



ISSUE No. 5
Spring 2010

THE BRIDGE



SOSA
Bangor University

Linking Past and Present with the Future

LAST CHANCE TO SEE WESTBURY MOUNT!
DURING THE REUNION WEEKEND 30-31 OCTOBER 2010 (details p. 10)

Alastair Fothergill joins 60th Anniversary



© Bangor University

Alastair Fothergill delivering the public lecture at Bangor

With the rain pummeling hard outside the lecture theatre in Bangor, a spell-bound audience of all ages was taken on a fascinating trip around the globe: from a relentless hunt in the deserts to

the struggle for survival at the poles. Executive producer at the BBC's Natural History Unit and the director of the award-winning series Planet Earth, Alastair Fothergill, shared his stories behind the filming of the awe-inspiring habitats and their creatures in a public lecture to mark the 60th Anniversary of the existence of marine science in Menai Bridge. Alastair proved to be a true storyteller: amusing, inspiring and educational, with a passion for his work that was

infectious and with an unmatched eagerness to engage with the audience. A warm thank you to Alastair who not only added gravitas to the occasion but made the 2008 celebrations a truly memorable event.

Supporting Our Maritime Industries

The advert for the post of director of the NAFC Marine Centre, Shetland had struck a chord. Marrying a passion for all things marine with the academic leadership skills he'd acquired in his career to date was a dream come true. David Gray, (BSc MarBiol 1993), applied for a job that would literally change his life, in a place that is the perfect location to bring up a family: the islands offered the same family-orientated lifestyle and community support that David had enjoyed as a child in Cornwall.

For Dave and his wife Janine, coming to Shetland was the right choice. Two years later, David still puts all his knowledge, theory and experience to best use. The work of the Centre has and continues to make a real difference to the people of Shetland. Dave's message to any marine science graduate echoes this: "Seize every opportunity to gain real life practical experience. Use your education to make a valuable contribution to the



© NAFC Marine Centre

David Gray

future of our planet through your work, and see your skills and the contribution you make grow as you grow. You'll never stop learning, you'll probably never stop progressing and that's what makes your future so exciting". (cont. p.4)

FRS & Honours for Alumni

Peter Liss, (PhD MarChem 1968) has been elected a Fellow of the Royal Society and made a CBE in the Queen's Birthday honours list in 2008 for his contribution to the field of environmental chemistry. One of the leading biogeochemists in the world, Peter has been teaching and carrying out research on the biogeochemical interactions between the ocean and the atmosphere at the University of East Anglia for the past 40 years. He is currently chair of the Royal Society's Global Environmental Research Committee and has been re-appointed as a member of the Royal Commission on Environmental Pollution*. Peter took over the directorship of the University of East Anglia's Climate Research Unit (CRU) in Norwich, during the investigation into the allegations of professional misconduct of members of the Unit.

Ed Hill, (MSc PhysOcean 1983, PhD 1987), was awarded an O.B.E. in the 2010 Honours list. Ed became a lecturer in the School until he moved to the Directorship of the Proudman Oceanographic Laboratory in 1999. In 2005 Ed became the Director of the National Oceanography Centre Southampton and Professor of Oceanography at the University of Southampton.

*Set up in 1970 to advise the Queen, the Government, Parliament and the public on environmental issues; members serve as individuals, not as representatives of organisations or professions for 3 years but they may be re-appointed.

What's in a name?

An Honorary Fellowship, a prestigious shellfisheries award or a flair for model house making? Actually all of these and more if you are called Sandra Shumway! Not to mention the dinoflagellate species named after her and that Kermit thinks she is worth posing next to. Besides Sandra has a soft spot for Bangor: "As a Marshall Scholar with my choice of any British university, I chose Bangor in 1974 and, after 35 years of experience and travel, I would choose Bangor again. I am forever grateful for the opportunity to study in Wales and especially to work with Professor Dennis Crisp and the extraordinary faculty at Menai Bridge. No one could ask for a better start to a career", she said in her acceptance speech of the



© Southampton College Press Office, USA

Sandra Shumway with Kermit

Honorary Fellowship awarded for her services to Marine Science by Bangor University in July 2009. (cont. p. 2)

WG061294: A Minging Tale

A clam, recovered from a depth of 80m north of Iceland by the Bangor Arctica Research Group, has been officially recognised as a Guinness World Record for the oldest non-colonial animal known (the official certificates on the labs' walls prove it!). WG061294, or most widely known as Ming, has even reached #7 in the CNN-Time Magazine Top Ten Scientific Discoveries of 2007. And all without the team having properly written up a peer-reviewed scientific journal! (Full story p.11)

Arctic 'Mank'y Music

Described by BBC Radio Wales as "one of the most important electronic artists in Wales", Ben Powell was armed only with a laptop's "qwerty" keyboard and a pair of headphones aboard the Russian RV *Vickor Buynitskythe* in the Arctic Circle. An electronics technician at the School of Ocean Sciences since 1998, Ben is influenced by nature, maths and walks in the mountains. Patterns and numbers, like the Menai Strait tidal data, form the basis of his electronic music. An ice



© Ben Powell

Ben Powell somewhere in the Arctic

breaker however, gave Ben access to different sort of inspiration. (cont. p. 12)

A warm farewell to
Pat Boaden
SOSA Chair 2001-08 (p.12)

Assist fellow alumni in their efforts to help the
School and join CORDAN or contribute
to the Assist in Learning Fund (p. 6 & 9)

A warm welcome to
Mick Cook
SOSA's new Chair (p.3 & 11)

Help us reduce production costs Opt-In for a hard copy of The Bridge (p. 2)



The Bridge

The Bridge has resurfaced!
Editorial apologies for the years of absence but juggling projects while readjusting to the British weather was a challenge!
 Have an enjoyable read and
KEEP ON SENDING YOUR NEWS!

Warm thanks
 for making this issue possible:

Sinclair Buchan
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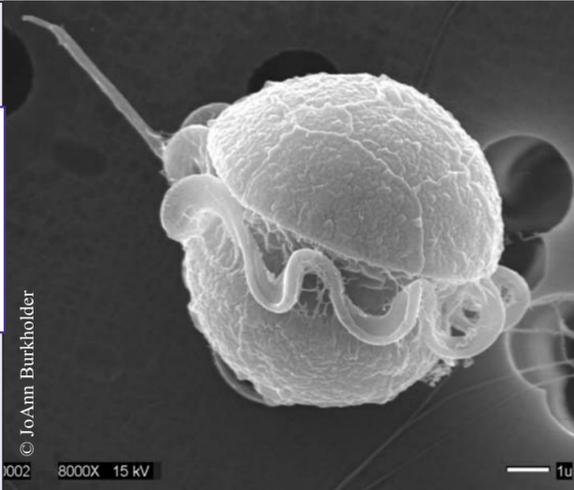
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Acknowledgements: This publication is for former students, staff and friends of the School of Ocean Sciences. The articles printed here, to the best of our knowledge, were correct at the time of going to press. The opinions expressed in *The Bridge* are those of the contributors, and are not necessarily shared by Bangor University, the School of Ocean Sciences, the Committee of the SOS Association or the Editor. For permission to reproduce any article please contact the Editor.

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**CONCEPT, DESIGN AND EDITING:
 Ioanna S.M. Psalti**

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Pfiesteria shumwayae: Nicknamed a Phantom of the Ocean, this marine dinoflagellate kills and then consumes fish by producing a potent neurotoxin. JoAnn M. Burkholder and colleagues found the unicellular, microscopic and photosynthetic organism in two US estuaries. The organism remains dormant on the sea floor until live fish come near, whereupon it converts to a motile form that swims upward and releases the toxin.

Sandy started her career in science about the age of 4 at her family's summer home in Portsmouth, Rhode Island, where she would explore the bay in her little motor boat and "test things", all the while interacting with the fishermen and locals gaining what would become a life-long admiration and respect for "local knowledge". She carried out a research project on shellfish and pollution that lasted 7 years, culminating with winning the Massachusetts State Science Fair, and set the course for a future in shellfish biology. At the age of 12 she asked for a filing cabinet for Christmas, no doubt in preparation to be a journal editor. She went on to receive her undergraduate degree in 1974 from the Southampton College of Long Island University where she graduated summa cum laude.

Sandra arrived at Bangor as the holder of the Marshall Scholarship*, one of the most prestigious awards that American undergraduates can receive. Although the majority of Scholars opt for either Oxford, Cambridge, London School of Economics, or one of the other major London institutions, Sandra chose the then University College of North Wales where she earned her Ph.D. in 1976. This was followed by post-graduate work in Wales, New Zealand and New York. Sandy was awarded a Doctorate of Science (D.Sc.) degree from Bangor in 1992.

As a researcher, professor, editor and advocate for shellfish and aquaculture, Sandy's work has taken her around the world including stints in Connecticut, Georgia, New York, Maine, North Carolina, and Washington, as well as Australia, New Zealand, Japan, Brazil, Canada, China, Korea, Mexico, Norway and Spain, to name just a few. Sandy has spent a lifetime (over 30 years and still going!) on basic research devoted to furthering a knowledge of shellfish and shellfisheries and the support and growth of aquaculture, worldwide.

Sandy has performed physiological experiments on nearly every phyla of benthic organism and has tailored her research to benefit industry. From her early work with pandalid shrimp and sea scallops in Maine, to her work with harmful algal species (HABs) and their deleterious effects on commercially important shellfish species and human health, she has had a substantial impact on global legislation and policies.

Hers may not yet be a household name, but Sandy's efforts have impacted families worldwide. She has been active in providing scientific expertise for the compilation of shellfish listings for the Seafood Watch cards which can be found in most supermarkets, and was instrumental in getting the northeast shellfish industry their own card. She regularly writes and speaks on behalf of the shellfish industry, not only in the U.S., but also abroad. She has made numerous invited trips, especially to developing countries, such as the Philippines, China, Mexico, and South America, to provide guidance on HABs and shellfish issues. Sandy has regularly participated in panels on aquaculture, fisheries and HABs to help the shellfish industries flourish in these parts of the world. Some of her works on HABs have been translated and published in Chinese.

Sandy is the editor of four international journals, Journal of Shellfish Research, Journal of Experimental Marine Biology and Ecology, Reviews in Fisheries Science, and Harmful Algae, the latter of which she co-founded. She has been an outspoken advocate for aquaculture and its benefits and has carried this message from small local newspapers to Congress. Most recently, she organized a workshop for NOAA on Shellfish Aquaculture and the Environment.

