

# Metaleptea

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THE ORTHOPTERISTS' SOCIETY

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### *Metaleptea*: Our New Image

A Message from the Editor

**T**his is a much delayed, but very exciting issue of *Metaleptea*. At last, we have developed an appropriate format for a newsletter that is attractive, informative, and entertaining. The style of the articles to be highlighted in future issues will be more informal, which we hope will attract more interest and attention from our readers and will prompt our members to submit more items regarding all kinds of Orthoptera. Our Society has recently undergone rapid expansion, in both geographic and organismic scope. We must develop more extensive means of maintaining communication among researchers and enthusiasts on a worldwide basis. In an effort to meet these increasing needs, Dan Otte and I have conferred several times to develop a more comprehensive and more consistent news format for the Society. This issue is the prototype of the results of those discussions. We are pleased with it and hope you will be too.

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The new format will permit us to do more than was possible in the past. For example, we will be able to publish a limited number of photographs in each issue. We will also be able to render clean line drawings. Finally, we are dispensing with the concept of two issues annually. Instead, we are adopting a policy of printing issues of *Metaleptea* as soon as we have enough information to produce at least four pages in the published format. Much of the changed policy is due to the decisions made in Valsain this last summer: money was freed to cover additional expenses which surely will arise with the publication of this new format; also, the U.S.D.A. printing office will no longer be responsible for printing *Metaleptea*; instead, temporarily it will be processed jointly by Dan and me at his office and published through a local printing company in Philadelphia. Furthermore, the U.S.D.A. will no longer be responsible for foreign mailings; in the past, governmental policy had required a long and tedious mailing chain of command which I could not legally supercede. Freeing up the foreign mailings should result in a more rapid delivery of *Metaleptea*.

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In conjunction with the new format of *Metaleptea*, we are now becoming more actively concerned with the possibility of creating a new scientific journal for the Society. This journal will enable researchers to publish their research in the tradition of peer reviewed editing. As such, the journal from the beginning will have the respect of the scientific community. More about this in the next issue.

## 5th International Meeting

### Valsain, Spain, July 17-20 1989

The 5th International Meeting of the Orthopterists' Society took place July 17-20, 1989, at Valsain, Spain, just north of Segovia. As one involved in all phases of its planning and execution, I am pleased to comment on it for those who were unable to attend.

The Meeting took place at the Valsain headquarters of the Instituto Nacional para la Conservación de Naturaleza (ICONA), a state-of-the-art environmental facility run by the Spanish Government. Eugenio Morales, of Madrid, headed the Local Arrangements Committee, which included, among others, Carlos Garcia de la Vega, Jaime Gonsalvez, and Carmen Lopez-Fernandez, all of Madrid, Juan Presa, of Murcia, and Felipe Pascual, of Granada, Spain. President Vernon Vickery presided, and I was honored to serve as Organizer.

Valsain is nestled in the foothills of the Guadarrama Mountains, about 10 kilometers from Segovia and La Granja. Segovia is a picturesque, walled city with many medieval buildings, a 14th century castle, and a functioning Roman aqueduct. La Granja is renowned for its 18th century Royal Palace, with beautiful gardens and fountains.

Housing for the participants was in various hotels located in Segovia and La Granja, and meals were taken in local restaurants.

The conference was truly international in scope. A total of 89 orthopterists from countries throughout the world were registered. Spain was well represented among the registrants, with 35 delegates, the United States and United Kingdom, with 12 each, West Germany and Canada, with 4 each, and the Netherlands and Japan, with 3 each. Australia, Brazil, China, Denmark, France, Hungary, India, Iran, Israel, Italy, Mexico, Sweden, and Tanzania were represented by one-two delegates each. Some additional orthopterists attended but either did not read papers or did not register formally.

I intend neither to detail the program nor comment on specific papers delivered, because all of this will soon be published in the conference Proceedings, to be published later this year in the Boletín de Sanidad Vegetal, a journal of the Spanish Government's Ministerio de Agricultura, Pesca, y Alimentación.

The conference opened on the morning of the 17th with the Board Meeting, chaired by President Vickery. The opening session followed, chaired by Dr. Morales. It featured brief remarks by selected host country officials and Society officers. The remainder of the

morning was given over to the keynote address by Nick Jago, of Chatham, England. His interesting presentation was entitled "The Future of Orthopterology." The afternoon program included Control Session I, chaired by Rafik Skaf, of Rome, Italy, and Evolution and Systematics Session I, by Ted Cohn, of San Diego, California. Then in the evening, the Spanish officials hosted a reception in honor of the delegates and their dependents at the conference headquarters.

The July 18 morning program included Evolution and Systematics Session 2, chaired by Felipe Pascual, and Evolution and Systematics Session 3, by David Ragge, of London, England. A poster session followed during the lunch break. In the afternoon, the program



Dr. Eugenio Morales enjoying a gourmet soup at the Restaurante Meson de Candido.

included a symposium entitled "The Recent Upsurge of the Locust Plague and Novel Approaches to Locust Pest Management." It was organized by Paul Peneer, of Jerusalem, Israel, and moderated by Rafik Skaf.

July 19 was devoted primarily to an all-day collecting trip in the Guadarrama Mountains. Collectors were ski-lifted to the top of one of the mountains and walked and collected down to the base where they were met by the buses. It was a highly productive field trip, enjoyed by all who participated. Afterward, the Society Business Meeting convened in the conference headquarters, followed by a delightful evening reception and dinner hosted by the Society at the venerable Meson de Candido in nearby Se-

The July 20 program opened with Ecology and Behavior Session I, chaired by Barnabas Nagy, of Budapest, Hungary, and Session 2, by Bill Kemp, of Bozeman, Montana, USA. Following lunch, Physiology and Genetics Session I, chaired by Jaime Gonsalvez, and Session 2, by Godfrey Hewitt, of Norwich, UK, completed the scientific program. The conference dinner given by the Spanish host officials in honor of the delegates and their dependents was the culmination of the conference. It was held in the evening of the 20th at the Rancho de la Aldeguela, a typical restaurant located in Torrecaballeros, and was highlighted by a folk music group and excellent food and drink. After appropriate comments by the host officials, Local Arrangements Chairman Eugenio Morales, Organizer Gangwere, President Vickery, and Incoming President Dan Otte, of Philadelphia, Honorary Membership certificates were awarded. This honor, requiring approval by at least two-thirds of the voting membership, is conferred on selected members who have rendered long and distinguished service to the field of orthopterology. The Honorary certificates presented by President Vickery at this Meeting went to Eugenio Morales, Kurt Harz, of Steinsfeld, West Germany, Baccio Baccetti, of Siena, Italy, and Felipe Capra, of Genoa, Italy. Morales received his certificate in person; Baccetti and Capra received theirs *in absentia*; and Harz, who regrettably suffered an accident in transit, received his at his hotel in Segovia.

