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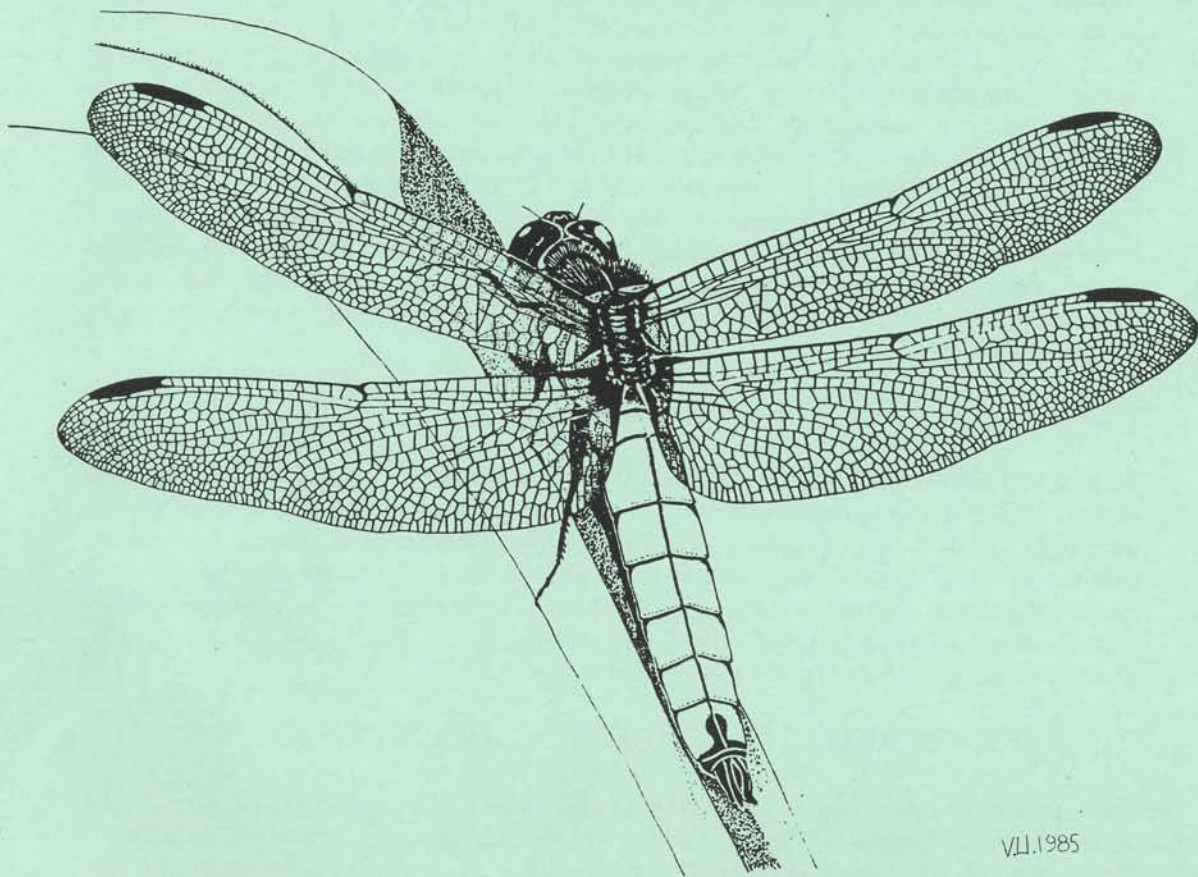
ARGIA

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

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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 and 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.

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

IN THIS ISSUE

This issue was delayed because of a three-week trip by four of us to Thailand in January. A mid-winter Odonata trip is an amazingly good way to chase away the blues when the snow is blowing around your windows. A brief account of this trip is included in this issue.

Continuing our string of odonate behavioral contributions, Bob Alrutz has contributed a piece on feeding swarms. Can any of you contribute something on dragonflies vs mosquitoes? The question as to how effective odonates are in mosquito control is still unanswered.

There is usually a dearth of collecting news for a mid-winter issue, but several members have sent in interesting accounts, which I have included. These accounts emphasize how relatively little known the odonates are -- compared with birds or butterflies. Interesting discoveries are constantly being made even in well-known areas.

Our society continues to be interested in conservation of Odonata (and everything else!). I have included some information on endangered species which was up to date last December, and I encourage our membership to keep their collective eye on the serious problems our fauna faces.

Founding ARGIA editor Carl Cook continues to convalesce in a hospital in Kentucky. He reports that handling of large amounts of chlorinated hydrocarbons during pest control work many years ago may have left him with systemic damage. Carl wishes to thank the many people that have sent him letters and cards; when he is out of the hospital he will answer all of them. You can write him c/o his wife Margie at his home address: 469 Crailhope Road, Center KY 42214.

UPCOMING MEETINGS

The DSA membership has several gatherings to look forward to. The northeastern members will

meet in the **Adirondacks** in the weekend of 18-20 June for our 4th early summer gathering. We hope, as always, that some participants will come from other parts of the country. If your plans take you in the vicinity of the Adirondacks in June, why not plan to join us? A fuller account is given elsewhere in this issue.

The **Oregon** meeting in July will be the official DSA gathering for the year. Although featuring especially *Tanypteryx hageni*, this trip should provide a wide variety of interesting west-coast insects that many of our eastern members have never seen. Remember the date: weekend of 17-18 July, and the organizer is Steve Valley, 1165 S.W. Lawrence, Albany OR 97321 (503-928-4467). A fuller notice was printed in the last issue of **ARGIA**.

The biennial international SIO meeting will be in Osaka, **Japan**, as announced in the last issue. The dates are 1-8 August, and the contact is Kiyoshi Inoue, 5-9, Fuminosato 4-chome, Abenoku, Osaka, 545, Japan. FAX 81-6-621-1328.

DUES ARE NOW DUE

Many of you have already sent in your dues for the coming year. We appreciate this and now look forward to hearing from the rest of you. The dues are unchanged: \$10 for **ARGIA** (we would prefer to receive a \$15 sustaining membership) and \$15 for the **Bulletin**. Postage is proving to be a major expense and we regret that we now have to charge an additional \$4 for non-North American subscribers. We continue to charge \$10 for Air-mail outside of North America or \$4 for 1st class delivery within North America.

BULLETIN OF AMERICAN ODONATOLOGY

The 4th number of the 1st volume is not included with this issue. I will include it with the next **ARGIA**. I am most anxious to receive manuscripts for future numbers.

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WATCH OUT - IT'S GOING TO EXPLODE

Nick Donnelly - with paragraphs by John Michalski

One cold and dreary day last December I received a memo from our university President informing me that the spring semester was starting a week later than usual (to save on heating costs). The same day Ailsa found an ad in the New York Times promising highly reduced air fares to the Far East. Coincidence? You be the judge.

