

Metaleptea

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JOR MANAGING EDITOR DANIEL OTTE RETIRES (LARGELY)

After seven years of yeoman service in producing our flagship Journal of Orthoptera Research, and after "putting to bed" Number 8 (due out in December), Managing Editor Daniel Otte has partially retired. Without having been an Editor it is probably hard for anyone to appreciate the amount of work that has to be done in reading manuscripts, riding herd on reviewers to read manuscripts and return their comments on time, making judgments on accepting or rejecting manuscripts, whipping manuscripts into shape, and finally composing the whole issue. I have seen bits and pieces of this, especially the last as I have brought to the printer the text and the great masses of art work with complex instructions as to how to handle each piece, where it goes, and how to fit it in. To do this job each year and to get everything done in time to have the issue appear at the appropriate time requires great organizing skill as well as an awful amount of time. I can imagine how much this task took from Dan's first love, research, and for this service we owe him a great debt of gratitude. It is the JOR more than anything else that has put the Society "on the map" of science and has certainly made our fellow biologists sit up and take notice.

On Dan's recommendation, I have appointed Glenn K. Morris of the University of Toronto as the new Editor. He and Dan have agreed to work together to make the transition as smooth as possible, and Dan has agreed to continue composing the final copy at least in the near future. Thank you Glenn for taking on this time-consuming but vital job for the Society. T. J. Cohn

THANKS TO NEW SUSTAINING MEMBERS

At this time, fourteen Society members have renewed at the new Sustaining Membership rate, joining four officers and a former officer who are already sustaining members. Many thanks to all of you. (If I have missed any, my most sincere apologies.)

Amedegnato, Christianne (also a Life Member)
 Cohn, Theodore (President)
 Eades, David
 Gapparpov, Furkat
 Hilliard, John
 Hopkins, Theodore
 Kosal, Erica
 Lavigne, Robert
 Morris, Glenn (Editor)
 Pener, Paul (former Regional Rep.)
 Rence, Bradford
 Rentz, David (Past President)
 Samways, Michael (Regional Rep.)
 Shaw, Kenneth
 Sismondo, Enrico
 Tyrkus, Michael
 Weissman, David
 Whitman, Douglas
 Willey, Robert

Such generosity assures the Society a higher level of regular income, thus giving us of sufficient funds for current programs (such as the giant 1999 number of JOR which is now at the printer), to expand old ones and to contemplate initiation of new ones. It also means that we can maintain the current low rate for regular dues and subscriptions, thus allowing all orthopterists to participate in the Society regardless of their economic situation.

MEMBERSHIP RENEWAL REMINDER

Only about half our members have sent in their dues and subscriptions by the time this issue was "put to bed" in late November. In December we will have to pay for a very large issue of the Journal of Orthoptera Research before plate and page charges come in, as well as pay for a new set of Research Grantees. So please do not forget to renew your memberships and subscriptions and contribute what you can to the Research Fund and to Sponsored Memberships.

LOST ORTHOPTERISTS

The following members of the Orthopterists' Society have had their mail returned. If you know of the whereabouts of these orthopterists, please let me know; we will change their addresses so that they can again participate in the affairs of the Society.

Mohammed Al-Harbi, Saudi Arabia
 Aziz Ajlan, Saudi Arabia
 Ulf Carlberg, Sweden
 Carl Castleton, Dominican Republic
 Volkhart Leffler, Mauretania
 Simon Mole, Nebraska
 Julianne Peterson, North Carolina
 Sonia Virdee, Great Britain

NEW MEMBERS

The Orthopterists' society extends a warm welcome to the following new members whose telephone and Fax numbers and E-mail addresses will shortly be entered into the Society's Website:

BIERINGER, MAG. GEORG
 Dept. Terrestrial Ecology, University of Vienna
 Heugasse 17, 2544 Leobersdorf, Austria
 Ecology and conservation of grasshoppers in
 Central Europe dry grassland

BROZA, DR. MEIR
 University of Haifa at Oranim, Tivon 36006, Israel
 Tettigoniid and gryllotalpid speciation, taxonomy taxonomy and phenology; acridid phenology, ecology, and hormonal control