On July 20, upon closure of the conference, most delegates undertook touristic or professional trips or returned to their homes. A few took advantage of the four-day post-conference field trip through parts of the orthopterologically rich Sierra de Nevada, near Granada, in southern Spain. At a total per-person cost of about \$165 for all lodging, meals, and transportation, this trip was a bargain.

The daily program of the meeting was full, starting promptly at 9:00 am and ending at 21:00-23:00pm, with time off only for lunch or refreshments. Except for the keynote talk and the symposium presentations, the time allotted individual papers was short (about 10 minutes per paper followed by only 5 minutes of discussion). However, the schedule was observed closely, the comments given usually *a propos*, and the exchange among delegates spirited. About 90% of the papers were read in English.

The Local Committee received a total of \$6,494 in checks from the Society and from members during the course of the meeting and spent \$6,276, refunding \$218 to the Society. The Society's receipts from members totaled \$6,482 and its expenditures on their behalf \$8,900.28. Therefore, the negative balance of \$2,418.28 represents the Society's total cost of

the meeting (all figures in dollars, US currency). Not bad when one considers the scope and quality of the conference! Obviously the meeting would not have been possible were it not for the fact that ICONA underwrote it in the amount of about \$43,500 (US currency). A detailed analysis will appear in the Society's annual financial report, to be released in the next number of *Metaleptea*.

The 5th Meeting was the Society's first-ever outside of the New World. I thought it memorable for that reason and because of its excellence. I was impressed by the quality of the facilities and services provided, the hospitality shown, the large turnout of prominent orthopterists, and the scientific merit of most of the reports read. I judge the 5th International Meeting to have been the Society's best yet and a worthy successor to the prior major European orthopterological conferences, viz., the "Silver Jubilee" of the former Anti-Locust Research Centre, London, England, in 1970, and the International Conference, "Phylogeny and Evolution of Orthopteroidea", Siena, Italy, in 1986.



Outgoing President V. R. Vickery and his wife Muriel at the banquet with Executive Director S. K. Gangwere.

## T. H. Hubbell, 1898-1989

*The following passage is a speech given by R. D. Alexander at a party given in the memory of Dr. T. H. Hubbell held at the University of Michigan, Museum of Zoology, following his death in September of 1989. Dr. Hubbell did not want a funeral. This party was held to allow Dr. Hubbell's friends to gather and remember a great friend and mentor. Dr. Alexander was a good friend of Dr. Hubbell for many years and has collected many stories about him. What follows is but a glimpse of this great orthopterist.*

I HAVE tried to estimate how many times, during his life, T. H. Hubbell shared discussions with one or more people over coffee or tea in this Museum, and I have come up with the number—25,000; that's enough intellectual stimulation, good humor, and good fellowship to amount to several lifetimes. The number is conservative, for, as many of you know, one could have coffee with Hubb almost as easily on a Saturday or Sunday as on a weekday. And Hubb was associated with this museum longer than many people suspect. Although he came

here permanently in 1948, he was here before that as a graduate student and research associate, and in the first decade of this century, when he was an undergraduate at Michigan, he had a secret bed hidden somewhere in the old museum building where he actually lived and slept without anyone knowing it.

I am fortunate to have been one of those who shared coffee with Hubb a good many times, along with a lot of intelligent and good natured people, including Speed Rogers (before my time), Irv Cantrall, Norman Hartweg, Bill Brudon, Bill Burt, Volney Jones, Charles Walker, Emmet Hooper, Bob Storer, Ted Cohn, Don Tinkle, Nelson Hairston, and a large proportion of the people in this room today.

I have put together a few brief stories about Hubb, and some poems and quotes from him. I have arranged them by decades, beginning in the first decade of Hubb's life and finishing with a dozen quotes from approximately the last decade of his life, one for each year. These stories are not so much about Hubb's professional life as about him as a person—a wonderful person, as everyone here knows, and a person whose many different sides none of us really knew completely.

I'm going to start these little stories with the first decade of this century:

In 1906, when he was eight years old, Theodore Huntington Hubbell gave his first collection of Lepidoptera to his elementary school in

Detroit, Michigan.

In the second decade of the century, Lieutenant Hubbell was practicing aerial gunnery, World War I style. Lacking real guns on their planes, the trainees used shotguns out of open cockpits. The world almost lost Hubb one day when he forgot to fasten his seatbelt on a flight over the Washita Mountains. Luckily his pilot did not have time to perform the aerial stunts he otherwise did every day, on the way home, to improve his flying ability.

In 1923, Hubb wrote a letter to a German entomologist in the Philippines. This excerpt is self-explanatory:

*Mr. W. Schultze  
Department of Entomology  
Bureau of Science, Manila, P. I.*

*My Dear Mr. Schultze:*

*I wonder if you recall two boys who used to bring butterflies and moths in to you for naming, back in 1911 and 1912? And whom on one or two memorable occasions you took collecting, at Montalban and out near Fort McKinley? I was one of them, and while the other, Wallace Beardsley, has lost interest in entomology and gone into architecture. It happened that I still remained an enthusiast, and when I got to the University of Michigan I specialized in zoology, with the emphasis on entomology. In 1914-5*

and 1915-6 I worked at the Forest Insect Experiment Station near Washington during the summers under S.A. Rohwer, and after graduation went into the entomological department of the Museum of the University of Michigan as assistant. Taking a year out for the war, I remained there until this fall, when I came east to Boston to work toward a Ph. D. under Dr. Wheeler. This brief summary of my career up to the present will suffice to indicate that your efforts were not entirely wasted, since they helped to steer another misguided mortal into the thorny paths of science.

My interests did not long remain centered on the Lepidoptera; for several years I was an ardent collector and student of the Coleops, but I finally gave these up in disgust, because there were so many of them that it was discouraging. That was in 1917. I began at that time to study the Orthoptera, since it seemed to be a rather neglected group, and have remained constant in my affections since that time. I am sending you under separate cover copies of the only two papers I have gotten out so far—lists of species from North Dakota and from Berrien County, Michigan—just as souvenirs. At present I am engaged on a systematic study of the genus *Ceuthophilus*. It is proving a rather difficult problem, owing to paucity of material, and the fact that alcoholic specimens are necessary for the study of the male genitalia, which will have to be used for separating the species.