Since her early start in science, Sandy has published over 150

What's in a name? (cont. from p. 1)

articles, edited more than ten volumes on bivalves and aquaculture, and served on the committees of countless graduate students worldwide. She is an Aldo Leopold Fellow**, a Fellow of the American Association for the Advancement of Science (AAAS), and has received numerous honours and awards for teaching, science and advocacy. In summary, Sandy has devoted the bulk of her professional career to the study and promotion of shellfisheries science both in the U.S. and abroad. She has worked tirelessly to coordinate industry and academia toward the betterment of shellfisheries worldwide. It is for these reasons that in 2009 Sandy Shumway so richly deserved the National Shellfisheries Association's David H. Wallace Award*** presented to her in October at the NSA Pacific Coast Section Annual Meeting.

Edited from an article by Dane Frank and LeRoy Creswell published at Quarterly Newsletter, National Fisheries Association, Jan 2010

*The program provides full funds for two years of study, with a possible third-year extension, at any university in the United Kingdom in any field of study. It was created by the UK Parliament when the Marshall Aid Commemoration Act was passed in 1953 as a living gift to the US in recognition of the Marshall Plan - the post-World War II European Recovery Plan. The first Marshall Scholars - 8 men and 4 women selected out of 700 applicants - took their placements in autumn of 1954.

**The Leopold Leadership Program allows 20 Academic Researchers in the U.S. and Canada to participate in Intensive Leadership Training; the Fellows are chosen for their outstanding scientific qualifications, demonstrated leadership ability, and a strong interest in communicating science beyond traditional audiences.

*** The David H. Wallace Award is "presented to those scientists who deserve to be recognized for their dedicated service in promoting research, understanding and cooperation among shellfish scientist, culturists, managers, producers and regulators".

Changes in The Bridge

Opt-In for hard copy explained

Not much is FREE in life but The Bridge issues certainly are! Thanks to the continuous support of the School of Ocean Sciences, the production of the newsletter, namely printing and postage costs, were until now covered in full. However such support is not in perpetuity but subject to regular reviewing. The Committee has recently decided to gradually move to a web newsletter with an OPT-IN for those of us who still feel good having a hard copy to clench on our way to the coffee room or elsewhere!

A web newsletter means that you do NOT get The Bridge as an attachment to a mass mailing. Instead a pdf version is posted at

www.sos.bangor.ac.uk/

where it is available for public access. Providing the Newsletter in this fashion saves paper and, particularly postage as the latter makes up nearly 50% of the total production costs. The possibility of an electronic reminder to our members with a direct link to the Newsletter pdf, is currently under consideration.

Hence we would like to ask you to help us cut production costs by kindly filling the Personal Information section (p.9) and:

EITHER tick the OPT-IN BOX to receive a hard copy and provide a full postal address

OR update your email address for possible electronic reminders

**THANK YOU
 for your understanding and cooperation
 in this matter.**



A Letter From The Chairman



Mick Cook

Mick Cook was born in Coventry and spent his formative years in Nuneaton, Warwickshire attending the King Edward VIth Grammar School (1966-1973), where he was far more interested in sport than academic studies: when he wasn't on rugby fields, he sang in various choirs and played the French horn in the Warwickshire Youth orchestra. In 1976 Mick left Queen Mary College, University of London with a 2:1 in Geography. He subsequently spent two years as a Town Planner at the Royal Borough of Kensington and Chelsea Council in London before heading for an MSc in Marine Geophysics, Geotechnics and Oceanography at the then Marine Science Laboratories. Mick graduated in 1979 and in January 1980 he joined Fairfield Aquatronics (a US seismic company): for the following two and a half years Mick travelled the world as a marine geophysicist on board survey vessels before being appointed Seismic Interpretation Manager at Fairfield. In 1984 Mick joined Hydrossearch, an embryonic geoscience consultancy company outside London. Mick and his colleagues spent the following 20 years building Hydrossearch into a world-leading geoscience consultancy and employed many SOS graduates. Between 1984 and 2008, Mick held various positions in the company and became a board member in 1990. In 2003 Hydrossearch was taken over by RPS and Mick moved to the post of Managing Director – Operations for the Energy Division of RPS until October 2008 when he left to pursue other ventures. He now holds a number of consultancy positions with companies providing consultancy services to the Energy sector. A former Chairman of the Offshore Site Investigation and Geotechnics committee of the SUT, Mick is now Chairman of the Independent Energy Consultants Organisation (IECO). He is married to Christine (née Tigar, marine biologist who he met in Menai Bridge in 1978) with two children, Christian (21) and Stefan (19) - both reading Geography at Kings College London as of Sept 2010. They live just outside Farnham in Surrey but visit North Wales at least once every year for Christine to get her annual injection of "mountains and sea air".

Dear SOSA Members,
I am writing to you in my new role as Chairman of SOSA; a role I was deeply honoured to be invited to perform and one that I hope I can fulfil successfully. I have just attended my first SOSA committee meeting and was truly impressed to learn what has been done to date in order to establish SOSA and the efforts expended in making contact with so many ex-students and for all the reunions that have been so successfully organised.

As with any new role, my thoughts have turned to what can we do to build on all the good work that has previously been done by SOSA. Well, SOSA's key reason for existence is to keep all alumni informed about other alumni and about developments in the School of Ocean Science. Maintaining the alumni database is, in itself, a major undertaking and would not be in the good state that it is without the hard work of Gay Mitchelson-Jacob and other members of the SOSA committee. Your support in keeping SOSA up-to-date with your personal developments is very important and the additional information you supply about "those that have fallen off the radar" is invaluable for expanding and maintaining the Association.

The Bridge, the SOSA newsletter, is an essential means of achieving the objectives of the Association. The thud of The Bridge on the doormat is, I know, warmly welcomed in the Cook household, as I am sure it is in many other alumni homes. Great thanks are due to Ioanna Psalti who puts huge amounts of skill, time and effort into producing this very appealing and informative publication. We can all help Ioanna by providing material for inclusion in The Bridge: an interesting job you would like to let us know about, a promotion, a new husband, an exciting piece of research or have travelled to an interesting part of the world then your fellow alumni would like to share this news with you; pictures would be a bonus! Ideally, we would like to publish The Bridge annually and we are taking steps to achieve this aim by enlisting help for Ioanna. Whilst the university provides a level of financial support to the costs of printing and posting The Bridge, there is a shortfall and we are looking to companies to advertise in The Bridge to part-pay for the production. What better way can you think of promoting your company or catching the eye of prospective employees than placing your advert before nearly 3000 marine science professionals. The Bridge is also provided to all current marine science students and is a great way to introduce your company to them. Please contact me if you would like to place an advertisement....and if you don't contact me.... I will be approaching you – you have been warned!

I am determined in my first Chairman's letter not to put too much burden on SOSA members. After all, the purpose of SOSA is to serve its members. In this respect I would like to turn to an issue that may be of interest to Alumni. I have spent all my working life in the Energy sector - initially in oil and gas and more recently in a number of other areas such as renewables. Energy is certainly a hot topic at present. Traditional supplies of energy – coal, oil and gas – are being used up. There are of course huge untapped natural gas resources in remote areas such as Russia, but there are difficulties in transportation, storage and security. A mix of resources including sustainable energy such as winds, waves and tides may be the answer to the increasing demand for a secure and sustainable supply. As yet these "new" technologies have barely registered on the global energy production scale. However, there is a marked push in various parts of the world to advance such technologies. By the time you read this newsletter, the UK Crown Estates will have announced its ambitious Round 3 licence awards for mega-windfarm developments off the coast of the UK. These developments have the potential to make significant contributions to UK power generation. As I relate in my article in page 4, such developments in energy production will provide significant employment opportunities to both current and future Alumni alike. Further, the marine science skills taught and researched in Menai Bridge will see increased demand as a result.

Finally, I cannot complete my first Chairman's letter without encouraging you to plan to be in North Wales at the end of October for Anglesey's event of the year; just topping the Menai Bridge Fair in popularity. I am, of course, referring to the next SOSA reunion dinner which is scheduled for Saturday 30th October at the Victoria in Menai Bridge. This is a great opportunity to catch up with old friends and colleagues and we are encouraging Alumni this year to put together tables (or part-tables) at the event to ensure you enjoy the re-union even more than normal. Your SOSA committee is also planning tours of the Prince Madog and talks by School of Ocean Science staff and research members on topics of interest in marine science. Perhaps most importantly, the reunions are always an opportunity to learn more about the many and distinctive flavours of Scotch Whisky from Sinclair Buchan – an education in itself. I look forward to seeing you there.

Best wishes,

Mick

The School of Ocean Sciences Association (SOSA)

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SOSA

<http://www.sos.bangor.ac.uk/alumni>

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The SOSA Committee Reports:

The Committee met on three separate occasions in 2009 and 2010.

SOSA has welcomed Mick Cook as the new Chairman.

Plans for the reunion weekend in October 2010 were finalised.

The newsletter remains in great need of sponsoring and several options were discussed. A core of alumni had previously shown an interest to help collectively; the Committee will try to re-establish contact. The decision for an 'opt out' for an electronic version is to be tried out in the 2010 issue. A hard copy will continue to be produced for those who choose snail mail.

The College of Natural Sciences has been informed in writing of the activities of the School of Ocean Sciences Association regarding CORDAN, the Marine Network mentoring scheme and the Career's evenings.

Other items discussed are the formalisation of the SOSA/Endeavour Society link, the setting up of LinkedIn Group and a Facebook page.

The merging of the SOSA and the Bangor Alumni Office databases has been put on hold due to software issues.

The objectives of SOSA will be reviewed during the next meeting in July 2010.



ECONOMIC RECESSION! ENERGY CRISIS? THE INCREASING DEMAND FOR MARINE SCIENCE SKILLS

The ongoing economic crisis hit us all much more quickly than we ever could have imagined at the end of 2008. For those of us working in the energy sector, it was only a few months earlier that we had been talking about the end of the oil and gas boom and bust cycle that has typified our industry over the past 30-40 years. Demand for energy was increasing exponentially. Gazprom, the Russian state natural gas company, were predicting oil prices of US\$250 per barrel. How quickly things change. The price of oil was slashed from a mid-2008 high of nearly US\$150/barrel to a level of US\$40-50 but the oil and gas industry didn't really see the then daily-reported swinging cuts that had become common-place in other industries. Some oil and gas companies delayed or cancelled previously planned projects and seismic vessel new-builds were put on hold. However, the impact has been somewhat minor inside the energy industry when measured against the world economic downturn.

