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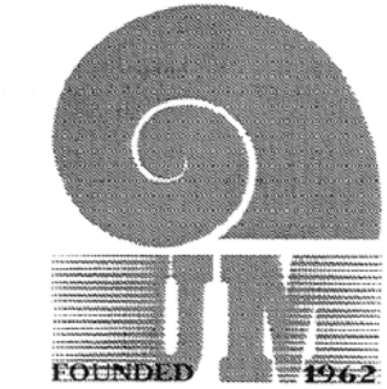
UNITAS MALACOLOGICA



Newsletter

Number 26
March 2008

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Dear Members,

As of late 2007, the complete back catalogue of the UM Newsletter is online to download: http://tinyurl.com/2leytc

This was a successful joint project between your editor, Jackie Van Goethem and his staff in Brussels, and Paul Valentich-Scott. So feel free to download all the issues to complete your library (or, rest assured, they will be on the website whenever you need to re-live malacological moments from the 1980s and 1990s). As you know, we try to economise by distributing the newsletter primarily by email (postage to a worldwide membership is a challenge to any budget). If you have received a copy of the newsletter by post, but have an email address, please send your email contact details to me!

This issue includes several interesting communications from our members (p. 8, 9, 10). I really encourage you all to contribute reports of this sort for future issues – send in your musings!

As always, we are particularly delighted to see reports on the research of four of our recent student award winners (p. 12, 14, 15, 16). The application deadline for UM student research awards is coming up again at the end of May (see p. 18).

In the year 2008 we celebrate many things. This summer and autumn will bring important malacological meetings on three continents (p. 6). February this year included not only the beginning of the lunar New Year but also a Leap Day (which is a rare event and also your loyal editor's wedding anniversary). Although sadly there are no molluscs in the lunar zodiac, I hope the Year of the Golden Rat is successful and auspicious for you all.

UMN27 is scheduled for autumn 2008.

JDS

Erratum – UMN25

Please note, the UM second prize for oral presentation at the WCM 2007 (Antwerp) was awarded to Hiroki Utsuno, of Shinshu University, Japan. This was reported incorrectly in the previous issue of the Newsletter and his name was inadvertently omitted. *Congratulations Hiroki!*

Our aim is to further the study of Mollusca by individuals, societies and institutions world-wide

Affiliated Organisations

American Malacological Society | Belgische Vereniging voor Conchyliologie | Deutsche Malakozoologische Gesellschaft | Friedrich Held Gesellschaft | Instituto Português de Malacologia | King Leopold III Foundation | Latvian Malacological Society | Malacological Society of Australasia Ltd | The Malacological Society of Japan | The Malacological Society of London | Malacological Society of the Philippines | Malacozoological Association of Yamaguchi | Nederlandse Malacologische Vereniging | Naturmuseum Senckenberg | Sociedade Brasileira de Malacologia | Sociedad Española de Malacología | Sociedad Malacológica de Chile | Società Italiana di Malacologia | Société belge de Malacologie | Society for Experimental and Descriptive Malacology | Société française de Malacologie | The Western Society of Malacologists

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President's Message

Dear Members

After my first message to you all since receiving the presidency of UNITAS, in Newsletter Number 25, August 2007, I have been to many places in Asia to visit Asian malacologists. It seems that we will have many more UNITAS members from Asia, and we have agreed for a concrete plan of establishing an Asian Society. I am now seeking sponsorships inviting them to hold a meeting in Thailand. One important item is the need to establish a Thai Society of Malacology, and this was discussed at the Thai malacologist meeting on the 29th January regarding the Molluscan list of Thailand, where it was agreed to establish the Thai Society of Malacology. We also have good news in that one of our research funding agencies, The BRT Program (Biodiversity Research and Training Program), will support the establishment of our society and will also extend the support to WCM 2010. We will have our great meeting in 2010 as promised at Antwerp 2007. The WCM 2010 logo has been finished, as many of you have seen it on the top of this message. I hope we will have our first announcement after the UNITAS council meeting this summer. With respect to the UNITAS council meeting this summer, to be held in Phuket, Thailand, in July or August, I wish to inform those members who want to hold a symposium in the WCM 2010 meeting to please communicate with me or any of our council members so that we can put it in our meeting agenda.

Finally, the time for UNITAS Research Grant Application has come. I wish to encourage all student members to apply, but please read the application criteria carefully before making your application. Good luck to you all. I will be back to you with many more items of good news in the next issue.

Somsak Panha
President
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Publications

Phylogeny and Evolution of the Mollusca

Winston F. Ponder and David R. Lindberg, ed.

Hardcover, ISBN 978-0-520-25092-5
488 pages
Publication date: March 2008
University of California Press. Price: USD $49.95/ £29.95

Publisher's description:

Brought together by Winston F. Ponder and David R. Lindberg, thirty-six experts on the evolution of the Mollusca provide an up-to-date review of its evolutionary history. The Mollusca are the second largest animal phylum and boast a fossil record of over 540 million years. They exhibit remarkable anatomical diversity and include the bivalves (scallops, oysters, and clams), gastropods (limpets, snails, and slugs), and cephalopods (squid, cuttlefish, and octopus). This study treats each major taxon and supplies general information as well as overviews of evolution and phylogeny using data from different sources–morphological, ultrastructural, molecular, developmental, and from the fossil record.

The historical ecology of the River Arun and its beaches at Littlehampton, West Sussex: 1,000 years of change

RAY SOCIETY VOLUME 169

Brian Morton

198 pages, 38 colour plates

Available for order through:
www.scientificbooks.co.uk

A new science of historical ecology is emerging, particularly in the USA and in

special relation to coastal wetlands that are globally considered to be endangered habitats. The science collates data on modern habitats and merges these with information gleaned from charts, maps, photographs and other sources of historical information to produce a real picture of ecological change. Having established what has changed, reasons are sought for how and why. Such an approach allows us to better understand our ecological heritage and for decision makers and managers to better plan for restoration conservation so as to allow communities to recreate lost, remnant, or vestigial habitats, even ecosystems – notably, again, wetlands.

This book is intended, through an examination of the history and coastal ecology of a virtually unstudied southern English Downland river, its coastal port and associated beaches, to act as a general model to determine if historical ecology can reveal protection, conservation and, possibly, restoration, priorities. At least, however, it may also help one local coastal town community better understand its historical ecological heritage. It may, hopefully, also stimulate other township communities to examine their historical heritage and ecology in a new way. And, thereby, come to a new appreciation of what they have.

