenas to collectors, seeking insect specimens for use as

evidence against other collectors. These actions have become well known throughout the entomological community but are only now starting to be addressed. I have talked to many amateur and professional entomologists, many of whom are extremely concerned about these actions. Many entomologists, and some agents of public agencies, appear to be ignorant of rules and regulations about collecting in our own country and abroad.

For example:

1. Some entomologists who have collected on U.S. National Forest land and on Bureau of Land Management (BLM) land were told by rangers that collecting permits were needed. Head offices of both agencies later indicated that no insect collecting permits are needed.

2. The USFWS is apparently enforcing provisions of the Lacey Act. Enforcement of laws of foreign governments which require insect or invertebrate collecting permits has recently occurred. Specimens collected in Mexico, for example, have been confiscated at the U.S. border by USFWS personnel. Unfortunately, obtaining insect collecting permits in Mexico involves much time (perhaps a year or more in advance) and money (almost \$1000--for a one-year permit). Many other Latin American countries require such permits, though their cost seems to be lower.

3. Some countries, such as Australia, require export permits as well as collecting permits. Other countries apparently require similar permits but it is difficult or almost impossible to acquire or even obtain information about them. For example, I have just learned that all insects imported from Indonesia require an import permit, but attempts at obtaining the information was difficult.

4. I have seen proposals advocating the protection of certain species and subspecies where overcollecting has been listed as a primary danger to the target species. These proposals have so far been limited to butterflies.

5. The September/October 1992 issue of the Lepidopterists' Society newsletter summarized the results of a meeting on the issues surrounding collecting for faunal surveys and endangered species programs. Acknowledging that collecting permits are required for many countries, states, and parks, some of the more than 100 attendees voiced

frustration with the international and national red tape necessary to obtain permits. Some problems included the requirement of submitting a report to the issuing agency and the short time frame allowed for submitting it. Because analysis and identification of insects can involve much time and research, such time frames may be difficult to meet. Other agencies may require a total listing of the *number of species in advance*, a condition which is simply impossible to meet.

Other members were stymied by the long delays that may occur before receiving collecting permits.

Sometimes a simple collecting trip involves contact with many agencies. During the summer of 1992, I led a one week trip to Arizona. I had to contact, by phone or by letter, four different agencies requesting permission to collect. I received favorable replies from three of the four requests: I failed to receive a reply from the BLM/USFWS for permission to collect at the San Bernardino Ranch.

Permits from foreign countries are nearly impossible to obtain. In some cases, the collector can have a definite advantage if he has a contact in a foreign country who can facilitate the procurement of permits.

6. The number of insect specimens which may be collected at any one locality has become a hot topic. Robert Glotzhober, Associate Curator, Natural History, Ohio Historical Society, suggests, in a proposed policy for all collectors who conduct surveys within restricted sites, that no individual collect more than four specimens of each identifiable species at the same place and same day.

Examples reported above, and more reported by other professional and amateur entomologists, indicate an alarming trend. I believe that insect collecting is beginning to be perceived by much of the public and by conservation agencies as an unnecessary pastime which inflicts great harm or contributes to the extinction of target species. Consequently, several agencies and many lay people are elevating insects (primarily butterflies at this time) to the same status as slowly reproducing vertebrates, and attributing to them a set of ecological principles and protective protocols associated with giant pandas and mountain gorillas.

I strongly believe that insect collecting, whether amateur or professional, provides a fine means of understanding the world we live in and collecting is often a means by which we can further understand insects and their role in the environment. The following points show some of the problems associated with overly zealous, but well-meaning, regulations that restrict advancements of amateur and professional entomologist alike.

1. Most insects are a vastly renewable resource: population generation times and their capacity to increase are rapid. Many common but desirable insects such as birdwing butterflies, can be reared (bred) with little effort, and the results can be scientifically and financially rewarding. Michael Parsons, World Wildlife Fund entomological consultant, has argued for the regulated rearing of many of the more popular and spectacular butterflies in Indonesia and Australasia. He notes that many species have been listed as endangered or threatened, mostly on an emotional basis rather than on sound scientific evidence. Overly restrictive laws and regulations may actually inhibit native peoples from conducting a financially sound enterprise which would relieve pressures by collectors and help preserve native ecosystems. The preservation of these habitats is a separate issue, but collecting, *per se*, has little detrimental effect compared to habitat destruction.

2. I have seen no evidence that entomological sampling or "overcollecting" has contributed to the extinction of any species. Insect collecting by amateurs and professionals, however, has greatly expanded our knowledge of the life history and distribution of supposedly endangered taxa. Insects are highly speciose (over 1,000,000 described species) and of small size compared with vertebrates. They require capture and preservation for study, because differences are often minute and difficult to see. A single day's catch may require months of work in the laboratory. Even the better known taxa, such as butterflies and dragonflies, are yielding undescribed species in relatively well collected countries such as the United States. For example, I am presently describing three new species of damselfly from the U.S. Two of them have recently been proposed for endangered status before they have even been described, much less studied in depth. One of them seems to be restricted to a single canyon, but I suspect further collecting may show that it occurs elsewhere.



Another is known from four or five localities. The third species is similar to the first, and was also thought to be restricted to one canyon until last summer, when we found another population about 150 miles from the first site.

