Bulletin

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Comments regarding this Bulletin should be addressed to the IBA Secretary:
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Further information at www.bryozoa.net/iba

News from the Membership

Hans De Blauwe. Happy New Year to you all. Last winter I got a sample of Antarctic Bryozoa (Eastern Weddell Sea) in loan from the Museum of Natural History in Brussels. The sample was a leftover of a dredge to collect Amphipoda and still contained 10 litres of Bryozoa debris. I could find already about hundred species in a small part of the sample. You can see some of the photographs of the material on my website:
http://www.marinespecies.org/deblauwehans/photogallery.php?album=2022
Any comments are welcome.

Spring and summer brought me back outside, collecting in the field all kinds of marine species with special attention to invasive species. I studied tunicates, Hydrozoa and discovered a new leafhopper for Belgium (*Prokelisia marginata*), originating from the US and feeding on *Spartina* (cordgrass). This winter I returned to the Antarctic sample and I intend to work on it for the next months. In the meantime I cooperate on a paper on the spreading of *Tricellaria inopinata* in Europe and I intend to write a similar paper on the rapidly spreading *Fenestrulina delicia* and *Pacificincola perforata*. So if someone of you has records of the latter species, I am very interested to hear from you.
(deblauwehans@hotmail.com)

Andrej Ernst, Priska Schäfer and Joachim Scholz: "Bryozoan Studies 2010" has been delivered to Springer and is just formatted. We will receive the proofs in mid/late February, which must be quickly performed. The volume contains 29 contributions, and it should appear not later than in the April. We thank all the authors for their interesting articles for the volume!"

Andrew Ostrovsky. For a long time I have been searching for the species from the genera *Scruparia* and *Thalamoporella*, and also *'Electra' bellula*, that I need for my anatomical work. I need them reproducing, i.e. with eggs/embryos. If someone could help me with them (fixed in glutaraldehide), I will clearly pay back including a collector as a co-author.

Anna B. Taylor. Paul Taylor and I have begun populating a 'Scratchpad' of British Neogene Bryozoa <http://neogenebryozoans.myspecies.info/>. This site aims to provide the scientific community and general public with information about the rich Pliocene bryozoan faunas from the Coralline Crag and Red Crag formations, and also the Pleistocene Norwich Crag Formation. It includes original and new species illustrations and descriptions of species, as well as stratigraphical data and photographs and information about field localities. Remarkably, the Crag bryozoans were last monographed by George Busk in 1859! The Scratchpad currently (5 December 2011) contains about 650 pages. By the end of the project we hope to have illustrated descriptions of about 150 species online.

Leandro M Vieira. The last three years I have been working on my PhD Thesis project "Revision taxonomic of *Scrupocellaria* (Candidae) in Atlantic". During these years I visited some Institutions and Natural History Museums in Europe [NHMUK (London), MNHN (Paris)] and USA [VMNH (Virginia), AMNH (New York), NMNH (Washington D.C.), MCZ/Harvard (Cambridge)] to work on type and historical specimens. I'm grateful to everyone that helps me during the visits, in special to Mary Spencer Jones, JoAnn Sanner, Judy Winston and Dr. Jean-Loup D'Hondt. At this moment I examined type-specimens of 53

species of *Scrupocellaria*, about 1500 SEM images of this genus were done and more than 90 new species were found!!!!
Next year I'll spend two months in Europe to give a presentation of these results in 11th Annual Larwood Meeting in Czech Republic and work on some specimens deposited at the Oceanographic Institute of Monaco, Manchester Museum, Rijksmuseum van Natuurlijke Historie (Leiden) and Natural History Museum of London (to finish some projects with Mary Spencer Jones). I also started collaboration with Dr. Karin Hoch Fehlauer-Ale to work on molecular genetics to recognize cryptic species in *Scrupocellaria*. The last step of this project (but not included in my PhD) will be a phylogenetic analysis of *Scrupocellaria* based on morphological characters, to try to facilitate the taxonomy and classification of the group. I hope finish the phylogenetic analysis next year to present the results in the next IBA Conference in Italy.