Hydrobiologia special issue:
Freshwater Animal Diversity Assessment

Guest Editors: E.V. Balian, C. Lévêque, H. Segers & K. Martens

62 articles; 637 pages.
Published online: December 2007

Available **online** [subscription]:
http://tinyurl.com/ysjctm

Summary, from the forward to the issue by Robert J. Naiman:

This is a critical time for organisms living in continental waters. The leadership by the editors in organizing the initial workshop and compiling this volume cannot be under-estimated. It not only summarizes a vast array of data on a large number of freshwater phyla but perhaps more importantly, it has also acted as a catalyst to garner the interest and support of international programs focused on understanding and conserving freshwater environments (e.g., UNESCO's International Hydrological Programme, DIVERSITAS International, The Nature Conservancy). The remaining tasks represent a grand scientific challenge but, with this volume as a starting point, the path forward seems much clearer.

UNITAS Micromollusc Symposium Proceedings Volume

[Pending]

The proceedings volume from the UNITAS Antwerp '07 symposium *Micromolluscs: Methodological Challenges – Exiting Results* is scheduled to be released mid 2008. The volume will be published in *Zoosymposia*, the sister publication to *Zootaxa*, for rapid publication of zoological symposium proceedings. All manuscripts have been submitted and are currently in external review. The topics cover many aspects of investigations on micromolluscs. We are also working on incorporating a 3D interactive viewer into some of the pfd files, which will permit user-controlled interaction with the 3D models while not requiring proprietary software. If you would like to receive direct notification once the volume is getting published (and about potential pre-publication orders), please contact us at the e-mail addresses below.

Co-editors of the volume:

Daniel L. Geiger
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Bernhard Ruthensteiner
BRuthensteiner@zsm.mwn.de

[Surveillance and Control of Molluscs with Epidemiological Importance: Technical Directives] - in Portuguese.

Vigilância e Controle de Moluscos de Importância Epidemiológica: Diretrizes Técnicas. Editora do Ministério da Saúde, Brasília, (Série A- Normas e Manuais Técnicos).

177 pages, publication date: 2007

Available **online** as PDF [free]:
http://tinyurl.com/2zsr7t

This book, with contributions form 17 experts, was commissioned by the Brazilian Ministry of Health. It contains a comprehensive and well-illustrated review of techniques and guidelines for surveillance and control of molluscs with medical and veterinary importance in Brazil. Since Schistosomiasis mansoni is the main parasitic disease transmitted by snails in that country, the book deals most extensively with the intermediate hosts (*Biomphalaria glabrata*, *B. straminea* and *B. tenagophila*) emphasizing themes as: ecological aspects, techniques of collecting, laboratory rearing, relaxing and fixing for dissection, packing and shipping of snails, as well as searching and identifying *Schistosoma mansoni* larval stages and rearing of that trematode in the laboratory.

For host snail identification, a detailed, well illustrated dissection procedure is provided and molecular techniques are outlined. Guidelines and techniques for biological, physical and chemical control of the snail hosts are given, and the national environmental laws regulating the application of control measures are transcribed and commented. Special attention is paid to preventive measures related to snail control including health education and sanitation. An illustrated list of terrestrial and freshwater exotic species of economic and parasitological importance (*Helix aspersa*, *Achatina fulica*, *Melanoides tuberculatus*, *Limnoperna fortunei* and *Corbicula largillierti*) is also provided.

Following on from this theme, the book presents control techniques of the African snail *A. fulica* as recommended by IBAMA (the Brazilian Environment Institute), as Brazil is currently experiencing an explosive phase of invasion by this mollusc. This book is primarily intended for health planners, managers and field staff involved in control programs. However, it certainly appeals to professional parasitologists as well as to biologists interested in snail hosts of medical, veterinary and economic importance.

Book organisers:

Silvana Carvalho Thiengo
sthiengo@ioc.fiocruz.br

Ronaldo Santos do Amaral

Otávio Sarmento Pieri

Conference Announcements

CLAMA 2008
VII Congreso Latinoamericano de Malacología
Valdivia, Chile
3-7 November 2008

The Faculty of Sciences of Universidad Austral of Chile and the Latin American Association of Malacology are delighted to invite to the scientific community of Latin America and the world to participate in the 7th Latin American Congress of Malacology – CLAMA 2008 ("Cry Out" for Malacology!).

Chile extends for 4000 km, between the Andes and the Eastern South Pacific. It has a great variety of landscapes and climatic conditions, from the desert regions of the north, through the central zone (including Santiago, its capital), and the South zone (where Valdivia is located).

CLAMA is dedicated to malacology of the Southern Hemisphere and particularly of the Latin American, and the meeting provides a space for the malacologists of the region to establish bonds for future cooperation.

Abstract deadling: 15 July

www.clama.cl

American Malacological Society
74th Annual Meeting
Carbondale, Illinois, USA
29 June – 3 July 2008

Annual meeting, including contributed talks, field trips, special events and the AMS auction.

Special symposia: landsnails, taxonomy, cephalopods.

Abstract deadline: 1 May 2008

Meeting details
http://tinyurl.com/2ezp6e

National Malacology Congress of Turkey
Adana, Turkey
8-10 October 2008

The 2nd National Malacology Congress (with International Participation) of Turkey will be held at the University of Çukurova, in Adana. We will welcome the Turkish and foreign malacologists studying on the marine, the fresh water and the terrestrial molluscs related with the sciences of Taxonomy, Ecology, Evolution, Aquaculture, Fishing and Processing Technology, Medicine, Veterinary, Agriculture, Archaeology and Geology.

It will be an honour for us to meet our Turkish and foreign colleagues in Adana in 2008.

Abstract deadline: 23 May 2008

kongreler.cu.edu.tr/malakoloji/

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European Congress of Malacology
Ponta Delgada, Azores
2–6 September 2008

The next European Congress of Malacology (5th Congress of the European Malacological Societies) will be held at the University of the Azores, at Ponta Delgada (São Miguel Island), Portugal, between 2–6 September 2008.

The congress is open to all contributions in the field of Malacology and may also host further symposia or sessions beside those already confirmed (please contact the organizers).