Those of you who know very much about Hubb's life will know that his doctoral thesis was a systematic study of the genus *Ceuthophilus*, and that eleven years after his retirement at the age of 71, he and Ted Cohn received a three-year grant to do a systematic study of the genus *Ceuthophilus*. If you were to visit his office upstairs, you could see what he was doing on the systematics of the genus *Ceuthophilus* only a little over a month ago. His complaints about the nature of its particular difficulties did not change over the decades.

In 1934, Hubb received his Ph.D degree, at the age of 37, and was scheduled to leave from Florida on a western collecting trip with Irving Cantrall. He fell behind in typing his thesis, and he told Irv to go ahead, he would catch up. As Irv tells this story, he left by himself, thinking, "This way I'll get in good physical condition before Hubb arrives, and I'll be able to keep up with him for a change!" Irv believed that it would help immeasurably that Hubb was bound to his typing table every day and would be completely out of shape. When Hubb did arrive, he got out of his car carrying a killing jar and a net, and immediately said to Irv, "Come on, let's go up and see what's on that mesa!" On the way up, Irv eventually found himself sitting down to rest, while Hubb went on. When Irv finally

struggled on up, he met Hubb coming down off the lip of the mesa with his killing jar packed full of grasshoppers: "Come on," he said, "Let's go. I got 'em all."

Incidentally, Hubb's doctoral thesis was a fairly impressive document. As I understand it, when he wheeled the manuscript on a cart to one of his committee members, the man said, "I only need one copy!" And Hubb looked down at the manuscript with a little frown and said, "This is only one copy!"

In the early 1940's a biology professor at the University of Florida named Theodore H. Hubbell was written up in the Gainesville newspaper for having been arrested and fined for stealing a watermelon. When Grace started to tell the particulars of this rather funny story at a party at Lorrie's and my house, some decades later, Hubb tried to stop her, saying, "Grace, don't tell that story; it brings me no honor!" Grace persisted, and Hubb finally said, "Grace, I don't know how much more of this I can stand!" Grace quickly leaned around and said impishly, "How about five more years?"

### *Whatever I do, most of what I would like to do remains undone.*

In the 1950's the Museum of Zoology had a regular Wednesday luncheon attended by everyone who could limp or crawl to Room 2009. One night some high-spirited museum graduate students draped the statue in the rotunda of the Exhibit Museum with some unexpected items of apparel — a white lab coat and some other things (they were protesting the placing of an object in the middle of the rotunda). The Director, Irving Reimann, appealed to Hubb to keep his exuberant subjects under better control. So Hubb got up at the next Wednesday luncheon and lectured the anonymous parties about the sacred nature of public property, how it is there for everyone to enjoy, and it should not be desecrated in moments of frivolity. When he sat down, Francis Evans began his lecture. The first slide was a beautifully clear color picture of a beech tree in Berrien County, Michigan, bearing the carved message: "THH: 1922." (After I told this story, Herb Wagner said that he took his class every autumn on a slight detour just to see that tree and the initials. To his dismay, this year, the tree had just died!)

In the 1960's, Hubb, at the age of 71, was being driven north from Melbourne, in Victoria, Australia, one night to collect gryllacridids in a *Nothophagus* forest (with Dan Otte, Mur-

ray Littlejohn, and me). On that trip he first heard about William D. Hamilton's paper on the biology of senescence and remarked how it was becoming increasingly difficult for him to climb mountains in search of gryllacridids, saying, "You know, I can't climb mountains the way I used to. I run out of breath, and I get tired, and my legs give out. It's hell to get old!" In the darkness someone asked him if he could choose any age to remain forever what age would he choose? He thought a second or two and said, "About a year ago."

When President Hatcher telephoned Hubb in California, where he was on a trip with Grace, to tell him he had received the Distinguished Faculty Achievement Award following his extraordinary extra year as Director of the Museum of Zoology as a result of a unanimous petition from his faculty (which the Dean of the College of Literature, Science, and the Arts said that, as far as he knew, was a first), Hubb said quickly, "We're working! We're working! We're collecting gryllacridids!"

When he was 76 years old, Hubb fell taking a short cut home on an icy evening and seriously compressed a centrum in one of his vertebrae. In terrible pain, he was carried to the hospital in a sling, where they kept him a couple of days, fitting him with a metal vest and telling him there was nothing more they could do for him. He came home and departed the next day with Grace on a scheduled trip around the world, saying, "Hell, I might as well hurt in Greece as in Ann Arbor!"

There are many things most people don't know about Hubb and it is frustrating to be able to mention only a few. Once he said to me, Dick, I have told you things that I have never told anyone else! And another time he said, "You know, I can remember things that happened 70 or 80 years ago that still make me blush!" Once he ran six stoplights in a row in Gainesville going home from the University at two in the morning. The policeman who had been following him pulled him over and said, "Sir, were you aware that you just ran six stoplights?" Hubb said, "Yes, Officer, but there was no one else around." As the officer gave him a ticket, he said, "I was here." When Hubb told me that story he said, "It makes me sound like a scofflaw, but I'm not a scofflaw! I just use my own judgment now and then." I said it sounded as though maybe he used his own judgment all the time. He said, "Yes, but most of the time my judgment and that of society coincide!" I dare say that most of us might agree.

Most of what I remember in detail about Hubb took place in the last decade, and I want to start that part of his life by reading three poems that he wrote. The first was written for Grace, on the occasion of his having named a

species of gryllacridid in her honor. He titled it

**"Pristoceuthophilus graciellae"**

*For years my darling hoped to hear  
Her husband say, "At long last, dear,  
Thy name is now for aye enshrined  
As that of this strange new-found kind  
Of camel-cricket." But, alas,  
It never seemed to come to pass.  
The reason, I would always say,  
Was that I had not found a way  
To formalize and Latinize  
In suitable and graceful wise  
Her cognomen. As you can see  
To turn Grace into gratiae  
Would graceless and unfiting be,  
And nothing else occurred to me.  
But at long last I saw the way  
And just at hand the species lay  
That had the qualities I sought  
Of grace and beauty. So was caught  
The perfect name — 't' was graciellae -  
Diminutive, evocative, and fully  
Suitable for both the honored parties.*

*And here, my dear, is Suzanne's rendering  
of the creation of the name and its acceptance  
By your namesake. I hope you will do so  
As graciously.*

Here's a verse Hubb wrote ten years ago this  
Christmas:

*T'is quite incomprehensible  
Why anyone who's sensible  
Should choose to live up here in Michigan!  
To face the blasts that blow  
And plod to work through snow  
Takes courage masochistic in a man.  
And that's not all—for one  
Who once lived in the sun  
The move to this cold clime was doubly hard.  
But all things may have reason,  
And lo—this Christmas season  
Aroused my arcane need to be a bard!*

When Franz Huber and his German associ-  
ates were here from Germany, Hubb sent them  
off, four years ago, with this verse:

*Ode to Franz Huber and Colleagues  
With admiration we observe  
How skillfully they prick the nerve—  
These German scientists who try  
To understand the cricket's cry,  
And how the female chooses him  
With whom to mate—it's no mere whim  
They're sure, for—wunderbar to state—  
The nerve responds to song of mate  
As though it had been tuned to send*

*A string of pulses end to end  
That match the output of the male—  
His wing-song beats—and without fail  
Reports it to the female's brain  
And thus excites her, might and main.  
The end result, needless to state,  
Is union with the chosen mate  
And lots of little cricket eggs  
That hatch to babies with six legs.  
And, after months of food and growth,  
The cycle doth repeat, my oath,  
Its purpose seems self-evident, but not  
The way it came to be, God wot!*

I'll end with twelve brief quotes that I stole  
from my coffees with Hubb during the past  
eleven years. Except for the last one, for which  
I don't know the exact date, they're in chrono-  
logical order.