LIU, MS. PEGGY
 Dept. Zoology, University of British Columbia
 6270 University Blvd., Vancouver, BC V6T 1Z4, Canada
 Effects of grazing on Orthoptera and Grylloptera, biodiversity in the South Okanagan (British Columbia)

MAHMOOD, DR. KHALID
 University College of Agriculture
 Rawalakot, Poonch, A. K., Pakistan

HASAN, DR. SEVGILI
 Hacettepe Universitesi, Fen Fakültesi.
 Biyoloji bölümü
 06532 Byeteppe-Ankara, Turkey

SONG, MS. HOJUN
 (Dept. Entomology, Cornell University)
 934 Stewart Ave. #4, Ithaca, NY 14850
 Orthopteran systematics, especially phylogenetic relationships among the Cyrtacanthacrinae (Acrididae)

WAGNER, DR. WILLIAM E.
 School of Biological Sciences, University of Nebraska
 Lincoln, NE 68588-0118
 Sexual selection, natural selection, acoustic communication, mating systems

LOCUSTS, LIZARDS AND LYMPH NODES (Part One)

Gregory Sword

Section of Integrative Biology and Brackenridge Field Laboratory
University of Texas, Austin, TX 78712

In 1997 I was fortunate enough to receive a grant from the Orthopterists' Society Research Fund to study a novel case of density-dependent warning coloration in the grasshopper, *Schistocerca emarginata* (= *lineata*). Here I provide a little synopsis of the events preceding as well as following its receipt. There's a lot to cover, so I won't wallow in the technical details. Some of this story has been published already, but some has not. I've provided a bare bones and necessarily incomplete reference list for anyone interested in the specifics. You'll have to trust me about the unpublished stuff for now. I'll have it out soon. I hope.

I must admit that when I first spotted bright yellow-and-black juvenile *S. emarginata* grasshoppers in Texas in 1994, I didn't get very excited about their color patterns. They certainly appeared to be aposematic, but I already knew a little bit about *Schistocerca* coloration. Locust species such as *Schistocerca gregaria*, the infamous desert locust, exhibit phenotypic plasticity in coloration as well as many other morphological, physiological and behavioral traits in response to changes in their population density. Desert locust juveniles are commonly yellow-and-black or orange-and-black in the field. At that point in time, no one thought they were unpalatable to their predators. Since the desert locust is the common ancestor of all the New World *Schistocerca* species, it seemed logical to assume that *S. emarginata* nymphs could be yellow-and-black, but not aposematic. Just to be sure though, I popped the hind legs off of a nymph or two and chewed them up. They didn't taste any worse (or better) than you might expect palatable grasshopper legs to taste. Based on the results of my impromptu field bioassay and the lack of evidence for unpalatability in any other *Schistocerca* species, I shrugged off the aposematism idea.

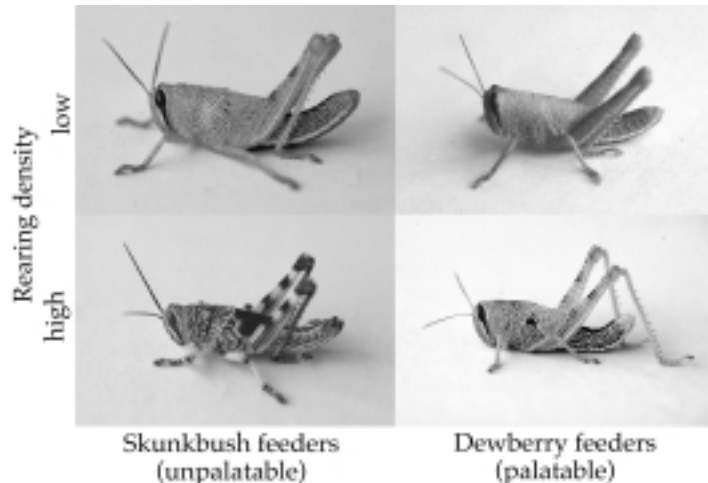
I continued to study the host plant use ecology of *S. emarginata*. Populations of *S. emarginata* in Texas

exhibit interesting developmental and geographic patterns of host plant use. The juveniles specialize on certain host plants while the adults commonly feed on multiple unrelated plants. In the populations I studied, the nymphs were feeding mainly on either Skunkbush, *Ptelea trifoliata* (Rutaceae), or Dewberry, *Rubus trivialis* (Rosaceae). If one only studied adult host plant use in these populations, the underlying patterns of nymphal host plant specificity could be completely overlooked. This omission could be costly. Juvenile host plant use turns out to be the key to understanding a lot of the biology of *S. emarginata*.

