

# METALEPTEA

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A News Forum for Acridologists  
and Orthopterists  
THE ORTHOPTERISTS' SOCIETY



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## MESSAGE FROM THE EDITOR

This has been a busy time for me. I have been to two Entomological Society of America meetings, the annual meeting of the Society of Systematic Zoology, and one field trip to Peru. All of it, though profitable in many ways, has been a drain on the amount of time I have been able to spare on other aspects of my life (like eating, sleeping, editing *Metaleptea*). In addition, we have received in our laboratory new word processing hardware, some of which is yet to be properly installed (including my desk PC). For these reasons there has been a delay in getting this issue of *Metaleptea* into circulation. I apologize for the delay and hope for more progress in the coming year.

This year promises (or threatens) to be the Year of the Locust. The U.S. Dept. of State and several other concerned agencies have been in touch with me concerning the African locust situation, and I am sure we will hear more about this problem in the months to come. I might add that in addition to the African locust problem, I was alerted last month to a similar regional problem in southern Mexico involving large swarms of *Schistocerca americana*. When more information is gathered on this situation, I will make it available to you.

In the meantime, please send material for publication in *Metaleptea*. Without your input, there can be no output!

David A. Nickle  
Editor, Orthopterists' Society

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## THE ORTHOPTERISTS' SOCIETY

*The Orthopterists' Society* (formerly *Pan American Acridological Society*) is an international scientific organization devoted to facilitating communication among those interested in Orthoptera and their allies. Research and publication is fostered in all aspects of the biology of these insects from ecology and taxonomy to physiology, endocrinology, cytogenetics, and control measures.

The Society was founded in 1978 by some 50 orthopterists meeting at San Martin de los Andes, Argentina. Its constitution and by-laws were adopted in 1979, and it was accorded tax-exempt status by the United States government shortly thereafter. The meetings held since San Martin have been at Bozeman (United States), Maracay (Venezuela), and Saskatoon (Canada). The next meeting will be held in 1989 at a site to be selected in 1986.

Symposia, round table discussions, and research papers presented at the society meetings are published in the *Proceedings of the Orthopterists' Society*, and a newsletter, *Metaleptea*, is issued semi-annually. Information regarding these publications can be obtained from the editor, Dr. D. A. Nickle, USDA, c/o National Museum of Natural History, Smithsonian Institution, Washington, DC, 20560, USA.

The 1985-89 Governing Board comprises President V. R. Vickery (Canada), President-elect D. Otte (United States), Regional Representatives T. J. Cohn (United States), N. D. Jago (United Kingdom), and N. E. Sanchez (Argentina), Past President J. E. Henry (United States), Executive Secretary S. K. Gangwere (United States), and editor D. A. Nickle (United States).

### Past Presidents include:

|                |                 |               |
|----------------|-----------------|---------------|
| S. K. Gangwere | (United States) | (1978 - 1979) |
| R. A. Ronderos | (Argentina)     | (1979 - 1982) |
| J. E. Henry    | (United States) | (1982 - 1985) |

### Honorary Members include:

|                 |                  |                     |                            |
|-----------------|------------------|---------------------|----------------------------|
| F. O. Albrecht  | (France)         | T. H. Hubbell       | (United States)            |
| I. J. Cantrall  | (United States)  | D. K. McE. Kevan    | (Canada)                   |
| C. S. Carbonell | (Uruguay)        | J. Lieberman        | (Argentina) (deceased)     |
| M. Descamps     | (France)         | H. R. Roberts       | (United States) (deceased) |
| P. T. Haskell   | (United Kingdom) | C. A. Campos Seabra | (Brazil)                   |

Membership is open to all persons, professional or amateur, with an interest in Orthoptera. Annual dues are US \$10 for Active Members and US \$5 for students. Members receive all publications of the Society.

Society business is handled by the Executive Secretary, Prof. S. K. Gangwere, Department of Biological Sciences, Wayne State University, Detroit, Michigan, 48202, USA.

All corresponding Society business should be mailed to the Executive Secretary, Prof. S. K. Gangwere, Department of Biological Sciences, Wayne State University, Detroit, MI 48202, U. S. A.

**MEETINGS.** - Meetings of The Orthopterists' Society are held on a triennial basis, in the United States, Latin America, or Canada, in rotation. Symposia, research papers, and business conducted at the Meetings are published in the *Proceedings of The Orthopterists' Society*.