1979: *You know, as I get older, I feel like a  
man driving a car. The car is wearing out: it's  
getting old and rusty, and the motor doesn't run  
very well any more. But the fellow inside is the  
same!*

1980: *Is it better to be a naked mole rat than  
to be nothing at all?*

1981: *You know, Dick, I'm glad to be alive!  
It's been an interesting experience!*

1982: *Whatever I do, most of what I would  
like to do remains undone.*

1983: *The ultimate honesty is to admit you're  
dishonest.*

1984: *Oh, what tangled webs we weave,  
when first we practice to deceive—of course,  
we get better at it with time!*

1985: *I'm finding it easier and easier to  
avoid sitting down and doing real work. It's  
beginning to get serious!*

1986: *Contribution to "The Biology of Moral  
Systems."*

*A Dilemma:  
Cows can't marry; but a virtuous  
Cow gives no milk  
The Farmer:  
"Oh, Bull!"*

1987: *You know, Dick, I have read your book on the  
biology of moral systems very carefully, and I  
could not find the word compassion in it  
anywhere! (He then asked me what I thought  
compassion is. We were just getting on the  
elevator, and Gloria Lake was holding the door  
for us. In keeping with our long-term banter*

about altruism in human behavior I said that I  
didn't know what compassion is, but I would  
have to start with the hypothesis that it serves  
the purposes of those who show it. Hubb looked  
down and said, "Hmmm. It doesn't feel that  
way." Gloria Lake laughed louder than I have  
ever heard her laugh and said, "Try again, Dr.  
Alexander!")

1988:

*The newts, they slither, hither and thither  
They know not whither  
This makes me dither, my tongue to blither,  
My muse to wither. (Why?)*  
(He called that one "Musings of a Disordered  
Mind #1073.)

1989:

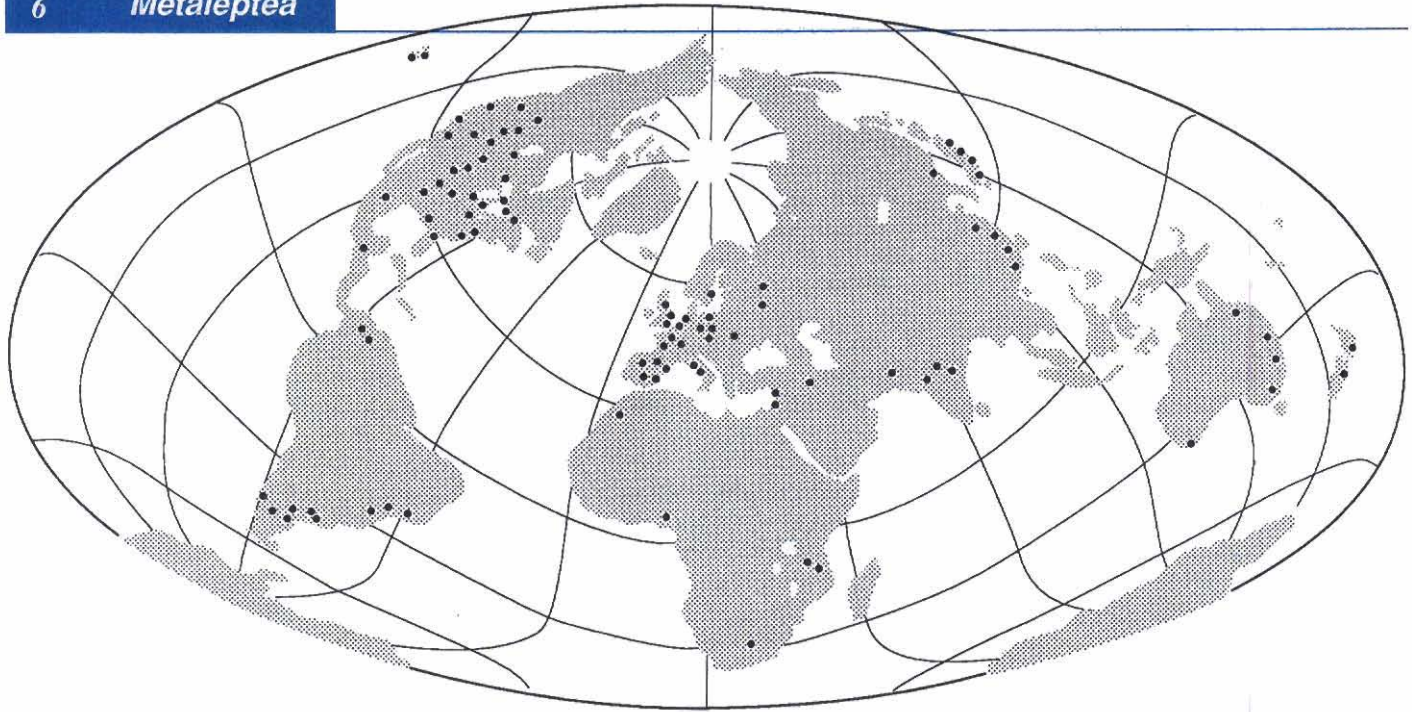
*Iambic pentameter, so I've heard  
Can injure the ear; but that's absurd  
The worst it can do! Is to put you to sleep  
(Which can be a blessing)—like sheep.*

This last one, one of my favorites, I can't  
date. Hubb said it as he stirred his coffee one  
morning, preparatory to sitting down for one of  
our wonderful, wide-ranging discussions: "You  
know, Dick, this is a good place to be." And I  
replied uncertainly, "Yes — the University of  
Michigan has always been good to me. . . ." "No.  
No. Not the University of Michigan. Earth.  
The Planet Earth is a good place to be. I'm very  
pleased to have been able to share it briefly with  
everyone."