Abstract deadline: 15 May

Early registration: 30 April

Further information can be obtained in the congress website:

www.euromalac2008.org

e-mail: euromalac2008@gmail.com

First International Congress on Invertebrate Morphology
Copenhagen, Denmark
17 - 21 August 2008

Please look at our home page:

www.ICIM-1.dk

We hope that you will find the program so attractive that you want to participate and to let us know about your fascinating research.

We would also like to have as many participants as possible when we try to found "Society for Invertebrate Morphology" which should hopefully arrange congresses like this one every three years in the future.

Abstract deadline: 1 May 2008

Jørgen Knudsen's birthday

Danish malacologist, Dr. Jørgen Knudsen, will be 90 years old on 6 March 2008. Jørgen (or Jorgen for those of you without the special Danish letters) has worked in the Zoological Museum for more than 60 years, beginning as a student research assistant to Dr. Anton Bruun (principal organiser of the Atlantide (1945-46) and Galathea (1950-52) expeditions).

In all those years, even when he was teaching at the Royal Veterinary and Agricultural University or studying populations of commercial fishes at the Danish Fisheries Investigations, he has worked on molluscs. Unlike most other malacologists, Jorgen has not developed a special area of expertise. His publications cover almost all mollusc classes (with the exception of the Monoplacophora).

Jorgen was one of two young scientists participating in the Atlantide expedition to West Africa, but unfortunately he was denied permission to participate in the Galathea expedition by the then director of the Fisheries Investigation, who did not appreciate basic research and was particularly against the organisers of the Galathea expedition.

Jorgen's first scientific publication is from 1944, a description of a new species of bivalve, and his latest is from 2005, on bivalves from Surinam (plus one co-authored with Kathe Jensen on invasive species in Danish waters).

To celebrate this occasion the invertebrate department of the Zoological Museum (now part of the Danish Museum of Natural History) in Copenhagen, Denmark is organizing a 2-day international symposium on the 6th and 7th of March, supported by the Carlsberg Foundation and the Malacological Society of London.

For information, contact:

Dr. Kathe R. Jensen
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Member Reports

Malacological fauna in irrigated rice fields of the Southern Brazil: a comprehensive general study

The present research focuses on the occurrence of molluscs on the irrigated rice fields systems (*Oryza sativa* L.) in southern Brazil, and their identification and characterization as agricultural pests. Historically, this aspect of the regional natural history has been poorly documented, with only few known species cited in previous bibliographical records.

The advancing invasion of several limnic and terrestrial mollusc species - native and exotic gastropods, mainly - and the damage that these animals can cause to the general agriculture and, particularly, to irrigated rice production, besides immediate interest for veterinary, medical and sanitation applications (recognized problems of public health, directly related to inadequate environmental sanity), makes it more and more important to focus on pest management. Delivering adequate information about aquatic snails, and improving knowledge about pest management is essential to control this growing threat, and the vast territory of Brazil is today a clear example of this situation.

The States of Santa Catarina (SC) and Rio Grande do Sul (RS), are important national producers of irrigated rice (lowland irrigated transplanted rice systems), they are part of Brazil's southernmost region, situated between the Brazilian state of Paraná (PR) to the north, and is also bordered by Uruguay, Argentina, and the Atlantic Ocean. One principal and independent river basin system irrigates the lands of the great basin of the Uruguay River.

For the State of Rio Grande do Sul (RS), in the end south of the country, field research up to now revealed the occurrence of two species of prosobranch gastropods: *Pomacea canaliculata* (Lamarck, 1804), *Asolene platae* (Maton, 1809)

five pulmonate gastropods: *Biomphalaria tenagophila tenagophila* (d'Orbigny, 1835); *B. t. guaibensis* Paraense, 1984; *Drepanotrema depressissimum* (Moricand, 1839); *Aplexa (Stenophysa) marmorata* (Guilding, 1828); *Bulimulus tenuissimus* (d'Orbigny, 1835)

two species of unionid bivalves: *Anodontites* sp.; *Rhipidodonta charruana* (d'Orbigny, 1835)

and a single species of venerid bivalve: *Corbicula fluminea* (Müller, 1774).

Records in the literature still denounce the occurrence in the regional fields of irrigated rice of several additional pulmonate snail species: *Lymnaea columella* (Say, 1817) – confirmed intermediate host of "Fasciolose" or Fasciolíase", serious zoonose of parasitic nature; *Biomphalaria glabrata* (Say, 1818), *B. straminea* (Dunker, 1848) – important confirmed intermediates hosts of "Esquistossomose" – and *B. peregrina* (d'Orbigny, 1835).

For references to studies completed an in progress, and for taxonomic details of involved species, please contact the authors of this report.

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Scholarpedia: The Wiki alternative

While many of us are familiar with Wikipedia, the on-line free encylopedia, some of us may be unaware of its rival, Scholarpedia. My recent experience as an author with Scholarpedia leads me to think that it might be suitable vehicle for disseminating information about molluscs. Both sites allow visitors to review and modify the articles, and both are powered by the same software, MediaWiki, but Scholarpedia differs from Wikipedia in some important ways. Each article is written by an expert who is usually chosen by an editor. The articles are anonymously peer reviewed and, once approved for "publication", further changes can be made only by the curator, typically the author. Thus, the articles are subject to perpetual revision and updating, but always under the control of a responsible, expert curator. The entire process is designed to ensure that the content is accurate and reliable.

Scholarpedia is the brain child of Dr. Eugene M. Izhikevich, who is a theoretical neurobiologist working at the The Neurosciences Institute in San Diego, California. Currently, all of the articles are on scientific topics, mostly in the field of neuroscience. In early November 2007, there were about 250 peer-reviewed and approved articles, and another 900 articles slated for inclusion. Among the participants are 11 Nobel Laureates, 3 Fields Medalists, and many other prominent scientists. The most popular article on Scholarpedia, on Models of the Hypothalamus, had accumulated a total of 38,357 views by December 1, 2007.

My article came about after a meeting on Gastropod Neuroscience, held at Friday Harbor, Washington, in June 2007. Seeking to raise the profile of our discipline, the participants at this meeting decided to launch a set of articles on Scholarpedia. The editor of the section on Gastropod Neuroscience is Dr. Paul Katz of the University of Georgia. To date, about 20 articles have either been peer-reviewed or are in the process of being written. My article on Gastropod Reproductive Behavior has averaged 160 hits per week since its final acceptance on September 25, 2007. See: http://tinyurl.com/2yb4ef

Because my article contains numerous references to hermaphroditism, long penes, and bizarre sexual acts, some visitors to my article may have been disappointed if they had been directed to the article by entering such text words into a search engine. Nevertheless, it is satisfying to know that many people are learning about this fascinating aspect of molluscs by visiting my Scholarpedia article.