3. Faunal surveys may add further knowledge in areas which are considered to be relatively well collected. Recent collecting in southern Australia has revealed previously unknown populations of the endangered damselfly, *Hemiphysalia mirabilis*.

4. It is important that reasonably large samples are available for ecological, biogeographical and taxonomic studies. Ecological studies show that some species may actually adjust to ecological disturbances. The San Francisco forktail damselfly, *Ischnura gemina*, may have extended its range due to urbanization. Some local populations become extinct, but others live in extremely polluted areas in the San Francisco Bay Area. We know that *I. gemina* hybridizes with a more widely distributed sister species, that different frequencies of females occur at different sites, and that relatively subtle morphometric characters correlate to locality and season.

5. Because there are relatively few professional (paid) insect taxonomists, the help of amateurs is essential for clarifying the status of rare or endangered species. Many of these species are more likely insufficiently known due to unusual habits. Care should be exercised in listing such species.

6. A thorough understanding of geographical, seasonal, and ontogenetic variation is possible only by analyzing long series of specimens from several localities. Multivariate morphometric studies analyzing geographic variation, for example, routinely require a sample size of 25-30 specimens of each group from each locality and time. Although I respect the need for controlled collecting in restricted areas, small sample sizes cannot yield accurate data. Studies of this type have rarely been documented for insects, even widely distributed ones, because of lack of specimens.

Many Odonata which are seemingly rare occur in great abundance from time to time, in the southern deserts. Only at brief times are some species abundant. Long series collected at different sites can provide a data base with which to study

individual and geographic variation of these often poorly known species.

7. Museums and universities cannot build study collections without collecting or collectors. Amateurs and unaffiliated professionals such as myself provide an important source of material for such institutions. I routinely donate examples from such long series to other interested colleagues and museums.

8. Although our Odonata fauna is relatively well known, that of many countries lags far behind. I believe that the collection of long series of insufficiently known tropical taxa can be justified, if for no other reason than that examples can be made available to other workers. The foresighted work of the Williamsons in the 1920's continues to provide workers with an incredibly rich database. For example, one long series of *Hetaerina curvicauda* is all that is known of this species (except for one specimen in another collection).

9. The importance of collecting by nonprofessionals and amateurs cannot be overemphasized. Among odonatists, Ris, Williamson, and Fraser were technically amateurs. The contribution of these individuals are self evident. Even well-known entomologists such as Bates and Wallace were professional collectors (dealers!) who contributed greatly to our knowledge of tropical insects. As habitats are slowly depreciated or completely lost, amateurs provide a source of public information for the impending loss of critical habitats. Besides contributing to the education and sense of wonderment which accompanies insect collecting, early collecting activities serve a necessary prerequisite to professional development. Amateur collecting also provides much needed knowledge about taxa in our own area. For example:

a) A college student enrolled in an undergraduate entomology course rediscovered *Ischnura gemina*, previously thought extinct.

b) A lepidopterist collected the first records of *Aeshna psilus* for the United States.

c) A family with two grade school children interested in insects discovered the first specimen of *Enallagma semicirculare* for the United States.

d) Collections by interested amateurs during August 1991 provided new Arizona county records

for *Argia translata*, *A. oenea*, *Lestes alacer*, and *Macrothemis inacuta*.

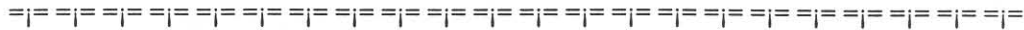
In the above cases, the participants were excited about and gratified by their contributions to the scientific knowledge of these poorly known species.

A complete listing of rules and regulations for this country and at least a listing of countries requiring permits should be made available to entomologists. Knowledge of these laws would help us to work within a cooperative framework with law enforcement agents. Agents in our local and national governments, and in governments abroad, should streamline the processing of permits so that they can be readily available to entomologists. Recommendations of recognized amateurs by acknowledged professionals (even within other countries) would be one way of simplifying the permit process for those already known to be contributing to science. This is not meant to

exclude other individuals, but is meant to streamline the process for regular contributors.

Although we entomologists have a duty to preserve endangered species and threatened habitats, I caution against the hasty listing of species and overzealous laws and regulations which may unnecessarily result in the hindrance of future scientific research. We should remember that insects have much greater reproductive potentials than vertebrates which makes them much less vulnerable to overcollecting. Their capture, preservation, and examination are usually necessary for their study, and that any perceived negative effects of insect collecting are far outweighed by the contribution of these activities to science and to the enhancement of wonder for beginners.

I appreciate input and advice on the preparation of this note from Don Frack, John Beurie, Sid Dunkle, and Clark Shiffer.



## A PROPOSED DSA STATEMENT ON COLLECTING GUIDELINES

Richard Orr, 9334 Farewell Rd., Columbia, MD 21045

The following proposed collecting ethic and associated guidelines originated out of a number of previous articles in *ARGIA* dealing with the philosophy of collecting. These articles indicated that a number of **DSA** members believe that a collecting ethic endorsed by the **DSA** would help to communicate the need to "non-members" for further study on dragonflies, and to provide access to protected areas which are presently being regulated by various government and environmental organizations.

The purpose of this first draft is to provide the **DSA** membership with the chance to review and provide input into the guidelines. Ideally the guidelines will be discussed and voted into agreement as being the "official" collecting guidelines for the **DSA** during the Oregon meeting.