A long time ago someone said to me about T.  
H. Hubbell, "You know, he's a prince of a  
man." And I remember thinking, across the  
years, that this is a phrase not to be applied  
lightly, and also that if it was ever appropriately  
applied to anyone, Hubb is the one.

R. D. Alexander, Autumn 1989

The Orthopterists' Society sadly  
announces the deaths of two of its most  
distinguished members, Dr. T. H.  
Hubbell, Professor Emeritus, University  
of Michigan, and Honorary member of  
the Society since 1980, and Dr. Syril  
Blondheim, Professor, The Hebrew Uni-  
versity, Tel Aviv, Israel. They will be  
greatly missed by those who knew them  
and had the opportunity to work with  
them. Obituaries will appear in the next  
issue of *Metaleptea*.



Approximate distribution of OS members around the World. The distribution of this species is spreading gradually and may soon reach SE Asia and Antarctica.

Excerpt from  
**New President's Address**

Valsain, Spain

**W**e again thank our Spanish friends for being such wonderful hosts. They have been magnificent and exceptionally kind to all of us. We will leave Spain with a warm feeling in our hearts. Perhaps someday we can bring them to our various countries for a visit.

We owe Dr. Vickery a great deal of gratitude for his efforts on behalf of the Society. Fortunately he is not gone; he will continue to be active in the Society and we shall consult with him from time to time. Thank you very much, Vic.

• • •

You are a privileged group of people! If it were not for this wonderful group of insects we know as the Orthoptera, we would not be gathered at this splendid feast tonight. They are an old, complex, highly radiated group of insects about which we know more than any other group of equivalent size. They present us with formidable intellectual and economic challenges, keep our minds and hands occupied, feed our dreams, and give us many interesting stories. They are our passports and tickets to wild and interesting places. I cannot imagine what we would do without them.

It is because we still know so little about this insect group that we are in Valsain. And in three years we will meet again and be fascinated once more by new ideas, new stories, new exaggera-

tions. Some of the problems which vex us now will be solved, but most will not. We will have met new taxa, new behaviors, new relationships. We will have sprayed them, and have been sprayed by them, deafened by them, and bitten by them; but, most importantly, we will have been entertained and fascinated by them.

This Society exists to exchange information—about ecological and phylogenetic relationships, but perhaps more importantly about ideas and biological processes—in what we believe to be the most interesting group of organisms on earth. It also strives to promote communication between or among scientists, to promote cooperation which will lead to discoveries that individual scientists alone cannot achieve, to promote education of people from all around the globe, to teach them about Orthoptera, and to seek ways for sharing our expertise in solving economic and intellectual problems.

During the past three years Dr. Vickery worked toward initiating a program of education and training, one by which people from various parts of the world afflicted by Orthoptera-induced economic problems can gain additional help and knowledge by attending special courses and workshops in grasshopper control. This has been a long, difficult procedure; he is to be congratulated for this past success. We wish him continued success in the future.

Now it is the turn of a new team. What initiatives can we take that will further enhance the goals of this Society in particular and our science of entomology in general? I would like to propose several initiatives which can help improve communication among ourselves and with the generation of orthopterists who will follow us.

**Orthopterists' Journal  
(OJ)**

Although this Society has had some success in publishing the proceedings of its past meetings and in running a newsletter, what we lack is a journal devoted to the biology and systematics of Orthoptera. There are only six or seven thousand species of birds and yet dozens of journals devoted exclusively to them. Our fascinating group, with over 20 thousand described species (and many times as many undescribed species), does not have a single journal devoted to it. A few years ago we had an acridological journal which had to be discontinued for financial reasons. At these meetings we have discussed again the need to provide orthopterists, entomologists, and other biologists with a top quality journal.

We should begin modestly, making sure

that we not overextend our limited resources. We can commence, I believe, by taking the following steps:

- share the burden of editing by creating an editorial board consisting of regional editors and coordinated by a managing editor.
- ensure that the quality will be high by instituting a peer review system.
- encourage submission of articles of broad significance to biology.
- include a section which lists new references.
- include taxonomic registry which lists all new taxa and all changes in taxonomic status (see OSF below).
- make the process as cheap as possible by producing camera-ready copy from computer diskettes.

## Orthoptera Species File (OSF)

As we approach the end of the 20th century it becomes clearer every year that, despite two hundred years of work on orthopteran systematics, we have not nearly reached the half-way mark in describing the extant world orthopteran fauna.

The process of discovering species and naming them is incomplete almost everywhere; and the need to identify Orthoptera was never greater. Applied and basic research, ecological impact studies, feasibility studies, and renewable resource studies of many kinds depend on the expertise of a dwindling number of specialists.

With immense changes in the world's habitats taking place in temperate and tropical zones alike, we have on our hands a biological crisis of considerable proportions. Species are probably disappearing in our own lifetimes, practically in our backyards. If we cannot conserve them, then the least we can do is study them much more intensively. Unlike extinct forms, living creatures can be observed directly, without the use of time machines, vivid imaginations, or painstaking reconstruction based on fragmentary evidence.

But an undescribed biota is only a part of a larger dilemma. Lack of knowledge about described organisms also hampers biological research, thwarts biological pest control efforts, and deprives industry of valuable information on living material resources. Systematics is explicitly and exclusively devoted to the ordering of complex data. As such it is an important fundament to comparative biology. It is the most elementary part of zoology because animals cannot be discussed or treated in a scientific way until some systematization has

been achieved. It is also the most inclusive and integrative part because of the way it gathers together, utilizes, and summarizes everything that is known about animals. All comparative biological sciences enter into systematics because they necessarily study relationships among diverse organisms.

Orthopteran systematics is becoming more difficult every year because the ratio of workers to taxa is changing adversely. There are probably hundreds of young people in universities today who would be thrilled to be doing what we are doing. But, unfortunately, they know almost nothing about Orthoptera—the basic classification, how big the groups are, what is known about them systematically or biologically, or who is working on them. And they have no way of finding out! They know little about what we are doing, why we are doing it, and even if they are fortunate enough to know, they have not the foggiest idea of how to get into the field. Those that do dabble in it for a while are soon discouraged by formidable literature problems.