Scholarpedia could be a useful platform from which UNITAS, or a member organization of UNITAS, could fulfil its mandate for public education, while at the same time promoting its own interests. Currently, there are a few articles about molluscs posted on Wikipedia, but these contain little content beyond taxonomic classification. Dr. Izhikevich has told me that he would welcome a set of articles on the phylum Mollusca. The subject matter of these articles could go well beyond taxonomy, for they could include articles on species-neutral subjects such as Fossils, Conservation, Genomes, Feeding System, Nervous System, Sexual Selection, Etc. I am simply throwing out the suggestion that malacologists contribute to Scholarpedia. If this is to happen, one or two people to step forward to volunteer as editor or co-editors. Thereafter, articles would need to be solicited and authors chosen. The process would work most smoothly if a single malacological society were to assume overall responsibility for the project. Interested persons or organizations can contact either myself or Dr. Izhikevich:
Eugene.Izhikevich@nsi.edu

Ronald Chase
Ronald.Chase@mcgill.ca

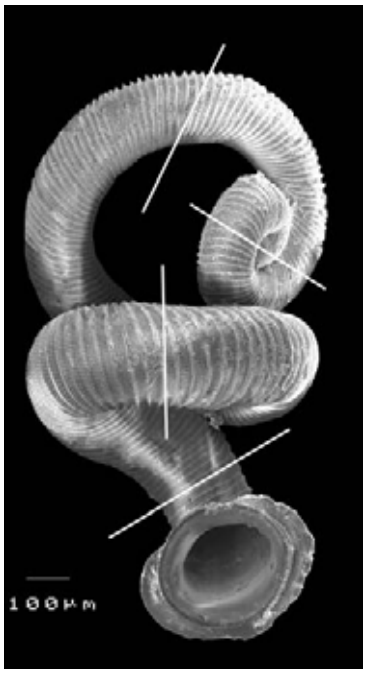
http://en.wikipedia.org
www.scholarpedia.org

A Weird Landsnail

Surveys in the limestone karsts of Peninsular Malaysia have unearthed a new species of gastropod with a shell that coils like no other. Described in the journal *Biology Letters* by Reuben Clements *et al*., *Opisthostoma vermiculum* (the species epithet meaning "wormy") possesses a puzzling shell coiling strategy that underscores how little we know about the relationship between form and function in gastropods.

Most gastropod shells tightly coil according to a logarithmic spiral and have an upper limit of three coiling axes. When shells do uncoil (e.g., in marine vermitids), they usually do not reattach to preceding whorls. The shell of *O. vermiculum*, however, possesses four different coiling axes - the most for any known gastropod. In addition, the whorls thrice detach and twice reattach to preceding whorls in a fairly consistent manner, which suggests that the coiling strategy is under some form of strict developmental-gene control.

The adaptive significance of such a bizarre coiling strategy could not be determined as live individuals have yet to be found. However, the authors discuss why hybridization and evolutionary responses to sessility, gerontic conditions and predator evasion are unlikely explanations. Environmentally-induced mutations could have played a role in shaping the phenotype, but this hypothesis can only be investigated once missing fossil intermediates are found at the same site.



O. vermiculum appears to be restricted to a single limestone karst. Several micro-landsnail genera, especially *Opisthostoma*, are found almost exclusively on karsts, which have calcium-rich soils that support high species densities and levels of endemism. Unfortunately, this and other site-endemic species face extinction from active quarries at the same karst. Future biodiversity surveys may potentially uncover similarly peculiar species at karsts elsewhere, but these are urgently needed as quarrying rates in Southeast Asia and are already escalating beyond those in other tropical regions.

Rueben Clements
rclements@wwf.org.my

Secretary's Column

Things have been fairly quiet on the administration front since the last newsletter and the WCM in Antwerp in 2007. However, we will soon be making plans for another UM Council meeting, probably in Thailand, so that Council members can visit the venue for the 2010 WCM. Our new President Somsak Panha can then update us on his preparations for what promises to be another good meeting.

In the meantime, the chief item for us to initiate is the issue of UM Student Research Awards for 2008. So we now invite students engaged in malacological research projects to submit applications for these awards as detailed below (p. 17). These are prestigious awards given to students showing promise as future role players in our discipline. Furthermore, the winners of awards will be in a strong position to obtain subsequent UM travel awards to attend the 2010 meeting, at which they can present the results of their endeavours to the UM community which has supported their research. Don't be shy – give it your best shot. I remind you that in accordance with the decision of Council in 2005, you must be a member of UM to be eligible for such awards (application forms available on UM website).

Dai Herbert
Secretary

Treasurer's Column

Dear members,

2007 was a record year with more than 80 new member subscriptions. At the other hand some 50 members had to be removed from the members list since they did not pay any membership dues for the last five or more years.

Donations to the Trust Fund are very much appreciated since they demonstrate member awareness of the multiple benefits of the Fund in particular towards students and young researchers.

In the period January – December 2007, many individual donations to the Trust Fund were received:

three generous donations by:
Ruud BANK, Henk DIJKSTRA and David LINDBERG,

smaller ones by:
Burçin A. GÜMÜS, Beata POKRYSKO and Luitfried SALVINI-PLAWEN

and round-ups by
Hiro ASAMI, Stuart E.R. BAILEY, Rüdiger BIELER, Gerhard FALKNER, Steffen KIEL, Bangon KONGIM, Angel LUQUE, Paula MIKKELSEN, Eike NEUBERT, Marta POLA PEREZ, David REID, Joaquim REIS, Gary ROSENBERG, Sonia SANTOS, Christoffer SCHANDER, SOCIEDADE BRASILIERA DE MALACOLOGIA, Gerhard STEINER, Piyoros TONGKERD and Amporn WIWEGWEAW.

Thank you all very much.