Salvador Reguant (University of Barcelona) is still a member of the IBA but retired from active research on bryozoans many years ago and has not attended any of IBA conferences in the last 20 years. However, **Paul Taylor** reports that he remains in good health and is interested to know about members of the IBA he knew from the 1960s to 1980s. In the photo shown here the man on the right is Padre Sebastián Calzada, head of the Seminary Geological Museum in Barcelona where the photograph was taken during September. Salvador can be reached at sreguant@ub.edu.

New IBA Members

Grit Benedix. After my diploma (thesis: fossil sclerites of ascidians) I wanted to take part in the science of biomineralization. Now I am a PhD student working on the ultrastructure of recent bryozoa. My supervisors are D.E. Jacob (Mainz/Germany) and J. Scholz (Frankfurt am Main/Germany). I started in summer 2011. My first field trip was in the Mediterranean Sea for learning scientific diving skills and sampling on my own. Until now some good pictures from SEM and first results with EDX are available. THANKS to Paul Taylor, who has sent me samples of five bryozoan species. Any further support is welcome & I shall be happy to contribute to cooperations and to the exchange of data.

Inês Fontes. I have just started a PhD based at the Natural History Museum, London and the School of Biological Sciences, University of Aberdeen with Profs Beth Okamura and Chris Secombes. I did a BSc in Biology at Cardiff University and an MSc in Ecology, Evolution and Conservation at Imperial College. My main scientific interest is parasite ecology and I have a particular interest in waterborne diseases. My PhD project's title is "Assessing the risk of an emerging disease in salmonid fish". The aim is to characterise the population dynamics of *Tetracapsuloides bryosalmonae*, the causative agent of Proliferative Kidney Disease (PKD) in salmonid fish which can cause great declines in both farmed and wild salmonid populations in Europe and North America and a substantial economic impact on trout industries. I will also identify environmental risk factors associated with the disease by examining the population dynamics of the parasite's primary host - freshwater bryozoans. The focus will be on *Fredericella sultana,* the most important bryozoan host for *T. bryosalmonae*. A final aim is to investigate whether there is an association between the infection levels in bryozoans and fish and to develop an SOP (sampling Standard Operating Procedure) that would use bryozoans as surrogates for sampling wild fish in order to assess PKD levels.

Antoinette Kelso (kelsoa@tcd.ie) has just begun a Ph.D. at Trinity College, Dublin on Irish marine bryozoans under the supervision of Patrick Wyse Jackson. Antoinette is a graduate in zoology of University College, Dublin and has just completed a M.Sc. in Biodiversity and Conservation at TCD. During the last year she investigated the bryozoan fauna in a major seaport close to Dublin. Her Ph.D. study will focus on the use of bryozoans as proxies for climate and other environmental factors over the last 150 years. Bryozoans are notable inhabitants of Irish coastal waters with over 192 species recorded in the literature between the 1840s and the twentieth century. The last comprehensive report on the distribution of bryozoans around

Ireland was published in 1911. More recently a few more localized surveys have documented further bryozoan diversity.

Firstly the project aims to document the diversity and spatial distribution of bryozoans around the Irish coast and to account for any demonstrated changes over the last century and a half. Secondly through the utilization of museum collections and ongoing collected material it will investigate possible changes in environmental regimes in the Irish Sea over that period.

If you have any publications or suggestions relating to this research Antoinette and Patrick (wysjcknp@tcd.ie) would appreciate hearing from you.

In Memoriam: John Bartley (1951-2011)

IBA member John Bartley died on December 20, 2011, after enduring, with exceptional humor and grace, a six-month ordeal with multiple myeloma.

John worked on the Permian trepostome, *Tabulipora carbonaria*, the same species that Roger Cuffey had studied for his dissertation years earlier. He and his wife, Jackie, often attended IBA conferences, including the most recent one in Kiel.