### The OSF will provide researchers with an access point into the literature of any species.

There is perhaps no other branch of science in which information storage and retrieval is as formidable and as crucially important a task as in taxonomy. It is impossible to prepare a reliable revision or monograph of a higher taxon if one does not first compile a listing of the described species. To make matters worse, there are few fields in which the literature is more scattered. Every taxonomist spends more time on searching and extracting the literature than on original work. This is so taken for granted that it is virtually never pointed out how appallingly inefficient this search method is. Access to the literature has improved greatly over the past decade as libraries and various information services have adopted various on-line computer searches. But these facilities, in their attempts to keep abreast of a broad front, fall short in being unable to focus on special fields. In the area of systematics they do not furnish information which is essential to taxonomists who describe and revise taxa. Other sources, such as the Zoological Record, are valuable but also fall short in several respects: information is slow to come out, and certain types of information needed by taxonomists are not provided. The latter shortcoming would not be important if one had easy access to the literature. But even the best institutions cannot keep up with the literature.

The solution is a computerized database to which one has almost instant access (either through printouts or through phone connections). The only way to cope with this massive accumulation of new information is to automate the process through electronic data processing. With personal computers and their various attachments it is possible to input, store, and retrieve information very rapidly. We should begin to make our work and those of future systematists and orthopterists more efficient by producing a computerized catalog to all Orthopteran species.

An Orthoptera Species File (OSF) will have the utilitarian purpose of bringing scattered information on a group together in one place; it will provide a skeleton classification of a group and serve as a convenient source of reference for the naming of species and the arrangement of collections. The OSF would be an invaluable tool for collection managers and curators around the world. The first and most formidable hurdle one encounters in maintaining or building a modern collection is synthesizing the massive, widely dispersed, and almost impenetrable body of taxonomic literature. Keeping abreast of this burgeoning wealth of information is both time consuming and costly. The OSF will provide researchers with an access point into the taxonomic literature that is not now possible through existing on-line, computerized databases. It will also provide researchers with an affordable and accessible means to selectively acquire and maintain current research libraries.

The OSF could be a great resource in the maintenance, organization and planning for future growth of Orthoptera collections everywhere, and in turn could greatly enhance their value to the research community. It could become a basis for some future revisional or monographic studies and permit the production of regional and taxonomic checklists.

What is needed is a procedure by which information on orthopteran taxa and orthopteran research of all kinds can be computerized, centralized, and made more immediately accessible than heretofore. At the core of this endeavor is my belief that a single species file is vital to all ongoing research efforts, systematic and otherwise.

The procedure that I am proposing is both feasible and inexpensive. It can exploit skills at various levels and allows a multitude of different approaches and equipment. Because it is so tolerant of diversity in background, expertise, methodology and technology it cannot fail! It requires only that agreement be reached on a minimum number of fields to be included in the database and on how to minimize duplication of effort.

The OSF could have the following important features:

- the file would essentially be an index to published taxa arranged in such a manner as to provide a complete series of references for both zoological and nomenclatorial purposes. The file would be taxonomically based—each record would have at its core the name of a taxon—species, genus, tribe, subfamily, *etc.*

- each name would be represented by at least one record (one line), but could be represented by as many records as there are references to that species. At the outset, though it would be better to focus on the primary taxonomic literature (descriptions, revisions, atlases, *etc.*—Fig. 1).

- the first record for each name would contain the original description, the type locality, and the type depository. Subsequent records would pertain to changes in taxonomic status, to relationships, to distribution, to ecology, and to other properties.

- the file would consist of a number of fields (columns), each field containing different kinds of information. Some of the most important fields are: subfamily, tribe, genus, species, nominal taxon, author, type of taxon (type specimen, type species, type genus, *etc.*), year of publication, author and publication, type locality, type depository.

- the reference which contains the original description.

- references about group membership—those tracing the history of taxonomic status and group assignment. Subsequently (or concurrently, if convenient) comparative, distributional, relational references, and various other biological references can be added.

Again, I should emphasize that it will be possible for people to contribute to this effort at any level—from pencil and paper to using computers.

Inexpensive technology is available to convert information from any one level to any other with minimal hassle. There are a couple of tools that would be indispensable in this effort. These are a scanner (with optical character

recognition software) which can convert published and unpublished material into text files which can then be edited with a word processor.

On a yearly basis all new taxa and all taxonomic changes can be added to the OSF. If there is disagreement on taxonomic status, contending versions can be printed out and made available for evaluation.

The OSF can be so constructed that camera-ready copy can easily be made from the file and printed to make catalogs. Periodically new editions of the catalogs can be produced which incorporate all changes taking place in the computer file. Authors' contributions to the OSF should be recognized and preserved.

At present keeping up with recent additions of taxa and changes in taxonomic status is difficult and cumbersome. This mechanism for keeping up with the latest taxonomic changes was fine for a period when it would have been difficult to accumulate all changes in one place. And though the system still works, it is so slow and prone to error that it impedes research and the flow of information. I propose here that Orthopterists send to a single place the names of all new taxa, taxa whose status has been altered, and taxa whose relationships are discussed. The information could be registered and made available almost at the time of publication. This would be done on a purely voluntary basis, and the system would improve as more and more authors contributed to it.

## Orthoptera Reference File (ORF)

Around the globe there are people who have already assembled for their own use a set of references on various aspects of orthopteran biology. I would like to propose that we begin to assemble all of these references into a single file—the ORF. To achieve this, members could send their references to a single source where they would be merged and indexed. Members

wishing to retrieve the reference file or portions of it could do so either through a phone network or through the purchase of diskettes containing those portions of the file that interest them. References on specific taxa could be merged with the OSF by adding a field which contains the names of the taxa.

As in the case of the OSF, we could quickly build up the ORF by setting up teams to tackle the various subjects. Thus there might be a grasshopper control team, a genetics team, an ecology team, *etc.*

## Specialists File

There is one more important file that is needed to make life easier in our science. For young scientists beginning their careers in research it is important, indeed vital, to know who is in the same field of science, what groups they work on, where they are. It is very important that we know who is working on Orthoptera and the subjects they are working on. The OS membership file comprises the beginning of this file, but it is incomplete. Many individuals working on Orthoptera are not now members of the OS. The specialists file could also be extended to include people who are no longer living.

## Reprint Collection

The old Anti-Locust research center in London used to keep a record of newly published papers on grasshoppers and send out reprints to people requesting them. Dr. Lockwood has proposed that we think about setting up a new clearing house. Authors who are members would send copies of all their reprints to the clearing house where they could be duplicated if a request for them were received.

## OS Committees

1990-1993 Term

### Board of Governors

President Daniel Otte, Chair; President Elect, R. F. Chapman; Regional Representatives: Baccio Baccetti, Aola M. Richards, A. B. Ewen; Newsletter and Proceedings Editor, D. A. Nickle; Journal Editor, N. D. Jago; Treasurer, R. G. Bland; Executive Director, S. K. Gangwere.

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### Regional Representative Nominating Committee

Current Regional Representatives (above),

one of whom President is to designate Chair for service prior to next meeting.