Best wishes

Jackie Van Goethem
Treasurer

Wanted

Scissurellidae/Anatomidae types sought

I have been working on a world-wide revision and monograph of the microscopic Scissurellidae s.l. for the past seven years, with a number of publications out, and more in press and in preparation. I am still looking for type material in general, and specifically from the following authors: Costa, Barnard (AM: no replies), Montouchet, Ravn, Laws, Philippi (not Hamburg: most likely destroyed), Petterd, d'Orbigny (not MNHN), Beets, Cossmann, Depontaillier, Fleming (1828: lost?), deFolin, Amitrov, Reuss, Lorcard, Monterosato (Milan? No reply), Scacchi, Seguenza, Morgan, deGregorio, Szöts, Semper, Feng, Nordsieck, Garrett (lost?), Boettger, Conti & Monari. If you have any information on the whereabouts of such specimens (or their likely loss), please let me know. If your collection holds scissurellid types and I have not contacted you yet, I am not aware of your holdings and would very much like to examine them.

Non-type material in any state of preservation is also of interest. I offer timely examination of material and identification of all sufficiently well-preserved specimens, in this group where a large portion of specimens is mis- or un-identified. Thus far > 6,000 lots and > 35,000 specimens have been examined and > 100 GB of comparative SEM images are on file. I am looking forward to hearing from you for a mutually beneficial interaction.

Daniel L. Geiger
geiger@vetigastropoda.com

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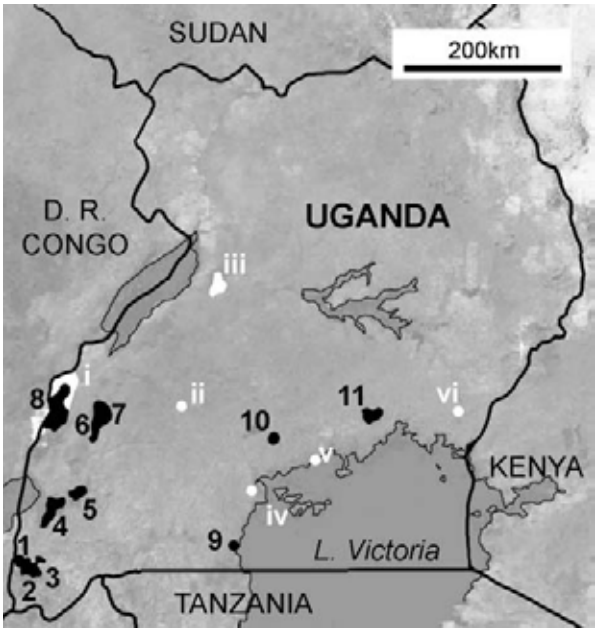
USA

Student Award Reports

PERSISTENCE AND DIVERSITY IN RAINFOREST REFUGIA: CARNIVOROUS LAND SNAILS (STYLOMMATOPHORA: STREPTAXIDAE) ACROSS SOUTHERN UGANDA

INTRODUCTION: The locations of African rainforest refugia remain contentious, yet forest discontinuities indicate a long history of connection and fragmentation. Streptaxid snails, the subject of my PhD thesis, are poorly-known carnivores diverse in sub-Saharan Africa. Limited vagility, strong persistence and endemism make them good subjects for historical biogeography. Here I studied the phylogeography of a single widespread species. In parallel with an ecological study by my colleagues, we aimed to determine the likely refugia and patterns of forest expansion in southern Uganda, a region where few phylogeographic studies have been carried out.

METHODS: 1. We surveyed eleven forest fragment sites (see map) across Uganda in February 2007 using a standardised-effort method involving timed direct search and sieving of known litter volumes, and measured abiotic soil variables. All land molluscs were collected and are currently being analysed. *Ptychotrema (Haplonepion) geminatum* (von Martens, 1895) was the most widespread streptaxid, occurring at eight sites. All live-caught *P. geminatum* were included in the analysis, along with specimens from forests in Rwenzori National Park (leg. P. Tattersfield, 1996) and specimens from three additional forest sites (leg. T. Wronski, 2006). Sites 1-11 on the map show where *P. geminatum* was found (sites i-vi are forests where it remains unrecorded).



2. For genetic analysis, 476bp of 16S mitochondrial DNA were amplified and sequenced from all live-caught *P. geminatum* using conventional methods. Sequences were aligned using BIOEDIT 7.0 with indels checked by eye, and a minimum evolution phylogeny inferred using PAUP* beta based upon K2P distances. Median-spanning networks and mismatch distributions were explored using NETWORK 4.0 and DNASP 4.2.

3. For geometric morphometric analysis, all live-caught adult shells were photographed, and 47 landmarks were defined and captured using IMAGEJ 1.38. A mean shape (with the confounding effects of size and rotation removed) for each population was inferred by Procrustes superposition using the TPS programme series. Mean shapes were compared pairwise by visualisation of the deformation as a thin-plate spline (scale factor of 2).

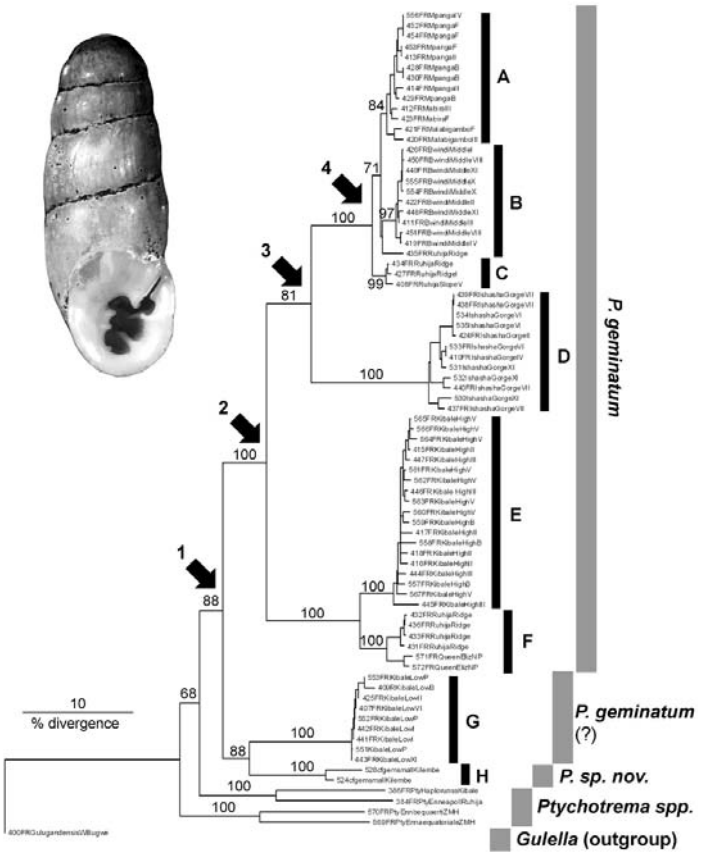
4. We also collected many little-known species and genera for my wider systematic study on streptaxids. These have been examined and sequenced with other appropriate markers.