According to *The Holland Sentinel,* John was a strong advocate for science education. He taught geology and math at Muskegon Community College where, for the past several years, he also served as chair of the department. He gave freely of his time over decades to Michigan Science Olympiad as event supervisor, board member, and, for several years, as director. He was also working with other two-year college faculty to establish a forum for geology teachers at two-year schools within the National Association of Geoscience Teachers, Inc.

The Enigma of *Palaeocyphonautes*

Paul D. Taylor & Consuelo Sendino

During a recent visit to the Museo Geológico del Seminario in Barcelona, we had the opportunity to see some puzzling fossils first described by Vía Boada and Romero Díaz (1978). These bell-shaped Triassic (Ladinian) specimens from Alcover-Montral in Tarragona Province, northeastern Spain, were the basis of a new genus *Palaeocyphonautes*, named on account of its resemblance to the cyphonautes larvae found in malacostegine cheilostome bryozoans. While there is no questioning the superficial similarity in shape between *Palaeocyphonautes* and cyphonautes larvae, the difference in size between the two is striking to say the least: the finger used for a scale in the photographs published here of the holotypes of *P. vertexacutatus* (Figure 1)*, P. viai* (Figure 2) and *P. rugosus* (Figure 3) was not added using Photoshop. Whereas cyphonautes larvae range in size from about 0.14 to 0.41 mm (Pachut and Fisherkeller 2010), the holotype specimens of these three species of *Palaeocyphonautes* measure 234, 229 and 238 mm in width respectively (Vía Boada and Romero Díaz 1978). The Triassic fossils are consequently three orders of magnitude larger than modern cyphonautes larvae. Scaling up a cyphonautes to this extent and yet retaining the same overall shape and presumably functional morphology seems highly improbable when surface area/volume relationships are taken into account.

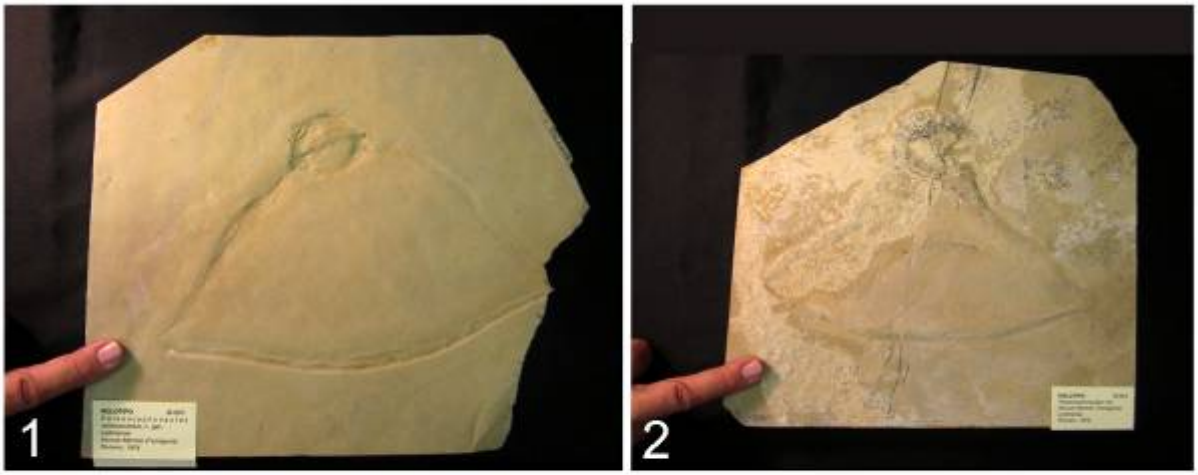


Figure 1. Holotype specimen of *Palaeocyphonautes vertexacutatus*, the type species of *Palaeocyphonautes*.

Figure 2. Holotype specimen of *Palaeocyphonautes viai*, here regarded as a synonym of *P. vertexacutatus*.

