

The International Biogeography Society

Summer 2006 Newsletter: Vol. 4, No. 2

Produced by the Committee for Publications

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*Contact information for the officers,
society bylaws, the constitution,
mission statement and additional
information may be found at
www.biogeography.org*

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directed to the editor: smithk@uga.edu*

Letter from the President *Brett Riddle*

We are rapidly closing in on our 3rd biennial conference this coming January in Tenerife, Canary Islands, which requires the attention of all IBS members to several new and ongoing details associated with this important event (details to be found elsewhere in this newsletter):

- We will very shortly have running on the web site new on-line membership and conference registration pages. Please let us know of any problems you might encounter using this process.
- The conference marks a most important event—the membership's opportunity to nominate and elect new (or returning) IBS Officers. Please look over this information and take this process seriously. At this young stage of the IBS, it is critical that we have enthusiastic and talented Officers that are dedicated to continuing the development of our Society.
- We would also like to invite members to provide nominations of worthy candidates for our highest honor—the Alfred Russel Wallace Award, which will be presented to a distinguished biogeographer at the conference.
- The schedule of symposia and invited speakers is posted on the web site and continues to be updated as needed. Please be thinking about developing a contributed presentation in the form of a poster, and be assured that poster presentations will be treated as an integral part of the conference, equal in importance and visibility to the invited presentations.

I would also like to draw your attention to one other update in benefits to IBS members. You will now find a “members only” portal on the web site. This important feature has allowed us to fulfill an invitation from Blackwell Publishing to provide all IBS members with electronic access to *Journal of Biogeography*, *Global Ecology & Biogeography*, and *Diversity & Distributions* free of charge. And very shortly, we will also be providing 20% discounts on subscriptions to *Ecography*, *Oikos*, and *Journal of Avian Biology*.

Finally, I would like to mention one new effort in our drive to continue growing the “International” flavor of the IBS. We have begun to construct a network of “In-country IBS representatives” that serve the Society by bringing to the attention of biogeographically-minded colleagues and students the benefits of joining the IBS. We now have such individuals in place in Denmark, Germany, Mexico, Portugal, Spain, Sweden, and Turkey.

See you in January!

International Biogeography Society

January 2007 Conference in the Canary Islands

Coming Soon!

The biogeography.org website is being upgraded to accommodate the upcoming meeting in Tenerife, Canary Islands. Soon you will be able to register for conferences, purchase books and IBS materials, and maintain your membership status online. This new service will be announced shortly with an email giving you instructions on how to access your membership and registration information.

Volunteers Needed:

In preparation for our first conference outside of the United States we are seeking volunteers to recruit new members from our non-US audiences. This is an important step for IBS as attendance at this meeting will help us determine the need for additional meetings in different regions of the world. If you would like to serve the society and help promote biogeography in your country, please contact Robert Whittaker via email at robert.whittaker@ouce.ox.ac.uk to volunteer or make suggestions for other regional representatives to spread the word about IBS.

Alfred Russel Wallace Award: Call for Nominations for the

The ARW award was established by IBS in 2004 to recognize a lifetime of outstanding contributions by an eminent scholar in any subdiscipline of biogeography. Previous recipients have included Drs. Jack Briggs and Jared Diamond. Preliminary nominations consist of a letter endorsing the candidate with an abbreviated copy of their curriculum vitae. The committee reviews these materials and solicits complete nomination packets (consisting of the letter of nomination, a complete CV, and three or more letters of recommendation) for selected individuals. The selected recipient will be invited to address the society at its next biennial meeting.

We are now in the process of accepting nominations for the 2007-2009 term award. Please forward preliminary nominations to Felisa Smith (fasmith@unm.edu), chair of the Awards Committee, by August 1, 2006.

CALL FOR NOMINATIONS: 2007–2009 IBS ELECTED OFFICERS

IBS is actively seeking nominations for future officers of the Society. Please note that as a young society there are opportunities for both senior and junior scientists to serve as officers, and that our experience thus far has shown the utility of having a mix of age and experience represented on the Governing Board. Please consider suggesting your own name to the nominations committee if you are interested in serving the society. Please send any suggestions you may have for these positions to Mark Lomolino, Chair of the Nominations and Elections Committee (see below for contact information and instructions).

List and Summaries of Positions Available (full descriptions of officer duties are described in the constitution and bylaws, available at www.biogeography.org):

President Elect – The President serves consecutive two-year terms: first as President-elect, then as President, and finally as Past President. The President is the primary spokesperson for the Society and is expected to interact with other societies, government officials and the public on behalf of the Society. The President may, subject to the approval of the Governing Board of

Directors, appoint special committees and take such actions as deemed appropriate to accomplish goals as President of the Society and to further the interests of the Society.