What do lizards have to do with this? One day I offered some grasshoppers left over from an experiment to a herpetologist who was rearing Gould's Monitor lizards from Australia. These lizards are voracious, highly visual predators and watching them hunt is a special thrill. One particular beast was about 1 meter long and we offered it a final instar yellow-and-black *S. emarginata* nymph (about 3cm). The lizard spotted the grasshopper, crossed the distance of its cage, captured the hopper into its mouth.....and spit it out!

The grasshopper jumped away unscathed and the lizard refused to re-attack. The herpetologists in the room were amazed because the lizard had never rejected prey before, not to mention fingers and hands. I was amazed because I finally realized what was going on. The grasshoppers had been reared in my lab on their native host plant, Skunkbush. I reasoned that it must have been the plant inside the grasshopper's gut as opposed to sequestration or endogenous toxin production that conferred unpalatability to predators. Perhaps their yellow-and-black coloration was aposematic after all.

Armed with my new insight and a grant from the Orthopterists' Society Research Fund, I further investigated the relationship between coloration and deterrence to predators in *S. emarginata*. In short I found that



juveniles from populations feeding on Skunkbush exhibit an extreme density-dependent color change that can result in cryptic green or conspicuous yellow-and-black individuals at low and high-rearing densities respectively. *Anolis carolinensis* lizards rejected and subsequently learned to avoid the yellow-and-black grasshoppers when they ate Skunkbush, but not when they ate Dewberry. So *S. emarginata* from populations feeding on Skunkbush can exhibit density-dependent warning coloration. They can be green and cryptic at low population density, but they can also change their coloration in order to express warning coloration at high population density. Juveniles from populations feeding on Dewberry also exhibit a density-dependent color change, but its extent is much reduced. The high-density form is much less conspicuous. Since they are palatable to their predators when they eat Dewberry, there is no benefit to expressing warning coloration regardless of their population density. See Figure 1 for examples of the different density-dependent color patterns.

Importantly, the density-dependent color change is independent of grasshopper diet. The ability to change color in response to population density appears to have differentially evolved as a result of selection for warning coloration in Skunkbush-feeding populations and against it in those feeding on Dewberry. Populations feeding on Skunkbush represent a distinct mtDNA lineage from those feeding on Dewberry. Whether the two host plant-associated forms are separate host races or distinct sister species is currently under investigation. Here again, understanding juvenile host plant use in *S. emarginata* provides further insight into its biology, its population genetics in this case.

Unpalatability to predators was due to Skunkbush in the grasshoppers' guts and could be rapidly lost by feeding the grasshoppers a different plant. The unpalatability conferred by Skunkbush is likely due to a number of Rutaceous alkaloids, though it also contains phototoxic furanocoumarins. Often the Skunkbush-fed grasshoppers were either regurgitated or released prior to consumption by the attacking lizards. Some nymphs even survived their encounter with the lizard, suggesting that regurgitation of their gut contents containing the toxic plant was enough to elicit rejection by predators. In fact, the regurgitate of Skunkbush-fed grasshoppers applied to crickets caused them to be rejected by lizards as well. I also conducted another round of my own personal taste tests, this time chewing up the entire insect, gut contents and all. Those grasshoppers fed Skunkbush were rancid while those fed Dewberry were, relatively speaking, quite pleasant.