The energy business has, however, been in crisis for some years now – a crisis of its own-making that has crept up on us. In the so-called “developed world” one grew accustomed to a ready supply of energy for transport and to power homes and workplaces. Unfettered consumption of energy has led to dangerous levels of CO₂ production and consequent global warming. And now the “developing world” has had a taste of the benefits of “easy” access to energy, the demand for such resource can only rise inexorably. The economic crisis has certainly flattened the energy consumption curve but the trend towards increased global energy consumption is unlikely to reverse significantly.

The perfect storm is brewing in the world of energy. The ingredients comprise:

- i) our near-total reliance on hydrocarbons (a finite and CO₂ producing resource)
- ii) the threat to security of supply of energy from a number of quarters
- iii) the much-talked about yet somewhat delayed search for economic alternative supplies of sustainable energy

Despite efforts to reduce our reliance on hydrocarbons, world supply of primary energy between 1971 and 2007 (see graph below) shows continuing reliance on such fuels. It is imperative to find soon alternative supplies of sustainable and car-

bon-free energy. Although we are already way behind the “needs” curve, high oil prices in 2007/08 that resulted in high prices at the petrol pumps and in our electricity bills, are a necessary pre-cursor to alternative supplies of sustainable, carbon-free energy. Innovative technology will always, by necessity, be expensive and humans have a long history of “economic innovation” – i.e. we adopt new technologies when it is in our economic interest to do so. We are currently almost totally dependent on hydrocarbons for our energy supply and we have invested huge sums in the infrastructure to produce, transport and supply such energy. This situation will not change quickly unless there is an economic reason to do so – despite the dire consequences of continued global warming. Only when we begin to seriously cost-in the economic impacts of global warming into our energy price equation or prices for hydrocarbons increase further, will we begin to make significant progress towards sustainable, carbon-free energy.

The switch to alternative sources of energy (hydrogen, solar, wind, waves and tidal power) will be a long-time coming without the necessary economic drivers or significant state intervention. In the meantime, we can look forward to an ever-tightening energy supply with consequent fuel shortages and inevitable future power cuts. Gas is an abundant and a less CO₂ producing alternative to coal and oil and is an important transitional form of energy. However, there are inherent problems in transporting the product to market (costly pipelines infrastructure and attendant security threats to such supply). These are being partly overcome by LNG transportation. Nuclear energy is considered by some to be a “safe” and “clean” form of energy but with concerns over the disposal of nuclear waste. In addition, new nuclear power stations take a long time to sanction and build and it may take 10-15 years before we see the impact on energy supply.

Significant progress has been made in the pursuit of alternative economic and sustainable energy sources. Although onshore wind has matured over the past decade, there is a significant backlash to overdevelopment of windfarms and the lack of suitable sites close to large populations; particularly in the UK. This is inevitably driving wind offshore. The three offshore wind licensing rounds have given impetus to offshore wind in the UK; the largest producers of offshore wind. However, the intermittent and unpredictable nature of wind

combined with the difficulties of storing electrical energy and diurnal energy consumer demand necessitates additional energy sources. Although tidal energy is a significant and predictable source of power, the technology for harnessing it is embryonic and some years behind offshore wind.

Energy consumption will continue to rise and they aren't making any more hydrocarbons – well not in the timescales of interest to us. Clean coal technology and CO₂ sequestration may provide a costly part-solution to the global warming issue. The search for secure and sustainable energy supplies will remain a key global issue for the

Supporting Our Maritime Industries (from p.1)

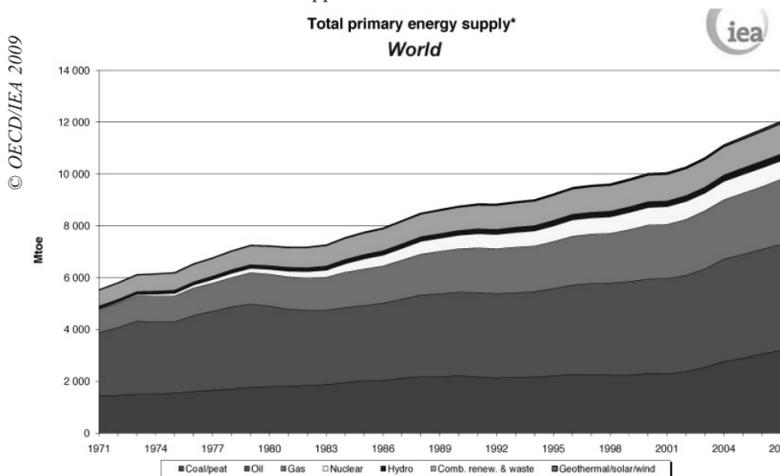
David grew up in Cornwall surrounded by the sea and the fishing industry. He also watched as that fishing industry was decimated and witnessed the effect that had on the community and its economy. It was from there that his passion for all things marine developed. He came to the School of Ocean Sciences where he achieved an Honours degree in Marine Biology in 1993. He then obtained a PhD from the Department of Zoology and Entomology at Rhodes University, South Africa, where he also held a lectureship. He subsequently went to Hartpury College of the University of the West of England, where he was later appointed Deputy Principal and Dean of Faculty. In 2007 David was awarded a personal professorial chair by the University of Derby in recognition of his academic leadership and international reputation as an education practitioner having held the posts of the Head of the School of Culture and Lifestyle in 2004 and the Dean of Faculty in 2006.

Before he came to Shetland for his interview, David hadn't really heard of the NAFC Marine Centre but, when he arrived, he was blown away by its hidden gems that needed their opportunity to shine: the quality, commitment and dedication of the staff and the first class equipment. He instantly saw the critical role that the NAFC Marine Centre had to play in managing the development of Shetland's marine resources, as well as contributing to the sustainability of the islands' economy – helping it to grow further. Over the past year the Centre has carried out a self-assessment process aiming to achieve the European Framework for Quality Management Committed to Excellence award and David was instrumental in the formulation of the Centre's roadmap for its development in the next five years. In addition a new business continuity plan and corporate risk register have been agreed, and a review of the Centre's marketing efforts and brand identity has been undertaken.

Admittedly all developments have been made possible with secure funding: Shetland Islands Council has – for the first time – approved the Centre's funding for the next three years and support from the Scottish Funding Council made possible the institution of the Merchant Navy Cadetship training programme that the Centre runs. However what has put the NAFC Marine Centre at the forefront of marine research, management and training is an enthusiastic and receptive staff that rise to each challenge, together with the input of David's knowledge, theory and experience acquired over the years. Deploying the education for the future of the planet has never been more productive or fulfilling!

foreseeable future and the skills possessed by those working in the energy industry will be increasingly sought after. Further, much of this search will be focussed in the marine environment and skills taught at Menai Bridge will form an essential ingredient in such activities. The current global economic crisis will inevitably impact us all but the need for our skills within energy, particularly in the marine environment is unlikely to diminish. The ageing demographics of those working within our industry will not help with the current energy crisis..... but that is another issue!

Mick Cook
Independent Energy Consultant



Recollections from the 1960s: Oceanography & Limnology Vacation Courses



© John Harvey

John Harvey

John Harvey obtained his BSc from the University of Liverpool in 1959. He was then appointed Scientific Officer at the Fisheries Laboratory, Lowestoft where he carried out oceanographic research in Arctic waters. In 1961 John arrived at Bangor as Assistant Lecturer to initiate the teaching of Oceanography in the then Marine Biology Station at Menai Bridge. He was later promoted to Lecturer, in 1968 John was awarded his PhD from the University of Wales in 1968 for his thesis 'Hydrographical Studies in the Irish Sea and adjacent waters' - that included the flow of water through the Menai Strait - and joined the nascent School of Environmental Sciences of the University of East Anglia as Lecturer (and later became Senior Lecturer) in Oceanography. In 1976 he published the textbook 'ATMOSPHERE and OCEAN - Our Fluid Environments'. In 1989 he took early retirement and moved to Scotland to establish Compass Ventures providing activity holidays for adults while he continued working part-time for the Open University..

Attending the 60th anniversary weekend and reading Ioanna Psalti's excellent chronicle "Across the Bridge" revived for me many memories of Marine Science at Menai Bridge, and stimulated me to write a little about the Oceanography and Limnology courses which we ran each July during the early 1960s. They followed the pattern of the Easter Marine Biology courses captured on film by Barry Paine in 1960, and were initiated by Dennis Crisp eager to get Menai Bridge known as widely as possible as a centre for Oceanography. The courses ran for a fortnight or so and were available to Bangor graduates and to persons embarking on (or already involved in) careers in which a knowledge of oceanography would be useful – fisheries research, Admiralty hydrographic department, water authorities responsible for coastal and estuarine water quality, naval officers involved in hydrographic survey work, industries discharging waste into the marine environment, etc. My recollection is that we limited numbers to 18 each year and that all places were usually filled.

I arrived at the then Marine Biology Station as Assistant Lecturer in Oceanography one week before the start of the first course in July 1961, with no previous teaching experience in oceanography (or anything else!). Peter Spencer was responsible for the chemical content of the course and

was the main organiser at least for the first year or two; I was responsible for most of the physical content. Eifion Jones nobly took on waves and tides, very much from the point of view of the shoreline collector, until Jack Darbyshire arrived in 1963 and took it over in his own inimitable way; Dennis Crisp devised a set of laboratory demonstrations and exercises involving tanks with two fluid layers, one rotating to simulate the Coriolis effect and another tipping to illustrate internal waves.

Apart from a series of some 25 lectures, the essential part of the course was a 9-day practical work "on the water" and the analysis of samples and data collected during this work. The course participants were divided into 3 groups of 6 and spent one day at sea out of Holyhead, one day studying tidal phenomena in the Conwy estuary, and one day studying a stratified body of water in a Snowdonian lake (hence Limnology in the title!). The groups not on the water initially undertook Crisp's lab exercises and then analysed the samples and data they had collected, but before the first groups went on the water there were practical classes on sample analysis and data processing – just as well because Peter and I were both much involved in the days out and there was very little supervision in the laboratories until we returned in the evenings. (cont. p 11)



News from the labs

In total, 88 students graduated from SOS in June 2008 - 16 First Class Honours Degrees, 33 Upper Second Class Honours, 31 Lower Second Class, and 8 Third Class Honours. Some 15 PhD candidates successfully defended their theses, whilst 57 students completed the taught course component of their MSc Degrees.