Figure 3. Holotype specimen of *Palaeocyphonautes rugosus*, also here regarded as a synonym of *P. vertexacutatus.* The wrinkled surface is likely to be a taphonomic artefact.

Differences between the three species of *Palaeocyphonautes* are less striking than are their similarities. It seems probable that they represent one and the same species, which page priority dictates to be *P. vertexacutatus*, the type species of *Palaeocyphonautes*. All have bell-shaped outlines defined by a marginal ridge or groove, and a ring-like structure at the

apex. Two additional specimens described by Vía Boada and Romero Díaz (1978) were also assigned as un-named species of *Palaeocyphonautes*, the first closely similar to the holotypes of the other three 'species', but the second is taller and the apical ring does not overlap the bell.

Vía Boada and Romero Díaz (1978) assigned *Palaeocyphonautes* to a new family, Palaeocyphonautidae, within the Superphylum Lophophorata. In a later publication describing a few new specimens and discussing the evolutionary significance of these strange fossils, Romero *et al.* (2005) made the bold assertion that Palaeocyphonautidae represented the adult stages of a cyphonautes larva and may have been 'a basal group at the stem of the origin of the Bryozoa' (Abstract, p. 149).

But what kind of organism really was *Palaeocyphonautes*? Relevant to its interpretation is the fact that the Alcover-Montral deposit is a finely laminated ('lithographic'), dolomitic limestone reminiscent of the famous Solenhofen Limestone. Like this German Jurassic deposit it contains soft-bodied fossils. For example, some convincing jellyfish and unequivocal holothurian fossils have been collected at Alcover-Montral. The laminated limestones apparently accumulated in shallow lagoons between dasycladacean mud-mound reefs. Vía Boada *et al.* (1977) interpreted the Alcover-Montral fauna as allochthonous, passively transported to the site of burial.

In view of the proven potential for soft-bodied preservation at Alcover-Montral, together with the lack of any obvious skeletal parts in *Palaeocyphonautes*, it is quite possible that the genus is a soft-bodied marine organism. Interpreting the identity of any fossil invariably necessitates comparisons with living organisms of known affinity. Rather few modern marine animals have bell-shaped bodies, except for some jellyfish in lateral aspect and bryozoan cyphonautes larvae. Had *Palaeocyphonautes* been a jellyfish on its side, one might have expected to see tentacles at the bottom of the bell. But no tentacles are visible. The ring-shaped structure seen at the apex of the bell has no obvious parallels among either jellyfish or cyphonautes larvae.

An alternative possibility is that *Palaeocyphonautes* is a trace fossil, either a trail or a horizontal burrow. But again we know of no bell-shaped animal traces and the apparently anoxic bottom waters do not favour the presence of mobile benthic animals that could produce such traces in the sediment.

Few scientists are likely to accept the interpretation of *Palaeocyphonautes* as an oversized cyphonautes. However, in the absence of any convincing alternative explanation of its affinities, the genus remains enigmatic and for the time being must reside in Problematica, a 'taxon' routinely employed by palaeontologists as a waste-bin for fossils of unknown affinity.

References

Pachut, J. F. and Fisherkeller, P. 2010. Inferring larval type in fossil bryozoans. *Lethaia* 43: 396-410.

Romero, A., Rogers, R. R. and Seguí, J. 2005. On the evolutionary significance of the Paleocyphonautidae [sic]: how fossils and larvae impact evolutionary reconstructions. *Batalleria* 12: 149-154.

Vía Boada, L. and Romero Díaz, A. 1978. Palaeocyphonautidae: nuevos fósiles del Triásico espanol, probablemente relacionados con las actuales larvas cifonautas. *Estudios Geológicos* 34: 497-504.

Vía Boada, L., Villalta, J. F. and Esteban Cerdá, M. 1977. Paleontología y paleocología de los yacimientos fosilíferos del Muschelkalk superior entre Alcover y Montral (Montanas de Prades, provincia de Tarragona). Cuadernos de Geología ibérica, Madrid, pp. 247-256.