The fact that *S. emarginata* nymphs from Skunkbush-feeding populations use their population density as the cue mediating the expression of warning coloration has some important implications. Although the case of *S. emarginata* was the first demonstration of density-dependent aposematism, this doesn't mean that it's the only time such a phenomenon has ever occurred. Similar instances of plasticity in coloration may have been important adaptive intermediate stages in the evolution of aposematism in the insects at large. Evolutionary biologists have long puzzled about the evolution of warning coloration due to the density-dependent costs of conspicuousness. Among unpalatable prey, the first conspicuous individual(s) in a population should suffer an increased cost of discovery by predators. Additionally, predators often require multiple experiences with conspicuous prey in order to learn to avoid them. So if unpalatable conspicuous prey are rare, they may suffer a two-fold cost of conspicuousness relative to the cryptic majority. Using population density as a cue for switching between crypsis and conspicuousness can allow organisms to reduce the initial costs of conspicuousness. There are many examples of density-dependent color change in multiple unrelated insect groups. Some evidence even suggests that density-dependent color change may be a by-product of a density-dependent immune response among insects in general. If so, this could provide a source of variation for natural selection to act on should the expression of warning coloration become beneficial. The evidence from *S. emarginata* suggests that simply ingesting a toxic plant may be all that it takes to become deterrent to predators.

[Tune in to the next issue of Metaleptea for OK, the thrilling finale- still to come are golf-ball size lymph nodes.]

METALEPTEA GOES ONLINE

Thanks to our Webmaster, Piotr Naskrecki, the last four issues of Metaleptea can now be found on our Website: http://viceroy.eeb.uconn.edu/OS_Homepage

Some members might prefer to read Metaleptea on our Website and dispense with the printed copy. Downloading and printing particular articles is very easy. This would save the Society a great deal in printing and postage costs, and would conserve on paper.

If you would like to use this option, please e-mail the Acting Editor at: tcohn@sunstroke.sdsu.edu.