PRELIMINARY RESULTS: Although sequencing of the Wronski specimens is not complete, 16S mtDNA resolves 8 strongly-supported lineages within *P. geminatum* (A-H on phylogram below). All of these are specific to a single site except lineage F (Queen Elizabeth National Park and Ruhija) and the derived lineage A, which comprises

all individuals from the three easternmost sites. Each site only harbours one lineage except for Ruhija, the second most westerly site, which harbours lineages B, C, and F. Lineages are linked by four strongly-supported deeper bifurcations. One of these (number 1 on figure) separates lineages G and H from all other *P. geminatum*, probably occurred in the far west, and is at least as deep as the speciation events between the other *Ptychotrema* species. Other bifurcations link eastern, western and central lineages. Median-joining networks and mismatch distributions (not shown) support this hierarchy of events and indicate repeated population expansions.

Geometric morphometrics indicates limited geographic variation in shell morphology. Variation between lineages A-F is slight and comparable to variation within them. As shown by the figure below, lineage G (Kibale "high") is morphologically highly similar to A-F (represented here by lineage E, Kibale "low"). However, lineage H (Rwenzori) differs from all others in spire and aperture proportions, requiring greater deformation in splines.

DISCUSSION: These results indicate substantial genetic structuring in *P. geminatum*, with endemic lineages corresponding to forest populations. That lineage A, one of only two non-endemic lineages, is shared between the three easternmost sites is strong evidence of a (recent) founder event in eastern Uganda, perhaps when these forests were last connected. Thus any refugium must lie in the west, which houses the only site with multiple lineages. However, the distribution of lineages suggests each of the four deeper bifurcations occurred between distant pairs or groups of sites. This indicates a more complex, perhaps cyclic pattern of range expansion and fragmentation. The initial, very deep split of lineages G and H from all other *P. geminatum* might indicate they are separate species. However, mean shell shape of lineage G is scarcely distinguishable from other *P. geminatum*, while that of lineage H is distinct. I have started work on nuclear markers that may determine whether this is an outcome of introgression or hybridisation, with lineage H representing an undescribed species. Morphological diversification in the Streptaxidae will be a major theme of my thesis.



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A NOVEL APPLICATION OF HARMONIC RADAR TECHNOLOGY TO MONITOR TREE SNAIL DISPERSAL

Tree snails of the genus *Achatinella* (Pulmonata: Achatinellidae), endemic to the island of O'ahu, Hawai'i, are rapidly disappearing and are all federally listed as endangered. Only 10 of the original 41 recognized species are extant (United States Fish & Wildlife Service, USFWS 1992), and remnant populations can now be found only in scattered patches along remote summit ridges. Following habitat loss and shell collecting, predation from introduced rats and the snail *Euglandina rosea* continue to decimate and fragment remnant snail populations (Hadfield et al. 1993).

Ongoing conservation efforts will likely soon include translocations among the remaining wild and captive-bred populations to reduce unnatural inbreeding, while simultaneously striving to avoid the consequences of excessive outbreeding. In order to establish optimal levels of artificial migration among neighbouring groups of snails within fragmented populations, efforts to determine natural dispersal rates were initiated. Since molecular marker-based methods for determining migration rates are most often deceptive and inaccurate for non-equilibrium species (Whitlock & McCauley 1999), a more direct approach was taken.

Capture-mark-recapture (CMR) pilot studies proved inadequate for obtaining the requisite dispersal estimates, due to low recapture probabilities. In addition, snail dispersal beyond the boundaries of the finite CMR study site was indistinguishable from mortality. I addressed both the low recapture probability and dispersal detection problems in a preliminary study by using harmonic radar tracking. The radar system involves using a hand-held transmitter/receiver unit (Recco Inc., Sweden) to detect small diode/wire combinations glued on to shells of live snails. Many different kinds of transponders were tested on captive *Achatinella* spp. before the current design was adopted. The current transponders weigh < 0.02 g, which is well below the conventionally accepted transmitter/body weight ratio (dubbed "the 5 % rule") for having no adverse effects on the study organisms (adult *Achatinella* weigh > 1g).

Achatinella mustelina Mighels 1845 (Wai'anae Mountains) and *A. sowerbyana* Pfeiffer 1855 (Ko'olau Mountains) were used to monitor movement patterns. They are the only two remaining species with substantial numbers surviving in fairly continuous habitat, providing the closest representation of *Achatinella* gene flow before anthropogenic disturbances. Radar-detected dispersal locations, for a cohort of 40 snails, were recorded at monthly intervals for a period of 6 months. This approach yielded rough dispersal estimates that were unattainable using CMR alone by providing 100% recapture rates even beyond the normal survey area boundaries.

Extensive movements within clusters of connected trees were frequently observed after tracking for merely a few hours, although movements between unconnected trees were rare and only recorded following monthly survey intervals. Just 11 out of 40 tracked snails made any between-tree movements (average distance of 4.94 ± 1.52 meters) during the entire 6-month study, and provided the only data utilizable for inferring gene flow between subpopulations. Dispersal rates were noted between 0 and 20% per month.

Meteorological data loggers (wind speed, humidity, and temperature) were deployed when tracking began to look for an association between such snail movement and weather fluctuations. A best-subsets multiple regression procedure was used to select the model(s) that best explained the variation in monthly dispersal, based on Akaike's Information Criterion (Akaike 1974). The

resultant data indicate that passive wind dispersal may be responsible for more distant snail movements. (R^2 = .59, p-value = .0014), and that *Achatinella* spp. are blown out of their trees during violent wind storms.

In the present study, radar has also helped to relocate snails in vegetation that is not normally thought to be a prime host for snails. Some transponder-equipped snails have also been recaptured in dense foliage and/or on high branches that would have been challenging to search thoroughly. Use of the radar alone resulted in recapture rates more than double that of equivalent effort in CMR pilot studies. But despite having provided coarse estimates of short-term dispersal and corresponding wind influences, the limitations of the radar method can be substantial. Efforts to improve the design of the transponder are discussed, along with more detailed descriptions of the analyses, in a manuscript that is currently in review for publication. I am indebted to Unitas Malacologica for providing funds to procure both weather monitoring and transponder equipment to carry out this research.