**MEMBERSHIP.** - Membership is open to anyone expressing an interest in Orthoptera. Annual dues for members are \$10 (U. S. currency) and for students \$5 (U. S. currency). Members are entitled to all publications available for the duration of their membership.

**PUBLICATIONS.** - The Society's publications include a newsletter, *Metaleptea*, which is published biannually, the *Proceedings of The Orthopterists' Society*, which is published triennially in conjunction with the Meetings, and *Occasional Papers*, an irregularly published journal for medium to large sized papers dealing with research on any aspect of Orthoptera. For information regarding any of these publications, contact Dr. David A. Nickle, Editor, SEL, USDA, c/o National Museum of Natural History, Smithsonian Institution, NHB-168, Washington, D. C. 20560 U. S. A.

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## A NOTE ABOUT THE LYMAN MUSEUM

The Lyman Entomological Museum has been built-up over the past 25 years to become an organization with International standing. I have been Curator for this 25 year period. Dr. Keith Kevan was Director, the first Director to be appointed, from 1973 until 1986. At the end of August we both retired, but we received emeritus appointments and are still associated with the Museum.

Only one taxonomist was hired as replacement, the other newly appointed person being a "biotechnologist". The new Curator of the Lyman Museum, Dr. Michael Sanborne, is a hymenopterist, specializing in Ichneumonidae. Dr. C. C. Hsiung will continue to work on Orthoptera in a minor way, but the future of orthopterology here looks rather bleak when Kevan and I can no longer function.

Our ability to function as researchers in orthopteroid insects here may be curtailed long before our personal abilities become defunct. By some means (which resemble backroom political dealings) the Museum budget was transferred (without our knowledge) from the University Secretariat to the Dean, Faculty of Agriculture. This Dean has long cast envious eyes on the space now occupied by the Museum and has stated his intention to force the Museum to move to the basement of another building. The space in this basement will be large enough to house the Museum and its collections, once extensive renovation is carried out, but this basement is notoriously damp and in our opinion is entirely unsuitable for any sort of Museum.

So it appears that as a center for orthopterology, the Lyman Museum may become defunct in the near future, although the collection of specimens will remain and hopefully will be maintained in good condition.

V. R. Vickery  
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## REPORT FROM THE PRESIDENT

More than a year has passed since I became President of the Society, so it is high time that I reported to you. As a matter of fact, there is not a great deal to report. I have been informed by Dan Otte, President-Elect, who is also Chairman of the committee to select the time and place for the next meeting, that the meeting will take place in 1989, at a place yet to be determined.

David Nickle, Chairman of the Editorial Committee, reports little progress on the feasibility study regarding publication of a regularly-issued journal by the Society.

Our membership is increasing: we now have members in 40 countries, an increase of 11 during the past few months. A letter has been prepared and signed by Stan Gangwere and myself which will be sent to a list of potential members. We also intend to send personal letters to the few former members who have dropped their membership. Since the change of name from Pan American Acridological Society to The Orthopterists' Society on January 1, 1986, the Society has become truly global in scope. Our Executive Secretary, Stan Gangwere, deserves a great deal of credit for the current growth.

In January, 1986, an international conference on "Phylogeny and Evolution of Orthopteroids" was held in Sienna, Italy, to honor Dr. Felice Capra on the occasion of his 90th birthday. This was reported by Dr. Gangwere in *Metaleptea* 8(1): 9-11. Dr. Gangwere and I attended, as did many of our members from around the world. The meeting was a resounding success. The papers which were presented were of high calibre. Most were presented in English, although Dr. Capra gave his in Italian. I wonder how many of us will be able to write and present a well thought-out scientific paper at the age of 90.

The Italian organizers, particularly Dr. Baccio Baccetti, are to be congratulated on the success of the meeting. I asked our Executive Secretary to poll the Executive Committee regarding Honorary Membership for Dr. Capra and Dr. Baccetti. The response was positive but must be voted on at the next Society meeting.

I retired on 31 August 1986 at Curator of the Lyman Entomological Museum and Research Laboratory. However, I was made Emeritus Curator, so I still have an office and other facilities. Dr. Keith Kevan, formerly Museum Director, also retired. He was made Emeritus Professor in the Department of Entomology.