In total, 99 students graduated in June 2009 - 12 First Class Honours, 47 Upper Second

Class Honours, 25 Lower Second Class, and 13 Third Class Honours. For the first time, four of these students were awarded the new M.Mar.Biol Degree, one was awarded the M.Mar.Sci. Degree and two were awarded Diplomas. Some seven candidates successfully defended their PhD theses, whilst 38 students completed the taught course component of their MSc Degrees.

Departmental Prizes	Value	Recipient 2008	Recipient 2009
Gavin Borthwick Memorial Prize*	£100	Alexandra Deamer-John	Fiona Read
Darbyshire Prize (Best finalist in Oceanography)	£50	Rosemary Carter	Lisa Thorpe
Darbyshire Prize Postgraduate (Best MSc in Oceanography)	£50	Jamie Dollman	Jennifer Wright
Ray Delahunty Memorial Prize**	Book Tokens	Katharine Eglise	Siobhan Vye
Jeremy Jones Memorial Prize***	£150	Margarida Bechardas	Sarah Crichton
Fishmongers Company Grant****	£3,000	Jessica Montgomery	Louise Roberts
Gavin Winsborrow Prize*****	£50 Book Tokens	Brett Dickinson	William Brocas

* Set up in the memory of Gavin Borthwick and awarded to the most promising first-year mature student in Marine Biology. A mature student in MarBiol 1994, Gavin died in April 1994 after a long illness. He was awarded an Aegrotat degree. A tree of remembrance has been planted by his family, friends and staff of the School at Treborth Botanical Gardens.

** Set up in 2003 in memory of Ray Delahunty and awarded to the best 1st year student of Joint Honours MarBiol/PhysOcean. Ray died in 2003 while studying and was awarded posthumously a PhD.

*** Awarded to a student who has just completed the MSc in Shellfish Biology, Fisheries and Culture and set up in the memory of Jeremy Jones, a mature student in the School of Biological Sciences.

**** Awarded to a promising undergraduate student to enable them to follow the MSc Shellfish Biology, Fisheries and Culture.

***** Set up in 2007 in memory of Gavin Winsborrow and awarded to the most enthusiastic, helpful and selfless student in both the academic and social arenas over the three year course and is chosen by both staff and students.

SOS students scoop Bangor's most coveted award

The University's most prestigious award, the Dr John Roberts Jones Prize, was scooped by SOS students for two consecutive years: Rosemary Carter (BSc 2008, Geol Ocean) in 2008 and Friederike Jordan (Degree 2009) in 2009. This annual award confers considerable distinction on the recipient, is made to a student whose academic performance is judged as particularly meritorious in that year.

SOS staff changes

Andy Beaumont was appointed Deputy Head of School in September 2009.

Leon Clarke left in December 2009, and was subsequently appointed as an Honorary Fellow at Bradford University.

Andy Davies was appointed as a Lecturer in May 2009.

Stuart Jenkins has been a Reader since December 2009.

Gay Mitchelson-Jacob was promoted to Senior Lecturer/Senior Research Fellow in June 2008.

Steve Mudge left the School in 2008

Tom Rippeth has been Reader since August 2009

Ray Seed retired in December 2009.

Andy Yule has left SOS and has been appointed to the Teaching Staff in the Zoology Department at Aberdeen University.

Sailing Together To Shape The Future

It is an annual tradition: normally held in April/May, the Careers Evening sees the Westbury Mount Lecture Theatre filled with current students who come to share the real life experiences of a group of SOS alumni dedicated to help the next generation on how to sculpt a career with a marine science degree. This well-attended event is jointly organised by SOSA and the Endeavour Society with participation of the Centre for Careers and Opportunities of Bangor University. It is made possible thanks to the continuous efforts of Gay Mitchelson-Jacob (Membership Secretary, SOSA), David Assinder (Treasurer, SOSA) and Dei Huws (CORDAN coordinator, SOSA).

During the past three years, the Careers Evening had an interesting mix of representatives from across the different sectors of the ocean science industry who gave their perceptions of life within their careers, tips on how to impress the interviewers, with other useful advice on how to get into the industry, how to thoroughly research the company beforehand and how to take full advantage of relevant volunteering opportunities.

The 2008 event was used to introduce the new Marine Network Mentors (Liz Morris and Mike Tetley) of the Alumni in Business Marine Networks (details on the project p12). Year-long internships in applied Geotechnics with Gardline Ltd. were also on offer as an excellent means to getting in depth knowledge of working in industry. Valuable work and field research experience were also possible in some

other voluntary job opportunities available within cetacean conservation organisations nationally, and locally with Seasearch, Anglesey Sea Zoo, Wildlife Trust Wales and an opportunity for whale watching in Nova Scotia. The importance of networking was highlighted by all speakers as a means of making contact with organisations in order to gain work experiences and develop career success. The networking advice was definitely put into practice as students, speakers and staff headed for the usual post-talk dose of beer and sandwiches in the local pub.

Edited from contributions by Inge Smith, Alumni-in-Business, CAMS, SOS, Jo Whitaker (Chairperson) and Lowri Evans (Treasurer), from the Endeavour Society 2009-10

School Programmes are now IMarEST accredited

All of the School's undergraduate and M.Sc. degree programmes are now IMarEST (Institute of Marine Engineering, Science and Technology) accredited for a period of four years from the 2008 up to and including the 2011 student cohort intake. Such students meet the academic requirements, in part, for registration as a Chartered Scientist and Chartered Marine Scientist. In addition the periods of accreditation are backdated to cover the academic years from 2005/6 to 2007/8 enabling former students to by-pass an

individual review of their degree programme should they apply for registration as a Chartered Scientist or Chartered Marine Scientist.

The accreditation has allowed students to qualify for a variety of IMarEST scholarships and the annual £50 IMarEST prize for the best IMarEST graduate.

For a list of the accredited programmes:

<http://www.sos.bangor.ac.uk/>

or contact the School

In 2009 and for the first time, the IMarEST Annual Prize was awarded to Friederike Jordan

Sir Kirby Laing Visiting Fellows

2008

Prof. Hans Bruchard (University of Rostock, Germany), became an integral part of the physical oceanography turbulence and mixing research group contributing to model-based analysis of field data from Liverpool Bay and investigating the interaction between currents, stratification and turbulence in Regions of Freshwater Influence (ROFI). In addition, he presented two seminars: *The Impact of Density Gradients on the Sediment Transport in the Wadden Sea* and *The Generation of Bulk Shear Spikes in Shallow Stratified Tidal Seas*.

2009

Professor Jan Pechenik (Tufts University, USA) interacted with staff in SOS particularly PhD student Katrin Bohn who is researching into *C. fornicata* in Wales. Jan spent time advising Katrin on larval rearing of the slipper limpets and

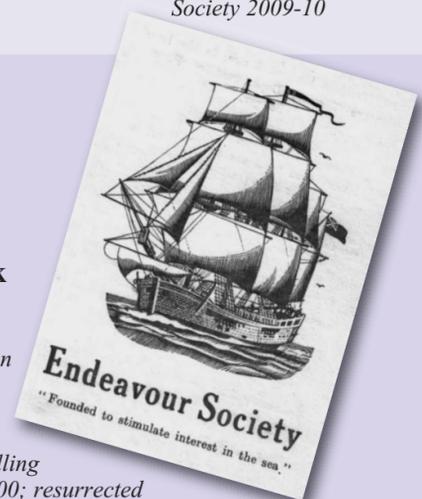
one day fishing at sea on the *Prince Madog* with undergraduate students and staff. He presented two seminars to the staff and students of the School of Ocean Sciences (SOS) staff and School of Biological Sciences (SBS): *Competence, metamorphosis and latent effects: Metamorphosis is not (always) a new beginning* and *Larval mortality and multiple paternity: two short stories about *Crepidula fornicata* as a model organism*.

2010

Prof. S.Y. (Joe) Lee (Griffith University, Australia) contributed to the International conference that marked the retirement of Raymond Seed from SOS with the seminar *What can ecologists learn from intertidal crabs?* in addition to the general seminar *A novel approach to assessing the impact of urbanisation on estuarine food web dynamics* for SOS and SBS staff.

Endeavour Society
CONTRIBUTE TO OUR TALKS
THURSDAYS AT 19.30
AT WESTBURY MOUNT LECTURE
THEATRE
www.endeavoursociety.org.uk

Named: after Captain James Cook's ship.
Established: over a cup of coffee by John Gray, a postgraduate student, in 1965.
Objective: to "stimulate interest in the science of the sea in all its aspects"
Biographical: it grew over the years, fulfilling the aspirations of its founders; folded in 2000; resurrected in 2001 by Ray Seed and the SOSA
Other: chat to the speakers over a pint and enjoy the FREE FOOD afterwards in the Auckland Arms, a kind offer by the landlord, Simon Hardy.



A Big Thank You to our speakers 2008-2010

2008

Vicki Hickin (BSc MarBio 2001), NW and N. Wales Sea Fisheries Committee

Rob Keirle (BSc GeolOcean 1992), Swansea University

Liz Morris (BSc MarBiol 2002, MSc MEP 2005), Marine Ecological Solutions Ltd.

Mike Tetley (MSc MarMamSci 2004) researcher in ecology of Minke Whales

Stephane Theurich (BSc MarBiol/Ocean 2003) Gardline Geosurvey Ltd

2009

Garth Bryans (B.Sc. OceanSci 2002, MSc AppOcean 2003), Aquamarine Power Ltd

Kirsty Lindenbaum (MarBiol, PhD 2003), Countryside Council for Wales
Michael Roberts (BSc. OceanSci 2000, PhysOcean PhD 2006), CAMS
Scott Webster (BSc. OceanSci 2002, MSc AppOcean 2003), Welsh Water

2010

Phil Baker (MSc MarGeotech 1984), freelance Geophysicist
Ceri James, British Geological Survey
Jo Lester (MSc AppOcean 2006), Metoc plc
Tony Roberts (BSc MarBiol/AppZoo 1991), Environment Agency, Wales



For the mutual benefit of Alumni, SOS staff and current students. Established in 2000 in response to inquiries by alumni working in various fields & looking for potential employees or collaboration.



Career & Opportunities in Research & Development: Alumni Network
A SOSA Initiative

CORDAN coordinates and formalises the transfer of information between the School, its current and past students, and interested companies and institutions providing also an insight into careers in ANY FIELD.

Who is CORDAN for?

for BOTH current students and graduates

What is CORDAN?

a database of former students who have been there, done that and can tell you what it is really like. Having carved unique paths to their current jobs, these SOS alumni are willing to advise and may assist with intern experience in their workplace. CORDAN represents a variety of professions and industries and it is currently made up of 10 Alumni, in 3 countries.