References

Akaike H 1974. A new look at the statistical model identification. IEEE Transactions on Automatic Control 19(6): 716–723.

Hadfield MG, Miller SE, & Carwile AH 1993. The decimation of endemic Hawai'ian tree snails by alien predators. Am. Zool. 33: 610-622.

USFWS. 1992. Recovery plan for the O'ahu tree snails of the genus *Achatinella.* US Department of the Interior, US Fish and Wildlife Service. Portland, Oregon.

Whitlock, M.C. and McCauley, D.E. 1999. Indirect measures of gene flow and migration: $F_{ST} \neq 1/(4Nm +1)$. *Heredity* 82:117-125.

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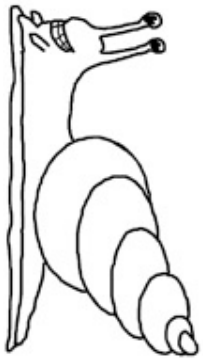
CORRELATES OF LAND SNAIL ENDEMISM: IMPLICATIONS FOR LIMESTONE KARST CONSERVATION IN MALAYSIA



On tropical land masses, limestone karsts are *de facto* habitat islands due to their isolation from one other by non-calcareous substrates. This spatial configuration limits gene flow and induces high levels of species endemism, particularly among land snails. Karst conservation planning, however, has been generally been lacking in firm scientific basis. Ideally, factors affecting the richness and distribution of karst-endemic taxa should be incorporated into quantitative guidelines for karst reserve selection.

The main objectives of this study was to identify variables (area, isolation, surrounding soil type and geological age) hypothesised to correlate with mollusc endemism on tropical limestone karsts, and to investigate molluscan species compositional trends across karsts in two different biogeographical regions: West (between 100° 52' E and 102° 28' E, and between 3° 18' N and 5° 40' N) and East Malaysia (between 116° 10' E and 118° 44' E, and between 4° 38' N and 7° 13' N).

Sixteen karsts in West Malaysia and 27 karsts in East Malaysia were sampled for molluscs. Multi-model inference of generalized linear mixed-effect models (GLMM) was used to determine correlates of endemism from the set of biogeographical factors (i.e., karst area, isolation, surrounding soil type and geological age) for West Malaysia. Non-metric multi-dimensional scaling (NMDS) was used to investigate how species compositions varied across karsts for both regions.

Sampling from 16 karsts in West Malaysia yielded a total of 198 land snail species from 49 genera and 19 families, while 173 species from 64 genera and 23 families were sampled from 27 karsts in East Malaysia. GLMMs revealed

important effects of surrounding soil type in addition to the effect of karst area on mollusc endemism. The most parsimonious model had 65.6% of the information-theoretic (AIC_c) weight and explained over 18% of the deviance in the total number of endemic species per karst (of which 9.3% was explained by surrounding soil type and 8.8% by karst area). NMDS showed that karsts separated by vicariant barriers in different parts of West and East Malaysia had distinct malacofaunas.

Conservation planners should therefore take into account karst size, surrounding soil type and the influence of geographic barriers to maximize the protection of land snails endemic to karsts, which are increasingly threatened by quarrying activities in Malaysia and throughout Southeast Asia.

I am currently employed by the World Wildlife Fund for Nature – Malaysia (WWF-Malaysia) as a species conservation manager. In this capacity I manage the Malaysia tiger (*Panthera tigris*) and Sumatran rhinoceros (*Dicerorhinus sumatrensis*) programmes in Peninsular Malaysia.

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ANATOMY AND RELATIONSHIPS OF SUBFAMILY COLINAE GRAY, 1857 AND GENUS *TROSCHELIA* (GASTROPODA: NEOGASTROPODA: BUCCINIDAE)

Buccinidae is the most diverse and dominant group of predatory marine gastropods at bathyal–hadal depths of high latitudes. Phylogenetic relationships among 200+ genera and subgenera included in this family remain quite ambiguous. The boreal zone of the Pacific appears to be very rich in Buccinidae: up to 6 subfamilies are included, and at least 47 nominal generic names have been proposed on the basis of shell characters. Subfamily Colinae is the largest one, comprising 16 genera and 116 species recorded from the Russian waters (Kantor & Sysoev, 2006). The validity of included taxa was never corroborated by either anatomical or molecular data. The northeastern Atlantic monotypic genus *Troschelia* Mörch, 1876, has been classified by a number of authors in the family Fasciolariidae due to the peculiar radula of *Troschelia berniciensis* (King, 1846). Conversely, Bouchet & Warén (1985) classified it in the Buccinidae, based on the lateral teeth with multiple uniform cusps similar to lateral teeth of some other Buccinidae (e.g. *Thalassoplanes* Dall, 1908).

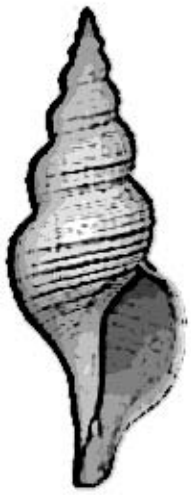
The aim of the project supported by UNITAS Student Research Award 2006 was to clarify the taxonomic status and phylogenetic relationships of a number of Colinae genera from boreal and Arctic zones, namely *Colus* Röding, 1799, *Plicifusus* Dall, 1902, *Latisipho* Dall, 1916, *Aulaco fusus* Dall, 1918, *Retifusus* Dall, 1916, *Retimohnia* McLean, 1995 and *Pararetifusus* Kosuge, 1967, and to find out the relationships of the genus *Troschelia* within the families Buccinidae and Fasciolariidae. The investigations of head-foot and mantle morphology, as well as anatomy of digestive and reproductive systems, have never been conducted before for the majority of mentioned taxa. The molecular phylogeny of Buccinoidea was

first treated by Hayashi (2005). But he included very few representatives of boreal buccinids, so it was impossible to obtain more detailed picture of buccinid phylogeny. Therefore there is still no consensus for the usage of many generic names or for their subfamilial and, in case of *Troschelia*, even familial placement.

The problem has been treated by using newly produced morphological, anatomical and molecular data. Vast materials on boreal Buccinidae, accumulated in Russian museums (Zoological Institution, P.P. Shirshov Institute of Oceanology, Museum of the Moscow State University), and the British Natural History Museum of London, were used.