The basic blueprint for the guidelines was derived from the collecting ethics published by the Lepidopterists' Society. However a number of additions, subtractions and modifications have been made by various **DSA** members. The

Lepidopterists' Society has provided permission for us to piggyback on their work and seem pleased that the **DSA** might be headed in the same philosophical direction.

Since this document, if accepted, will impact all members of the **DSA**, it is important that you let me know how you feel. If you approve of the document as is, I need to know that also. All correspondence sent to me on the guidelines will be taken to Oregon for discussion before any **DSA** commandment will be made.

*Draft Statement for Comment:*

### THE DRAGONFLY SOCIETY OF AMERICA'S STATEMENT ON COLLECTING ETHICS

#### I. PREAMBLE

The Dragonfly Society of America (**DSA**) believes that it is to their benefit to define the

rationale and practices of collecting Odonata for the purpose of governing its own activities.

The major goal of the **DSA** is to increase the knowledge of Odonata and educate others about the biological and aesthetic value of these aquatic insects. The **DSA** also recognizes that included in that concept is our responsibility to assess and preserve natural resources, for the maintenance of biological diversity and ecosystem sustainability.

The **DSA** believes that dragonflies are a renewable natural resource and that all actions by a member of the **DSA** should be in a manner not harmful to the perpetuation of that resource.

#### **The Collection of Odonata:**

1. has an essential role in gathering scientific information, both for its own sake and as a basis from which to develop rational means for protecting the environment and maintaining the health of the biosphere.

2. is a means of introducing and educating individuals and groups to the study of their natural environment.

3. is a recreational activity that can generally be pursued in a manner not detrimental to the resources involved.

## **II. GUIDELINES**

#### **Purposes of Collecting:**

- To create a reference collection for study and appreciation.
- To document regional diversity, frequency, and variability of species, and as voucher material for published records.
- To establish the distribution and geographical range of a species.
- To document faunal representation in environments undergoing or threatened with alteration by man or natural forces.
- To participate in development of regional checklists and institutional reference collections.

- To be part of a research project.

- To educate.

- To augment understanding of taxonomic and ecological relationships.

#### **Restraints as to Numbers:**

- Limit collection (of adults or of immatures) to sampling, not depleting, the population concerned; collect numbers of individuals consistent with, and not excessive for, the purposes of the collecting.

- Exercise caution and restraint when collecting where the extent and/or the fragility of the population is unknown.

#### **Live Material:**

- Rearing to elucidate life histories and to obtain series of immature stages and adults is encouraged, provided that collection of the rearing stock is consistent with these guidelines.

- Reared material, if released, should be done so only in the region where it originated, and in suitable habitat.

#### **Environmental and Legal Considerations:**

- Protection of the supporting habitat must be recognized as the "*sine qua non*" of protection of a species.

- Collecting should be performed in a manner to minimize trampling or other damage to the habitat.

- Respect property rights and sensibilities of others (including those of nature photographers and/or observers).

- Regulations relating to publicly controlled areas and to individual species and habitats must be complied with.

- Compliance with agricultural, customs, and other federal, state, or county regulations is required prior to importing or collecting specimens.

#### **Responsibility for Collected Material:**

- All material should be preserved with appropriate data.
- All material should be protected from physical damage and deterioration, as by light, mold, and museum pests.
- Collections should be made available for examination by qualified researchers.
- Collections or specimens, and their associated written and photographic records, should be willed or offered to the care of an appropriate scientific institution, if the collector lacks space or loses interest, or in anticipation of death.
- Deposit type specimens, especially holotypes and allotypes, in the appropriate scientific institution.

Related Activities of Collectors:

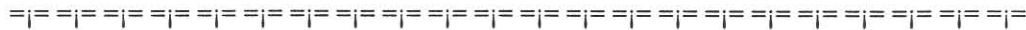
- Recording of field observations of behavior is encouraged.

- Photographic records should be accompanied with appropriate data.
- Undertake whenever possible public education regarding dragonfly natural history, identification, collection, and conservation.

Traffic in Dragonfly Specimens:

- Collection of specimens for exchange should be performed in accordance with these guidelines.
- Rearing of specimens for exchange should be from stock obtained in a manner consistent with these guidelines.
- Mass collecting of Odonata for commercial purposes, and collection or use of specimens for creation of salable artifacts, are not included among the purposes of the **Dragonfly Society of America**.

Please send comments to **Richard Orr**, 9334 Farewell Rd., Columbia MD 21045, or call him at 410-730-7290.



**ODONATA IN PROTECTED AREAS**

Sidney W. Dunkle, Biology Department, Collin Co. Comm. Coll., Spring Creek Campus, Plano, Texas 75074

Dr. Norman Moore, Chair of the Odonata Specialist Group (OSG) of the International Union for the Conservation of Nature (IUCN) is completing an Action Plan for Odonata conservation. Dr. Moore rightly points out that we need information on the localities where odonate species, especially rare and threatened ones, have been found. Particularly needed are data on rare species already known to be present in protected areas, or on habitats which on the basis of their odonate fauna should be protected.

As the North American representative of the OSG, I am willing to collate such data for the Western Hemisphere. What is most needed are lists of Odonata that have been found in specific protected areas.

