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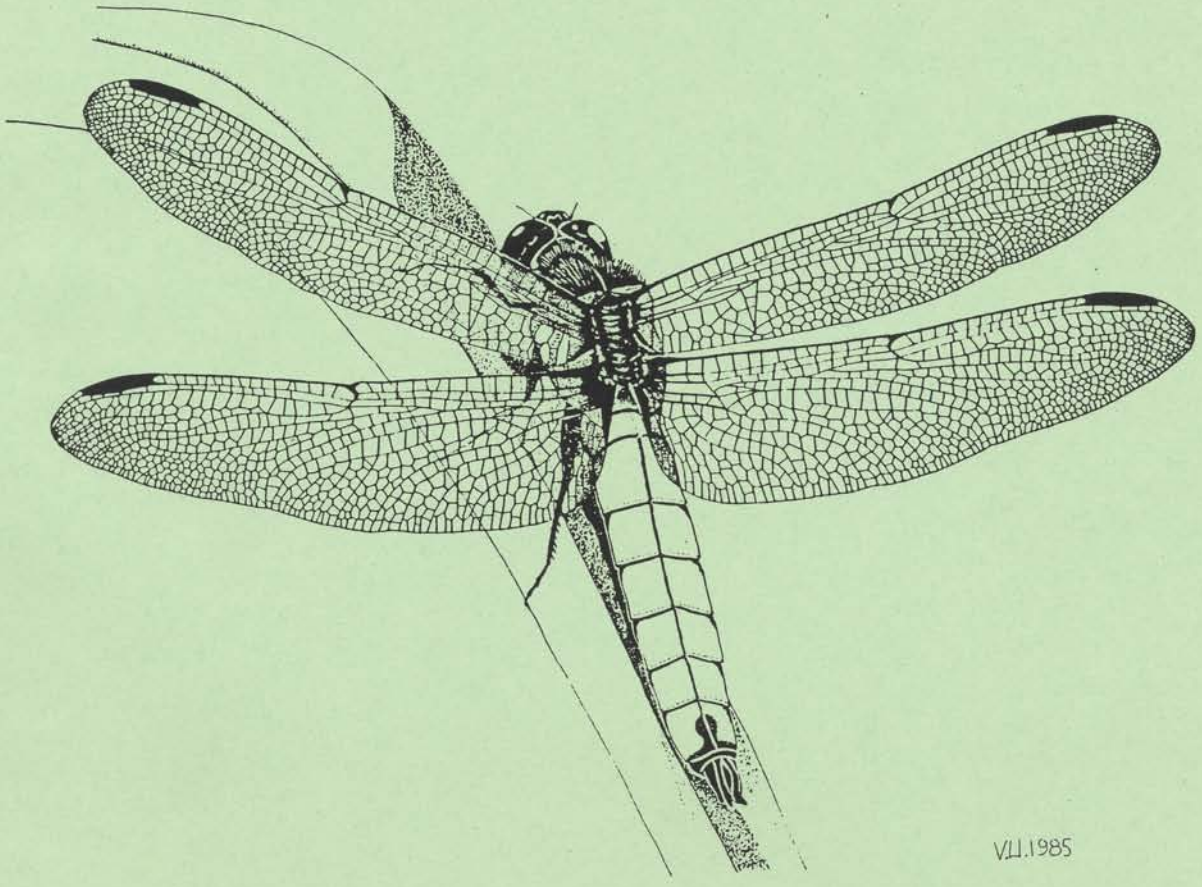

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SOCIETAS INTERNATIONALIS ODONATOLOGICA

coast, an area from which we need information, Jerrell.

A potentially extremely exciting, but still mostly unknown, area of dragonfly movement is along the Gulf Coast of the United States and Mexico. Among the bits of information that inspired me to undertake this project were Jerrell Daigle's report in **ARGIA** last year of massive movements of ***Anax*** in Texas and Richard Orr's account to me and Ken of spring movements along the Texas coast. Since then we have received indirect information on very large flights along the coasts of Louisiana in fall and Veracruz, Mexico, in spring, both observed by hawk watchers in those areas. In addition we have brief documentation of flights in Veracruz from Fred Tilly, a hawk watcher there, and over the Gulf off Texas from Ken Tennessen, made by a colleague of his. We will try to pursue these leads this year, in particular to try to find out which species are involved and, if possible, to piece together some of the story of where they are going and why.

Except for the Gulf Coast spring flights, information on spring activity is still very scanty. Richard Orr has been perhaps our best source, with careful documentation of early appearance and disappearance of mature adult ***Anax*** in early spring in the D.C. area, followed later by local emergence. Since it seems that in most areas mass flights do not occur in spring, we really need more concrete observations of phenology like this. Hal White did note a suggestive aggregation of ***P. hymenaea*** at Cape Henlopen, DE, in late June that could have been "staging" for a move north across the Delaware Bay to New Jersey.