When should I use CORDAN?

When you want to see where SOS graduates go, when you need to find out what a job is really like or access targeted careers guidance

Who can be a CORDAN member?

Former students no matter what your current job is, as YOU have a unique understanding of how to break into a particular field and YOU are the best source of advice on how to carve a career path with a marine science degree

Why should I join CORDAN?

STAY CONNECTED to the School
MEET other professionals
DEVELOP new skills in a fulfilling way
Often students helped by CORDAN, join later as participants returning to future generations the help they received.

How do I get involved?

We are constantly looking to expand our inspiring CORDAN group and would be delighted to hear from you if you could spare the time to advise or offer work shadowing placements for students. Please complete the form on page 9
Please remember to update your contact details when they change

How CORDAN works?

Your name will be added to the CORDAN database for students and graduates to contact you for information on working in your industry or country and ideas for career development. Please NOTE that the CORDAN database is publicly available, appearing online and in the issues of The Bridge

What do I expect to happen?

CORDAN is an informal scheme with no guarantee as to how many students will get in touch with you. Apart from the one-to-one advice that you may give, you could share your personal and professional experiences at the annual Careers Evening hosted jointly by SOSA and the Endeavour Society for current students.

What if I no longer want to be involved?

Let us know when you no longer want to be involved and your name will be removed from the directory.

CORDAN MEMBERS 2010-2011 & advice/placements on:

Company & Contact details

Nigel Carey

Careers in Marine Geophysics and summer / holiday placements for industry experience

GEMS Survey Limited
St James House, St James Place, Gains Lane, Devizes, Wilts, SN10 1FB

nigel.carey@gems-group.com www.gems-int.com

Mick Cook

Marine geophysical and geotechnical Site Investigation
Careers in the international Energy sector

Mick Cook Limited
e-mail: mick@mickcook.com

RA Ford

Career in Teaching in Further Education

38 Grove Road, Portland, Dorset, DT5 1DA, UK
e-mail: bobford@avnet.co.uk

Rob Holland

Oil spills and their clean up and environmental impacts of oil spills in the marine environment
Mostly voluntary vacation jobs available on an ad hoc basis upon request

Oil Spill Response Limited
Lower William Street, Southampton, SO14 5QE, UK
e-mail: robholland@oilspillresponse.com http://www.oilspillresponse.com

Liz Morris

marine biological consultancy and professional diving careers
offer of summer jobs usually funded through Go Wales
a Mentor for Alumni-in-Business Marine Network

Marine Ecological Solutions Ltd,
41 High Street, Menai Bridge, Isle of Anglesey, North Wales, LL59 5EF
e-mail: info@marine-ecosol.com www.marine-ecosol.com

Christopher Partridge

Work in the Oil Industry
many opportunities for intern experience that often lead to careers with Schlumberger

Schlumberger Oilfield Services
1325 S Dairy Ashford, Houston, Texas, 77077 USA
e-mail: cpartridge@slb.com
www.slb.com & www.slb.com/careers
For internships: http://careers.slb.com/recentgraduates.aspx?tab=7&tabname=internships

Andrew Peters

Environmental Chemistry (government and university sectors)
and assistance with intern/study opportunities at BIOS

Bermuda Institute of Ocean Sciences, 17 Biological Station,
Ferry Reach, St. George's GE01, BERMUDA
e-mail: andrew.peters@bios.edu http://www.bios.edu

Colin Poat

Marine Geophysics as a Career:
Who, What, Where, When and Why?

CP GeoServices
1 Woodland Close, Denbury, Newton Abbot, Devon, TQ12 6DZ, UK
e-mail: cpoat@aol.com

Nicola Solly (née White)

Environmental consultancy

Haskoning UK Ltd., Elizabeth House, Emperor Way, Exeter, EX1 3QS, UK
e-mail: n.solly@royalhaskoning.com www.royalhaskoning.com

Stephane Theurich

Marine Geophysics as a career and generally working offshore

Gardline Geosurvey Limited
Admiralty Road, Great Yarmouth, Norfolk, NR30 3NG, UK
e-mail: stephane.theurich@gardline.co.uk



Alive and Kicking

Anderson, John (BSc MarGeol 1994) works in Farnborough with SUN Microsystems.

Taylor, Andrea (BSc MarBiol 2000) attended the Marine Resource Development and Protection MSc at Heriot-Watt University in Edinburgh and worked for 5 years as a commercial diver on the local salmon farms, for the Orkney Islands Council and as a marine biologist for Xodus Aurora undertaking EIA work for the oil and gas and local aquaculture industries. She moved to Lancashire with Brett at the end of 2006 and worked for Arup in Manchester. She is now working for Apem, an aquatic consultancy near Stockport.

Crow, Alex (BSc GeolOcean 1992): Congratulations to Alex on his marriage to Liz in November 2008.

Fenlon, Louise (BSc GeolOcean 1998) is now a Business Consultant

Finlayson, Karen (PhD MarGeots 1998). Congratulations to Karen and Chris on the births of their twin daughters, sis-

ters to Lucy, in February 2009.

Hayles, Phil (MSc MarGeots. 1989) and **North, Debbie (MSc MarGeots 2000):** Congratulations to both on the birth of their son Jonty, a brother to Rowan, in May 2009.

Hills, Alan McDonald (BSc OceanSci 1994) works for the Environment Protection Agency in Glasgow.

Hind, Kate, (née Simpson, BSc GeolOcean 1993): Congratulations to Kate and Colin on the birth of their daughter, Veronica, a sister to Nathaniel and Elliot, in April 2008.

Jones, Rob (MSc MarGeotech 1976) is now Head of Exploration at Cairn Energy in Edinburgh, after 10 years in Bangladesh with the same company.

Kemp, Gareth (BSc GeolOcean 1997) is Senior Fishing Officer with the SFPA and has been transferred from Kinlochbervie to Peterhead. Hopefully Gareth and family will have settled down well amongst the "Trawlermen" of the Scottish NE.

McDermott, Ian (BSc MarPhysics 1982, PhD 1992) has been recently appointed Director of Geoscience Services with PanGeo Subsea in Canada.

Pettitt, Steve (MSc MarGeots 1991): Congratulations to Steve and Anne on the birth of their daughter, Katie, in February 2007.

Roberts, Gillian (Post Grad Secretary, SOS) has retired from Ocean Science in 2007. Congratulations to Gillian on the birth of her son, Thomas, in June 2008.

Sayers, Les (BSc Maths/PhysOcean 1978) has left M & J Seafood and is Chief Executive Officer with Tyrrell's, Hand cooked potato chips.

Tay, Pui Leng (BSc OceanSci 1994) remains in Holland working as a Senior Geophysicist with the Swiss SGS.

Uglow, Roger F. (MarBiol PhD 1965) is now the Bucklands Professor at Hull University.

Mariners Adrift

Many thanks to all those who take a minute to check the list and let us know regarding former students lost from our database

Aiken	Morag Elizabeth	Fogwill	Christopher J	Madenlioglu	Deborah	Spear	Margaret A
Al-Aradi	Jassim Saleh Jassim	Foster	Andrew Ronald	Maguire	Claire	Stephan	Bernd
Appleyard	Paul Julian	Fox	Alan David	Mansfield	Stephen Gary	Stephen	Stuart
Ashworth	Simon	Freeman	Catherine E.	Masson	Ann L.	Stone	David M
Aslam	Mohamed	Freeman	Steven	Maynard	Keith	Swanwick	Nicholas J.
Atkinson	Guy	Frost	Nick	McAuley	Rory	Tarrach	Zoe
Bartlett	Rachelle A	Galanes-Alvares	Hugo	McConney	Patrick Adrian	Taylor	Philip Graham
Bate	Lisa	Gardner	Harry Fenn	McLean	David A	Taylor	Jessica
Beaver	Ruth Catherine Marian	George	Christian R	Miller	Nicholas	Taylor	James
Beeching	John Rutland	Gibson	Lydia	Mirza	Nabeel	Thomas	Nigel Anthony
Benawra	Sumeet	Gill	Anthony	Moore	James Jonathan	Thomas	Paul
Birkett	Matthew	Gillis	Lucy Gwen	Moore	Nigel	Thomas	Karen
Bishop	Timothy James	Gray	John R	Moore	Debbie	Thomas-Rees	Lynette
Black	Philip A	Green	Damian John	Murray	Patricia	Thompson	Richard
Blackshaw	Susanna Elizabeth	Grenon	Jean-Francois	Muteham	Christopher B	Thompson	Andrew Martin Heaton
Block	Martin	Griffith	Lawrence William T.	Navarro-Curbelo	Agatha	Tootal	Drew A.C.
Bourne	Geoffrey	Growns	Jane Eleanor	Nesbitt	Steven Paul	Trigg	Michael John
Bowker	Catharine	Haddow	Caroline Louise	Newton	David Michael	Trigg	Mirna A. Moctezuma
Brady	Amanda	Hall	Stephen John	Nyandwi	Ntahondi	Truebano	Manuela
Brenchley	Christopher	Hames	Christopher Andrew C.	O'Grady	Jason	Tsontos-Vardis	Maximilian
Brinton	Daniel James	Hardy	Malcolm	O'Kelly	Charlotte	Venning	Russell
Bromley	Christopher W	Harrington	Anthony C. Robert	Owen	Jennifer Thais	Vine	Emma
Brown	Philip F	Harris	Aubrey	Owen	Richard	Wakefield	Ewan
Browne	Dylan	Harris	Philip Douglas	Peck	Richard David	Walker	Nicholas Mark
Bull	Christopher F	Hartley	John Andrew	Peet	Andrew Herbert	Wallis	Selina
Bunt	Jamie	Hauksson	Hilmar Jon	Penny	Michelle Diana	Walton	Mark
Burden	Annette	Hicks	Robert F	Penty	Sue	Warnes	Joanne
Butterworth	Kevin	Hilliard	Robert William	Peters	Ian Robert	Waters	Raechel
Butterworth	Matthew J	Hornung	Andrew George	Pfannukuche	Jens	Weir	Caroline R
Cain	Robert B	Hother-Parkes	Lee Alan	Pham	Christopher K	Welch	Suzanne
Caine	Andrew	Houlson	Matthew	Phillips	Matthew William	Wells	Rob
Campbell	Barry James	Hovey	Stephen James Charles	Philpott	Sally L	West	David
Campbell	Andrew R	Humphreys	Selena Jane	Poat	Jason Michael	White	Jonathan Douglas
Chadwick	Mike	Hutchins	Owen	Potts	Anthony E	White	Michael
Chalcraft	Peter Nicholas	Hutchins	William	Price	Gareth	Whittaker	Alexandra Jean
Charles	Margaret Lucy	Ingham	Richard	Pyne	Rebecca S.	Wild-Allen	Karen Ann
Chatzifotis	Stavros	Jack	Hayley	Ramsey	Shanti	Williams	Paul Robert
Christopher	Marina H	Jackson	Simon	Ratcliffe	Paul	Wong	Sau Yu Grace
Cloutter	Kevin	Jacobsen	Matthew Charles	Rees	David W	Wood	Colin
Coello-Cisneros	Segundo M. A.	James	Ben	Reid	David Winston	Wren	Dominic
Cooper	Malcolm Trevor	James	Martin L	Roberts	Graham Michael	Wynter-Dormer	Julie Ann
Cooper	Keith	Jimmy	Robert	Roberts	David Kingsley	Yates	David
Cooper	Jackie	Jones	Daniel	Robertshaw	Andrew M	Zennaro	Barbara
Cornick	Laura	Jones	J. Caradog	Robertson	S J		
Cowley	Christine	Jones	David J	Robey	Kate		
Crane	David Raymond	Jordan	Michael Brian	Rutherford	Bryan		
Crofts	Paul M	Jowitt	Paul	Salter	Sean Andrew		
Curtis	Deborah Jane	Judge	John Gavin	Savini	Dario		
Davies	Carl Gwyn	Jury	David Spencer	Scotchford	Colin Anthony		
Davison	Fiona Margaret	King	Michael	Scott	Charles J		
Dibba	Sambou	King	Clare-Marie	Sharrocks	Alexandra Mary		
Djama	Theodore	Kirby	Timothy Peter	Shaw	Ruth Elizabeth		
Dobbins	Christopher Ross	Kugele	Michael	Shearer	Colin		
Dunn	Tim	Lang	Simon Hamilton	Shearing	Julian M		
Eagles	Samantha Louise	Laval	Steven H	Shields	Robert John		
Edwards	Andrew J	Leah	Nicola	Shotton	Ross		
England	Paul John	Lennox	Angela J	Slater	Julie		
Everitt	Marilyn P	Lewin	David	Smallwood	Jonathan		
Farrington	Emma Louise	Lewis	Kathryn A	Smith	Paul S D		
Ferguson	John Christopher	Lloyd	Jane	Smith	Ian Philip		
Fern	Sophie	Lwiza	Kamazina Mutahyabarwa M.	Smyth	Rory		