Brazilian fossil expedition

Laís Ramalho, Kamil Zágoršek and Vladimir Távora

Fossils from Brazil are generally deeply understudied, mainly due to the lack of scientists. However, recent research by Professor Vladimir Távora (Universidade Federal do Pará and Emilio Goeldi Museum) shows rich fossils associations including Bryozoans on Pirabas Formation (Pará State) Miocene in age. Thanks to Kamil's project (supported by Czech grant agency through the project 205/09/0103: Shallow water ecosystems from the Middle Miocene of the Central Paratethys...) we were able to organize six days expedition to three sections, where previously bryozoans were reported.

Figure 1: Members of expedition: Vladimir, Laís and Kamil in beach near Salinópolis

Vladimir revealed as excellent guide and expert of Pirabas Formation, Laís approved to be remarkable hard-worker and Kamil showed how to enjoy the tropics...

Figure 2: Vladimir in front of the hard of mermaid (Fortaleza Island).

Figure 3. Hard working Laís digging on soft marl below hard limestone.

Figure 4: Kamil on the beach near Salinópolis searching for better life.

First studied section was active quarry on limestone near city of Capanema. Good luck (almost all time cloudy weather) prevents to be burned by sun and allow us to search for bryozoans in large area in quarry. During two days (03rd and 4th October), we found many proofs of bryozoans, but mainly preserved as "stein kerns", so without high value for detail study. Fortunately enough, we found some places (marly intercalations within the limestone layers), where calcitic shells were preserved, including few colonies of Metrarabdotos.

Figure 5: End of the day in quarry

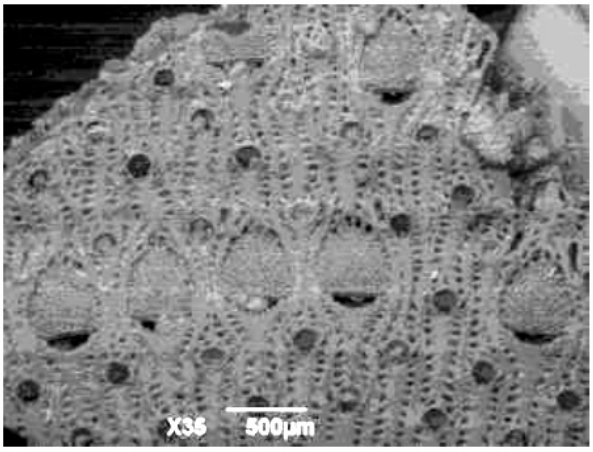


Figure 6: Metrarabdotos from Capanema

After that, we moved to Salinópolis, where was much more pleasure to work… Beach, refreshing wind and coconut water allow us to spend two nice days there (05th and 06th October). The hard limestone prevent erosion, and below them, clayish sediment, easy to wash and with perfectly preserved fauna consisting mainly of bryozoans making this stay the most comfortable. Saulo Nunes (student of Geology course) joined us to help in this stage of work.

Figures 7 to 9 (beach near Salinópolis): Crushing the hard limestone we found soft clay (usually under the water) where the best preserved bryozoans occurred.

Figure 10: Saulo with Vladimir searching for molluscs.

The last place was the most exciting. The section was situated on the Fortaleza Island about 40 minutes by boat from a small city called São João de Pirabas and half hour to walk on beach.


Figures 11 and 12: way to the startotype section of Pirabas Formation on Fortaleza Island.

The stratotype section of the Pirabas Formation includes religious place, hard limestone with large colonies of *Celleporids*, echinoids, molluscs and mammal's bones.

Figure 13: with large colonies of *Celleporids* and mammal's bones.

Figure 14: Divinity guard stratotype of Pirabas Formation.

However, the presentation does not allow us to collect bryozoans suitable for further research. Leonardo Freitas (student on decapods) replaced Saulo here.

Figure 15: As we were far for any lunch possibilities, the caju fruit was supplied...