### Resolutions and Amendments Committee

D. R. Ragge, Chair; S. K. Gangwere, Vicenta Llorente, J. Mark Ritchie (this committee performed its function at Valsain and will be replaced by a new one at the next meeting).

### Training Program Committee

S. K. Gangwere, Chair; A. B. Ewen, N. D. Jago, W. P. Kemp (resigned), J. Mark Ritchie, R. Skaf, V. R. Vickery.





**TETTIGONIIDAE**

*The Tettigoniidae. Biology, Systematics and Evolution*

Winston J. Bailey and David C. F. Rentz, editors  
CSIRO, Division of Entomology.  
250 x 176 mm,  
Crawford House Press  
P.O. Box 143, Bathurst, NSW 2795 Australia.  
528 pages, B/W plates, illustrations, 20/30 full color plates

This book commemorates the retirement of leading British biologist and taxonomist David R. Ragge from the British Museum (Natural History) and brings together the work of a number of leading researchers in the biology of the Tettigoniidae - the group of insects occupying most of Dr. Ragge's research career. Their work covers a wide range of topics using katydids or bushcrickets as a vehicle to test their hypotheses.

The book opens with an article on the strategies used by rainforest katydids to avoid predation, and is considered timely in that it is an example of value of the need to save rainforests and the importance of these ecosystems as "reservoirs" of evolutionary biology. The acoustic signal is one of the more obvious means of social communication in this family of insects, and this subject receives detailed treatment accentuating the dynamics of calling behaviors both within and between species. A number of reviews cover aspects of sound reception maintaining the link between function and the behavior of the whole organism. An account of the evolution of duetting in a group of northern Mediterranean phaneropterine katydids links taxonomy to processes of intersexual communication. The male spermatophore affects the pattern of mating in many species and its contribution to the evolution of different mating strategies is viewed across a number of ensiferan species. The chapter is followed by a comprehensive review of the anatomy and function of the tettigoniid egg. The behavior and evolution of an endemic group of south-west Australian cone-headed katydids is covered in two chapters, and shows the value of relating behavior distribution and allozyme data with the known geology of the region. Systematics and biology are again linked in a synopsis of the Saginae, a group of large and often formidable predators of the Old World. An evolutionary account of the chromosome systems of the shieldbacked katydids of Australia and a

worldwide classification provides a comparison between a cladistic and phenetic approach to taxonomy resulting in a unique technique for identification at the tribal level. As well as illustrating a number of chapters the eight colour plates exhibit both the beauty and diversity of tettigoniids.

*Bioakustik der europäischen Laubheuschrecken*

Klaus-Gerhard Heller  
F. & T. Mullerbader  
Forststrasse 18  
D-7024 Filderstadt  
Germany  
358 pages  
ISBN 3-8236-1165-6

In this handsome book the songs of 58 genera of Tettigoniidae belonging to the subfamilies Phaneropterinae, Meconematinae, Conocephalinae, Tettigoniinae, and Bradyporinae. The book contains detailed oscillograms of the songs and electron scanning photos of the stridulation files of the various species. It will be an indispensable reference to those interested in tettigoniid behavior and anyone interested in acoustic signaling.

**GRYLLIDAE**

*Cricket Behavior and Neurobiology*

F. Huber, T. E. Moore and W. Lohr, editors  
Comstock Publishing Associates Cornell University Press  
Ithaca and London 1989  
536 pages \$65.00  
ISBN 0-8014-2272-8

*Cricket behavior and Neurobiology* is an important and up-to-date reference work on the behavior of crickets as well as other orthopterans, especially locusts and cockroaches. Because it concerns general principles of behavior it will be of interest to all workers in the field of behavior and neurobiology. It will be especially important to anyone interested in communicative systems. Although 64 genera and 116 species of crickets are mentioned, the work concentrates on two species of *Teleogryllus*, two species of *Gryllus*, one *Acheta*, one *Gryllodes* and several *Nemobiiinae*. The book was written by 24 world authorities on cricket neurobiology and includes the following chapters. 1) Natural history; 2) Reproductive behavior; 3) Temporal organization of reproductive behavior; 4) Structure and function of the endocrine system; 5) Vision and visually guided behavior; 6) Vibrational responses; 7) Mechanoreceptors in behavior; 8) Songs and the physics of sound production; 9) Neuronal basis of song production; 10) Phonotactic

behavior of walking crickets; 11) Evasive acoustic behavior and its neurological basis-negative phonotaxis, ultrasound-sensitive auditory neurons; 12) Biophysical aspects of sound reception; 13) Auditory organ structure, development and functions. 14) Central auditory pathway: neural correlates of phonotactic behavior; 15) Perspectives for future research.

**GRASSHOPPERS**

*Nymphs of the Sahelian grasshoppers: An illustrated Guide*

G. B. Popov  
Overseas Development Natural Resources Institute (ODNRI)  
Chatham, UK 1989

This small pictorial handbook, covering about 80 species of grasshoppers, will be essential to people in the field, especially in West Africa, who wish to identify grasshopper species by examination of the nymphs. The book also indicates for each species, by means of graphic devices and icons the life cycle, preferred habitat, food preferences, usual coloration, economic importance, number of instars, and tendency to gregarization.

**GENERAL**

*Systematics of North American Insects and Arachnids: Status and Needs*

M. Koszarab and C. W. Schaefer, editors  
Virginia Polytechnic Institute  
To order: write to Dr. G. L. Jubbs, 104 Hutcheson Hall, VPI, Blacksburg, VA 24061 USA  
ca. 300 pages  
\$15.00

This book includes the papers presented at the Symposium: *Diversity and Dynamics of North American Insect and Arachnid Fauna* at the Entomological Society of America National Conference, Louisville, Kentucky, December 4-8, 1988. The book contains contributions from 30 scientists and covers all the orders. There are two chapters on orthopteroid insects.

**SPECIATION**

*Speciation and its Consequences*

D. Otte and J. Endler, editors  
Sinauer Associates, Inc.  
Sunderland, Massachusetts 1989  
679 pages \$30.00  
ISBN 0-87893-658-0 (pbk.).