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You may re-submit your details for inclusion in future issues.

IN MEMORIAM

ALAN AUSTIN 1932-2009



Alan Austin

© local newspaper, CANADA

Alan Austin was born in Pentre, Rhondda, Wales and he obtained his BSc in Botany from Aberystwyth in 1953. There he met his wife Nana, a Classics' student. Alan stayed in Aber for his PhD studies under Professor Lily Newton, the algologist. In 1960 Alan completed his studies and moved to Bangor as a post-doctoral research assistant to Professor Dennis Crisp. His early work was on non-attached seaweeds

and subsequently he worked on algal chromosome counts. A message saying "Have you published today?" was permanently on the blackboard in his room in Westbury Mount. Alan is remembered as a most amenable lab companion and an enthusiastic member of the International Folk Dance Club which met weekly in PJ Hall in 'Top College'. Alan moved to Malta to a lectureship position at The Royal University and in 1964 he joined the Biology Department of the fledgling University of Victoria, Canada.

Alan was a passionate educator, teaching and mentoring students from the 1960's to 1990's, many of whom kept in contact as long-term friends. He was a long term and active proponent of waste water treatment and protection of freshwater resources with a foresight into environmental issues ahead of their time. Alan's research and teaching helped to focus many concepts of sustainable life in his local and regional community and on a global scale. He was a member of Victoria's Arion Choir, Canada-China Friendship Association and the Welsh Society. Alan died of an illness related to Parkinson's disease. Our sympathies go to his wife of 50 years, Nana Elisabeth, son Jason and grandchildren Danielle, Joseph and Caitlyn.

Edited from an obituary appearing in a local newspaper in Canada and from memories of Pat Boaden who shared a first floor front room with Alan for a year in Westbury Mount

JOHN S. GRAY 1941-2007



John Gray

© JS Ryland

John Stuart Gray was born in Bolsover in 1941 and went to the then University College of North Wales (UCNW) in 1959. UCNW was then small but with both a highly regarded Zoology Department and a rather new Marine Biology Station. FW Rogers Brambell, the Professor of Zoology, had been instrumental in setting up the

Marine Biology Station (MBS) and ran an inspirational Easter Marine Course. After graduating in Zoology (1962), John went to the MBS for a PhD under the supervision of Dennis Crisp. Visitors to the MBS commonly shared Crisp's particular interests, but in 1957 included Bertil Swedmark, one of the founder researchers on meiofauna; in the following year Crisp took on his first doctoral student in this field. John Gray followed in 1962. John achieved an outstanding PhD thesis entitled *Behaviour and ecology of mesopsammic archannelids*, which received the Zoological Society of London's T.H. Huxley Award in 1965.

After finishing at Menai Bridge, John was appointed to the Wellcome Marine Laboratory at Robin Hood's Bay, where he continued with studies on meiofauna but expanded his interest to include the River Tees estuary (then said to be Britain's most polluted river). John, as throughout his life, made regular working visits abroad, particularly to the Kristineberg Marine Laboratory, where Swedmark was

director. Kristineberg served as a special summer meeting place for several of the 1960's generation of meiofauna workers, who regarded Swedmark as 'le Patron' in this research field. It was a great place for exchange of ideas which helped push European meiofaunal studies forward on a broad front. It was at Kristineberg that John met Anita, who became his wife.

John was awarded a DSc by the University of Wales in 1975. Then, in 1976, he left Robin Hood's Bay to take up the chair of Marine Biology and Zoology at Oslo University, where he remained until his premature death on 21st October 2007. He continued to work in various parts of the world, including polar waters. On one Antarctic cruise, when gear failure interrupted the sampling programme, John used the time to draft out his book *The ecology of marine sediments: an introduction to the structure and function of benthic communities*, published in 1981. Not long after the book was published John became a member of the NATO working group on bacteria and bacterivory in the sea, which met in May 1982. The outcome was the famous MEPS paper by Farook Azam and five others, which introduced the concept of the 'microbial loop' into marine ecology. This highly cited paper is inevitably referred to as Azam *et al.*, which conceals the names of those, including John, that were the intellectual inspiration for it.

John's early work on meiofauna was among the first to establish preference of meiofaunal species for particular substratum parameters, and his work with *Protodrilus* and sand bacteria was particularly innovative. John's other major interests included marine pollution. Among the characteristics of his work were his experimental approach and intellectual rigour in planning and in analysing data. The latter is exemplified by his use of the log-normal distribution function in benthic and pollution studies. John applied the log-normal as a means of demonstrating whether or not a fauna was impoverished but—as his papers show—he was meticulous in how it should be applied and critical of its misuse.

John Ryland

SARAH ELISABETH JONES 1962-2008



Sarah Jones

© SOS, UW

Sarah attended the Friar's School in Bangor and in 1980 she went to King's College, Cambridge to read Natural Sciences. She graduated in Physics in 1984 and returned to N. Wales and started her PhD with Colin Jago in the then Department of Physical Oceanography. Sarah held various research

assistantships in the School and was appointed to a Lectureship in Geological Oceanography just prior to the award of her PhD in 1991. In 1994 she became Senior Lecturer. Sarah was a creative, multidisciplinary, sea-going researcher and a natural teacher: whether she would be developing a PC-based role-playing game for the students - where they formed oil companies competing against each other to maximise profits - or working on the key skills module in Ocean Sciences, Sarah was committed to successive cohorts of undergraduates and supervised some 10 PhD students. She worked selflessly for the School for more than 20 years and developed a reputation of the highest standing in UK marine science, becoming a role model for female oceanographers. Sarah passed away at home in Menai Bridge in July 2008 after a struggle with a brain tumour for nearly 2 years.

Edited from the obituary appearing in Ocean Challenge Vol.16, No 1, 2008

PHYLLIS KNIGHT-JONES 1933-2009



Phyllis Knight-Jones

Phyllis was one of the world's best-known polychaete taxonomists, specialising in the families Sabellidae and Serpulidae. Phyllis led a very varied and colourful life. She left school at 15 to join a touring marionette company and later worked on several Supermarionation television series such as

Stingray (1964-65). Subsequently, she developed an interest in SCUBA diving and marine biology, meeting her husband Professor Wyn Knight-Jones along the way. Wyn took much pleasure out of teasing Pip for the 8-limbed crab puppet she had made in her pre-marine days. Pip returned to her education, obtaining high school qualifications and ultimately a PhD and much of her early work was on spirorbins together with her husband Wyn (now 93). They both continued working from their home on the Gower, South Wales, until recent years. Anyone who has ever visited their house at Gower will remember the garage (and any spare room too!) being full up to the ceiling with boxes containing specimens for identification and naming and sent to Wyn and Pip from around the world, including the Smithsonian Institute, USA. Phyllis's enormous specimen collection, ongoing work, and book and reprint collection have been lodged at the National Museum of Wales, Cardiff.

Phyllis, known to family and friends as Pip, was also an accomplished artist. Her detailed pen and ink drawings of Tube Worms which she made as part of her research have appeared in several publications and in many exhibitions staged across the world. In the early 1970s she progressed into painting in a wide range of media and genre. She was a member of the Swansea Art Society and she held solo exhibitions throughout Wales. Phyllis embarked on a project painting and documenting slate quarries throughout Wales. This led to her producing a booklet *Aspects of Welsh Slate* in 2004 to accompany a solo exhibition (2004-2005) of the same name. Even then Phyllis managed to involve polychaetes, including paintings of beautiful fan worms she had observed whilst diving in a flooded coastal quarry.

Phyllis Knight-Jones passed away peacefully in her sleep on the morning of 8th January 2009, having recently been diagnosed with secondary bone cancer. A paper entitled *Phyllis Knight-Jones - A remarkable life (1933-2009)* and written by Andrew S.Y. Mackie, Gaynor Oddy, and Holly Morgenroth will be presented at the *10th International Polychaete Conference*, Lecce, Italy this summer. This is a short account of Pip's life and her scientific output in relation to polychaete annelids including a bibliography of her publications, along with a list of the polychaete taxa named.