After these field work we went to the South Brazil (Rio Grande, Rio Grande do Sul State – 4,200 km far) where two of us (Laís and Kamil) worked together on Geologic al Oceanography Laboratory (Universidade Federal de Rio Grande). During the following two weeks, we washed, select and prepared samples from Salinopolis for SEM study and from rest samples we make preliminary washing and checking. Unfortunately, the SEM was not available in Rio Grande do Sul State, so we had to travel to Rio de Janeiro city for SEM session in National Museum. Only few pictures were made, the rest are waiting for installation of SEM in Geologic al Oceanography Laboratory of Universidade Federal de Rio Grande.

The last day, we went to Porto Alegre city to say goodbye to Kamil leaving Brazil for Prague. But before, one more barbecue with friends…

Figure 16: last barbeque in Porto Alegre

IBA Treasurer's Report

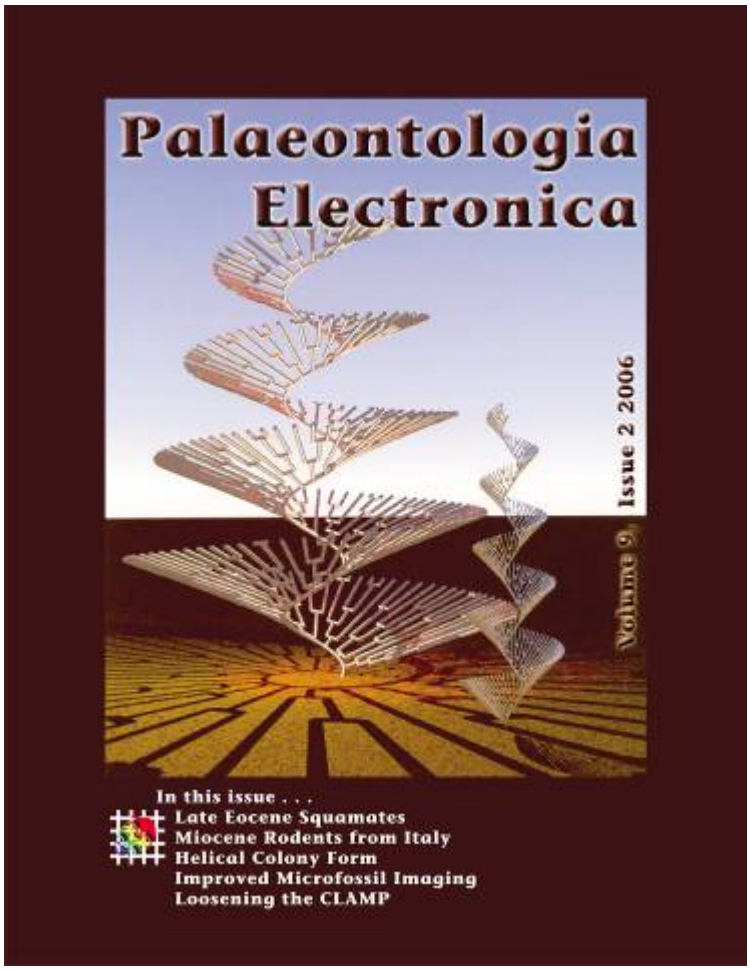
Abby Smith, Treasurer

End of Year Accounts — 2011

Income since last conference:	NZ$	Euros	US$
Donations (N=45)	$4640	€2,793	$3,611
Interest	$166	€100	$129
Expenditure since last conference:			
Fees & taxes	$244	€147	$190
Admin	$324	€195	$252
Balance end Dec 2011:	$8730	€5,257	$6,795

There's still time for donations to come in towards travel grants for the 2013 conference. Please use the online Financial Support form at
http://bryozoa.net/iba/files/IBA_membership_form10-13B.doc.pdf

Journal Covers



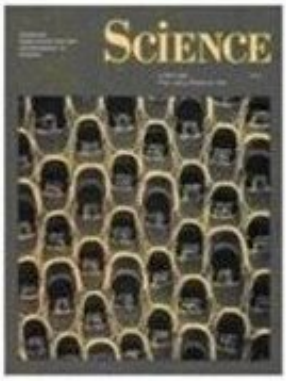
This cover illustration portrays simulations of helical colonies from a program originally written to portray the influence of varying morphological parameters of the fenestrate bryozoan genus *Archimedes*, although it applies to simulation of morphology of other helical modular organisms. Artwork by David Raup.