It took only a moment to decide that we needed to take a mid-winter trip to Thailand, which we had last visited in 1980 and to which we vowed to return some day. It took only a quick telephone call to convince John Michalski to join us - he had visited Thailand with his wife Caroline the previous June and had enjoyed the country fully as much as we had. We invited Matti Hämäläinen to forsake the midwinter gloom of Helsinki, and he accepted just as quickly. John had the brilliant idea of contacting Brother Amnuay Pinratana in Bangkok to see if he could help us with our itinerary. Brother Amnuay more than helped us - he arranged for the rental of a van suitable to transport the four of us and himself for a two week trip in the warm, southern peninsular part of Thailand. He himself accompanied us for the first week before he had to fly back to Bangkok. Completing the group was Mr. Samnuk (a friend of Brother Amnuay and a highly accomplished collector of odonates, butterflies, and other insects), and our driver, Mr. Pong.

Why Thailand? Simply because the country has a large odonate fauna, is very scenic and accessible, is populated with the friendliest people we have ever met, and is a thoroughly delightful place to visit, even if you leave your net at home. In the last decade Brother Amnuay has worked as diligently on odonates as he earlier worked with the butterflies; his "List of the Odonata of Thailand" (1988) contains the names of 267 species, including many which he has personally added to the fauna. The word in Thai for "dragonfly" is "Malang-po" and foreign people are called "farang". Our trip became known as "Farang-po 93".

Our group set out in the middle of the night of 4 January, bound for Kanchanaburi and Erawan Falls - a spectacular series of falls over travertine ledges set in the forests of western Thailand. Before 10 o'clock I was collecting my first ever *Coeliccia poungyi*, a large and vividly marked damselfly (huge pale spots on thorax; yellow tip of abdomen). Later I added the huge *Indocnemis orang*, which is an *Archilestes*-sized platycnemidid. Other common damselflies included *Neurobasis chinensis*, *Rhinocypha biforata* and *Euphaea ochracea*. We discovered that first day that the damselflies in mid winter were as diverse as during the summer, with the sole exception of the platystictids, which has also been my experience in tropical America. In fact, odonates generally are only slightly less diverse in the middle of the winter. Gomphids were scarce and we saw no cordulids for the entire trip, but libellulids were abundant and aeshnids as common as we had found them during the summer.

(John: For me, one of the outstanding non-entomological memories revolves around Matti's Thai phrase book. Apart from the phrases that seemed most appropriate for breaking the ice with ladies of the evening ("My, that is a lovely blouse you're wearing" and "Take it easy, I have a sore back."), most of the phrases varied from probably useless to the absolutely bizarre. Our favorites were, "How do you like military life?", "I can explain everything", and "Sharks? Get out of the water?" (I picture a *farang* standing waist deep in the ocean while a crowd of Thais gesticulates frantically to him from the beach.) Honorable mention went to, "Why have you arrested me, sir?", with the follow-up phrase for breaking the ice with your prison guard, "You're Thai, aren't you?". First prize was for the astonishing, "Watch out, it's going to explode!" This became our catch phrase for the entire trip, and we had to remind ourselves not to use it at the airport.)

You might be curious about our logistic arrangements during our 15 day trip. Our *modus operandi* was to rise in time to leave about 7 A.M., purchase breakfast at a sidewalk cafe or truck stop, and reach our collecting spot by about 10 AM. We would collect generally until about 4, and seek out a cheap hotel by about dusk. Dinner was found at small hole-in-the-wall dining spots along the back streets of the towns we stayed in. Food in Thailand is plentiful, available almost everywhere and at any

hour of day or night, generally spicy, and utterly delicious.

(John: The second week we were left with only Messrs. Samnuk and Pong, neither of whom spoke a word of English. We had a real experience making ourselves understood, and I'm sure the Thais have a similar story to tell. For my part, I dedicated some time to learning several polite Thai phrases to make our wishes understood, such as, "Can we stop here for a while?", though Nick preferred the more direct "Yo!". I won't speculate here as to whose style had the greater return, though Mr. Pong did buy me dinner once.)

We spent a second day near Erawan (adding *Vestalis anne*, *Rhinagrion mima*, and *Rhinocypha iridea* to our swelling list) and headed south. The next 12 days were spent in the deep south, with the final day devoted to a mad drive back to Bangkok. To visualize the length of our trip, imagine starting from New York City and spending two days collecting near Albany. Imagine then driving to Washington and then collecting at a dozen places between there and Charleston, South Carolina, returning home in a single day. All this driving was on two-lane roads crowded with trucks and motorcycles - and in a karst landscape of breathtaking beauty.

Most of the places we visited were National Parks (where we had letters of introduction); these were in forested areas with the center pieces of the parks being waterfalls and cascades of medium-sized streams. We spent a lot of time climbing up and down waterfalls and trying not to fall too far. National Parks have beautiful birds, and (in theory) lots of animals, even including wild tiger and elephant. You can guess how many of these we saw (we did see several domestic elephant), but Matti had a bizarre encounter with a gibbon. The animal was living wild but had evidently once been a pet of a park person. The gibbon jumped on Matti's shoulders when his back was turned and stole his hat! If you visit Ton Nga Chang and see a gibbon with a white cloth cap, it's Matti's.

We have not had sufficient time to tabulate our group list, but it certainly exceeds 80 species. We found one probably undescribed species (a *Coeliccia*) and at least two new libellulids for the country, both of which are Malayan species

extending their ranges to the north: *Zygonyx ida* and *Aethriamanta gracilis*.

Rhinagrion mima was found at nearly every forest stream we visited. This spectacular megapodagrionid looks like a very fat, short *Heteragrion* marked vividly with green stripes and a orange tipped abdomen. Males of this species confront each other in a spectacular flight display which consists of two males hovering in each other's face at a distance of less than a foot. They bend the last four segments of their abdomens upwards at a sharp right angle, flaring the bright orange tip of the abdomen to make a spectacular display. I have seen nothing like it in the odonate world.

Rhinocypha is the jewel of the Orient; we collected four species: the widespread *biforata* and more local *fenestrella*, *perforata*, and *iridea*. The iridescence of their wing markings is truly unique in the odonate world; their beauty can neither be adequately described nor photographed. Males of several species (and even more notably the closely related *Libellago lineata*) have pale legs which they hold in front of themselves to provide a hymenoptera-like display. In fact, *Libellago* seems to be a good wasp mimic.

Libellago aurantiaca is a local species in southern Thailand. It is found zipping back and forth over wide, slow, shaded streams, where its brilliant red abdomen can be difficult to see in the gloom. Females pause briefly on floating leaves to oviposit - evidently if they pause too long they run the risk of being some fish's dinner.