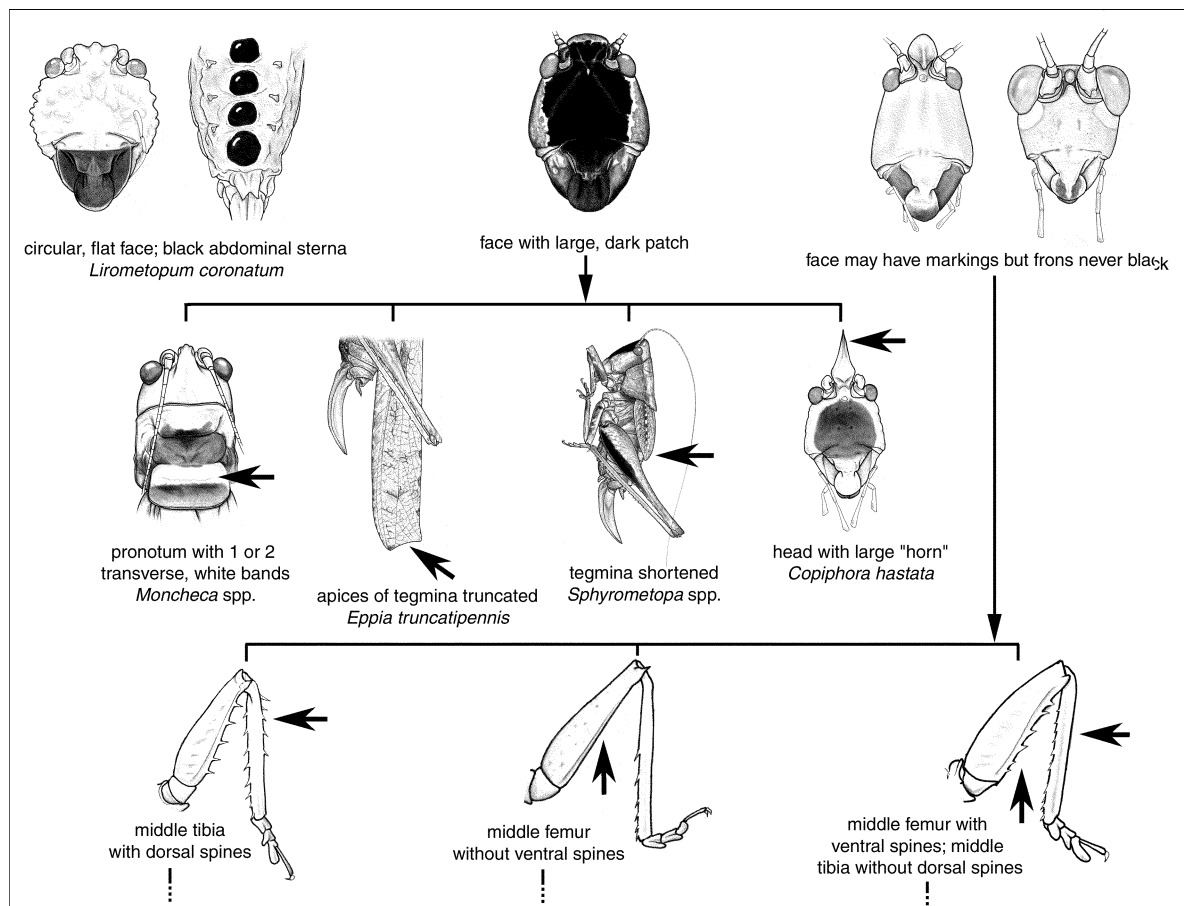
COMING SOON

Piotr Naskrecki's Katydids of Costa Rica - Volume 1

This handsome volume, the latest in the Society's Publications on Orthopteran Diversity, is now at the printers and should be available in late December or January. It is beautifully illustrated, has innovative pictorial keys, and thorough descriptions of all species of the cone-head katydids (sub-families Conocephalinae, Copiphorinae and Agraeciinae) known to occur in Costa Rica. Accompanying the volume is a CD ROM which includes songs, additional color photographs, and expanded keys for identification.

Orders may be placed with Editor Daniel Otte at the Academy of Natural Sciences of Philadelphia, or with author Piotr Naskrecki, or with Executive Director Jeffrey Lockwood (check our Website for their addresses). The price will be \$20 for both the text and the CD. Make checks out to "Orthopterists' Society." Visa and Mastercharge orders will be accepted (please include a signed authorization, the card number and its expiration date). The price does not include shipping costs therefore please add an amount sufficient to cover shipping costs to your country or state.

We urge all members to consider purchasing this volume, as the income will be used as a revolving fund to publish the next issue in this series.



A section of the key to Costa Rican cone-head katydids from Naskrecki's "Katydids of Costa Rica - Volume 1".

NEWS FROM OUR WEBSITE

http://viceroy.eeb.uconn.edu/OS_Homepage

EXPERTISE FIELD. Twenty members have upgraded their expertise field since the request for doing so appeared in the last *Metaleptea*- thank you very much. I hope **ALL** of our members will review this field and add enough detail to make it a significant source of information for members and non-members as well. Think in terms of a naive orthopterist seeking expert advice on her or his problem.

NEW FIELD. Our webmaster, Piotr Naskrecki, has suggested that a new field be added for current and future projects. It would be very useful to know just what members in various fields are working on at the moment and what they are contemplating doing next. For taxonomists, it would be of great value to know what genera are currently being revised. As many taxonomists, for example, need to accumulate material for a revision they may have started this, would be a good place to advertise.

PROPER ADDRESSES. Would you all please check your address labels on the next *Metaleptea* and advise us on the proper format. For example, it is not clear to us whether a postal code comes before the city, or after it, or on a separate line. In the United States it is a great aid to our Postal Service if the postal code comes after the city and the state. Please send me (tcohn@sunstroke.sdsu.edu, or Dr. Theodore J. Cohn/ Insect Division, Museum of Zoology/University of Michigan/Ann Arbor, MI 48109-1079/USA) your corrected address with a slash mark (/) separating lines.

Some addresses are so long that we have trouble fitting them on our labels- I think that we can take four lines of address below the name, not including the country.

PROPER TITLES. We would also appreciate knowing how you would like to have your mail addressed in terms of your title- it is embarrassing to us to use wrong titles. So please let us know whether you prefer: Mr., Ms., Dr., Ing., Prof., Mag., etc.