Secretary – The Secretary records the proceedings of the Society, reports annually to Membership on actions taken by the Governing Board of Directors, maintains close contact with all members of the Governing Board of Directors, prepares in consultation with the President agendas for Governing Board of Directors meetings, and conducts all authorized ballots. The Secretary ensures that adequate records of all meetings of the Governing Board of Directors are maintained and that there is continuity with Society policies of the past and conformance with accepted Society procedures.

Treasurer – The Treasurer is the chief fiscal policy officer of the Society and in this capacity is responsible for the development of fiscal and investment policy, review of the proposed annual budget, including Committee budgets, and oversight of the business, finances and management of the Society. The Treasurer is responsible for the annual audit of the financial records of the Society. Because the society is incorporated in the United States, it is helpful if the Treasurer lives or otherwise has access to U.S. tax attorneys or accountants.

V. P. for Conferences – This V.P. oversees the planning and conducting of the biennial conference of the Society. The Vice President for Conference Organization chairs the Conference Standing Committee.

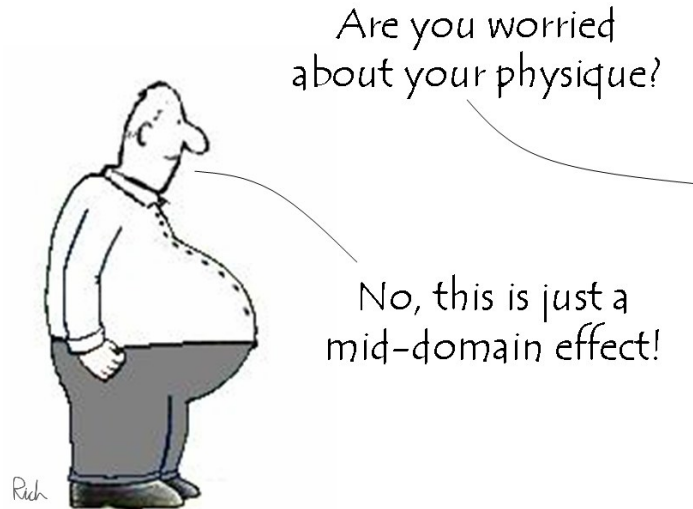
V. P. for Public Affairs & Communications – This V.P. oversees those Society activities related to public affairs, international affairs, public policy, and communication within and outside the Society. They typically oversee the publication of the Society's bulletin.

V. P. for Development & Awards – This V.P. oversees efforts to increase the membership and funding of the Society. The Vice President for Development and Awards also oversees the development and awarding of scholarly and service awards.

Directors-at-Large (2 officers) – These officers are responsible for maintaining awareness of the diverse views, goals and objectives of the membership of the Society and representing these as appropriate at meetings of the Governing Board of Directors. They should be willing to serve as chairs of special committees or as monitors for committees preparing special reports, if so asked by the President. They also serve as members of the Nominations and Elections Standing Committee.

Procedures for Nominations of Officers: In order to nominate an individual for one of these offices, please send the information listed below to Mark V. Lomolino, Past President and Nominations Committee Chair – IBS, via email (island@esf.edu) by June 30, 2006.

1. Name of the nominee
2. Nominating for which office (President Elect, Secretary, etc.)
3. Address, affiliation and contact information of the nominee
4. A short (not to exceed 50 word) description of the qualifications of the nominee for this office.
5. Your name, affiliation and contact information.



Palaeogeography and Palaeobiogeography: Biodiversity in Space and Time

Conference Summary

by Al McGowan, Department of Palaeontology, Natural History Museum, London

During the Third IBS meeting in 2005 at NCTC Claire Slater put forward a proposal to hold a biogeography-themed meeting in the UK in 2006. The proposed meeting took place in the Centre for Mathematical Sciences at the University of Cambridge between 10-13th of April 2006, attracting around 70 delegates. An explicit objective of the meeting was to attempt to bring together palaeogeographers and palaeobiogeographers, who tend to have Earth Sciences backgrounds, with ecologists and biologists working on the modern biota who tend to have life sciences backgrounds. We were successful in attracting a fairly cosmopolitan selection of delegates from over a dozen countries, and from a wide range of research fields.