(John: The odonates are so beautiful that they're enough to make you stop collecting them and start photographing them. The butterflies are enough to make you stop photographing dragonflies and start photographing butterflies instead. Then a group of giant black and white hornbills crosses over the stream ahead of you and you forget what you're there for in the first place. Finally a tiny, crimson-red *Libellago aurantiaca* flies past and you remember. You could almost taste the colors.)

Vestalis is the *Hetaerina* of southeast Asia, but with fewer species (we found four). Commonly in the south two species fly together (*amethystina* and *amoena*); so similar are these species that the collector is often unsure which he has taken even

after the first look with a hand lens! They must distinguish themselves by subtle behavioral clues, but I have no idea of what these might be. *Echo modesta* is similar but slightly larger; mature males have an unusual pruinose white face.

Neurobasis chinensis is probably the most widespread stream species in southeast Asia. They are like *Calopteryx*, but they use their hind wings to make a spectacular display. When perched they wing clap every few seconds, revealing a brilliant green flash which is totally hidden when the insect is at rest. When flying they often cruise with their brilliant green hind wings held motionless, in a delta-wing configuration, and fly with only the front wings. Because the front wings are transparent and difficult to see, the insect gives the impression of having remarkable gliding capability. Neither a pinned nor a papered specimen gives much of a hint of the beauty of the display of this bug -- you have to see it for yourself.

Devadatta argyroides was a triumphal find for me but a visual disappointment. This damselfly lives around tiny waterfalls and shaded cascades like its gaudy middle American relative *Amphipteryx*. However, so dull are its markings that I was never tempted to photograph it.

Argiocnemis rubescens is the *Hesperagrion* of southeast Asia. Males of this species undergo a series of color changes during maturation that include a dull, female-like juvenile stage, a bright red-abdomened semi-mature male, and a bright, *Ichnura*-like blue-tipped mature male. In another color variant the blue thoracic stripes and abdomen tip of mature males becomes dull purple. It is easy to imagine that you are collecting several species. The closely related and very similar *Mortonagrion aborense* only complicates the problem of identifying what you are seeing without netting it.

Epalligids are among the most showy stream damselflies in Thailand. In addition to the widespread *Euphaea ochracea*, with rose-colored wings, and the black-winged *masoni*, we found the smoky-winged *pahyapi* at one place, and a lone *Dysphaea dimidiata*.

Damselfly faunas of rocky streams in forested areas are very different from those in tropical America. Instead of ubiquitous *Argia* and *Hetaerina*, there are a very few *Copera* and *Coelliccia* in shady places and scattered

Rhinocypha, *Neurobasis*, and *Euphaea* in sunny places. Libellulids are fairly common, especially *Orthetrum*, *Potamarcha*, and the ubiquitous *Trithemis festiva*. Waterfalls of all sizes seem to be patrolled by *Zygonyx iris* -- at one locality along with the very similar, all-black Malaysian species *ida*.

Pond libellulids seem much the same the world over. We found red-abdomened look-alikes, such as *Crocothemis servilia* and *Urothemis signata*, which fly together and are as difficult to distinguish on the wing, as, say, *Erythemis peruviana* and *Planiplax sanguiventris*. Only their preference for shadier habitats help distinguish *Orthetrum chrysis* and *testaceum* from them. I presume many libellulids have red abdomens to scare off predators -- but why do so many seem to take such pains to mimic each other?

Our ponds were remnants of extensive, now-defunct tin dredging activities earlier in the century. The dredged ponds are now heavily vegetated and well supplied with *Rhyothemis*, *Indothemis*, *Neurothemis*, *Acisoma*, and the many other pond species of southeast Asia. This raises a conservational question: The dredging must have left the landscape badly scarred and the rivers choked with sand. However, several decades later there is a very rich pond fauna -- I believe richer than would be the case if dredging had never occurred. Has this been a net plus or a minus?

Gomphids really are rainy season bugs, and the only gomphids we saw with consistency were the large *Ictinogomphus decoratus* and a few species of the less common *Gomphidia*. Aeshnids were not conspicuous; in addition to a few *Anax* and *Gynacantha* we found the large and spectacular *Indaeschna grubaueri*, which very much resembles its New World relative *Coryphaeschna secreta*.

(John: Food is a major attraction for the traveler in Thailand, or at least it should be. We managed to dine very well every single day. In fact, the only way not to eat well in Thailand is to fast. But there was a lot of fun food. I couldn't resist one day as I looked down the menu at a reasonably grubby hole-in-the-wall restaurant, browsing through the pork section, the seafood section, and the chicken section. Finally I found a section that really caught my eye. "I'll have the

fried frogs with garlic and chillies," I said to the waitress.)

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NEW THAILAND BOOK AVAILABLE

Brother Amnuay Pinratana has recently published a reprint edition of Asahina's collected series called "A List of the Odonata from Thailand". These originally appeared in 21 parts between 1982 and 1990 and constitute a monograph of the Thai species. In addition to these papers, Bro. Amnuay has included eight additional Asahina papers dealing with the Thai odonate fauna. The hard-covered book has seven color photographs of Thai species.

The book is sold at \$35 U.S. plus \$4 for postage. The postal address is: Bro. Amnuay Pinratana, St. Gabriel's College, Bangkok THAILAND 10300.

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DRAGONFLY FEEDING SWARMS

Robert Alrutz

During the summers of 1991 and 1992 I participated in the Ohio Dragonfly Survey, coordinated by Robert C. Glotzhofer, Asst. Curator, Natural History, Ohio Historical Society. During each summer I happened upon an instance of what might be termed a feeding swarm of dragonflies: mixed species masses of dragonflies feeding together. The composition of the group differed as did the sources of food.

On September 17th, 1991, I received a telephone call from Pat Crabtree, Ranger at the office of the Shawnee State Park in Sciota County, Ohio. He reported that during the day while mowing was being done in the field surrounding the office, insects that flew up from the grass were being fed upon by "hundreds" of large dragonflies. The office building is about a half mile from Turkey Creek Lake. I encouraged Mr. Crabtree to try to capture at least one dragonfly and that I would be down to see the situation.

I traveled to Shawnee State Park on September 18th, arriving at the office about noon. There were no dragonflies seen feeding near the office building

at that time. The secretary gave me a can containing the one specimen which they had captured the previous day using a fish landing net. It was a female *Anax junius* minus its head. The secretary told me that mowing was in progress near the naturalist's headquarters at Roosevelt Lake, about a mile away. By the time I got there the mower had left, after having mowed perhaps one hectare. This open area was below and downwind of the lake's dam. Dragonflies, perhaps numbering several hundred, were "hawking" in the breeze. They were predominantly *Anax junius* but there were some of the genus *Pantala* and a few *Tramea lacerata*. I was not successful in netting any of them.