There is a continuum of protection for public lands. For example, the USA National Parks are

rather highly protected, and Wildlife Refuges and Sanctuaries are also probably relatively secure. State Parks are usually well protected except that some might fill in wetlands or dam streams to provide other kinds of recreational facilities, and National and State Forests are more or less protected except that building roads and clear cutting of timber usually have priority over wetland protection. The management of County and City Parks often changes with the vagaries of politics. Thus it would be helpful for an Odonata lister to make an assessment if possible of long-term protection for the relevant area.

It is also important that our taxonomy be good. Voucher specimens in some accessible collection are FAR superior to sight records. The lister should give an indication of whether actual specimens were handled, and who identified them.





fossils preserved in Dominican amber (Dieter Schlee, 1990 and pers. comm. 1993):

- 1.) An intact damselfly, which is not very visible, because the insect is surrounded by dirt.
- 2.) A relatively large piece of amber, containing three damselflies!
- 3.) A fragmentary damselfly-wing.
- 4.) A fine preserved distal half of a damselfly-wing in clear amber.
- 5.) A damselfly (head, thorax, legs, proximal abdomen and wing bases) in excellent condition, preserved in clear, polished amber! A color photo of this beautiful specimen, which is similar to *Telebasis* too, has been published in Schlee (1990), page 83.

The Dominican amber originated in the lower miocene. The "amber-tree" most probably has been a close relative of the extant species *Hymenaea courbaril*, a neotropical legume that is known for its high production of resin. Amber from the Dominican Republic is extraordinary for the following reasons:

- numerous places of discovery, with a large output of high quality amber.
- regular findings of large pieces of amber, up to 13 kg!
- frequent and diverse fossils in excellent condition: Plants (blossoms, leaves and bark), arachnids (incl. scorpions, amblypigids and pseudoscorpions), insects (incl. odonates, mantids, membracids, strepsipteres and fleas) and even vertebrates (small frogs, gekkos and iguanas)! There are also single pieces of amber with "mass catches" of arthropods, e.g. containing 2000 ants, or 1000 dolichopodid flies, or 15 moths etc.

It is certainly not over-optimistic to expect further odonates from Dominican amber in the future, but there are also some fossil odonates known from the baltic amber of eastern Europe: Two fossil damselflies of the famous "Königsberg Amber collection" are now housed in the paleontological institute of the University of Goettingen, Germany. These specimens were described and figured by Pfau (1975). They are remarkably well preserved and seem to represent two different platycnemidid species, which are still unnamed.

In his monumental work Die Fossilen Insekten (1906-1908), Handlirsch enumerated the six

following taxa from baltic amber (lower oligocene):

- 1.) A damselfly-larva (!), described by Hagen (1854) as *Calopteryx*.
- 2.) Three *Platycnemis*-like damselflies, described by Hagen (1848, 1856) as *Platycnemis antiqua*. These specimens are housed in the "Collection Berendt" of the paleontological museum of the Humboldt-University in Berlin / Germany. Pfau (1975) could only locate the two male specimens in the Berlin museum, the sole female specimen unfortunately seems to be lost.
- 3.) An adult dragonfly, described by Hagen (1854, 1856) as *Gomphoides occulta*.
- 4.) Another adult dragonfly, described by Hagen (1848, 1856) as *Gomphus resinatus*.
- 5.) A dragonfly larva (!), described by Hagen (1856) as *Gomphus*.
- 6.) A specimen classified by Handlirsch as "*Odonata incertae sedis*", was described by Berendt (1830) as *Libellula* spec. This description of Berendt seems to be the first scientific publication on odonates preserved in amber.

All these fossils together make a total of 19 specimens, but my enumeration is likely to be incomplete, because some publications (e.g. Carpenter, 1992) were not available to me. Furthermore it is quite possible that some specimens have disappeared in private collections without having been scientifically examined and described.

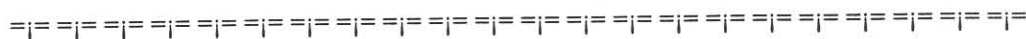
The fact that nearly all amber preserved odonates are damselflies, can be explained by the conditions of fossilisation: Damselflies get trapped and enclosed in resin more easily than dragonflies. It is evident that Anisoptera preserved in amber will always be rare, extraordinary and expensive fossils, although one could argue about a price of \$ 10.000 for such a specimen, even if it is in excellent condition.

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**SGSPO -- SPECIALIST GROUP FOR SYSTEMATIC AND PHYLOGENETIC  
 ODONATOLOGY**

Günter Bechly, Institute for Systematic Zoology, c/o Dr. G. Mickoleit, University of Tübingen  
 Auf der Morgenstelle 28, D-72076 Tübingen, GERMANY

The **SGSPO** is an informal non-profit association of scientists who are interested in systematics and phylogenetics of fossil and extant Odonata, with special reference to cladistic studies.

**SGSPO Membership is free ! Membership in the S.I.O. is not obligatory.**

**Publications:**

The **SGSPO** publishes the annual periodical "**PETALURA -- The annual Journal of the SGSPO**" (editor: G. Bechly). The first volume will be published in September 1993. Members of the **SGSPO** will receive the journal free of charge; non-members can order volumes from the editor for \$10 each. Submitted papers will be generally refereed. Authors have to submit camera-ready manuscripts to the editor. The **SGSPO** is unable to supply free reprints. Announcements and Communications shall be published in the S.I.O. Newsletter **SELYSIA**.