Also important, as I noted in my article last July, are data on emergence of known migrant species in fall as well as spring. Hal sent us our only report of fall emergence, of ***Anax junius*** and ***Pantala hymenaea***, both of which were eclosing in Delaware on October 7. This is almost surely too late for successful reproduction so far north, and we assume these individuals migrated. This sort of information can give us at least an indication of the geographic range of migrant populations.

All these results are not only interesting in themselves, but they illustrate the potential of a widespread observation network. Ken Soltesz's efforts to involve the hawk watch observers in this work has been perhaps the biggest key to our success thus far, because the network is in place. It's activation requires that the people who man (and woman) the watches be alerted to our Odonata migration research and be willing and able to cooperate. Ken has done an outstanding job alerting them, and they, in turn, have proved to be very cooperative and remarkably able. The birders I've talked to at Cape May, at least, are extremely keen observers and, I suspect, can teach many odonatologists (notably including me) a thing or two about field identification and about being alert to unexpected and sometimes hard to see behavior.

I have tried in this report to summarize all the notable results received this year, but if I've missed any, please accept my apologies and remind me about your observations (I'm all too capable of misplacing data sheets). I have not been able to mention by name all the people, odonatologists, birders, and hybrids, who have contributed, but all have my sincere thanks. Please keep the data coming. Dragonfly season is upon us, spring migrants are on the wing (somewhere), and we're anxious to build on a great beginning. We still need much more information to assemble a reasonable description, and to understand the whys and wherefores, of dragonfly migration. Keep your eyes open and let us know what you see. Send data either to me at the address above or to Ken Soltesz, P.O. Box 62, South Salem, NY 10590.

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FOSSIL ODONATES IN DOMINICAN AND BALTIC AMBER

Günter Bechly, Breslauer Str. 30, D(W)-7030 Böblingen, GERMANY

In **ARGIA 4(4)** Richard Orr reported about a libelluloid-like dragonfly preserved in miocene amber (certainly from the Dominican Republic). Nick Donnelly remarked in the same issue of ARGIA that he had a ***Telebasis***-like damselfly-amber fossil from the Dominican Republic too. The paleontological museum in Stuttgart / Germany is housing five additional damselfly-

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 scientificly 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 preseved 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.

References:

BERENDT, G.C., 1830. **Ins. Bernst.** 35

BRIDGES, C.A., 1991. Catalogue of the family-group, genus-group and species-group names of the Odonata of the World. Privately published: **Urbana, IL**

CARPENTER, F., 1992. Treatise on Invertebrate Zoology. Part R. Arthropoda. Vol. 3 and 4.

Superclass Hexapoda. Boulder CO: **Geological Society of America**

DONNELLY, T.W., 1993, **ARGIA** 4(4): 13

HAGEN, H., 1848. **Stett. Ent.** IX. 7-8

HAGEN, H., 1854. **Verh. Zool. Bot. Ver.** IV. 227

HANDLIRSCH, A., 1906-1908. Tertiäre Insekten. Ordnung: Odonata. page 896-905 in ***Die Fossilen Insekten*** (A. Handlirsch).. Leipzig

KIRBY, W.F., 1890. A Synonymic catalogue of Neuroptera Odonata, or Dragonflies: with an appendix of fossil species. **Gurney & Jackson: London**

ORR, R., 1993. The $ 10,000 Dragonfly. **ARGIA** 4(4): 12-13

PFAU, H.K., 1975. Zwei neue Kleinlibellen (Odonata, Zygoptera - möglicherweise Platycnemididae) aus dem baltischen Bernstein. **Stuttgarter Beiträge zur Naturkunde**, Serie A, 270: 1-7

PICTET-BARABAN, F.J. AND H. HAGEN, 1856. Die im Bernstein befindlichen Neuropteren der Vorwelt. page 41-125 and plate 5-8 in **Die im Bernstein befindlichen organischen Reste der Vorwelt, Bd. 2 (II. Abt.)** (G.C. Berendt, ed.). Berlin

ROHDENDORF, B.B. (ed.), 1992. Fundamentals of Paleontology. Vol. 9 (Arthropoda, Tracheata)

SCHLEE,D., 1984. Besonderheiten des Dominikanischen Bernsteins. **Stuttgarter Beiträge zur Naturkunde**, Serie C, 18: 63-71, pls. 12-24

SCHLEE, D., 1990. Das Bernsteinkabinett. Begleitheft zur Bernsteinausstellung im Museum am Löwentor, Stuttgart. **Stuttgarter Beiträge zur Naturkunde**, Serie C, 28: 1-100

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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 biannualy. 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 biannualy, along with the **INTERNATIONAL SYMPOSIUM OF ODONATOLOGY**, providing that enough members attend this symposium. Regularily 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 continously 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.

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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 offical 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 Chihuhuan 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

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

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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.**

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

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