Both that afternoon and the following morning I checked an area along the shore of Turkey Creek Lake that had been recently mowed. There were no specimens seen flying nor was there any feeding in evidence at the area below the dam of Roosevelt Lake that morning. It appears that this feeding swarm, like barn swallows following a hay mower, were attracted to the sites by the swarms of insects displaced by the mowing.

During the afternoon of September 25th, 1992 I was collecting at a one-fourth hectare pond located near Blue Valley Road, Berne Township, Fairfield County, Ohio. This pond was surrounded by the typical "old field succession" of mixed grasses and herbs. I was on an unsuccessful trip in search of members of the genus *Celithemis*. As I left the shore of the pond and returned to my camper van, I became aware that the air was speckled with flying beetles. My net easily caught several specimens which proved to be Mexican Bean Beetles (*Epilachna varivestis* Mulsant). I do not know where they were coming from for there was no agricultural field in sight. Then I noticed that these were being fed upon by dragonflies. As I attempted to net specimens I gradually moved to an area between a plot of dried corn and the nearby woods about 40 meters away. Here the air was "thick" with dragonflies, some carrying captured beetles in their mouthparts. After much effort I managed to net a male *Anax junius* and a male *Pantala flavescens*. There may have been other species but I never got near enough to be certain. The *Anax* dominated the swarm.

Neither of these swarms were merely the accumulated dragonflies from nearby waters; there were too many individuals in the swarms. These

must have been migrating individuals which had stopped off at an opportune feeding situation.

However, Walker (1953) includes the statement that Federley in Finland observed migrations and noted that "... although the insects were plentiful on the route followed by the dragonflies, the latter did not stop to feed, but pursued an uninterrupted course." These dragonflies were tenerals. Williams (1958) gives many reviews of dragonfly migrations in Europe and elsewhere. Reports of such in the United States include Wolf (1911) who reported a flight identified as *Anax junius* at Cape May and Borror (1953) who reported on a flight observed at Todd's Point near Old Greenwich, Conn. which consisted of *A. junius* and *Tramea lacerata*. Feeding swarms have been reported by Emery (1934) at Presque Isle, PA in which case the dragonflies numbering in the thousands were feeding over a large area. There were no *Anax* at any of the nearby ponds. In 1915 Butler reported that a swarm of ants taking wing from a fence post in Florida were so fed upon by a swarm of dragonflies that none seemed to escape.

- Borror, D. J. A migratory flight of dragonflies. Ent. News 64:204-205; 1953.
- Butler, A. W. Dragonflies devouring winged ants (Odon., Hymen.). Ent News 26:37; 1915.
- Emery, R. G., Jr. Another case of Odonate migration (Aeschnidae). Ent. News 45:50; 1934
- Walker, E.M. The Odonata of Canada and Alaska. Volume One (Zygoptera). Toronto, Univ. of Toronto Press, xi + 292 p.; 1953.
- Williams, C. B. Insect migration. New York, Macmillan, xiii + 235 p.; 1958.
- Wolf, H. T. Migrations of dragonflies (Odonata) and of ants (Hymen.), Ent. News 22:419-420; 1911.

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NEW JERSEY COLLECTING

Allen E. Barlow

While the weather during 1992 was less than ideal, a few good days presented themselves and were kind enough to offer up some interesting odonatological records.

In early June I was fortunate to be visited by Mr. Ray Andress of London England. Ray's principal objective while here was some first-hand experience with *Tachopteryx thoreyi* as he is conducting a thorough study of the petalurids. Miraculously, the weather was kind enough to clear for the entire week of his visit and a large array of species literally flew up to greet him.

During one foray into the Ramapo Mountains here in Bergen County, Ray and I met Mike May and John Michalski for a very productive day. Interesting species new to the area included *Cordulegaster maculata* (which we subsequently found elsewhere in great numbers), *Cordulegaster obliqua* flying over and around the fast moving Bear Swamp Brook, and Mike caught a small *Lanthus vernalis* trying to perch inconspicuously over the brook. Ray was amazed at an impressively large feeding swarm of *Epitheca cynosura*, *princeps* and *Gomphaeschna furcillata*. The swarm cast many ever-moving shadows on our little band trapped on the ground. Periodic sights of *Epiaeschna heros* further tantalized Ray as they went "steaming over head like missiles". Impressive they are too; later in the season I collected two *Epiaeschna* from this sight and found they measured over 95 mm long, the upper side of their measurement range.

As the week progressed we saw almost all the species we should have, all except the elusive *Tachopteryx*. On one of Ray's last days with us, we set out for the woods with heavy hearts and no hope of seeing our true objective. We were to be very surprised. At the Campgaw Reservation in northern Bergen County we had our most productive day.

While following a small stream through the deep woods, we stumbled into a large man-made clearing. Dominating the clearing was a small seepage area inhabited by several *Cordulegaster diastatops* which occasionally clashed with their cousins, *C. maculata* which flew patrols over the brook. It was here that we finally found *Tachopteryx thoreyi*, seeing several adults at favorable sun-covered trees overlooking the seepage. Many subsequent visits and mark and recapture studies indicate the presence of a very strong colony here. As previously stated, the site we found was man-made, the clearing itself being created by the felling of many trees in and around

the seepage area. Other signs of disturbance are obvious as well. According to the park people, the Dept. of Transportation had considered building an interstate highway through this section of the park. The ground was too unstable and swampy for their uses thank goodness. The habitat Ray and I found answered many questions that arose in 1991 with the discovery of this species here. Further work is needed here, but that will have to wait until next June. Ray went back to England with a great box of goodies and I think some memories he will never forget.

As Ray's plane lifted off I could see ominous clouds looming in the west. These clouds were the precursor of a return to the soggy weather we had been plagued with before. My trips out were confined primarily to the *Tachopteryx* seepage earlier found. Over the next few weeks of steady visits I marked over sixty adults, primarily males. The recapture rate around the park and vicinity was fairly high within a mile of the seepage. One previously marked male was taken at the Ramapo Reservation approximately one and a half miles from where it was originally taken. Several other individuals were observed but not taken for verification. Larva have not yet been found at the presumed habitat and until such time as they are it can only be assumed that the actual breeding seepage has been located. Peak activity seems to occur from 9:00 AM to about noon and then again around 3:00 PM as the sun creates different sunspots on the other side of the clearing. At noon adult *Tachopteryx* perched flat on any exposed surfaces acting more like a gomphid than a tree perching petalurid. Perches at this time of day were obviously scarce as clashes between individuals for the best spots were constantly observed. The encroacher would seem to appear out of the tree tops and pounce on the perched individual. The two would sometimes take flight in a tangled struggle, other times they fell to the leaf litter in a loud ball of rustling wings.