**Chairman-Elect:**

The Chairman-Elect will be elected biannually. Votes have to be sent via letter to Mr. G. Bechly. All Group members have the right to vote and to candidate. The first election will take place in August 1993.

**Meetings:**

International Group-Meetings shall be held biannually, along with the **INTERNATIONAL SYMPOSIUM OF ODONATOLOGY**, providing that enough members attend this symposium. Regularly meeting discussion-groups shall be organized on a local base, e.g. in Australia, Germany and the U.S.A.

**Subjects:**

1.) Close communication and cooperation between all specialists in the field of systematic and phylogenetic odonatology. It is a major purpose of the **SGSPO** to promote the development and acceptance of a modern phylogenetic system of fossil and extant odonates!

2.) Publication of the annual journal **PETALURA**.

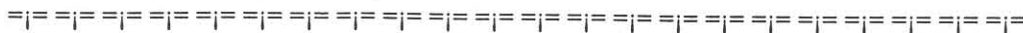


3.) Establishment of a continuously revised **ODONATA DATABANK & EXPERT SYSTEM** for MS-DOS / WINDOWS Personal computers, with the following components:

- Odonatological Bibliography.
- Catalogue of fossil and recent Odonata, including all synonyms, data concerning types, distributional data and major references.
- International directory of odonatologists and odonatological collections.
- "Total evidence data matrix" for the computer-program PAUP (2.4), using and revising the data of all available literature sources.

- Computerized keys to the odonate taxa (interactive and non-dichotomous). (If data of publications shall be used, copyrights must not be violated !)

4.) Close cooperation with the S.I.O. in all questions of systematic odonatology, and support of the INT. ODONATA RES. INSTITUTE in Gainesville FL, by donations of specimens and reprints.



### A SHORT TRIP TO TEXAS

Oliver S. Flint, Jr., Dept. Entomology, MRC 105, National Museum of Natural History, Washington, DC 20560

For the first two weeks in April my wife, Carol, and I took a hiking and sight-seeing vacation to the Trans-Pecos of Texas. In addition to the hiking we hoped to see the desert in bloom (the reason for selecting these two weeks). We flew into San Antonio late in the evening and stayed with friends there for a day and a half. The lush, green fields, full of flowers augured well for our trip. However, as we drove west on Sunday past Del Rio, a distressing brown dryness began to take over. When we arrived at the Chisos Mtn. Lodge in the Big Bend National Park (Brewster Co.) we were told that they had had no significant rain for a year!

In spite of the dryness we had a marvelous week hiking the mountains, looking at the few scattered flowers, and watching the javelinas walk down our porch. Not having a collecting permit for the park, I had not expected to do anything there. Luckily, on our first day an old friend, Dr. Jon Gelhaus from the Philadelphia Academy of Natural Sciences, caught up with us as we were approaching "The Window", and showed me his Malaise Trap placed across the little stream (with official Park permit). He has let me work up the few odonates taken in the trap: *Argia plana*, *Libellula saturata*. Another small *Argia*, that appeared much darker, was on the same streamlet but none showed up in the trap. Other than that, I did see several *Hetaerina*, probably *americana*, at

a small spring-fed trickle in the desert near the Chimneys. At Rio Grande Village I saw more *Libellula saturata*, various *Argia*, and several pair of *Telebasis salva* around the irrigation ditch.

From the Big Bend we drove north to Fort Davis (Jeff Davis Co.). The manager at the Hotel Limpia, a wonderful, old hotel, suggested several small springs in the vicinity. We visited "Modesta Spring" in the bottom of a small canyon in the Chihuahuan Desert Research Station 4 miles east of town. This nice spring-fed brooklet only supported *Argia plana* at this time of the year. A small spring flowing a few meters among several large junipers before dropping into the dry Limpia Creek bed at about 4 miles west of Ft. Davis was visited the next day. Again *Argia plana* was the most common damselfly, but *Argia nahuana* was also taken, and a small grassy pool contained *Hesperiagrion heterodoxum*.

The next day we continued driving north to the Guadalupe Mountains and Carlsbad Caverns (Culberson Co.). The closer we got the more the roadsides became covered with flowers, especially a brilliant yellow Onagraceae. We arrived in time to walk up McKittrick Canyon to the Pratt Cabin. The stream was flowing nicely just above the mouth of the canyon, but lacking permit we did not collect. The, by now, commonly seen *Argia plana* was the only damselfly noticed. That night it

began to rain and continued doing so the next morning. We decided that attempting to collect in this weather was futile, so spent the day driving back toward San Antonio.