My main thrust at the moment is an attempt to find funds to re-establish our training program, particularly for African countries, considering the present locust problems there. I am working through CIDA (Canadian International Development Agency) which recently has approved expenditure of \$2 million for locust control in Africa. I intend to visit FAO in Rome before Spring to try to establish a more or less permanent (depending upon need) training program, particularly, but not exclusively, for Third World countries.

Wish me luck!

V. R. Vickery  
President  
The Orthopterists' Society

## EXECUTIVE SECRETARY'S REPORT

Perhaps the main change in operation of the Secretariat since publication of *Metaleptea* 8(1) is completion of office computerization. Members will note that their billing report (dues notice) is computerized. This is only one example of the Secretariat's new, mechanized record-keeping process, but it is probably the most obvious I can cite. The overall effort should make our Society recording keeping and billing less onerous than in the past and will surely pay dividends (no pun intended!) in the months and years to come. Please give me your input on the new form, particularly as to whether it answers your needs or requires further modification.

While discussing dues payments, perhaps I can take the opportunity to mention a recurring problem. Some members have expressed concern about dues payments failing to be credited to them in the next *Metaleptea* mailing, sometimes up to 3-4 months after payment. The explanation is simple. The Secretariat, located in Detroit, is responsible for preparation of current dues notices when informed by the Editor's Office, in Washington, D.C., that an issue of *Metaleptea* is about to go to press. The Secretary responds by sending, to Editor Dave Nickle, a packet containing the completed, up-to-the-minute dues notices, brochures, and other mailing materials, along with computerized mailing labels. The Editor's Office then prepares, loads, and labels the individual envelopes into which, at the last minute, the new issue of *Metaleptea* is introduced. Mailing follows closely thereafter.

Therein lies the difficulty. The readied envelopes may wait for several weeks before the arrival of *Metaleptea* from the printer's office. It follows that, when *Metaleptea* is eventually mailed and received, perhaps to a distant country, the enclosed dues notices may not reflect recent payments.

The lag in dues notification is a necessary consequence of cost effectiveness and is neither the fault of the Editor nor of the Secretary. It could be remedied, of course, by dues notifications mailed apart from *Metaleptea*. That action, however desirable, would increase operational costs substantially and would force upward adjustment in the Society dues structure which (under President Vickery's direction) we are attempting to keep minimal!

The Membership Committee, consisting of Ted Cohn, Dan Johnson, and myself, is pleased to announce that a list of 380 prominent non-members has been assembled for purposes of membership solicitation. President Vickery and I have drafted a letter to go out under both our signatures to these non-member orthopterists from throughout the world who, by virtue of their professional position and research interests, should be encouraged to join. I am confident that many of them will elect to do so as a result of this initiative.

I might add that each present member of the Orthopterists' Society should consider himself/herself a committee member at-large and, as such, personally responsible for membership solicitation. This is the intent of enclosing, as we do routinely, a society brochure and membership application with every mailing. I hope you are not discarding these materials but are giving them to students, colleagues, and others who, by

virtue of their interests in orthopterology, should be encouraged to join. We are, after all, the only internationally based orthopterists' society left, following the unfortunate demise of the former Association d'Acridologie (which, incidentally, was headed by one of our valued Honorary Members, Dr. F. O. Albrecht).

The latter brings up the subject of Honorary Members. I am pleased to report that, upon nomination by President Vickery and approval by the Board of Governors, Drs. F. Capra and B. Baccetti, both of Italy, are candidates for Honorary Membership. Their candidacy is scheduled to be considered and, hopefully, will be approved by the membership present at the 1989 meeting of the Society.

A new list of publications has been prepared and should be available about the time this issue of *Metaleptea* is mailed. If so, please find it enclosed. (All publications listed are still available for separate purchase from the Secretariat). If not, you will receive a copy in the next mailing.

Our current checking account balance totals \$2,338.41, and our savings account balance is \$1,259.28, for a total bank balance of \$3,597.69. (All figures are in US currency). This small amount is sufficient for present purposes because the Society is heavily subsidized for mailing and copy services by USDA and Wayne State University, but the Society may require a changed dues structure in the future if these subsidies are withdrawn.

Current membership totals 189 persons from 30 countries of the world. Clearly, we can do better.