This habitat is of great interest, especially when juxtaposed on the reason for its creation. The principal species found here were the *Cordulegaster* species previously mentioned, *Calopteryx maculata* (which were often preyed upon by *Tachopteryx*) and *Lanthus vernalis*, which was discovered at the adjacent brook in mid July.

By late July the seepage became quiet as the season for these magnificent relicts passed for yet another year. My attentions were turned to an area near the New York border where I had previously observed *Somatochlora tenebrosa* in numbers along with a rarely glimpsed smaller metallic species. High in the Ramapo Mountains in northern Bergen County are some fine *Somatochlora* habitats. As I have described previously in this journal a series of small cattail swamps seem to provide an ideal breeding site for *Somatochlora tenebrosa*. Re-visiting such sites this year I observed several females ovipositing within the cattails. Seeing more small metallic dashes as observed last year I concentrated on netting one. After over an hour of frustrating near misses I was finally rewarded by a female specimen in my net. Happily I found that I had taken *Somatochlora walshi*. Subsequent visits have shown that the species breeds here high up in these untouched mountains.

The find is rather significant as the only previous record for New Jersey comes from John Michalski's capture of this insect in Morris County in 1982. No interaction between the two species has thus far been observed. *Somatochlora walshi* seems to keep lower in the brush surrounding the swamps while *tenebrosa* more actively patrols high above. It was on this day that I found a substantial feeding swarm of *Epiaeschna heros* and netted the two mentioned previously. Upon landing the first specimen, with three extensions on my net, I walked over to find my catch busily chewing a hole in my net; poor sport.

The weather and circumstance conspired to keep me from the field until August when my wife and I visited Colorado. The details of this trip must await another article.

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A DAY IN COLORADO

Richard L. Orr

I almost did not take the net! The quick trip for three days to Ft. Collins Colorado, to help place the finishing touches on a publication, was going to be crammed with work. The schedule was so tight that I opted not even to get a rental car. I could not conceive that I would have anytime to go

anywhere. Late hours were going to be necessary to accomplish what needed to be done.

But I could not bring myself to leave the net behind. I have had a lot of pleasant experiences chasing dragonflies north of Colorado in Wyoming and Montana, to the west in Utah, and to the south in New Mexico and Texas. I knew Colorado had to be productive.

I arrived at the hotel in Colorado along with a late afternoon thunderstorm. During the three afternoons that I spent in Ft. Collins the large anvil-shaped clouds formed over the distant Rockies and would slowly drift their blackened bodies over the flat arid landscape of Ft. Collins dropping marble-sized drops of rain. The storm was short lived and by the time I had unpacked at the hotel the sun was shining and the afternoon greeted me with the calls of Western Meadowlarks along with a dozen well-choreographed white pelicans gracefully carving circles in the rising thermal above my head.

A detailed map of the city, purchased at the gas station next door, shattered any dim hopes I had of collecting. The only water shown in the area was the Cache La Poudre River a good 2 miles from the hotel.

The next day when I showed up for work an unexpected surprise was waiting for me. The rough draft for the publication was not ready to be looked at and would not be ready until tomorrow. I had the day off. After returning to the hotel I demanded that someone tell me where some water was. I was about to call a taxi to take me out to one of the small lakes located north of the city when one of the locals mentioned a "ditch" a little more than 1 mile from the hotel. I decided to check the ditch out first.

At the cross-roads of Summit View and Mulberry a small irrigation canal cut across the road. The water in the canal was slow moving and choked with algae. I decided to give it a chance and started walking the small dirt path which followed the canal. By the time I had walked 100 feet I knew I had hit a gold mine of dragonflies.

Off to the right of the canal was a spring bubbling up from the ground with crystal clear water forming a small stream loaded with emergent vegetation. Off to the left of the canal was a half-acre pond being slowly encroached by

cattails. And everywhere there were dragonflies! July 13, 1992, under the incredibly blue skies of Colorado, was going to be a day to remember.

Twenty-one species were recorded that day.

1) *Anax junius* was seen only once. 2) *Aeshna multicolor* was common but most often seen/heard rustling low among the bases of cattails at the pond. Is this species as tightly associated with cattails as its sister species *A. mutata* is to spatterdock in the east?

3) *Erythemis collocata* was common on dirt paths. The behavior of this species, as far as I could tell, seems identical to the eastern *E. simplicicollis*. Three species of *Libellula* were present: (4) *lydia*, (5) *luctuosa*, and (6) *pulchella*.

7) *Sympetrum corruptum* were few in number and behaved as they do in Houston, Texas preferring to land on bare ground and making at most, short direct flights. This was an important observation for me because the behavior of this species, when I observed it in Montana, was very different. In Bozeman I observed this species flying like a *Pantala*: never landing but flying back and forth in loose groupings in open areas. I do not believe that this is just a difference in behavior due to temperature -- something else is going on with this species. I was curious as to how this species was going to act in Colorado which is between the Texas and Montana populations. I was glad to see Michael May (*ARGIA* Vol. 4 no. 2, pg 4) list this as a possible migratory species. If I had not observed this species in Montana, and based what he said on what I have seen in Texas and (now) Colorado I would have thought Mike crazy.

8) *Sympetrum costiferum* and (9) *S. occidentale fasciatum* were very abundant in the vegetation surrounding the canal while (10) *S. pallipes* was only collected once. 11) *S. obtrusum* was also abundant but preferred the edge of the large pond where they concentrated among the cattails.

12) *Lestes congener* were everywhere. (13) *L. unguiculatus* were few in number along the canal. The fresh water spring produced a healthy population of (14) *Amphiagrion abbreviatum*.

15) *Enallagma carunculatum* and (16) *E. praevarum* were very abundant near the canal while (17) *E. anna*, (18) *E. boreale*, and (19) *E. civile* were fewer in number. 20) *Ischnura cervula* and (21) *I. perparva* were present throughout the area.

Not bad for a unintended outing! The best days in one's life are not always planned. Always take your net when you travel!

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AN EASTERN ODONATIST ON THE LOOSE IN COLORADO

Allen Barlow, 411B Passiac St., Hackensack, NJ 07601

During late August my Wife and I visited my parents in western Colorado. The intriguing ancient geology of the area, coupled with good company and (you guessed it) odonates, made the trip a true success.

We visited areas primarily in the counties of Garfield and Pitkin, with elevations ranging from 5,500 to over 7,000 feet. The variety of sites visited afforded me my first acquaintance with a variety of western species.

Our first trip out took us to Rifle Falls State Park, a small lush oasis hidden in Rifle Gap and surrounded by dry scrub country. The centerpiece of the park is a magnificent series of waterfalls that seem to explode out of cataracts in the limestone cliffs surrounding the valley. Amid cottonwoods and aspens were two small stagnant pools. So choked with vegetation were these pools that no actual water could be seen. Conspicuously patrolling the banks were a dozen or more *Aeshna palmata*, many in the wheel position. Interestingly, given the large numbers of these *Aeshnas* on such a small pool, very few clashes were observed. Also here in great numbers were *Sympetrum pallipes* and *S. occidentale fasciatum*. Less conspicuous but equally interesting were *Lestes congener*, *Ischnura damula* and *perparva* along with large numbers of *Enallagma basidens*. At the nearby fast running brook, we found *Argia vivida*.