She will be remembered fondly by those who knew her as a determined person who was driven by a desire to do well in whatever she laid her hands on.

Edited from contributions by Andy Mackie and Ioanna Psalti



ASSIST IN LEARNING FUND (ALF)
 For this initiative, please contact: **DAVID ASSINDER** d.assinder@bangor.ac.uk

Over the years and with your help, the SOSA has slowly realised its aims: to connect anyone associated with the School with other members, and to help the present generation of staff and students. Assistance from alumni takes various forms: some donate books and/or money, others join the CORDAN scheme or come to give talks to students about careers and life after graduation. The SOSA has taken up a suggestion by George Floodgate and has established the Assist In Learning Fund.

Students today often complete their studies with considerable loans outstanding. Financial difficulties seriously interfere with their prospects particularly at times of unfortunate events. Administered via the School, the Assist In Learning Fund is intended to provide emergency assistance for students whose access to higher education might be inhibited by financial difficulties which were unforeseen at the start of the course. The Fund will be allocated with reference to individual needs and entirely at the discretion of the Head of the School of Ocean Sciences.

The Fund relies purely on donations. If the donor is a UK taxpayer, the donation qualifies for the Gift Aid Scheme, i.e. the value of the gift is increased at no cost to the donor as the scheme enables the University to claim back the tax on such donations.

HOW GIFT AID WORKS:

1. You must pay enough tax overall to cover the tax we reclaim (25p/£1 as from April 2008). This includes tax under PAYE and tax deducted from bank interest. If in the future your circumstances change and you no longer pay sufficient tax, you can cancel your declaration or advise us how much tax we may reclaim.
2. If you are higher rate taxpayer we only reclaim tax at the basic rate. You will obtain further tax relief by including donations on your tax return. Remember to keep a note of them!
3. If you are unsure as to whether your donations qualify for Gift Aid tax relief, please contact the University Development Office or ask your local tax office for leaflet IR65 *Giving to Charity by Individuals*.

Any gift however small is welcome!

With the Gift Aid Scheme

a £10 gift becomes £12.50 (form on p10)

**THANK YOU for helping us start such an important initiative
 YOUR FIRST DONATIONS HAVE BEEN RECEIVED!**

Careers and Opportunities in Research & Development: Alumni Network

For the mutual benefit of Alumni, SOS staff and current students

Looking for potential employees, research collaborations or simply willing to give careers advice to current students?
 Please complete in **BLOCK CAPITALS** and return to:

DEI HUWS **School of Ocean Sciences,**
d.g.huws@bangor.ac.uk **Menai Bridge,**
Anglesey LL59 5AB. UK

Full Name

Company/Organisation

Position at Company/Organisation

Address of Company/Organisation

TEL.: **FAX:**

E-mail: **WWW page (if any):**

Profession/Career you would be willing to advise on

- Please tick if you are interested in:
- Participating in the Careers Fair by giving a presentation
 - Helping in career choices by telephone e-mail

PART I: RESEARCH & DEVELOPMENT INTERESTS

Please give a short description of the field of research and/or development where you may hope for collaboration, any specific geographic area and funding requirements.

Please turn over

PERSONAL INFORMATION FORM

Please use the form below to inform us of any changes.
 Please complete in **BLOCK CAPITALS** and return to:

GAY MITCHELSON-JACOB **Centre for Applied Marine Sciences,**
egm@bangor.ac.uk **Marine Science Laboratories,**
Menai Bridge, Anglesey LL59 5AB, UK

Data Protection Notice

Alumni data is held securely and confidentially on the University's alumni database in the Development and Alumni Relations Office for the purposes of promoting closer links between Bangor University and its former students. The data is available to the University's academic and administrative departments for the purpose of promoting closer links with alumni, as well as to recognised University alumni societies. The data will not be disclosed to external organisations other than those acting as agents for the University. The University is also obliged to pass alumni contact details to the Higher Education Statistics Agency (HESA) or to agents appointed to work on behalf of HESA for the purposes of the Destination of Leavers from Higher Education survey. Alumni data is used for a full range of alumni activities, including the sending of University publications, departmental and alumni-specific literature; the provision of approved products, services and facilities; the canvassing of financial and non-financial support for the University; and the sponsoring of alumni geographic and special interest group events and activities through alumni representatives worldwide. SOSA maintains a database of Marine Science Alumni, past and present staff and friends for the purpose of maintaining a lifelong relationship with these people. All data will be securely held in accordance with the 1998 Data Protection Act within the School of Ocean Sciences and made available only to staff in the University and the SOSA Committee. This data will not be disclosed to external organisations other than those acting as agents for the University. The data may be used for educational, charitable and social activities (e.g. for sending invitations, newsletters or for fundraising). The University and SOSA make every effort to ensure that the information we hold is accurate, however we would appreciate your help in informing us of any changes. Under the terms of the Data Protection Act 1998 you have the right to object to the use of your data for any of the above purposes. If you would like to opt out please contact the Alumni Development Officer Bethan Perkins at +44 (0) 1248 388332 or b.w.perkins@bangor.ac.uk and the SOSA Secretary Gay Mitchelson-Jacob at +44 (0) 1248 713808 or egm@bangor.ac.uk

- COMPLETE THIS SECTION AND SIGN IF YOU WISH NOT TO BE CONTACTED:**
- I do not wish to receive any further communications concerning alumni activities
 - I do not wish to receive any communications from third parties regarding University approved products or services

NAME	SIGNATURE

Please tick what is appropriate giving course name & year of graduation or dates of employment

Student **Staff** **Other: Please specify**

Full Name
Name while at Menai Bridge
 (if different from above)

Email

Telephone number

Tick here to OPT-IN for a hard copy of The Bridge and provide a full postal address

No & Street or House Name

TOWN **COUNTY**

POSTCODE **COUNTRY**

- Tick here if you want to publish your contact details in the WET column adding any specific names of people you would like to hear from.**

Please turn over



WGO61294: A Minging tale (from p.1)

Absolutely flat, glassy, calm for day after day, midnight sun after midnight sun, athwart the North Atlantic Polar Front close to the mid-Atlantic Ridge. The Bangor Group* led by James Scourse and Chris Richardson – were to collect clam shells as part of the EU Millennium project, a 40-partner pan-Europe collaboration to reconstruct the climate of the last 1000 years. This was the first-ever attempt to construct at a 1000-year clam-based chronology: the annual growth increments preserved in long-lived molluscs would be deployed in the absence of any other annually-resolved climate

and was reproductively “spent”. Al entered the data into the database and sliced the clam up. When a few days later the acetate peel replica of the shell section was ready, Al started to count and digitise the bands in the Nimrod Lab: ... 100 (fairly routine, nothing much unusual there...), 200 (good long record, this one...). He started breathing a little more deeply as he passed the magic 268 and then continued on 300 ... 350... 400 ... Panting and flushed, Al ran upstairs to break the news to James, Chris and Paul: no other specimen of this extreme longevity had ever been counted before! Over the next couple of days Chris and Paul independently verified the age of the specimen as in excess of 400 years.

This was the longest-lived mollusc yet discovered but in order to ensure that it was also the longest-lived non-colonial animal known to science, the team issued a provocative press release: “Bangor scientists discover world’s longest-lived animal” to lure any other contenders out of the woodwork.

The Sunday Times asked to do an exclusive. “Fantastic!”, thought the team and on Sunday morning they duly went to Menai Bridge Post Office to buy their copies. The article in the Main Section on page 8 was big with an amusing time line showing historical events during the clam’s life. A good bit of publicity if it were not for the title that read: “Ming the mighty mollusc holds secret to long life” ... and the bit claiming that the clam’s nickname Ming, was given (“insisted” said the report) by the Bangor researchers ... after the Chinese dynasty on the throne when the clam began its life... and finally ... “Even an ocean quahog that pays scant attention to its health can live for 200 years, but this one had reached the age where it was beginning to consider a career in Liberal Democrat poli-

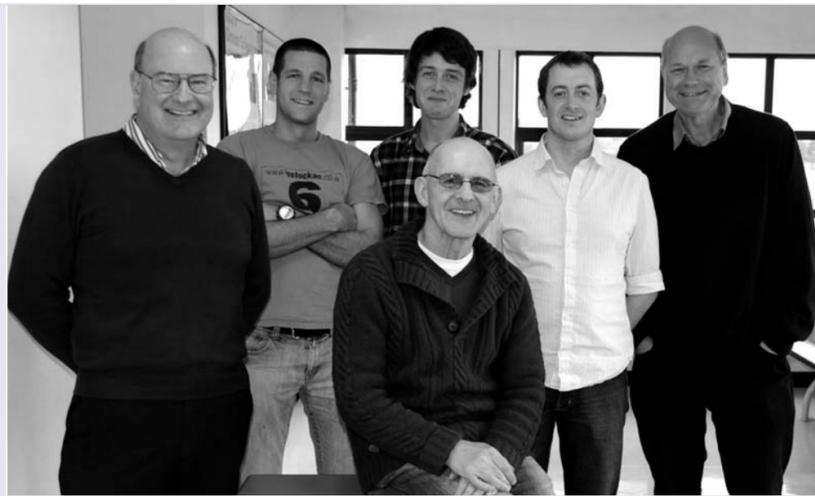


© SOS, UW

Record holder WGO61294 (Mingy)

archives for the temperate North Atlantic. The location - north of Iceland - with an abundance of *Arctica* clams, would allow the reconstruction of the migration of the Polar Front through time.

So 6000+ shells were collected, and numbered. Amongst them WGO61294 which, like the few lucky to be alive, was popped in the freezer and brought to Menai Bridge. Several months later, Al Wanamaker, a post-doc from Maine, took WGO61294 out of the ice for the routine measurements. The specimen was noted not to contain any parasites



© SOS, UW

The Bangor Arctic Group (from left to right): Chris Richardson, Iain Ridgway, David Reynolds, Nick Jones, James Scourse. Seated: Paul Butler.

tics”. The story was simply used as a vehicle to bang on about the age of the then Liberal Democrat leader Sir Ming Campbell. Apart to the reference to a reproductively spent clam, the facts were deviously altered! To the researchers, facing the rigours of peer review and evidence-based science, this all came as a shocking revelation: reporting had nothing to do with accuracy and don’t let the facts get in the way of a good story! What followed was like a juggernaut out of control: picked up by one outlet after another - 100 articles and broadcasts including *Seren*, the local student newspaper - the regurgitated Ming story was altered slightly each time in a kind of massive Chinese whisper. Only the BBC checked the facts with the team. But the Ming or WGO61294 did make it to the Guinness Book of World Records and the scientists have the official certificates on their office walls to prove it. Now they are back to work!