The four days of the meeting were divided into two days of talks and two days of workshops. Throughout the conference posters were on display. The afternoon of the first day was taken up with three keynote speeches. The Keynote session allowed me the opportunity to relax after racing around Cambridge on a bike trying to locate a VGA adaptor for my computer. Thanks to everyone who helped resolve that fiasco. Brett Riddle (University of Nevada, Las Vegas and current President of IBS) set the tone of the meeting by discussing biogeographic patterns among a range of plants and animals that had no clear geological cause in Baja, California, and threw the matter open to the geologists in the audience. Brett was overwhelmed with suggestions for possible geological processes that might have generated the observed north-south split. Paul Upchurch (University College London, and a co-organizer of the meeting) followed on with a talk with the crowd-baiting title "What's wrong with palaeobiogeography?" which focused on the problems of the multiplicity of methods available for palaeobiogeographic reconstruction. Alan Smith (University of Cambridge) concluded the session with a talk explaining the problems of generating global palaeogeographic reconstructions, and cautioned

After the keynote session we were able to retire to the Sedgwick Museum for an evening reception and a chance to view the exhibits and socialize. Dave Norman gave a talk introducing the Thanks to Dave Norman, Dan Pemberton. The people who were still thirsty at the end of the reception were able to explore Cambridge's many hostelries at their leisure afterwards.

The second day of the meeting consisted of the invited speakers talks. A brief summary of the main points is given below.

Terrane recognition through the Phanerozoic - Dr Robin Cocks (Natural History Museum, London) explained that prior to 170 million years ago paleomagnetic data yields accurate paleolatitudes but is unable to provide paleolongitudes. This makes the positioning of terranes unreliable. Robin outlined the use of climate-sensitive sediments and benthic invertebrate fossils to better resolve the position of terranes.

The systematics of biogeography - Dr Malte Ebach (Université Pierre et Marie Curie, Paris) presented a talk that was a mixture of history and philosophy of biogeography. He traced the history of the idea of areas of endemism from 1805 to the present day, and urged a more systematic, or evolutionary, approach to biogeography, rather than a classification-based system, echoing the between ranking and relatedness-based criteria among organisms.

Combining GIS and Phylogenetics in Paleobiogeography: Assessing the role of Invasion events during Mass Extinctions - Prof. Alycia Stigall (Ohio University) focused on combining phylogenetic and range data in within Geographical Information System environments. Then she gave the example of GIS analyses of species ranges coupled with phylogenetic analyses used to examine faunal dynamics of brachiopods and bivalves during Late Devonian mass extinction. Alycia noted that if Late Devonian species invasions and range expansions contribute to reduced vicariance, then modern invasive species may depress speciation rates in the modern biota as well.

Geographic Range and extinction risk: lessons from ancient marine benthic organisms - Dr Wolfgang Kiessling (Humboldt-Universität zu Berlin) The question of whether geographic range is a significant factor in predicting extinction risk during mass extinctions remains equivocal despite the strong predictive power range has in the modern biota. Wolfgang used data on Middle Triassic to Late Jurassic benthic taxa to analyse correlations between taxon longevity and geographic range. He found that extinction trajectories of widespread versus geographically-restricted taxa show similar patterns as the trajectories of common versus rare taxa. However, narrow distributed and rare taxa have significantly higher extinction rate per stage than widely distributed and common taxa.

Mesozoic Paleogeography: Methods, Limits and Uncertainties - Dr Roy Livermore (British Antarctic Survey). Roy discussed developments in computer-based reconstructions of the continents over the past 30 years. He described the progression from simple models of land and ocean distributions through to the latest advances made possible by GIS, which has allowed the integration of information on climate-sensitive sediments, ancient drainage patterns, and fossil plant data to provide much more detailed reconstructions of the earth through time.

Southern Hemisphere biogeography: perspectives from the fossil record of Antarctica -Dr David Cantrill. This talk fitted well with the aim of the meeting to demonstrate the links between modern and ancient biogeographic processes. Dave mentioned the role of the Ethiopian Rift in generating vicariance, even in the absence of ocean opening in the area as yet. He used this as an example of genuine vicariance that would not yet have a geological signature. He then moved on to discuss angiosperm palaeobiogeography during the Mesozoic, and made a strong case for the need for detailed palaeogeographic maps to better understand the observed distributions and generate testable hypotheses about the processes governing the spread of angiosperms.