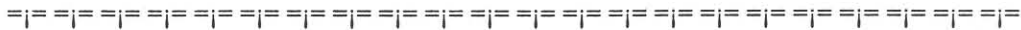
We went to Bandera (Bandera Co.) in the hill country northwest of San Antonio. The country was again green, with flowers everywhere, and, more important, with all streams flowing. The beautiful Medina River flowed through the backyard of our motel 1 mile south of town. This river and many others in the region are margined by large Bald Cypress trees, whose sight provides an easy way to follow the river course. At the motel, late in the day, we picked up a few examples of *Argia immunda*. Next day we drove north of Medina, following the North Prong of the Medina River into the hills along FM 2107 till the road ended in private property. A short return to the Mickle Creek Road gave access to the river. Here a greater variety of odonates were taken: *Argia fumipennis violacea*, *A. immunda*, *Basiaeschna janata*, and *Tetragoneuria petechialis*. Other dragonflies were seen, but not caught, including a green-eyed cordulid that approached only once.

On the following day, accompanied by David Bowles, we visited the springs in Lost Maples State Natural Area. Although we found the caddisfly we wished to find there, the springs had no odonates. The nice branches of the Sabinal River in the park should be productive, but we lacked permits. After Lost Maples we went back to the Medina River to where it crosses Rt. 16 about 1.5 miles north of Medina. The underside of the bridge was excellent for caddisflies, so I spent much of my time there. Finally, Carol called me to say there was a pretty damselfly sitting on a rock near where she was collecting caddisfly larvae. I immediately saw it was an *Argia* of the *oenea* group, and collected it. In the pool just above, a dragonfly was patrolling, which proved to be *Brechmorhoga mendax*. I

walked further up the stream looking for more of the *oenea* type, but saw not another. However, I did take *Argia translata* and *Hetaerina americana* in this section.

The following day we flew back home and the next week I worked preparing and naming the collection, using primarily Clifford Johnson's The Damselflies of Texas. Everything went well, although a bit slow until I came to the *Argia oenea*-group specimen. I realized that no species of this group was treated in this work, nor could I find any reference to any record of a species in the United States. Then I turned to Calvert's Biologia Centrali-Americana and easily determined the species to be *cuprea*, a determination quickly confirmed by comparison with examples from Mexico. Still puzzled by the apparent lack of any record of *Argia cuprea* from the United States, I called Nick Donnelly who confirmed the lack of published records of the species from the USA. However, it has also been taken by him in Kendall and Uvalde Counties.

This area of central Texas also supports a variety of caddisflies, another order with aquatic larvae, whose distributions are primarily to the south in northeastern Mexico. A number of species of *Chimarra* and *Polypectropus* enter the United States only in this area and along the Balcones escarpment which borders the Plateau along its southern border. *Atopsyche erigia* and *Phylloicus ornatus* only occur here in the United States but are more widely distributed through Mexico and Central America at least to Panama. David Bowles had found at the identical site on the Medina River an undescribed species of *Austrotinodes*, which is the northern most record of the genus. Considering the variety of interesting records of aquatic insects known from the Edwards Plateau, the region would repay considerable collecting effort for all groups.



## EARLY RECOLLECTIONS ON THE ODONATA

Rosser Garrison

I became interested in dragonflies when I was growing up in the desert area west of Phoenix, Arizona. I was always enthralled at their beauty, shape, and maneuverability in flight. Do you remember your childhood acquaintance with these

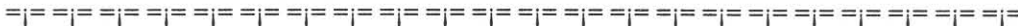
creatures? What dragonfly (I presume a dragonfly, since an *Enallagma* or *Lestes* would probably not get one overly excited) first led you down the path to Odonatology.

I spent many early years collecting Anisoptera around the hot, arid stock ponds at Luke Air Force Base west of Phoenix. I was 12 or so, and my most eagerly desired species was the Black Saddle Bag, *Tramea lacerata* Hagen. At that time, I did not know its name, and I did not collect with a net. I would grasp all my specimens by the abdomen while they perched. Now you can see the problem. Both *Tramea* and the more common Globe Trotter, *Pantala flavescens*, were persistent fliers, but you could occasionally find a perched adult. At dusk, I could flush dozens of *Pantalas* as I walked around the alfalfa or cotton fields. (Don't look for them there any more - it's all urbanized.) But *Tramea* was different...so conspicuous in flight, and when they landed it was on the tip of an exposed branch where they would catch the wind like a pennant in the breeze. Approaching them, let alone catching them, was almost impossible.

There were a couple of alternative solutions. I had collected several of the common *Libellula saturata*. I took one female and painted it jet black, even with the corresponding "saddlebag" on the hind wings. Still, a bona fide specimen continued to elude my grasp. The other solution was to assemble a "chimera" *Tramea*. Some of my

best collecting was done by examining the exposed grilles of cars at the nearby shopping center. The old Fords and others had generously exposed radiators, and a young entomologist could usually find a gold mine of insects and insect parts. I used to keep a box of spare parts so that I could build a complete specimen. I had a beautifully pinned *Tramea onusta* which, over the years, I had built from several others, all of which I collected from automobile radiators. I no longer have that specimen, but I believe that the poor thing was composed of parts of at least four or five males. The hardest parts to find intact were the delicate wings.

Years later, when I had an aerial net as part of my regular collecting apparatus, I was able to collect many trameas, though they were still a challenge to capture. Now that I've collected in many places and have seen many dragonflies larger, smaller, and more beautiful, it still gives me fond recollections to think of that scarecrow I assembled so many years ago. That one dragonfly, *Tramea lacerata*, was probably responsible for my lifelong interest in Odonata and my eventual career in entomology.