PRICE REDUCED

Otte's Handbooks of North American Grasshoppers

Harvard University Press "Spring Sale" includes both volumes of Dan Otte's "The North American Grasshoppers" (Gomphocerinae, and Oedipodinae) for a 2 volume sales price of \$71.00 (plus \$5.00 for Postage and Handling). These volumes normally cost \$83.50 and \$85.50 respectively for EACH volume. You can order by calling toll-free 1-800-726-3244 (open 24 hours a day, seven days a week) and can pay by credit card. But be sure to tell them you want to order the set at the sale price. The sale expires on 29 February 2000. What a great holiday gift.

OUR SISTER SOCIETIES

With this column I would like to see the Orthopterists' Society develop contacts with our sister societies. Many members, myself included, are not aware of active organizations outside our own countries or continents, and are perhaps missing important papers and meetings. Please send information about your society, your subject emphases, publications, meetings, and webpages, and how one can become a member. In turn our society would appreciate being mentioned in your organization and having you encourage your members to join us as well.

Japanese Orthopterological Society

Our sister society in Japan was founded 20 years ago as the Research Group of Orthoptera, and is now headed by Professor Norihiro Ueshima of Matusaka University, Mie, Japan. It publishes a newsletter, "Battarigisu," and a journal, "Tettigonia," as the "Memoirs of the Orthopterological Society of Japan." Volume 1, No. 1 was published in February, 1996, and Vol. 1, No. 2 appeared on 31 March 1999. The first number contains descriptions of a new melanopline genus (by A. Ichikawa), a new *Gymnogryllus* (by Y. Kano), and two new species and subspecies of *Parapodisma* with a study of their distribution and variation (by O. Tominaga, S. Storozhenko & Y. Kano). The second number contains nine short papers, and a long one by Kano, et al, reviewing the Japanese brachypterous Meconematinae comprising four genera and 18 previously known species, in addition to the five genera, 16 species and four subspecies described in this paper. In addition, there will shortly appear, "Catalogues of Japanese

Orthopteroids" by A. Ichikawa, on 3.5 inch floppy disks in MS-DOS. These may be obtained from the author by contacting him at "tatrix@nyc.odn.ne.jp" or "akihikoichikawa@hotmail.com."

The Phasmid Study Group by Paul D. Brock

I been studying phasmids (stick and leaf insects) for about 30 years and have been a member of the Phasmid Study Group (PSG) since it was formed in 1980. Whilst I have written several books, numerous papers and articles, there are always more subjects to cover. These insects are very understudied.

I always have a long list of projects to start / complete (sounds familiar?!) in between taking holidays in search of phasmids. Recent highlights include finding attractive undescribed Australian species around the time of the OS conference in Cairns (joint collecting trip made with OS members David Rentz and Lyn Lowe), and a 1998 trip to the Cape Town area, South Africa. Not only was I able to find two small South African species I wanted to see, within yards of our cottage accommoda-

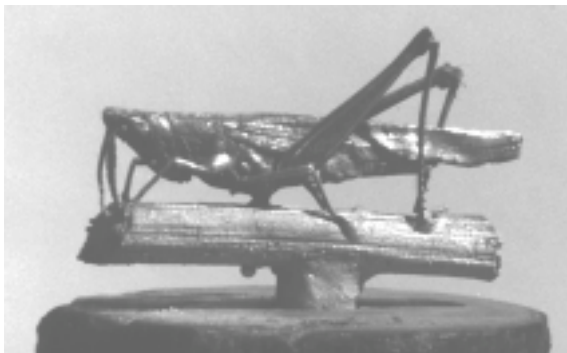
tion, I also found an unrecorded alien introduction, the Laboratory or Indian Stick-insect *Carausius morosus*. On many trips abroad, I have obtained culture stocks and exchanged material with members, or given stocks to the PSGs Livestock Co-ordinator, for distribution to members. This is a fundamental part of the Group's activities, where members can derive pleasure from rearing or studying around 100 species, all for the price of postage costs - subject to a major rule "Members are not permitted to sell livestock they obtain through the Group".