This book contains three chapters that are mainly or exclusively concerned with speciation in Orthoptera (boldface). The book contains 25 chapters under the following headings:

1. The Meaning of species and speciation: a

genetic perspective; 2) Speciation and its ontology; 3) Species and taxa: systematics and evolution; 4) The Subdivision of species by hybrid zones; 5) Mosaic Hybrid Zones and the Nature of Species Boundaries; 6) Sympatry and Hybridization in a "Ring Species"; the Plethodontid Salamander *Ensatina eschscholtzii*; 7) Reinforcement of Premating Isolation; 8) Two Rules of Speciation; 9) Chromosomal Divergence and Reproductive isolation in Dik-Diks; 10) Founder Effect Speciation; 11) Mating system evolution and speciation in heterostylous plants; 12) Population structure and the genetic and morphological divergence among pocket gopher species (Genus *Thomomys*); 13) Sympatric speciation in insects: perception and perspectives; 14) The role of habitat preference in adaptation and speciation; 15) The diversification of single gene pools by density- and frequency- dependent selection; 16) Genotypic diversity and coexistence among sexual and clonal lineages of *Poeciliopsis*; 17) Taxon cycle among *Anolis* lizard populations: review of evidence; 18) Sympatric speciation and Darwin's finches; 19) Fruiting failure, pollinator inefficiency, and speciation in orchids; 20) Speciation in Hawaiian crickets; 21) The guage of speciation: on the frequencies of modes of speciation; 22) Macroevolutionary consequences of speciation: Inferences from phytophagous insects; 23) The relationship between speciation and morphological evolution; 24) Speciation and diversity: the integration of local and regional processes; 25) Conceptual and other problems in speciation.



## Grasshopper IPM

### GRASSHOPPER INTEGRATED PEST MANAGEMENT MEETING

Phoenix, Arizona

5-9 February 1990

This meeting is being sponsored by US Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) and Plant Protection and Quarantine (PPQ).

## A Course

### MOLECULAR TECHNIQUES IN TAXONOMY

NATO Advanced Studies Institute Norwich  
UK 9-20 July 1990

This tutorial course aims to bring together some 20 international authorities and 70 young researchers to discuss and learn about this exciting interface. Lectures, seminars, and laboratory practicals will use molecular and computer methods for systematic studies.

Topics will include—Taxonomic concepts,

DNA hybridization, PCR and DNA sequencing, mtDNA, rDNA, scDNA, RFLPs, Sequence databases, Phylogenies, Computer programs, Non-DNA techniques, Rapid diagnosis. Applications to microbes, plants, insects, and vertebrates — in Agriculture, Conservation, Medicine, and Evolution.

Speakers will include - Humphrey Greenwood (British Museum), James Murray (Virginia), Hampton Carson (Hawaii), Jean David (Gif), Eleftherios Zouros (Crete), Christine Simon (Hawaii), Jeffrey Powell (Yale), Dieter Sperlich (Tubingen), Robert Cedergren (Montreal), Jeffrey Doyle (Cornell), Michel Solignac (Gif), Martin Kreitman (Princeton), Antonio Fontdevilla (Barcelona), Bryan Clarke (Nottingham), David Swoffard (Champaign), Peter Young (Norwich), and others.

The Location is the University of East Anglia which, along with several Research Institutes, is set in parkland on the edge of the ancient City of Norwich.

Applications to Professor Godfrey Hewitt before 31 January 1990 should include a curriculum vita with research interests - molecular or taxonomic expertise is not a prerequisite. Full accommodation fee is £390; please explain in your application if you could not attend without a subsidy. Some NATO countries give grants for these ASIs.

## Orthoptera on Postage Stamps

### Postage Stamps from Zambia Feature Grasshoppers and a Katydid

According to CAPHCO, Ltd. of Great Britain, four species of African orthopterans were featured recently on postage stamps, which are still available. They were issued on November 8, 1989, in the denominations of 70n (*Lamarckiana* sp., a pamphagid grasshopper), 10.40K (*Dictyophorus* sp., a pyrgomorphid grasshopper), 12.50K (*Cymatomera* sp., a pseudophylline katydid), and 15K (*Phymateus* sp., another pyrgomorphid). Lithograph production of the stamps, designed by artist G. Ellison, was by Carter SA of France.

### Postage Stamp from Palau Features a Cricket

The cricket (*Duolandrevus palauensis* Otte: Pteroplittinae, Landrevini) featured on a 25 cent

stamp. This stamp makes up 1/20th of a set of stamps which, together, feature some animals and plants in a mangrove forest. The set was designed by Tracy Pederson (Philadelphia).



## Changes of Address and New Members

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# *A Call for Information*

## Orthoptera Specialists File

of the ORTHOPTERISTS' SOCIETY

If you work on Orthoptera or any related group of insects, the OS would like to include you in their computer database on specialists. Please fill out the enclosed form and send to:

The Orthopterists' Society  
c/o Department of Entomology  
Academy of Natural Sciences  
Philadelphia, PA 19103 USA

Last Name \_\_\_\_\_  
First Name \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_

Field of interest (e.g., systematics, ecology, pest management, etc.).

Taxonomic interest (e.g., *Acheta domesticus*, *Schistocerca*, Mantodea, etc.).

Geographic interest (e.g., Hyde Park, Fiji, Sahara, Southeast Asia, etc.).

This information will be added to a computer database at The Academy of Natural Sciences and made available to all members of the Orthopterists' Society. If you know of specialists on Orthoptera who are not members, we would appreciate having their names, addresses, field of speciality, and taxonomic speciality.

## Orthoptera References File (ORF)

The Orthopterists' Society is assembling a database on all specialists on Orthoptera. An accompanying database will include the bibliographies of all specialists on this group—past and present. This database is called the Orthoptera References File and will be made available to all members of the Orthopterists' Society.

Please send a copy of your Orthoptera references to:  
The Orthopterists' Society  
c/o Department of Entomology  
The Academy of Natural Sciences  
Philadelphia, PA 19103

### How to send:

To facilitate entry of your bibliography into the ORF please furnish us with one of the following:

1. Diskette (not high density) with your bibliography saved as an ASCII file, or in MS-DOS WordPerfect, or Macintosh MS-Word, WordPerfect, MacWrite, MacWrite II, Nisus, WriteNow, MS Works, MS Excel, FileMaker II.
2. Printed Copy, preferably in Helvetica or similar sans serif typeface (but any typeface can be accepted). Since this will be entered into the database via a scanner and Optical Character Reading (OCR) software, it is important to have high quality printing (i.e., no dot matrix printing). Scientific names may be underlined, but it is better if they are not italicized. The scanner can be taught to read anything but the process will be easier with the above specifications. To facilitate data entry and help teach the scanner how to read your typeface, please furnish several lines of your entire keyboard (i.e. ABCDEFGH . . . abcdedfg . . . 123456 . . . #%&\*()[] { } , ; ? /").
3. Key words: The ORF will be organized to facilitate grouping of similar references. Therefore, it would be helpful if you provided us with convenient key words to subject (e.g., taxonomy, genetics, behavior, physiology, biogeography), to taxon (e.g. order, family, subfamily, genus, species), geography (e.g., continent, country, biome). Key words may be appended to the end of each reference.