## SHORT NOTES

### MORE ABOUT *SOMATOCHLORA HINEANA*

Nick Donnelly

An article culled from The Milwaukee Journal was recently sent to me by Oliver Flint. It begins as follows:

"Can a rare dragonfly - found only in northern Door County and one other site in North America - evade extinction if a garbage compacting and hauling business moves into its neighborhood?"

Don Behm, the Journal's Environment Reporter, goes on to report that this problem has divided families and whole neighborhoods into "Pro *Somatochlora hineana*" and "Con *Somatochlora hineana*" camps (only he, of course, calls it Hine's emerald dragonfly, a.k.a. Hine's bog skimmer). This odonate lives in Three Springs Marsh, close to which a garbage company is proposing to build a "waste transfer facility" which the "Pro-Hineana"

camp backed by the US Fish and Wildlife Service feels will seriously threaten the continued existence of this green-eyed rarity. The Fish and Wildlife Service is likely to propose listing the odonate as an endangered species [This has been done. ed.] , and in anticipation of this move local environmental officials have delayed their approval of the proposed move of the waste-handling facility to new quarters close to Three Springs Marsh.

Several more paragraphs delineate the steps that the haulage company will be required to take to ensure that the marsh is not contaminated by "sewage sludge, asbestos and infectious wastes", to name but a few of the listed horrors threatening the flora and fauna of the wetlands.

Perhaps the next edition of **ARGIA** will be able to bring you up to date on this North Bay David and Goliath story.

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## MEXICAN ODONATA ACTIVITIES

Rodolfo Novelo G.  
Instituto de Ecología  
Apartado Postal 63  
91000 Xalapa, Veracruz  
MEXICO

**Instituto de Ecología, Xalapa:** Alex Córdoba is working with some aspects of biology and ecology of *Hetaerina cruentata* and *Ischnura denticollis*, and has in press a paper on the behavior of *Brechmorhoga vivax*. Roldolfo Novelo is studying the immature stages of Amphipterygids, including Asian and African genera. He is also describing the larva of *Pseudostigma aberrans* from Los Tuxtlas. Novelo is also in charge of a project to study the environmental impact on aquatic insects of a hydroelectric dam being constructed at Zimapan, Hidalgo. The first stage of this project is to inventory the fauna (Novelo,

Alex Córdoba and Jorge Peña will study the Odonata, Roberto Arce the Coleoptera, and Sergio Ibáñez the Diptera), and to study the effects of changes of turbidity, pH, dissolved oxygen, temperature, and conductivity. A later phase will consist of monitoring various bioindicator species. Rodolfo is spending much of April in Costa Rica with Alonso Ramírez studying larvae.

**Instituto de Biología, Universidad Autónoma de México, D.F.:** Enrique Gonzalez is editing a book on the natural history of Los Tuxtlas, to which Rodolfo Novelo has added a contribution on *Orthemis ferruginea*. Enrique has finished a paper on the biodiversity of Odonata of México. He has almost finished a study of the genus *Paraphlebia*, which will also be the basis of a PhD dissertation.

**U.A.M., México D.F.:** Jorge Peña is completing a masters thesis under the supervision of Rodolfo Novelo on Odonata from Hidalgo.

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## NOTICES AND REQUESTS

Note: It will be the policy of ARGIA to print as many notices and requests as can be accommodated in each issue. For the moment it is not feasible to run "standing order" notices repeated in successive issues.

### REQUEST FOR INFORMATION ON SOMATOCHLORA GEORGINA

Jerrell Daigle is studying the immature and adult stages of *Somatochlora georgina*, which is one of the rarest of the members of the genus in North America. Jerrell has asked for information that readers of ARGIA may have on localities where this species has been taken, as well as any other information on habits, habitat, etc., that readers might be able to supply.

### STATUS OF MACROMIA GEORGINA AND ILLINOIENSIS STUDY

Ken Tennesen and Nick Donnelly have been laboriously measuring male specimens of *Macromia georgina* and *illinoiensis* as well as

tabulating variations in their color pattern. They have now tabulated over 500 specimens and have a few more hundred in hand awaiting further study. Their study was prompted by the difficulty several people have had distinguishing the species. According to keys in manuals and early monographs, the species are best separated by the presence or absence of a pale antehumeral stripe. They have found, however, that the color pattern is not reliable, and that the mesotibial keel length and length and shape of the hamule provide far better criteria. However, a somewhat unexpected result has been that specimens occurring in a broad central area (in fact, most of the combined range of these two species) intergrade too commonly to be considered hybrids. It question, instead, is whether these two "species" should be thought of species in the conventional sense (with a new criterion for their diagnosis) or whether they should be considered the same species, with regional races. There are important implications for either decision. People having male specimens which puzzle them are requested to loan them to either Ken or Nick for study, which should be

Appalachians, and Nick on eastern coastal; plain and Appalachian specimens, though both have examined material from the entire range.

They have also examined other species in the genus, especially *alleghaniensis*, which seems to be the next most closely related species and is available in substantial quantity. Their preliminary conclusion is that the criteria which show an intergradation between *georgina* and *illinoensis* do not have a clear analogy with *alleghaniensis*. However, they have seen some material which might represent genuine hybrids. Other species in this group, including *margarita*, seem to show no tendency towards intergradation in the limited series available to them.

