

The PHYCOLOGIST



The Newsletter of the British Phycological Society

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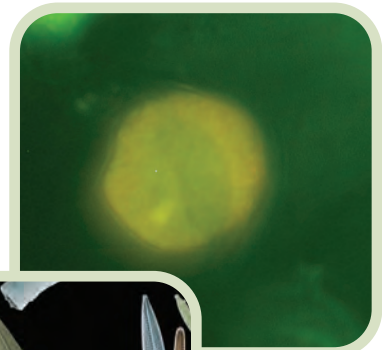
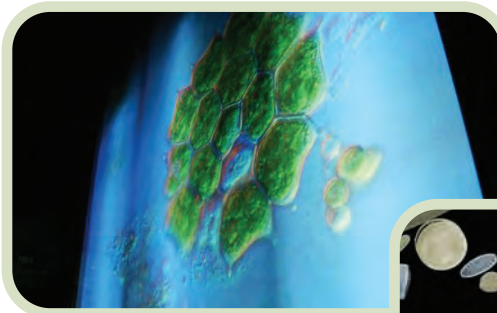
Autumn 2011

Reflections on 60 years of Phycology and the BPS

'Mire' Whitlaw Mosses: Diatoms-another world

Making culture out of algae: Gateshead Shop Art

Found on an Iceland Holiday



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Editorial

Welcome to the last edition of *The Phycologist* in 2011. This will be the last edition before the BPS turns 60 next year. Perhaps the Society will receive assistance with winter fuel payments and free bus travel, free prescriptions, money off dry cleaning, hairdressers and concessions at a number of local outlets, but what ever happens turning 60 will be something BIG to celebrate. Still, its not as old as Professor F.E. Fritsch's Freshwater, Brackish and Terrestrial Illustrations of Algae which will be 100 in 2012!

In this edition we continue with accounts of 60 years of the BPS and phycology from a number of past-Presidents, recounting stories from the 50s and 60s of dominant ladies and hearty discussions at the winter meetings. We should all be excited by what may happen at our next meeting in Newcastle! We should continue to promote Phycology and the BPS, and a number of articles detail this very subject with exhibitions of public algal-art in Newcastle and diatoms in the Borders. Importantly there are also student reports detailed, made possible by bursaries provided by the BPS providing assistance in attending meetings and conferences.

Please note there are also Nominations invited for the post of Secretary and for two Ordinary Members of Council.

I hope you enjoy this edition and look forward to seeing you all in Newcastle.

Remember - do keep sending in your contributions. Write to us with your phycological views, news, work events, or any matter you wish to share with readers of *The Phycologist*. YOUR input is required; all relevant material will be considered (job adverts, science reports, book reviews, news items of topical interest, meeting announcements, research news, and suggestions for future articles are always welcome). Without YOU the newsletter would not exist.

As a reminder, previous issues of *The Phycologist* can be downloaded at <http://www.brphycsoc.org/phycologist.lasso>.

Front cover images:

Jackson Street, Gateshead

Whitlaw Moss diatoms

Alexandrium tamarensis cell with fluorescent inclusion, epifluorescence microscopy

Can seaweed be used to heat an entire city? This advertisement is from Amsterdam Airport. The seaweeds are *Ascophyllum nodosum*, *Saccharina latissima* and possibly some *Halidrys siliquosa* in an impossible association! Mike Guiry, NUI Galway Ireland

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Reflections on 60 years of Phycology and the BPS

To celebrate the 60th Anniversary of the British Phycological Society a one day extra special summer meeting is planned for June 2012. In preparation for the diamond anniversary and

following on from last edition's articles, following are additional articles by past Presidents reflecting on 60 years of phycology and the BPS.

Early days of the B.P.S.

Gerald Boalch



Gerald T. Boalch and his wife Shirley at the entrance to Fingal's Cave on Staffa.

Although there had been an informal meeting of phycologists in Bangor in 1951, the inaugural meeting of the BPS was held in Edinburgh in 1952. I joined the BPS in January 1954. At that time I was an undergraduate at University College, London, and the BPS annual meeting in January was to be held at UCL. I was advised, because of my interest in seaweeds, to join and attend the meeting. I very timidly turned up but was made very welcome and became an ardent member of the BPS.

In those days the BPS held two meetings a year, the January AGM and a summer field meeting which alternated between freshwater and marine habitats. The

society was, to a large extent, run by females - many of them rather large, forceful characters. The one male officer was Harry Powell who was the Hon. Sec. People like Lily Newton, Mary Parke, Helen Blackler, Elsie Burrows, Katherine Drew-Baker, Margaret Martin and Elsie Conway were the ones who kept the Society running. Bob Ross, John Lund, Tony Fogg, Eric George, Roger Butcher and Michael Droop were all there but were content to let the ladies get on with the organisation. The AGMs in January were rather formal affairs with the business of the Society and presentation of research papers. Research students were encouraged to present their first paper at these meetings but they could expect to be penetratingly questioned by the more senior members of the Society.

In the early years the AGM was held in London and moved around to the various colleges in the University. As the Society grew it became more difficult and expensive to arrange the meeting in London and the January AGM moved out to other universities in the U.K. as it does now.

The summer field meetings had a much more relaxed atmosphere. A large proportion of the membership attended and this was when members really got to know each other - there is nothing quite like collecting in the field on a wet and windy day for breaking down barriers. I have a very vivid memory of coming into the Ferry House, the Freshwater Biological Association headquarters on Lake Windermere, for tea after a day in the field in 1955 and as I sat down with my cup of tea, my Professor from UCL, W.H. Pearsall, came and sat next to me and asked me how I was enjoying the meeting. I started listing all the places we had visited and what we had collected when he

interrupted and said, "No, I know all that but who are you meeting and who are you talking to?" I then realised the value of field meetings.