Livestock is only one feature of the Group, which has over 500 members in 20 countries. The Group attempts to cater to all interests by publishing a quarterly Newsletter and the biannual Phasmid Studies for larger articles. Two meetings are held each year, usually at the Natural History Museum, London, which always attract visitors from overseas. There are few members with the same degree of interest in phasmids as myself; many members are children with only a casual interest in breeding species, although the Group has a good mixture of amateur and

SILVER ORTHOPTERANS

Prof. Carlos Carbonell, dean of South American acridologists, has discovered a master silversmith, Sr. Mario Shettini (also a famous artistic photographer) who has developed a method to produce exact replicas of grasshoppers in silver. These are precise in every detail, from wing venation to tibial spurs. Two examples are illustrated below.

They are made by what Prof. Carbonell calls the lost specimen technique (a variant of the lost wax method?) in which the insect is destroyed in the process. (It is thus not appropriate for the permanent preservation of types!) If you would like a silver replica of your favorite grasshopper, send the specimen to Prof. Carbonell; it should be preserved in Pampel, or a similar liquid, or in 80% alcohol



to which has been added some glycerin. Dry specimens are not as good as alcoholics in this process. If the buyer is not choosy, Sr. Shettini and Prof. Carbonell will select a local grasshopper, most likely a melanopline.

Arrangements can be made with Prof. Carbonell to have your favorite grasshopper or other orthopteran reproduced in silver for a minimum charge of US\$60. Contact Prof. Carbonell at his E-mail address "luis_carbonell@montevideo.com.uy" or by mail, Casilla de Correo 490, 11000 Montevideo, Uruguay.

professional entomologists, or organisations which only wish to receive the publications.

To join the Group please request an application form from the Membership Secretary/Treasurer, Paul D. Brock, "Papillon", 40 Thorndike Road, Slough SL2 1SR, U.K. Current subscription rates are £5 (UK), £6.50 (Europe) or £7.50 (Overseas); payment must be sent in Sterling, drawn on a U.K. Bank or request details of alternative methods.

TECHNIQUES

Preserving Fragile Stick Insects.

By Paul D. Brock, "Papillon", 40 Thorndike Road, Slough SL2 1SR, U.K.

From time to time, entomologists have enquired about methods of packing fragile phasmids in the field and setting them without loss of legs. I have also often received badly damaged papered specimens by post.

It is impossible to set a fragile phasmid which has hardened in an awkward position, with legs literally all over the place! Try to set them and the legs easily drop off. However, species with more robust legs are usually no problem.

When papering phasmids, entomologists tend to use triangular or rectangular paper envelopes, which are often unsatisfactory, because the legs and perhaps body, may harden in an awkward position for setting (although these packets are suitable for many insects). It is preferable to use a piece of thin cardboard, cut to a suitable size. Place the insect on a tissue paper or similar base, and gently spread the legs in a similar position to how you would set the insect. Then place cellophane over the top, stapling it around the edges, so the insect cannot move around in the "packet" (care - if the insect is damp or you are in the tropics, mould may develop. Therefore, allow the insect to dry before stapling the cellophane cover. Keep the packages in a tin with preservative, for later setting. All too often, I receive similar well prepared packets, but with a cotton wool base, which results in legs dropping off when removing each insect.

There are, of course, various options when field collecting. Most phasmids are found at night, and instead of placing them in a killing jar, you could use a collecting box (beware of fast moving insects when

opening the lid) and kill them later; perhaps after photographing them. If you are periodically removing contents of the killing jar, I suggest that you bring along pre-prepared packages, half stapled (as described above), which should save time and broken limbs when setting specimens at a later date.

CURRENT CONTROVERSIES

As no one has submitted a controversial article, I herewith submit the following which is certain to stimulate howls of distress.

Nomenclatorial Stability and the Law of Priority

Non-taxonomists are surely often confused, annoyed, and inconvenienced by changes in the scientific names of common species. Indeed, such changes may be counterproductive as biologists may fail to recognize important research reported under the previous name or the new name. In my case for example, I no longer remember what the old scientific names are for the Lesser Migratory Locust in the United States and Mexico, and have to laboriously check the matter in Otte's Orthoptera Species File when I read a paper using the old name. Many non-taxonomist biologists may not be familiar enough with taxonomic literature to know how to determine what the old names were, or for that matter how to find out what the proper current name is.