Stanley K. Gangwere,  
Executive Secretary

GRASSHOPPER PROBLEMS IN MALI -  
TO DILLY BUT NOT TO DALLY

by

DANIEL OTTE

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A trip to Mali to visit Nick Jago and do some cricket collecting has been without question one of my most memorable experiences. If one were to simply look at the slides which Bill Cade and I took, one could get the impression of an unexceptional trip, but the grip this country comes to have on you is subtle. Our first impressions of Mali were formed, as they usually are, by the chaos of Bamako's airport. But 'chaos' is a euphemism! To get your luggage you must hire one of the porters, who takes your check stubs and begins to search by number for the luggage, without any notion of what it looks like. This means that every porter must examine every piece of luggage that comes through the two small holes in the wall. Now, consider that we were two of several hundred grubby persons that the jumbo had just disgorged into a room scarcely large enough to accommodate the passengers alone. Imagine then what happens when each of this legion of porters now attempts to be first to read the numbers on the cases being pushed through the hole. Of course, it was impossible to see the luggage coming in and to point it out to the porter. There were no conveyer belts to take the pieces and spread them around, and some, I think, must have been examined briefly and pushed out the hole again when their numbers did not match. Bill and I stood with Nick amongst this seething mass of weary passengers and well-intentioned but inefficient porters and after an eternity our porter finally showed up with an encouraging smile on his face.

"Success", I thought.

But Nick was quick to dash our hopes: "He's smiling because he's unable to find your luggage."

The night air which greeted us on the way to the Land-Rover was celestial. Having emerged from the terminal unscathed and with our belongings intact, we were now inured to shock, and the trip into town was blissful. Under normal circumstances it should not have been, for Bamako is a bustling city which has evolved over hundreds of years to acquire an atmosphere that, once the Niger River is crossed, treats one to a barrage of novel and not always pleasant sensations. The city lies close by the water and is flanked in the north by a low escarpment of hills which we had to cross on our way north.

In April I had visited Malawi along the Rift Valley in east Africa. North of Bamako I saw vegetation similar to that I'd seen in Malawi, but the similarity is superficial, for it is composed of entirely different groups of plants. The woodland here and the Miombo woodland which crosses the African continent south of the Equator are subject to strong seasonal shifts in rainfall and man-made fires. But since there is no physical connection between the two, a point of interest for me was how the crickets of these two regions would compare.

Mourdiah is the center for Nick Jago's millet project, and we could



work out of this small village, driving or walking in any direction we wished. The town lies in the Sahel and has a variety of habitat types about it--to the east, open woodland on low rocky hills; to the west, low flat drainages mostly covered with millet fields; and to the north, a succession of grass-covered dunes. The timing for cricket hunting in this part of Africa is critical and, thanks to Nick, we timed it perfectly. Never have I encountered crickets in such numbers and diversity. Within a space of a square mile or less, we found the highest diversity of crickets I have ever seen--a local diversity which exceeds that of the Queensland rainforest or of wooded riversides in East Africa. We collected 34 species around Jago's camp, but even more amazing was the taxonomic composition of this fauna. Besides one ground cricket, one Itarine, and six tree crickets, all were field crickets. This surely must represent one of the greatest profusions of field crickets on earth.

And if you have ever wondered where the house cricket (*Acheta domesticus*) came from originally, I think I have the answer: Mali or some other country nearby. One of the surprises of our trip was finding this second most cosmopolitan cricket after dark, scattered all across the countryside, on the ground, on stems of trees, even up in the foliage of low trees. We did not hear it in the villages, where, as is so often the case, *Grylloides sigillatus* (the most cosmopolitan cricket of them all) was dominant. The notion that the house cricket is native here is strengthened by our finding it living with five of its close relatives. We had come to the core of Achetadom.

An expedition was planned for visiting western Mali. Vehicles were prepared and boxes packed, and we set off for Sagala on a hot afternoon. John Rolley, Nick Jago's program coordinator, had a meal in Bamako's finest restaurant resting on a wager with Nick Jago that we would not get through to Sagala at this time of the year. (I hope, John, that by now you have had your meal and perhaps someday you will admit that you were privy to special information!). We did not get far. We did not make it much beyond Dilly, because a moment of hesitation in a wet spot was enough to start the Bedford's wheel spinning and to cause the creation of a grotesque mudhole which kept us digging for the next twenty-four hours.