I later re-visited a small habitat I found during my last trip to Colorado in 1989. Conveniently,

this spot is within walking distance of my parent's home. The site lies adjacent to the Colorado River and is composed of a series of ox-bow lakes created by the ever-changing course of the river. The species list from my last trip here was rather thin but higher rainfall in the last two years seems to have improved conditions somewhat. Most conspicuous were the large blue variety of *Aeshna umbrosa* which occurs here. Compared to our dominantly green eastern variety these examples are quite intriguing. The thoracic and abdominal coloration is all blue, as are the large eyes. These individuals displayed more aggressive tendencies (to each other and any other intruders) than our eastern variety seems to. Also common here was *Archilestes grandis*, a substantially larger variety than occurs here in New Jersey but occupying a similar habitat. I tend to find *A. grandis* in less than ideal looking habitats here in New Jersey. Generally, weed choked, fishless waters seem to foster large, healthy populations. These ox-bow lakes are exactly this sort of habitat. Other species of note found here were *Ischnura damula* and *perparva*, *Enallagma basidens*, *carunculatum*, and *civile*, *Sympetrum pallipes*, *Libellula forensis* and *Tramea onusta*.

A brief shopping trip to Pitkin County (elevation 7,100 feet) allowed me to stop at a small cattail swamp where a different array of species was found. To look at the surroundings, one would feel like late fall had already arrived. The dense aspen forest glowed with the golden tones of fall. It was a cloudy, cool day but the odonates of this region must be well acclimated to this as they were quite active. Here we found *Aeshna palmata* again (a much darker variety than previously seen), *Aeshna interrupta interna*, and *Aeshna juncea* which was quite common. Flying inconspicuously among these giants were several *Sympetrum danae* and *pallipes*. I could have spent hours here but my wife had already been patient with my numerous "bug stops" along the road. We retired to the town of Redstone for a fine lunch and glasses of the local amber beer; a fine cap to a productive day.

I would recommend this part of Colorado to any of you. This is a region of great contrasts. One can drive from desert to lush forest, from dry canyon to high mountains within an hours drive. This diversity, coupled with the ancient and ever changing geology of the area make the trip a must.

The odonata found here are the "cherry" on top of the sundae.

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TRINIDAD GATHERING DEFERRED

John Michalski, 90 Western Ave., Morristown NJ 07960

In a recent **ARGIA** I solicited input from the membership about a possible collector's gathering in Trinidad. It now appears that this will not be possible for 1993. The major problem seems to be that there is already so much going on in 1993 (Nick's Adirondack gathering; DSA's Oregon meeting; SIO's Osaka meeting, etc.). Also, though though the initial response was pretty good, there was no reaction to the second notice for this meeting; hence, I have had no input regarding how to organize this trip. Since all the arrangements must either be made by post or in person, it's already a little late for me to get this thing off the ground. Finally, I may have a westward move in my future, and things may get a little hairy for me this season. If there are any persons still interested in visiting Trinidad, please contact me, and we'll look towards 1994 at the earliest.

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UPDATE ON THE DRAGONFLIES AND DAMSELFLIES OF THE EXPLORAMA FACILITIES, PERU
 Earthwatch Team XIV Aug. 8-22, 1992

Sidney W. Dunkle, Biology Dept., Collin County Community College, Plano, Texas 75074

Conditions were not too good for collecting odonates in August of '92. As aquatic insects, their populations were reduced by a long dry spell of around two months before we arrived. Thus, some habitats such as certain stream channels and pools were dry. The Yanamono River at the Lodge was a small stream blocked by log jams, and not navigable even by canoe. Collecting was not helped by the mostly cloudy skies. As usual when populations are low, the survivors are especially skittish, and I saw many good specimens flush far out of net range in spite of a careful approach. Since I was a "Principal Investigator" on this trip, by default since Dave Nickle was not able to come,

my collecting time was more limited than on previous trips.

The pasture pond at the Lodge continued its amazing changes in ecology. When I first saw it in 1989, it had fairly clear water and high grass around the edge. In 1990 it was completely covered by water lettuce. In 1992 it was muddy, the water lettuce was gone, and the grass around most of the edge had been grazed down. The reason for the latest changes was the presence of several water buffalo. I guess they had eaten the water lettuce and their wallowing muddied the water. They also added an exciting new dimension to collecting, because they resented my presence at "their" pond and chased me around the pond at a determined walk. There are no trees to climb around most of the pond! In any case, a few species of odonates were common at the pond in 1992, notably the big blue and red dragonfly *Orthemis schmidti*, and the blue damselflies *Helveciagrion chirihuanum* and *Telebasis* sp. near *lacustris*. The red dragonflies *Miathyria simplex*, *Tauriphila australia*, *Erythemis carmelita*, and *E. peruviana*, previously common, were absent. Also disappointingly absent were the small green damselfly *Chrysobasis* new sp. A and the small red damselfly *Telebasis* new sp. near *filiola*.

Four new species of odonates, all dragonflies, were added to the Explorama list on this trip. *Gynacantha mexicana*, a large brown dragonfly, was caught at the Inn, as was the small amberwing *Perithemis mooma*. Two brown species of Skimmers were taken at the Lodge, the medium-sized *Brachymesia herbida* and the small *Erythrodiplax tenuis*. All of these species are common elsewhere, but this is their first appearance at the Explorama facilities. A total of 136 species of Odonata have now been found at the Explorama facilities, of which I collected or definitely saw 62 (46%) in August 1992.

We also added two new species, both Skimmers (Libellulidae), to the list for the Inn. These were the green and black *Micrathyria mengeri*, and the red and black *Orthemis* new sp. near *levis*. The latter was an especially welcome catch. I now have a total of 3 specimens of that wary species. A good male specimen of the Clubtail labeled as *Progomphus* near *superbus* in previous lists allowed the identification of this species as

Progomphus perpusillus, reputed to be the world's smallest known Clubtail.

Although the collecting was not great on this trip, I did garner specimens of some rarities, including in some cases the opposite sex of what had been found on previous trips. The most disappointing miss has to be that of the huge blue damselfly, probably a *Leptagrion* which I have never caught, which unexpectedly appeared in front of me. My surprised wave of the net was a wave of good-bye as he shifted into warp drive and sped away. Nobody said odonate study was going to be easy, and it isn't!!