I have not checked the historical literature to find out why the International Rules of Zoological Nomenclature were developed, but the most important reason must have been to infuse some stability into nomenclature with unambiguous, objective, and easily applicable rules. As one of my colleagues put it, "the old boys often played very loosely with published names," in response to my question of why Burmeister took a perfectly valid generic name (*Anostostomata*), reduced it to specific status and erected a new one (*Stenopelmatus*), all for a relatively well known species (*australasiae* Gray).

The Law of Priority was the most significant rule regarding name changes in the International Rules of Zoological Nomenclature. It requires that a prior name must be used for a more recent name for the same species, so long as the older name meets the requirements of publication and formation. This rule works well when there is a confusion of names currently being

used for the same species. Unfortunately, the Law of Priority has been sometimes invoked when modern research has uncovered a previously validly published name that has escaped the notice of specialists for many years. While it may be honest and scholarly to resurrect such a name, it hardly contributes to the stability of names to do so. Names, after all, are keys to the literature and the means of communication and application of research. If the old name was not used after its publication, it serves no practical purpose to resurrect it, and if resurrected actually confuses communication because in fact both names have to be used in order to make prior literature identifiable.

Such a case occurred recently when Kevan (1980) proposed changing the name of the common Eastern Lubber Grasshopper, *Romalea microptera*, known to a vast number of college students who have dissected it as “the insect” in beginning biology courses. Kevan correctly pointed out that, according to an obscure paper by Griffin (Jour. Soc. for the Bibliography of Nat. Hist., Vol. 1, 1937), the book in which the species name *microptera* was first used, long thought to have been published in 1805, was actually published in 1817, and therefore *microptera* is antedated by the name *gutatta* published in 1813. Kevan himself said that *guttata* was used only one time in the 167 years since its publication!!

It is mystifying to me why Kevan thought that such a name change could better serve the biological community than retaining the old and well-known name. Indeed he violated the intent of the Rules of Zoological Nomenclature as stated in the 1961 Code, under which he operated, “The object of the Code is to promote stability and universality in the scientific names of animals... Priority is the basic principle of zoological nomenclature. Its application...may be moderated to preserve a long-accepted name in its accustomed meaning.” In the this code, Article 23 (the Law of Priority) included section (b) which allowed a name unused for

50 years to be suppressed. This was replaced in 1972 when the International Congress of Zoology adopted without objection the following wording in place of sections (a) and (b) of Article 23, “Purpose- The Law of Priority is to be used to promote stability and is not to be used to upset long-established name in its accustomed meaning through the introduction of an unused senior synonym” [bold facing mine, TJC] (contra Vickery, “according to the priority rule a name change was necessary,” in *Metaleptea* 16 [1], Feb. 1996). Unfortunately this Article continues with the statement that “ a zoologist who considers the application of the Law of Priority ..would disturb stability... is to maintain existing usage and must refer the case to the Commission...” Kevan states that the change he proposed would not result in instability because, “the amount of literature on the species ... is surprisingly rather limited” and that he therefore apparently felt that he was not obligated to submit the change to the Commission. Of course the necessary “amount of .literature” judged to be significant, is a matter of opinion, but a quick sampling of that literature reveals 24 papers using *microptera* between 1880 and 1932 (Caudell manuscript 1932 catalog), and four references in just 1978 and 1979 (*Zoological Record*), the two years immediately preceding Kevan’s publication in the Sept. & Oct. issue of *Ent. News* for 1980. In the years after Kevan’s publication, there have been 11 scientific papers using *microptera* and 24 using *guttata* thus causing precisely the confusion that the Code has tried to obviate, although since 1992 all papers have used *guttata*. I have not checked textbook references but would guess that most of them are still using *microptera*.

Because Kevan violated the spirit of the Law of Priority, and avoided the letter of that law by a personal opinion that is at best questionable, I think that biologists can safely ignore the change and continue to use the established and well-known name, *Romalea microptera* (Palisot de Beauvois).