It had taken us half a day to reach Dilly. There, in the bush west of town, we camped for three days. And after that, with no hope of even reaching Dali, we took another half day to return to Mourdiah. This would seem to be a trip of nightmares, but it was one of the most pleasant interludes I have enjoyed in the field. We made ourselves comfortable, collected insects about the countryside, took baths in wheel tracks along the road, watched and photographed the local herdsmen and at times just walked aimlessly as though in a trance. We counted *Oedaleus senegalensis* which was swarming all about us (160,000 in one small burst of flight during tea). We drank lots of tea, argued about taxonomic methods, joked, told stories, and had more tea. At night, when the locusts began to fly, we had to move our dinner into the shadow of the truck for fear of being hit by them. Even so, one large *Kraussaria* female managed to bomb my cup, splashed coffee over my face and shirt, then flew on to Guinea. After dark other grasshoppers crawled up our tents and ate holes in the screen. But we were fair game--this is the land of the locust. It is a part of the world where

everything flies; of all the orthopteroids to be found here, only a stone mantis seems to be flightless. Even a species of *Cryncus* (a cricket genus previously thought to be always flightless) was flying like the rest. After dark the tires of the Bedford were crawling with crickets. Dozens of little heads were peering out from beneath the treads; males courted, and females kicked sand in their faces.

This is also the kingdom of the blister beetle. I was wounded, and it left a purple 'bullet hole' on my belly; one of the drivers had lost a good deal of skin on his forehead, and another had rolled about on a beetle in the night and lost most of the skin on his back. John Rolley collects blister beetles, but he didn't get many from me. Much of every evening meal was spent with a light under the table looking for and squashing beetles.

On our last evening Nick called out at dusk to me saying: "Dan, look at the grasshoppers!" I looked toward the setting sun and could see grasshoppers of several species flying up from the vegetation and rising to great heights until they disappeared. We were witnessing a phenomenon that must be rarely observed in other parts of the world. The insects were on the move, and they were abandoning what seemed to be fine habitat. But their computers knew better and their programs said: "Go now, regardless."

## THE AFRICAN LOCUST UPDATE

by

DAVID A. NICKLE

*Systematic Entomology Laboratory, BBII, ARS, USDA  
U. S. National Museum of Natural History, Washington, D.C.*

In late 1986 for the first time in 40 years, Senegalese grasshoppers and all four species of African locusts threatened almost simultaneously to develop into severe outbreak population levels which could seriously affect about 20 African nations. In a broad belt across sub-Saharan Africa, Senegalese grasshoppers (*Oedaleus senegalensis*), desert locusts (*Schistocerca gregaria*), and migratory locusts (*Locusta migratoria migratorioides*) swarmed in nearly every country from Senegal on the Atlantic coast to Somalia on the horn of Africa. Uganda, Tanzania, and Zambia were threatened with outbreaks of red locusts (*Nomadacris septemfasciata*), and southern African nations were affected by brown locusts (*Locustana pardalina*).

Control strategies to counter these swarming pests have been made difficult by several factors: (1) political conflicts among neighboring countries have prevented the implementation of control measures against moving swarms; (2) the gradual dismantling of regional pest control facilities because of lack of funds and because locusts had ceased (temporarily, of course!) to be a concern has resulted in a scarcity of equipment and trained personnel to handle the situations as they arose; and (3) the sheer immensity of the problem has gone beyond being international in scope to become a *transcontinental* problem, with swarms getting into Asia and southern Europe and international relief efforts arriving from Europe and North America. These problems were addressed clearly in an article by John Walsh entitled "Return of the Locust: A Cloud Over Africa", which appeared in *Science* 234: 17-19.

Because of the proximity of my office to the State Department in Washington, D.C., I have been called upon several times in the past year to answer questions from the State Department and U. S. AID regarding the recent locust problems in Africa. At the same time, I have requested information from the Agency for International Development to keep me and the Orthopterists' Society informed of anti-locust activities and locust problems as they become known to that organization. The following summary report [Situation Report No. 8, Friday, October 17, 1986, U.S. Agency for International Development] summarizes most of what took place in Africa up to October 8, 1986.

### AFRICA - Insect Infestation

#### I. West Africa

##### A. Senegal:

The second large-plane spraying operation was due to begin Thursday, October 9. Tragically, upon take-off, an engine on one of the planes caught fire; the plane was unable to land safely and crashed into the ocean, killing three crew

members; one crew member survived.