Towards a specimen-based biotic history of Indo-West Pacific Cenozoic corals:

(1) The story so far - Dr Brian Rosen (Natural History Museum, London) Towards a specimen-based biotic history of Indo-West Pacific Cenozoic corals

(2) The future - Dr Kenneth Johnson (Natural History Museum, London) Brian and Ken started the afternoon with back-to-back talks on Indo- West Pacific (IWP) corals. Brian underlined the importance of understanding the patterns of extinction and recovery of coral reefs through time because of the current threats to reef systems. One of the continuing arguments about coral distribution is why IWP corals are so

diverse, and whether the diversity evolved in situ, or is the result of shifting biogeographic distributions. Brian presented results that support a Neogene age for the onset of the current high IWP diversity. During most of the Palaeogene coral diversity was much higher in the Atlantic. Brian also noted a poor fit between climate and coral diversity curves. Ken presented work with Dutch colleagues on the distribution of scleractinian coral diversity. A specimen-based databasing approach was used in Ken's analysis, with age assignment based on planktonic and large benthic foraminifera biostratigraphy at each locality. This work found that coral diversity peaked during the Pliocene.

New approaches to historical biogeographic analysis - Prof. Isabel Sanmartín (Uppsala University, Sweden) stressed the importance of vicariance and dispersal for biogeographical processes, in generating the current distribution patterns for historical biogeography. She also underlined the challenges facing those of us who are involved in simulating these processes, particularly the problem of computational time when using fixed geographic models with predetermined geographic connectivity.

The geological, oceanographic and climatic controls on the Wallace Line - Prof. Robert Hall (Royal Holloway) This line, which is most probably the most well-known biogeographic boundary is located between. As early as 1858 Wallace recognised the biogeographic significance of the differences in the fauna and flora of Borneo and Sulawesi. The current geology in the area is governed by a convergent tectonic regime that has driven major change in topography and oceanography in the area over the last 55 million years. Such changes in ocean circulation may have regional impacts on connections among different areas of the Indonesian archipelago.

Morphological disparity as a biodiversity metric to explore biogeographical patterns: Recent cuttlefishes as a case study - Dr Pascal Neige (CNRS, Université de Bourgogne) Pascal is a fellow ammonoid worker who also works on extant cephalopods. In this talk Pascal compared and contrasted taxonomic diversity and morphological disparity in across the range of modern cuttlefish. His results showed that along the western African coast there is a morphological disparity peak without a taxonomic diversity peak whereas in the Indo-Pacific species richness is higher, but disparity is lower.

Phylogenetic Methods in Palaeobiogeography: Closing the Gap between "Is" and "Ought" - Dr Daniel Brooks (University of Toronto) As many of you will already know, Dan is a great speaker who gives wonderful overviews of our subject, and seeks links between disparate areas of science in the same way as the late Steve Gould. Despite the Kantian overtones of the title, this was more Daniel Dennett. Dan discussed the limitations of the human mind, particularly our need to generalize solutions. He encouraged us to embrace the inherent complexity of biogeographic patterns, and come to terms with the reticulate nature of area relationships.

Bat Biogeography Revealed by Molecular Phylogenetics - Dr Emma Teeling (University College Dublin) Emma presented the first well-resolved molecular phylogeny, which supported the hypothesis that that megabats are nested within microbats. Divergence time estimates indicate that the four major microbat lineages began to diversify during the early Eocene. As global temperatures rose during the Eocene insect and land plant diversity rose. A southern origin for bats was not supported. Based on these data, bats originated in Laurasia possibly in North America.

Circulation in ancient epi-continental seas: the use of finite-element modeling to understand non-uniformitarian systems -Prof. Peter A. Allison (Imperial College) Most of the record of marine rocks in the geological record is from epi-continental seas (such as the North Sea to the east of Great Britain) Tidal range is likely to have been of key importance to the hydraulic behaviour of these seas. Stratification in these systems is of particular interest. The Imperial College Ocean Model (ICOM) has been used to simulate these epi-continental seas. Tides in the Mediterranean have been successfully simulated, and Peter showed results for the Late Carboniferous. Tidal range may be an unrecognised but important factor influencing the fossil record of epi-continental seas. The 'adaptive mesh' routines used in the model may also have many applications outside of fluid dynamics.

The two final days of the meeting were in workshop format, rather than talks. One of the advantages of the CMS site was access to a computer lab, which allowed a “hands-on” component to some of the workshops, which was a success.

The morning workshop on day three focused upon palaeogeography, with a demonstration of TimeTrek by Alan Smith and his colleagues Colin Reeves and Lawrence Rush. During the first hour of their session they showed some of TimeTrek’s capabilities. The animations were particularly impressive. You can examine the range of palaeogeographic mapping tools the group has developed at <http://www.the-conference.com/CPSL/>

Allister Rees (University of Arizona) ran the afternoon session dealing with various on-line data bases. Allister and the TimeTrek group were able to integrate data sets and display various palaeontological and climate-sensitive sediment data sets on the animations. Allister’s work and links to data sets can be found at <http://www.geo.arizona.edu/~rees/>

The second day of workshops concentrated on analytical tools. Malte Ebach (Université Pierre et Marie Curie, Paris) took to the chalk boards for some “chalk and talk” about his program “3Item” which is a consensus-based methodology for phylogenetic reconstruction that he is working on extending to biogeographic problems.