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**SOME COPIES OF THE RUSSIAN FOSSIL INSECT VOLUME AVAILABLE.**

Oliver Flint, of the U.S. National Museum, informs us that he has copies of the Russian volume on fossil insects available at no charge to interested readers of ARGIA. This is a valuable work, and persons interested in fossil insects will find it a valuable resource. If you are interested, contact him: Oliver S. Flint Jr., Entomology - MS 105, Nat. Museum of Natural History, WASHINGTON DC 20560.

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**THE LARVAE OF FLORIDA ODONATA - JERRELL DAIGLE'S RECENT CONTRIBUTION.**

The Department of Environmental Regulation of Florida has recently published, in their "Technical Series" two fine accounts of the larvae of Florida Odonata. Volume 11 covers Zygoptera, and Volume 12, Anisoptera. These are thoroughly illustrated keys to the larvae and will serve to identify most species east of the Mississippi to genus at least and most southeastern forms to species. Jerrell tells me that he has a few extra copies to distribute. If you are especially interested in larvae, why not get in touch with him. His address is: Jerrell Daigle, 2166 Kimberley Lane, TALLAHASSEE FL 32311.

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**DATA WANTED**

I am collecting records for the state Oregon. I also would also like reprints of C.H. Kennedy's papers about Oregon, Washington, California and Nevada.

Steve Valley, 1165 S.W. Lawrence Avenue, Albany, OR 97321

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**D.S.A. FINANCIAL STATEMENT**

Jerrell Daigle

The income is entirely from dues and from payment for past issues. Expenditures include printing and the cost of postage. There are other minor expenses, including envelopes for mailing.

date	income	expenditure	balance
end 91			\$ 138.92
end 92	\$ 2005.75	\$ 1572.40	\$ 572.27
12 Apr 93	\$ 2105.00	\$ 247.20	\$ 2430.07

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**STOP PRESS**

Just as we were finishing the preparation of this issue, we had a telephone call from Allan Barlow, who collected on Sunday, 9 May, a male specimen of *Williamsonia lintneri*, at the Campgaw Reserve, Mahwah Township, Bergen Co., NJ. This is the first capture of this species in New Jersey since before World War I!

**Address Update:**

Allan Barlow tells me that he will be moving to a new address on 25 June. The address is 10 Belle Court, Budd Lake NJ 07828. He does not have a new telephone number at this time.

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**Back Issues of ARGIA**

Nick Donnelly is able to provide back issues of ARGIA for the price of \$5 per volume. Several of the issues will be xeroxed, as original copies of many issues have been exhausted.

# THE DRAGONFLY SOCIETY OF AMERICA

Business address: c/o T. Donnelly, 2091 Partridge Lane, Binghamton NY 13903

## EXECUTIVE COUNCIL 1991-1993

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## JOURNALS PUBLISHED BY THE SOCIETY

**ARGIA**, the quarterly news journal of the **DSA**, is devoted to non-technical papers and news items relating to nearly every aspect of the study of Odonata and the people who are interested in them. The editor especially welcomes reports of studies in progress, news of forthcoming meetings, commentaries on species, habitat conservation, noteworthy occurrences, personal news items, accounts of meetings and collecting trips, and reviews of technical and non-technical publications. Articles for publication in **ARGIA** should preferably be submitted as hard copy and (if over 500 words) also on floppy disk (3.5" or 5.25"). The editor prefers MS DOS based files, preferably written in WORD, WORD for WINDOWS, WordPerfect, or WordStar. Macintosh WORD disks can be handled. All files should be submitted **unformatted and without paragraph indents**. Each submission should be accompanied by a text (=ASCII) file. Other languages should be submitted only as text (=ASCII) files. Line drawings are acceptable as illustrations.

T. Donnelly (address above) is the interim editor of **ARGIA**.

**BULLETIN OF AMERICAN ODONATOLOGY** is devoted to studies of Odonata of the New World. This journal considers a wide range of topics for publication, including faunal synopses, behavioral studies, ecological studies, etc. The **BAO** publishes taxonomic studies but will not consider the publication of new names at any taxonomic level. Enquiries and submission of manuscripts should be made to **BAO** editor T. Donnelly, 2091 Partridge Lane, Binghamton NY 13903. Final submissions (after review) should be made on floppy disk, as above, with illustrations in final form and preferably adjusted to final size.

## MEMBERSHIP IN THE DRAGONFLY SOCIETY OF AMERICA

Membership in the **DSA** is open to any person in any country. Dues for individuals are \$10 for regular membership and \$15 for contributing membership, payable annually on or before 1 March of membership year. Institutional (e.g. libraries or universities) membership is \$15 per year. All members receive **ARGIA** via surface mail at no additional cost. For delivery by first class in the U.S. there is an additional charge of \$4, and for Air Mail delivery outside the U.S. a charge of \$8.

The **BULLETIN OF AMERICAN ODONATOLOGY** is available by a separate subscription at \$15 for members and \$18.75 for non-members and institutions.

POSTMASTER: Send address changes to D.S.A., c/o T. Donnelly, 2091 Partridge Lane, Binghamton NY 13903

Cover: *Libellula herculea*, drawn in El Salvador By Victor Hellebuyck

# ARGIA

Binghamton, New York

Vol. 5, No. 1 15 May 1993

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