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CELITHEMIS AMANDA FROM TEXAS

Richard Orr

Bob Honig sent me a mature male *Celithemis amanda* that he collected at Jones State Forest in Montgomery County, Texas. This is (to my knowledge) a new state record and the most western-known specimen taken for this species.

What Jones State Forest is famous for is its woodpeckers. On a good day you can see eight species of woodpeckers, including the endangered Red-Cockaded woodpecker. Because of the high concentration of Red-Cockaded woodpeckers the area has been relatively protected from development. Included in the protected area are three ponds and a healthy marsh -- all of which are loaded with dragonflies.

When I lived in the Houston area I visited Jones State Forest at least once a year between 1986 to 1989. From those visits I identified 46 species of odonates from this natural history hot spot (47 if you count Bob's *amanda*). I have little doubt that many other species are present which were not recorded since I concentrated only in a small area around the main ponds and focused as much on birds and butterflies as odonates.

The odonate species that I have recorded from Jones State Forest are: *Tachopteryx thoreyi*, *Anax junius*, *A. longipes*, *Coryphaeschna ingens*, *Epiaeschna heros*, *Nasiaeschna pentacantha*, *Aphylla protracta*, *Arigomphus lentulus*, *Dromogomphus spinosus*, *Gomphus oklahomensis*, *Didymops transversa*, *Epiþheca*

cynosura, *E. princeps*, *Celithemis amanda*, *C. elisa*, *C. fasciata*, *C. ornata*, *C. verna*, *Dythemis velox*, *Erythemis simplicicollis*, *E. vesiculosa*, *Erythrodiplax connata minuscula*, *Libellula auripennis*, *L. deplanata*, *L. incesta*, *L. luctuosa*, *L. lydia*, *L. needhami*, *L. semifasciata*, *L. vibrans*, *Orthemis ferruginea*, *Pachydiplax longipennis*, *Pantala flavescens*, *Perithemis tenera*, *Sympetrum ambiguum*, *Tramea carolina*, *T. lacerata*, *Lestes disjunctus australis*, *Argia apicalis*, *A. fumipennis violacea*, *Enallagma basidens*, *E. civile*, *E. dubium*, *E. geminatum*, *Ischnura hastatum*, *I. posita*, and *I. ramburii*.

If you are ever in the Houston area I would recommend that you contact DSA member Bob Honig and have him guide or provide you with directions to this enjoyable location.

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OREGON IN 93

Richard L. Orr

For those of you who have never been to, or collected in, Oregon do not miss next summer's annual DSA meeting. Oregon is a beautiful state with an incredibly diverse natural history. Oregon can provide you with plenty of nearly undisturbed desert, high volcanic peaks, a lush temperate rain forest, and hundreds of miles of easily accessible coastline.

If this sounds a bit like a homesick Oregonian too long removed from his native roots it is understandable. It is where I was born and raised. The area around Bend where the DSA meeting is going to be held is home to some of my old all time favorite fly-fishing rivers. With the Three Sisters region of the high cascades just a few miles to the west of Bend -- home of pillars of pumice, a crater floor of obsidian, fields of windflowers, crystal clear lakes, pristine forests, and eternal mountain snow fields -- believe me you will have a great time even if you never see a dragonfly. But of course you will.

Collecting in Oregon is almost always productive. It is not a heavily populated state, contains large areas of relatively undisturbed land, and has many locations which have never experienced a dragonfly net.

My last trip to Oregon (August 2-12, 1992) was no exception. The most notable of odonate finds were: A new state record and range extension for *Argia nahuana* which was found in good numbers along the Illinois River near \$8 mountain, Josephine County; A possible northern record for *Aeshna walkeri* found a couple miles south of the Washington border at Deschutes River Park in Sherman County; A possible state record for *Pachydiplax longipennis* found in high numbers in an abandon log pond near the intersection of HWY 6 & 8 in Washington County; And the thick swarms of *Aeshna* (possibly *palmata*) seen at the ridge of Crater Lake.

Most enjoyable was just getting to work the magnificent rivers. I may have replaced the fly pole of my youth for a dragonfly net but the same euphoric feeling and highs of adrenalin are still present when I stalked my prey along the edge of these rivers.

Brenda (my wife) on the other hand remembers the Oregon trip more for the crystal clear Pacific tide pools full of starfish, collecting intact sand dollars on beaches without crowds of people, watching the sea lions and migrating gray whales, the deep blue color of Crater Lake, and the large volcanic peaks of the cascades.

Don't miss it. I hope to see you there.

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FOSSIL INSECT BOOKS AVAILABLE

Nick Donnelly

After waiting for more than two decades, the entomological world was recently treated to the publication of Frank Carpenter's monograph on fossil insects. This has appeared as "**Part R. Arthropoda 4. Superclass Hexapoda**" of the Treatise on Invertebrate Zoology. Please excuse my enthusiasm, but this book is a landmark in insect paleontology. It includes a listing of fossil genera and illustrations or diagnoses of most of them. Carpenter discusses the higher-order classification of insects. Many odonatists will be surprised to find the *Epiophlebia* is no longer

placed with the Anisozygoptera, but has been moved to the Anisoptera.

The price of this volume is \$87.50, and it is available from the publications office of the Geological Society of America (call 800-472-1988 for information).

Earlier this year the Smithsonian published an English translation of the Russian "**Fundamentals of Paleontology**". Volume 9 (Arthropoda, Tracheata, Chelicerata) is edited by the paleontologist B.B. Rohdendorf. This volume is lavishly illustrated, but there is essentially no discussion of classification

I do not know the price. Enquiries should be addressed to: National Technical Information Service, Springfield VA 2161.

Those of you interested in fossil odonates have two superb books to guide your studies. Now that we're on this subject . . . see the following note.

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THE \$10,000 DRAGONFLY

Richard Orr

During the 1992 Entomological Society of America's annual meeting in Baltimore I heard a rumor that a dragonfly was up for sale at the bargain price of \$10,000 dollars. You are probably asking what makes a dragonfly worth this price? The answer is a fully preserved intact adult dragonfly trapped in Miocene amber.

Dr. Michael (Mike) Ivie from Montana State University came across the specimen for sale in St. Thomas from a dealer which specializes in insects found in amber. When I talked to Mike about the dragonfly it was obvious that he was very impressed with the specimen and had developed a strong interest in its future.

The libelluloid-like dragonfly is in relatively clear amber and in good condition. The head is damaged and one pair of wings crosses over each other but the rest of the specimen (as far as Mike could tell) is in excellent condition.

Mike is returning to St. Thomas and hopes to be able to take detailed photographs of the

specimen. He also wants to make sure that the dragonfly is in genuine amber although he admits that because of the reputation of the dealer that it is most likely authentic. He is also looking into the possibility of having the dragonfly purchased for the Smithsonian.

Is this the first recorded odonate in amber?