In the aftermath of this tragic event, the spraying operation was postponed and reevaluated. However, several days later, it was decided to resume the operation. Approximately 300,000 hectares were sprayed the week of October 13. The USG contribution to this phase of the grasshopper eradication program was \$756,192.

**B. Mali/Mauritania:**

On October 14, the three remaining DC-7 aircraft flew a six-hour spraying sortie over 40,000 hectares along the Mali and Mauritania border. This successful operation was funded by the United States, Canada, and Norway. Following the sortie, ground teams entered the treatment zone to take grasshopper mortality counts.

**C. Gambia:**

On October 14, U.S. Ambassador Hennemeyer reported that 250,000 hectares were in need of treatment and declared a disaster in Gambia. Donors are scheduled to meet in Dakar on October 16 to agree upon an appropriate plan of action and further donor commitments for Gambia.

**D. Ghana:**

Unusual numbers of grasshopper nymphs have been reported in Northern, Upper West, and Upper East regions of the country. So far reported crop damage has been slight, but more is anticipated once grasshoppers enter the adult stage. The Government's Plant Protection and Quarantine Unit has identified the following grasshopper control needs: 6,500 motorized sprayers and 10,000 liters of pesticides. The Government has not yet made an official request to USAID for assistance, but will keep the Mission informed.

**E. Nigeria:**

Grasshoppers from Chad and Niger have migrated into the northern portion of Nigeria. According to experts, this is the worst invasion in 40 years. The grasshoppers arrived too late to completely destroy crops, but once they lay their eggs, it could mean a serious outbreak next year. Grasshoppers are reportedly being sold and consumed as human food. The Government has contracted a West German company to spray 6,000 hectares and local farmers are using EPA-banned pesticides, which may have serious long-term repercussions.

**II. East Africa**

**A. Ethiopia:**

In general, both the Desert Locust Control Organization and

the Ethiopian Ministry of Agriculture think that the locust situation is currently not serious, although all organizations are continuing both ground and aerial surveillance. However, officials fear a major threat to Ethiopia if large swarms develop in Saudi Arabia.

**B. Sudan:**

The locust situation throughout Sudan is not alarming at this time, although a large infestation of desert locusts has been located north of Kassala (eastern Sudan) covering over 100 sq. km. Given the right weather conditions, there could be a large outbreak of desert locusts along the Red Sea coast during the winter breeding season (November-April).

Aerial spraying operations are currently being carried out in North and South Darfar (western Sudan) against grasshoppers, in Damazine against African migratory locusts, and against a mixture of grasshoppers and African migratory locusts in Gederaf (east Sudan).

**III. Southern Africa**

**A. Botswana:**

Botswana is an excellent example of effective donor coordination and prepositioning of pesticides and equipment. All identified requirements for the upcoming crop season have been funded by donors and provided by the Government of Botswana or FAO. In the southern districts, ten ground spraying teams have been deployed and report a ninety percent kill rate in treated areas. The Botswana government expects the first locust invasions from South Africa in early December and have deployed four teams on the border for continuous surveillance.

**B. South Africa:**

South African Government has deployed 213 ground spraying teams in 42 magiserial districts. Recent cold weather has delayed the outbreak, but upcoming warmer temperatures will accelerate locust egg hatching already taking place in the Karoo Desert, eastern and northern Cape Province, and the Orange Free State. At this stage, the outbreak is under control.

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## MEMBERS' NEWS

Ms. Ludivina Barrientos recently received a CONACYT grant in Mexico to study the acoustic behavior and taxonomy of Mexican *Pterophylla* as part of her Ph.D. program.

Roger Butlin is interested in research on the evolutionary genetics of speciation and sexual selection in *Chorthippus*. At present he is studying the genetics of differences in mate recognition systems between *C. parallelus parallelus* and *C. perythropus*.

Michael H. Blust received his Ph.D. in Entomology at Kansas State University in 1986. His dissertation, "Olfactory, gustatory, and feeding behavior responses of a specialist grasshopper (*Hypochlora alba*) adapted to *Artemisia ludoviciana*, and a non-adapted generalist grasshopper (*Melanoplus sanguinipes*)", was completed under the direction of Dr. Theodore L. Hopkins.