WATCH THIS SPACE! For more exciting

work using *Arctica* sclerochronology that reconstructs marine climates back to the end of the last Ice Age!

Edited from an article by James Scourse

*In 2003 and during the EU project, HOLSMEER (co-ordinated by James), SOS post-doc Graham Forsythe went round to James’ house to deliver the news as soon as he achieved the first significant cross-matches from fossil material dredged from the North Sea. “It works, it actually works!!” he beamed with incredulity. That chronology – which included the then longest-lived specimen ever collected, at 268 years - demonstrated that all clams in a population respond similarly to external stimuli by laying down a fat band in a “good” year and a thin band in a “bad” year. These records form a kind of bar code which is statistically cross-matched with other shells from the same area whose life-spans overlapped. The North Sea chronology, however, was “floating” as it was not connected to a series from live-collected specimens. Although radiocarbon dating showed the shells to be between AD1000-1400 (the Medieval Warm Period), the dating was not absolute. The understanding of the history of the shelf seas was opened up when SOS Ph.D. student Paul Butler constructed the first *Arctica* multi-centennial absolutely dated chronology (from Isle of Man waters).

The Bangor Arctica Group
26 June - 4 July 2010

The Royal Society Summer Science Exhibition
The Southbank Centre (foyer of the Royal Festival Hall), For
info: <http://seefurtherfestival.org/home>

Admission Free

Oceanography & Limnology Vacation Courses (cont. from p.4)

From Holyhead we usually had use of a naval hydrographic survey launch, *Medusa*, through the good offices of Desmond Scott who attended the first course whilst a naval officer; (later General Secretary of IAPSO). We took measurements and samples out to some 20 miles offshore where “deep” water (>100m) required unprotected thermometers for determining depth of sampling and geostrophic calculations of flow could be made.

In the Conwy estuary we used *Lambda* to run lines of stations along the estuary, whilst other students were based on the old Conwy

suspension and Tal y Cafn bridges to get time series during the tidal cycle. A major logistic challenge was to rotate students between *Lambda* and the bridges using the landrover through the holiday traffic. Over the three days with different groups we aimed to cover conditions over the full 12 ½ hour tidal cycle. For limnology we went to a different lake on each of 3 days, usually L. Llydaw, L. Peris and L. Crafnant. L Llydaw immediately below Snowdon was the big day involving trailing three large dinghies behind the Landrover up what was then a very rough rocky track – a challenge Peter was always

pleased to undertake (he always wanted to try to get a boat up to Glaslyn 300m higher, but whether he just wanted a greater challenge or thought conditions would be significantly different there I’m not sure). Anyway we usually sampled cold deep water dating back to the previous winter and recorded temperature profiles on smoked glass slides of old mechanical bathythermographs. The climax of the course was the presentation by each course member of a topic which had been investigated during the practical work– billed as a final seminar, but sometimes more a series of cabaret acts!

I’m not sure how many years the courses ran for – perhaps 5 years up to 1965, or just why they stopped when they did; perhaps there are readers who can help my recollections on this and other aspects of the courses. For me they provided a stimulus for much of my work at Menai Bridge during my 7 years there:

- Current measurements and tidal height records in the Menai Straits in 1962/3 with facilities from the Sea Fisheries Committee and Admiralty Hydrographic Dept leading to

the conclusion that there is a net flow south-westwards through the Straits driven by the greater tidal range at the north-eastern end.

- A study of hydrographical conditions and flow in the North Channel of the Irish Sea in 1963 from the naval vessel HMS Scott.
- Regular trips out into deep water west of Holyhead using a converted lifeboat from Holyhead Boatyard to establish a series of temperature, salinity and nutrient records, and which led to the discovery in 1964 of large sand waves there.
- Quarterly hydrographical surveys more widely in the Irish Sea in 1966 with the release of drifters to investigate water movements
- Heat budget studies in Llyn Cwellyn.

Perhaps some of the colleagues and students who participated in these projects will read this Newsletter. If so can I repeat the thanks for your involvement which I hope I expressed to you sufficiently effusively at the time.

John Harvey



... allegedly Steve McGiveron never showed up with the clothes...of Richard Lailey, Mick Cook and Jose Pelegri who swam the Menai Strait in 1979 ...

A Chair in the making

It is highly advantageous, although not essential, for a SOSA Chair to have successfully completed the swim across the Menai Strait at some stage of their life. Completion of such task is testament to skills essential in the leadership of an alumni society: physical strength and determination (surviving the cold waters and strong currents); organisational skills and mental ability (performing precision calculations of tides to avoid being swept away); excellent scoping of

the task (taking into account the opening times of the sluice gates of the sewage treatment plant) and delegation of the right task to the right person (making sure that the person who has your clothes is actually waiting for you at the opposite bank). Evidence has shown (and the facts have not been altered for the sake of a good story!) that Mick may have to attempt the swim once more to dispell any reservations as to his suitability for the position of SOSA’s Chair particularly as impeccable dress code is a must in this position (see p.12). Meanwhile we warmly welcome Mick Cook to the Chair!



NAFC MARINE CENTRE

The NAFC Marine Centre's core mission – 17 years since it was first opened – remains unchanged: to support Shetland's marine industries, which remain key components of the islands' economy. In the present challenging times, that support is more vital than ever.

Key facts:

- 75% of the annual economic turnover of Shetland is through the marine industries which equates to £320 million (excluding oil)
- Scotland produced 73,631 T of salmon in 2008; in Shetland production was 24,550 T (33% of the Scottish total)
- Scotland produced 5,869 T of rope-grown mussels in 2008; in Shetland production was 3,506 T (60% of the Scottish total)

The Centre is home to state-of-the-art resources, skilled staff and quality facilities including a state-of-the-art ship bridge simulator; laboratories; classrooms; engineering workshops; training vessels and work-boats; and a library.

With an ever-increasing reputation for high quality Fisheries and Merchant Navy training, the Centre's professional team of staff teach a range of courses in the subject areas of nautical, engineering and marine science, as well as developing and delivering a variety of bespoke industry-related short courses.

Applied research and development programmes are conducted in collaboration with industry and other stakeholder partners, providing answers to key questions, developing knowledge, technology or best practice to help drive the industries forward.

As part of its mission to support industry development and innovation in Shetland and wider Scotland, the NAFC offers a range of 'commercial' services from consultancy to knowledge exchange/commercialisation of research outputs.

The Centre is somewhat unique for both being in the close physical vicinity of industry and forging close working partnerships with the very individuals and companies it exists to support.



Aerial view of the NAFC, Shetland

NAFC Marine Centre
Port Arthur, Scalloway, Shetland ZE1 0UN

Tel: 01595 772000 Email: info@nafc.uhi.ac.uk Web: www.nafc.ac.uk

Alumni-in-Business: An Update

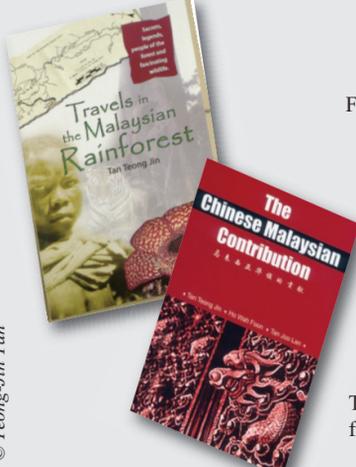
In 2007 we have announced the start of the Alumni-in-Business project, a collaborative venture between Bangor and Aberystwyth Universities and Swansea Institute of Higher Education. The project aims to develop knowledge transfer activities with the alumni communities by building up networks and identify mentors within the alumni cohort of each institution for the benefit of the alumni themselves, the student body, and the business and research communities. We are now proud

to announce the establishment of three exciting initial Networks within the strong Ocean Sciences alumni network. **Marine Mammal Studies, Marine Geophysics, and Marine Ecology** Networks focus on knowledge exchange activities, career development and mentoring for past and present Bangor students with direct access to web based information, discussion boards and links to associated organisations. This project has been made possible through funding provided by the Welsh Assembly Government through the Knowledge Exploitation Fund (KEF) and the European Social Fund (ESF).

Would you like to act as mentors or co-ordinate networks in marine fields? Get involved in the 'Alumni in Business' project! Contact the Alumni coordinator egm@bangor.ac.uk



Publications by SOSA members



© Teong-Jin Tan

Two paperbacks written by **Teong-Jin Tan** (BSc MarBiol/PhysOcean 1983). For ordering: blue.mountain.press@gmail.com or www.bluemountain.lifelogger.com

Travels in the Malaysian Rainforest
A travelogue that looks at the secrets, legends, people and fascinating wildlife of what Charles Darwin described as "one great, wild, untidy, luxurious hothouse built by Nature for herself". The book took five years to research and write.

The Chinese Malaysian Contribution
The book tells the story of the Chinese in Malaysia from the earliest times until the present day.

Have you just published a general interest book?
Send the book outline and the cover image to SOSAthebridge@btinternet.com

Arctic 'Mank'y Music (cont. from p.1)

Elements such as the drone of the engines and the shudder of the hull ploughing through ice sheets surrounded by a bleak environment, have found their way into Ben's evocative music. In 2008 Ben Powell accompanied the SOS scientists Dr Yueng-Djern Lenn, and Ben Lincoln aboard the Russian icebreaker *Kapitain Dranitsyn*, as part of the International Polar Year. The researchers were to study the impact of the increasing amount of freshwater in the Gulf Stream, from both the melting of the Greenland ice sheet and increased flow from Siberian rivers. When not tuning instruments, Ben composed evocative pieces such as "Into The Vilkitsky Strait" and "Svalbard" which have featured on Radio Wales and BBC Radio 3.

Ben releases his music under his own label



CD cover from Ben's album *Isbjorn*

and has been making music under the name 'Mank' for the last ten years. For further information go to www.mankymusic.co.uk

Edited from a contribution by Tom Rippeth

SOSA would like to thank Pat Boaden for all his work and wish him all the best in his new endeavours as the Chair of Ulster Wildlife Trust and in his involvement with Strangford Lough

... expected duties of a Chairman ...

Providing the musical entertainment during SOSA's events	Setting impeccable dress code: Note the colour coordination between bottle and tie.	Giving the required speech	... and finishing with a hard-earned cup of coffee

All Photos of Pat Boaden © Keith Wewill

What the new Chairman means to SOSA: ...the French horn to replace the fiddle during the social events...