[No, it isn't. I have had for several years a specimen obtained from the late Don Pompilio Brauer, the foremost amber collector of the Dominican Republic. It is of a damselfly which seems to be related to *Telebasis*. Nick Donnelly]

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ATTEND THE 1993 ADIRONDACK GATHERING

Nick Donnelly

Plan now to attend the 1993 Adirondack gathering on the weekend of 18-20 June 1993.

In past years the DSA northeastern section has enjoyed three exceptionally fine early summer field trips: Westchester Co., NY in 1990, New Jersey Pine Barrens in 1991, and Patuxent Wildlife Refuge, MD in 1992. This year we are going to try something different.

Whereas in the past we have been guided skillfully and thoroughly by local experts through relatively small areas in search of established species, this year we will explore a largely unknown area - the Adirondacks. In compiling the New York Odonata list recently, I was struck by how little systematic collecting has been undertaken in the Adirondacks. In spite of the abundance of boreal bog habitats, this area has no records at all of *Somatochlora cingulata*, *franklini*, *kennedyi*, or *incurvata*, and only a very few of *minor*, *forcipata*, *albicincta*, and even *walshii*. Needham was the first and last odonatist to spend any time there, and that was nearly a century ago! He concentrated on stream larvae and described perhaps the largest number of Odonate larvae at any one time.

There are several species found in either Quebec, Ontario, New Hampshire, or Maine which should occur here: *Arigomphus cornutus*, *Ophiogomphus colubrinus*, and *anomalus*, and

the *Somatochlora* listed above. Last summer Judy Cameron added *Williamsonia fletcheri* to the list. How many more are to be found? There is an old record for *Aeshna subarctica* but no recent documented example.

One of the problems we have faced in the past is that there has been no good inventory of the intricate variety of wetlands, and no guidance for people seeking out specific bog habitats, not to mention streams, ponds, and rivers. Also, some of the better habitats are difficult to find without local help. For the upcoming trip we have been offered considerable assistance by local experts on wetlands for identifying good examples of the various wetland types and helping us to gain access to these.

The idea of using one of our gatherings to increase knowledge of the local fauna is not entirely new (We did this in Tennessee last year when we fanned out to broaden the known distribution of *Ophiogomphus acuminatus*). We showed then, and we have also shown on several other past occasions, that a group of odonatists can be a very effective instrument for assessing the Odonate fauna of any area, even those that are supposedly well known.

For our gathering Judy Cameron has obtained preliminary permission to use a summer camp before they open. This will provide us with no-cost lodging and a place to prepare our meals communal style.

In order to complete our plans for this gathering, it will be very helpful for me to hear from all people who think they might like to attend. Please tell me as soon as you can, so that we can complete our logistic arrangements!

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ENDANGERED ODONATA - 1992 VERSION

Nick Donnelly

Recently Dr. Paul Opler sent me a list of the latest FEDERAL REGISTER with a list of endangered species as recognized by the Fish & Wildlife Service. The list is as follows:

Category 1 (Endangered or threatened species) includes only *Somatochlora hineana* (IL, WI,

OH*, IN*), where * means not recorded since 1963. The status is "stable". Studies on this species were discussed in a recent **ARGIA**.

The remaining species are placed in category 2, which means "proposing to list as endangered or threatened is possibly appropriate...". Most are gomphids of "unknown" status: *Gomphus consanguis*, *lynnae*, *G. notatus* (*Stylurus*), *G. parvidens carolinus* (*Hylogomphus*), *G. sandrius* (incorrectly placed in *Gomphurus*), *G. septima*, *G. townesi* (*Stylurus*), *G. westfalli* (incorrectly placed in *Stylurus*), *Ophiogomphus* unnamed (the Vogt-Smith species from Wisconsin), *O. anomalus*, *O. howei*, *O. incurvatus alleghaniensis*, *O. westfalli*, and *Progomphus bellei*. Other species include the two southwestern undescribed *Argia* (popularly called "*sabino*" and "*balmorhea*"), *Cordulegaster sayi*, *Ischnura gemina*, *Macromia margarita*, *M. wabashensis*, *Neurocordulia clara*, *Somatochlora margarita*, and *Williamsonia lintneri*. Many of the Hawaiian *Megalagrion* are also listed: *M. adytum*, *M. amaurodytum fallax*, *M. amaurodytum peles*, *M. amaurodytum waianaenum*, *M. leptodesmus*, *M. molokaiense*, *M. nigrohamatum*, *M. nigrolineatum*, *M. oahuensis*, *M. oceanicum*, *M. pacificum*, and *M. xanthomelas*.

The failure of *Ischnura gemina* to make the list in spite of a careful study is unexplained. The reality is that the process is painfully slow.

REQUEST FOR BIBLIOGRAPHIC ASSISTANCE

Alex Córdoba-Aguilar
Instituto de Ecología, A. C. Biosistemática de Insectos. Apartado Postal 63, Xalapa, Veracruz 91000 México.

For the last two years I have been working on damselfly ecology. Often in developing countries as Mexico it is very difficult to obtain specialized literature such as papers concerning ecological variables (e.g. survivorship, longevity, maturation changes, sex ratios, among others). This lack of information becomes especially serious when comparisons must be made among several species. For the next year I intend to make a comparative summary for Zygoptera which could be of some assistance to colleagues working on this subject.

This work will consist of references for the majority of species, and should be of value for the interpretation of the the natural history of damselflies. I possess several recent (or almost recent) papers, but I lack those that were published a long time ago (before the 1970's). I would greatly appreciate any contributions, especially papers concerning African, Asiatic and European species. Likewise any other kind of help (including personal observations) will be gratefully received. I can pay for xerox copies but any free contribution will be welcome and deeply appreciated.

OUR COVER

The last two issues have featured a pen and ink sketch of an *Argia oenea* from El Salvador. The artist is Victor Hellebuyck, a Salvadoranean artist now living in Quebec. Victor illustrated a series of postage stamps for El Salvador featuring several very lovely odonate paintings. Victor has sent along some new drawings for our use in future issues. One of these is featured on the present cover. Can you identify the dragonfly?

CONTRIBUTIONS TO ARGIA AND TO THE BULLETIN OF AMERICAN ODONATOLOGY

We always need contributions to our two journals. The news journal **ARGIA** publishes collecting and other field news, interesting observations, personal news, and news of upcoming meetings. The **BAO** publishes refereed articles of varying length and scope.

It is easiest for me to use articles on floppy disk for **ARGIA** and necessary for the **BAO**. These can be in TEXT format (sometimes called ASCII format), WordPerfect, WordStar, or Microsoft WORD. I translate them into WORD for Windows, which is used to compose the newsletter.

If you have any news, send it in. If it is not possible for you to compose it on a word processor, then simply send a clear typed text version.

ARGIA

Binghamton, New York

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