Raup, D. M., G. R. McGhee Jr. and F. K. McKinney. 2006. Source code for theoretical morphologic simulation of helical colony form in the Bryozoa. Palaeontologia Electronica 9(2),7A:18 p.

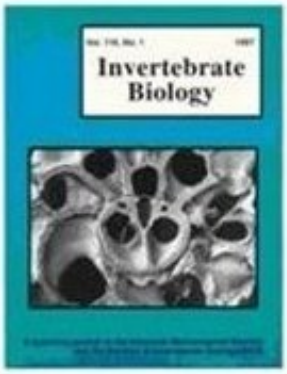
http://palaeo-electronica.org/2006_2/helical/index.html

Previous journal covers featuring bryozoans are shown on the next page.

Editor's Note: I am looking for the cover of **Journal of Morphology (Volume 271, Issue 9, pages 1094–1109, September 2010).** If anyone has this journal, perhaps you could scan the cover and send me the jpg. Thanks! Tim


SCIENCE


Science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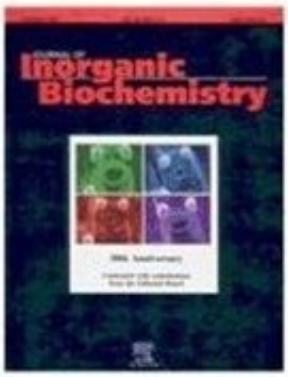
Biology


Inorganic
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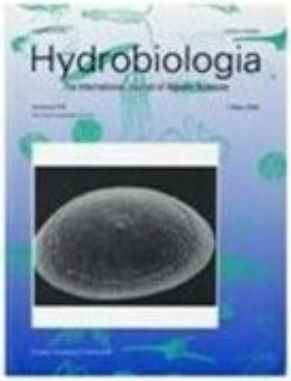
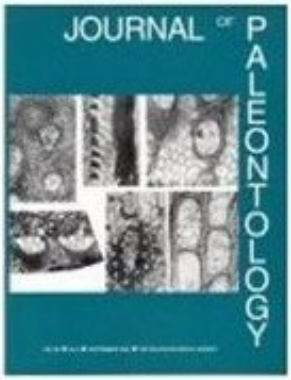
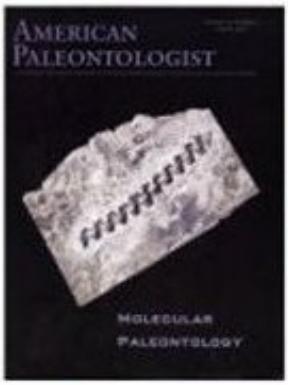
SCIENCE


The ASB BULLETIN


Hydrobiologia


JOURNAL OF PALEONTOLOGY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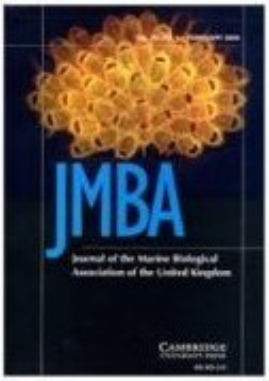
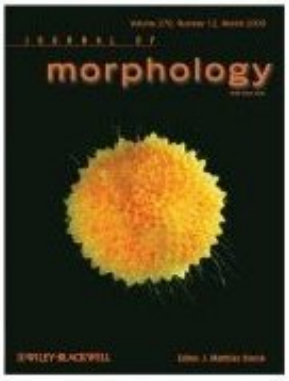
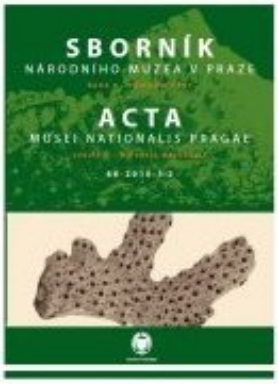
ZOOLOGICAL
SCIENCE