Trying to keep things going through the final afternoon were Paul Upchurch and Al McGowan presented the (almost) finished version of Simulation Program for Area-Taxon Analysis (SPARTA) that we presented a poster about at IBS 2005. We have been able to start using simulated data from SPARTA to begin to assess the ability of various biogeographic methods to recover a signal from known data. We have also developed some additional software tools for processing biogeographic data.

The workshop days also gave people the opportunity to explore Cambridge. One botanist managed to fit in a pleasant trip to the Cambridge Botanic Gardens. Other people took the opportunity to have more extended discussions about topics they were particularly interested in. CMS is an excellent facility for this purpose, as the building has many subdivided areas for small group discussion, as well as a large canteen area.

We must thank the National Centre for Environmental e-Science (NIEES), who helped with a great deal of the logistical and computing support for the meeting. Quantifying and Understanding the Earth System (QUEST) provided substantial funding to help support the meeting. The Geologists’ Association, International Paleontological Association Cambridge University Press, Blackwells and Taylor & Francis all made contributions that helped to make the meeting possible.

The Systematics Association, another major sponsor of the meeting, will be handling the publication of a special volume based on the meeting through CRC Press. A special issue of the journal ‘Historical Biology’ will be coming out in 2007 with some papers from poster presenters. To whet your appetite until then, the meeting abstracts are available on the website <http://www.tethys.org.uk/biogeography> as a PDF.

We will be migrating the meeting website to a permanent on-line archive soon, and will make as many of the speakers presentations available as possible. Anyone who is interested in copies of the software and resources that were distributed at the meeting should contact Al McGowan by email (a.mcgowan@nhm.ac.uk)

UPCOMING MEETINGS OF INTEREST

Society for Conservation Biology
24-28 June 2006
San Jose, CA, U.S.A.
Website: <http://www.conbio.org/2006/>

Freshwater Biological Association Annual Meeting
18-19 July 2006
Dorset, England, U.K.
Website: <http://www.fba.org.uk/>

Ecological Society of America Annual Meeting
6-11 August 2006
Memphis, TN, U.S.A.
Website: <http://www.esa.org/memphis/>

5th International Conference on Applications of Stable Isotope Techniques to Ecological Studies
13-18 August 2006
Belfast, Northern Ireland
Website: <http://www.isoecol.org/>

International Association of Landscape Ecology, U.K. region
Water and the Landscape: The Landscape Ecology of Freshwater Ecosystems
5-8 September 2006
Oxford, England, U.K.
Website: <http://www.iale.org.uk/conference.html>

Society of Vertebrate Paleontology Annual Meeting
18-21 October 2006
Ottawa, Ontario, Canada
Website: <http://www.vertpaleo.org/meetings/index.html>

Geological Society of America
22-25 October 2006
Philadelphia, PA, U.S.A.
Website: <http://www.geosociety.org/meetings/2006/index.htm>

American Geophysical Union Annual Meeting
11-15 December 2006
San Francisco, CA, U.S.A.
Website: <http://www.agu.org/meetings/fm06/>

IBS NEWS

Minutes from board and business meetings, as well as reports from the officers may be found at <http://www.biogeography.org/newsletter.htm>

Membership information may be found at <http://www.biogeography.org/Membership.htm>

Information about past meetings may be found at <http://www.biogeography.org/meetings.htm>

Member Publications:

Joshua Drew of Boston University is compiling representative publications from members to post on the IBS website. We have created this site with the intention of facilitating collaboration, communication, and networking between our members and the greater scientific community. If you are interested in posting select publications on this site, please contact Joshua at jdrew@bu.edu. Be sure to include your contact information and a link to your personal webpage address if you would like it to be posted alongside your publications.

Funding for Biogeography:

For each charitable donation made by a US Citizen the US Federal Government (via a tax deduction to the donor) channels funds that would otherwise be spent by the US government to IBS. Charitable gifts reduce your tax burden and they help IBS.

Non-US citizens may benefit from similar tax advantages. Inquire for more information.

News to share?

Please forward news items for inclusion in the next IBS membership newsletter to Kate Smith at smithk@uga.edu.