RESULTS**:** Based on morphological and anatomical studies of 35 Colinae species attributed to *Colus, Plicifusus, Latisipho, Aulaco fusus, Retifusus, Retimohnia* and *Pararetifusus*, partial generic revision and phylogenectic analysis based on 37 characters are conducted. Obtained majority rule consensus tree (Fig. 1) well resolves genera *Plicifusus, Retifusus, Pararetifusus* and *Aulaco fusus.* Genus *Retimohnia* appears to be junior synonym of genus *Retifusus*. Analysed species of heterogeneous genus *Colus* do not make a clade, what probably testify its paraphyly. Presented results demonstrate the importance and opportunity of using anatomical characters for taxonomy of extremely diverse and variable family Buccinidae (Kosyan, WCM, 2007).

It is generally accepted that molecular studies require fresh material preserved in 100% alcohol. Unfortunately it is very difficult to obtain specially preserved representatives of the mentioned genera, as they are not common and in majority having deep-water habitats. Being supported by UM Student Research Award 2006, I had the opportunity to work in the fully equipped molecular laboratory of the Department of Human and Animal Biology of the La Sapienza University (Rome, Italy) under the supervision of Ms M.V. Modica, who has been working on the phylogeny of Neogastropoda. Despite improperly fixed material kept in the museum collections sometimes more than 100 years, we managed to amplify valid sequences (from 450 to 600 base pairs long) of 16S rRNA gene from several buccinid species. Phenol-chloroform way of DNA extraction and amplification with two pairs of specific primers, pointed by Hayashi (2005), was used. Not all the obtained sequences appeared valid for phylogenetic purposes. Nevertheless, it was possible to discuss the taxonomic position of the monotypic genus *Troschelia* from the North Atlantic (presented at WCM 2007). In the phylogenetic hypothesis derived from the molecular dataset (Fig. 2), including 16 buccinid and 4 fasciolariid taxa, *Troschelia* is in the same clade with the tropical buccinids *Pareuthria* and *Phos*. Although the relationships between several buccinid clades are still not clearly resolved in our topology, possibly due to significantly incomplete taxonomic coverage, yet we recovered a strong signal of close relationship between Fasciolariidae and Buccinidae. From a morphological point of view, Fasciolariidae also result as a rather derived group within Buccinidae: after examination of a number of fasciolariid species, only a single character – the structure of the proboscis retractors – was found to be typical for Fasciolariidae, while other are shared with Buccinidae.



The results of the project were presented on the World Congress of Malacology (Antwerp, 2007), and two papers submitted for publishing (see below):

References

Bouchet P. and A. Warén, 1985. Revision of the Northeast Atlantic bathyal and abyssal Neogastropoda excluding Turridae (Mollusca, Gastropoda). Bollettino Malacologico, Suppl. 1, 296 pp.

Hayashi S., 2005. The molecular phylogeny of the Buccinidae (Caenogastropoda: Neogastropoda) as inferred from the complete mitochondrial 16S rRNA gene sequences of selected representatives. Molluscan Research, 25(2): 85–98.

Kantor, Yu. I. and A.V. Sysoev. 2006. Marine and brackish water Gastropoda of Russia and adjacent countries, Moscow: KMK Scientific Press Ltd., 1-371.

* Kosyan A. R., and Yu. I. Kantor, 2008. Phylogenetic analysis of the subfamily Colinae (Neogastropoda, Buccinidae), based on morphological characters. The Nautilus. (submitted)

* Kosyan, A., Modica, M. V. and M. Oliverio, 2008. The anatomy and relationships of *Troschelia* (Neogastropoda: Buccinidae): new evidence of close fasciolariid-buccinid relationship? The Nautilus. (submitted)

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Call for application for UM Student Research Awards 2008

Instructions for applying for awards

Two awards, each of up to €1 000, are offered every year to students engaged in research projects of a malacological nature. These will generally be projects undertaken in pursuit of higher academic degrees (e.g. M.Sc. and Ph.D.). Normal budget items include supplies, expendable equipment and research-related travel. The awards cannot be used to cover salaries, institutional overheads, permanent equipment or conferences. Only students who are members of UM in good standing are eligible to apply for these awards.

The next deadline for submissions is 31st May 2008. Applications must be completed on an application form which is available on the UM website:

http://tinyurl.com/2pl4fc

Submit completed applications to Dai Herbert:

e-mail: dherbert@nmsa.org.za

In Memoriam

Juan Jose Parodiz (1911-2007)

It is with sadness that I am writing to inform folks that Juan Jose Parodiz passes away on 4 September 2007. Jose, curator emeritus at the Carnegie Museum of Natural History was 95 years old at the time of his death. Jose worked for 20 years in Argentina (where he was born) before coming to the Carnegie Museum. He was curator of molluscs at the Carnegie Museum from 1952 until 1981, and was emeritus curator after that. He is best known as a specialist in Nearctic and Neotropical unionids.

Charlie Sturm
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Juan Jose Parodiz was a member of Unitas Malacologica until his death

Karl-Heinz Beckmann (1948-2007)

Karl-Heinz Beckmann passed away October 2, 2007, at the age of 59. He was a well-known colleague among malacologists in Europe and beyond. The focuses of his malacological research were the non-marine mollusk faunas of islands in the Mediterranean and Eastern Atlantic Ocean, as well as the mollusks of his native North Rhine-Westphalia (Germany). His publication list on malacological topics comprises ca. 70 titles.

The son of a farmer, K.-H. Beckmann had a remarkable professional, academic and scientific career. He received training as a mechanic and subsequently earned university degrees in engineering, education and economics. He didn,t use his doctor title in economics – he must have thought that would be showing off – but merely his master,s degree in engineering. He became a successful inventor and entrepreneur, and the founder and CEO of his own company that translated his inventions into actual products.

For those who knew him on a personal level, Karl-Heinz was the best pal one could wish for. Visiting him or being visited by him could be an exhausting experience, but always in a good way. Collecting or looking at specimens together, literature work, long discussions, often deep into the night, all that fueled by generous amounts of food and drink (and I am not talking green tea here), filled these days to the brim. We, who called him our friend, have many fond memories of our time spent with him.

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Karl Heinz-Beckman was a member of Unitas Malacologica for exactly 20 years until his death