S. K. Gangwere received the Wayne State University Faculty Recognition Award from University Governor George N. Bashara, Jr. on June 13, 1986. The award was for Gangwere's co-authored (with M. G. de Viedma and V. Llorente) book entitled *Libro Rojo de los Ortopteros Ibericos*, Monograph 41, 91 pp. + 11 plates, ICONA, Madrid.

Ashley B. Gurney (retired some years ago from the USDA Systematic Entomology Laboratory, Washington, D.C.) recently wrote the Secretariat with compliments of PAAS' 4th Proceedings. Secretary Gangwere passes on the following: "Ashley tells us that, for about a year, he has been living in a nursing home near Washington. He would like to hear from some of his old friends of The Orthopterists' Society [see address change elsewhere in this issue]. He mentions in his newsy letter of Dave Nickle's new work (co-authored with Margaret Collins) on termites of North America; Ernest Tinkham's many activities in and around Indio, California [see below]; Dave Rentz' beautifully illustrated new volume on the tettigoniine katydids of Australia; and his own (co-authored with Frank Fisk) illustrated key to the cockroaches. The latter (part of a USDA volume on insects of stored food products) has been in press for some time."

At the Eastern Branch Meeting of the Entomological Society of America in Philadelphia, PA, September, 1986, Ashley B. Gurney was awarded the Meritorious Service Award in praise of his research and service contributions over his career. Congratulations, Ashley, from all of us in The Orthopterists' Society!

Theodore L. Hopkins writes, "Comparative studies on the chemistry of sclerotization and pigmentation of grasshopper, cricket, and cockroach cuticle is continuing with a grant from the National Science Foundation. We are also studying plant chemicals that influence orientation and feeding behavior of grasshoppers and crickets. A sabbatical leave was spent in 1984-1985 at the Entomology Division, DSIR in Auckland, New Zealand, doing research on host plant volatiles attractive to the black field cricket,

*Teleogryllus commodus.*

D. K. McE. Kevan writes this lengthy but interesting letter:

..."Dr. Humphrey Fisher of the School of Oriental and African Studies, University of London, has kindly drawn my attention to a recent article of his, which may be of interest to orthopterists, but one which will almost certainly be overlooked by such abstracting journals as members are likely to consult. ...It is:

Fisher, H. 1985. Two Nineteenth-Century accounts of locusts in the Bornu region, near Lake Chad. *Annals of Bornu* [Nigeria], 2:139-148.

The paper discusses, in some detail, extracts dealing with locusts and grasshoppers, etc., included in the following two publications:

Koelle, S.W. 1854. *African Native Literature, or Proverbs...* in the *Kanuri or Bornu Language...* London xiv + 434 pp. [Reprinted in Austria, 1968].

Nachtigal, W. 1879, 1880, 1889. *Sahara und Sudan*. [Berlin?]. 3 vols. [Reprinted 1967; English translation in 4 vols.: 1 (1974), 2 (1980), 3 (in preparation), 4 (1971)].

'An Account of Locusts' is reproduced in full from the former (pp. 198-204), together with comments and notes on this and other passages, and on Nachtigal's work. There is fairly lengthy introduction relating the two sources, particularly the first, to the subject. It is explained that Koelle (who compiled his work in Sierra Leone, not in the Lake Chad region) got his information from a freed Kanuri slave named Ali Eisami. An attempt is made to relate the latter's account of 'Kaman' locusts [almost certainly *Locusta migratoria migratorioides* (R. & F.)] swarms to their date of occurrence, one or two years after an eclipse of the sun [not caused by the locusts but by the moon!], which occurred on 29.XI.1807; i.e., the swarms had appeared in 1808 or 1809 - probably in July. This could, however, have been mid 1810, as Ali Eisami's exact dates, and others associated with them, are subject to some doubts. [In any event, this would seem to be the earliest, reasonably reliable record of Migratory locust swarms in this region of Africa].

Although Nachtigal's account relating to 1870-73, reports on the ravages of "Kaman' locusts, no disastrous outbreak seems to have occurred whilst he was in the Lake Chad area, or within a reasonable period prior to his visit, though clearly there had been such in the past [This is, in effect, a negative report confirming the locust recession of that time; the earliest West African (post-1870) report given by O. B. Lean, 1931, *Bull. ent. Res.* 22: 376, and E. Betts, 1961. *Anti-Locust Mem.* 6:15 is ca. 1875-6 for Zaire].