JMBA
Journal of the Marine Biological
Association of the United Kingdom
CAMBRIDGE


JOURNAL OF
morphology
WILEY-BLACKWELL


GEOLOGICKÉ VÝZKUMY
na Moravě a ve Slezsku
GEOLOGICAL RESEARCH
in Moravia and Silesia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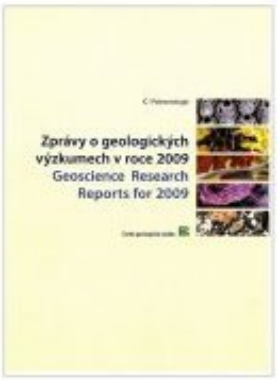
MUSEI NATIONALIS PRAGAE


Zprávy o geologických
výzkumech v roce 2009
Geoscience Research
Reports for 2009


PALAIOS

Upcoming Meetings and Conferences

Bryozoology

11th Annual Larwood Meeting
31 May to 3 June 2012
Masaryk University, Brno, Czech Republic
Hosts: Kamil Zagorsěk and Tereza Tomaštíková

16th IBA Conference
10-15 June, 2013, Catania, Italy
(Website not yet announced)

Paleontology

American Geophysical Union
2011 Fall Meeting
6-10 December, 2012, San Francisco, CA.
http://www.agu.org/meetings/

American Geophysical Union
2012 Ocean Sciences Meeting
20-24 February 2012, Salt Lake City, Utah USA

The Palaeontological Association
56th Annual Meeting 2012
(Dates and venue not yet announced)
http://www.palass.org/modules.php?name=annual_meeting&page=19

Tenth North American Paleontological Convention
Summer, 2013, (Venue not yet announced)

Geological Society of America Annual Meeting
4-7 November 2012, Charlotte, North Carolina, USA
http://www.geosociety.org/meetings/2012/

Biology

Aquatic Invasive Species, 18th International Conference,
(Not yet announced)
http://www.icais.org/pdf/1st_annc_17th.pdf

12th International Coral Reef Symposium
July 9-13, 2012, Cairns, Australia.
http://www.coralcoe.org.au/icrs2012/NewsCoral2012/CoralNews.htm

Ecological Society of America, 97th Annual Meeting
August 5-10, 2012, in Portland, OR
http://www.esa.org/portland/

International Society of Limnology
Various meetings and workshops
http://www.limnology.org/links.shtml#meetings

Recent Publications

The following list includes works either published since the previous issue of the *IBA Bulletin* or else missed by previous issues. As always, members are encouraged to support future compilations by continuing to send complete citations to the IBA secretary at any time. Reprints will be gratefully received by the IBA archivist, Mary Spencer Jones.

Antoniadou, C., Voultsiadou, E. & Chintiroglou, C. 2010. Benthic colonization and succession on temperate sublittoral rocky cliffs. Journal of Experimental Marine Biology and Ecology 382: 145-153.

Antoniadou, C., Sarantidis, S. & Chintiroglou, C. 2011. Small-scale spatial variability of zoobenthic communities in a commercial Mediterranean port. Journal of the Marine Biological Association of the United Kingdom 91: 77-89.

Brezina, S., Taylor, P.D. & Casadio, S. 2011. The record of sclerobiotic communities changes through the Cretaceous-Paleogene transition in Patagonia, southern Argentina. Geological Society of America Abstracts with Programs 43 (5): 657.

Bitschofsky, F., Forster, S. & Scholz, J. 2011. Regional and temporal changes in epizoobiontic bryozoan-communities of *Flustra foliacea* (Linnaeus, 1758) and implications for North Sea ecology. Estuarine, Coastal and Shelf Science 91: 423-433.

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