Koelle's 'account of the locusts' actually describes, in vague detail, six 'varieties' of grasshoppers [they probably all belong to different species (most of them not strictly 'locusts'), but they possibly may not; one is probably the migratory conocephalid bush-cricket, *Ruspolia differens* (Serville)]. A seventh is mentioned only in his vocabulary. Various notes on pest status, biology, and particularly on use as human food are given for each. It may be possible to identify some others of Koelle's species, but this is not the place to attempt it.

Nachtigal lists six of Koelle's orthopteroids and adds eight more, which are described briefly, but mostly not sufficiently well for identification (at least not here). An exception, however, is the *Kafi ngolondo mairambe* (Princess's finger[hopper]), which feeds on *Calotropis procera*. [I can state without hesitation that this is *Poecilocerus bufonius heiroglyphicus* (Klug)]. It is said to have a 'sharp' taste. [It is actually poisonous to eat, and is, in fact, the same as the *Tumfafiya* hopper of the Hausa of Nigeria and adjacent regions - see G. B. Popov and D. K. McE. Kevan, 1979. *Anti-Locust Bull.* 51: 6]. Nachtigal also notes two species of cricket and, speaking of the Tibesti, not the Lake Chad region, an injurious acridid called *Gomaru* [conceivably the Desert locust, *Schistocerca gregaria* (Forsk.)].

In the above 'abstract', certain comments are given in square brackets in order to indicate that they are not included in Dr. Fisher's paper.

...Perhaps in conclusion, it should be noted that locust workers have not entirely overlooked Koelle's contribution, for F. D. Golding, in an article entitled "Locusts" (1941, *Farm & Forest*, Ibadan, 2: 124-130) discussed it superficially (without attempting to date the events). Golding's paper and comments on Koelle are referred to briefly in the comprehensive Migratory locust survey of Nigeria (including Bornu) by J. T. Davey and H. B. Johnston (1956, *Anti-Locust Bull.* 22: i-iv, 1-99 (p. 3)). G. B. Popov (1972, *Misc. Rep. Cent. Overs. Pest Res.* 3: 1-7), in a paper referring to a fairly recent outbreak of Migratory locust, specifically in the Bornu region, while commending the work of Davey and Johnston, makes no mention of the early Bornu reports of Koelle (or of Golding's reference to them). None of the above authors refers to Nachtigal."

Robert Lavigne writes, "...I have been working in Baidoa, Somalia for the past 15 months as entomologist and Chief of Party for the University of Wyoming Team. Baidoa is a community approximately 250 km inland from Mogadishu, the capital, and the Red Sea. We are running a newly constructed agricultural research station where we work on problems faced by subsistence farmers in growing crops in the semi-arid tropics. As entomologist I am working primarily on the life history and control of sorghum stalk borers, but occasionally have time to collect Orthoptera, which in many cases are weird and wonderful. It is my hope, if I am here long enough, to establish a regional collection of insects. If anyone has extra reprints of articles dealing with the taxonomy of East African Orthoptera, we would greatly appreciate obtaining them. Mail comes through diplomatic pouch to the above address or can be addressed to: Dr. Robert Lavigne, Wyoming Team, BRADP, Box 2971, Mogadishu, Somalia. Take note that mail to this area is exceptionally slow."

Jeffrey A. Lockwood is currently involved in ethological studies of *Aulocara ellioti* and research concerning scavenging and cannibalism in rangeland grasshopper species. He received the L. D. Newsom Award (Louisiana State University) for 1986.

C. H. F. Rowell would like to hear from workers engaged in or with experience regarding gel electrophoresis of acridid isozymes, especially any work involving population structure or using endemic New World subfamilies.



Ernest R. Tinkham of Indio, California, compliments the Society on the *4th Proceedings and Metaleptea*. Now 82 years old, he continues with a busy schedule, operating a desert nature center, occasionally acting as a class instructor in various schools throughout the Coachella Valley, rearing several species of birds, reptiles, and Orthoptera, and writing poetry (for which he recently won a number of awards).

Chen Yonglin would appreciate receiving specimens of *Locusta migratoria*, especially from colleagues in the Far East and Southeast Asia.

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#### NOTE

An article entitled *Katydid*s of Peru by David A. Nickle, slated to appear in this issue, has been postponed until next issue in order to cover more information based on an additional field trip to Iquitos, Peru.