In 1956 the summer field meeting was at Dale Fort, Pembrokeshire, soon after it had opened as a Field Study Centre. Living conditions at the Fort were rather spartan and a number of those present found the food rather uninspiring but they all enjoyed the meeting. The 1957 meeting was at Flatford Mill, Suffolk, again a young Field Study Centre. In 1958 the BPS met with the International Seaweed Association at their Symposium in Galway and this was followed by a field meeting based at Bangor University, N. Wales. After the field meetings the society always tried to produce a list of all the algae collected by members during their visit and thus lists were published for a number of areas not normally visited by phycologists. The areas visited included Guernsey (combined meeting with the French Society), the Shetlands, The Isles of Scilly and Caen on the Normandy coast (again a combined meeting with the French Society). For a number of years I was Field Meetings Secretary. In more recent years the annual field meetings have discontinued.

In the 60 years since it was founded the BPS has undergone many changes but it still remains the society for British Phycologists.

Gerald T. Boalch, B.Sc., Ph.D.,
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The 1960s Remembered

George Russell

I recall the 1960s as an exciting decade for the Society. Funding for research had at last become generous, more so certainly than in these threadbare times. Money had become available for laboratory and field investigations as well as technical support. For a generation trained on jam jars and elastic bands, all this was heady stuff. More to the point, a new generation of talented and energetic research students had appeared to swell the ranks. However, this revolution took place under the eagle eyes of our founding members, most notably those of the formidable women described by Joanna Jones (*Phycologist*, 80, 2011) and their influence on the research remained a powerful one. There was, for example, much interest in algal life histories and chromosome numbers inspired, in part at least, by the work of Margery Knight (Liverpool) and Kathleen Drew-Baker (Manchester). Terminologies for life histories were proposed and there were even serious discussions on whether the term life history or life cycle was correct. It all seems rather remote from the presentations at winter meetings now.

More enduring has been the prominence of taxonomy as the content of our journal bears witness. In the case of marine algae, this interest owed much to the successive check-lists published by Mary Parke (Plymouth), later lists being co-authored with Peter Dixon (Liverpool). Dixon was one of the more vocal taxonomists of the decade and I recall him telling us rather sternly that we could do nothing at all until we had examined the type. This came as dispiriting news for those who found the nit picking of algal nomenclature unappealing. But I was an ecologist after all and poorly equipped for such mysteries.

The decade brought considerable, and for me exciting, innovations in ecology. We had a visit from Jack Lewis (Leeds) who described his then new approach to intertidal ecology and his system still remains a handy descriptive framework for field observations. However, more sophisticated methods for pattern analysis were already being applied and these marked a shift away from older studies, which often seemed to treat ecology as a branch of floristics. A second, and perhaps more important, movement became evident at this time too, marking a shift in emphasis from pattern to process. The population rather than the species came to be understood as the primary unit in ecology and its relationship with the local environment, the subject of experiment. This principle was also applied to community ecology notably with an experiment conducted by Norman Jones (Liverpool - Port Erin). In 1948, he cleared a strip of intertidal rock at Port St Mary, Isle of Man, removing all limpets and fucoids, the initial stages of algal revegetation being described by Sheila Lodge also of the Port Erin laboratory. In 1949, Lodge was joined by Elsie Burrows (Liverpool) in describing a later phase of



George Russell in Finland.

revegetation and this they did in terms of the inter-relationships of limpets, barnacles and *Fucus*. Since then, species manipulation has been adopted world-wide by shore ecologists as a powerful tool in our understanding of the forces operating in intertidal ecosystems. It has been employed rather less often in the sublittoral but, in 1967, Norman and Joanna Jones recorded the results of a three-year experiment involving the removal of *Echinus* from an over-grazed area of sublittoral rock at Port Erin and the subsequent recovery of the kelp forest.

If species manipulation in the field is now standard practice in ecological experiments, manipulation of natural environments is rather less common. However, the Society has provided another pioneer in John Lund (Ambleside) whose work on Blelham Tarn in the 1960s involved enclosures and artificial destratification as means to understanding phytoplankton dynamics. Experimental enclosures have been used in recent years and for similar purposes in Finnish coastal waters and artificial destratification has been applied to the semi-natural water of Liverpool docks. Such experiments can most certainly trace their lineage to Lund's research.

This highly selective and personal reminiscence ought not to obscure a more general comment that in the 60s, the Society had many original and creative scientists in its ranks and I still count it a privilege to have known them.

The women in my life



**Trevor Norton, Emeritus Professor,
Liverpool University
President of the British Phycological
Society 1989-91
President of the International
Phycological Society 1991-93**

In 1952, while we were still recovering from the Second World War, the cold war was warming up. Britain tested her first atom bomb and the United States exploded the first Hydrogen Bomb. In both countries spies for Russia were discovered in high places.

Despite all this, optimism was in the air. A new Elizabethan age was dawning. On the day of Queen Elizabeth's coronation it was announced that Mount Everest had been conquered. In Cambridge Crick and Watson were on the brink of discovering the structure of DNA. Not surprisingly the founding of the British Phycological Society had as much impact as a leaf falling into the Grand Canyon.

England was not short of learned societies. The Royal Society of London was given its royal charter in 1662. Today's treasurers may be consoled to know that even then it was difficult to get the members to pay their annual subscription. By Victorian times most scientific disciplines had their own society and their specialist journal. But before 1952 phycology was pursued by lone researchers in botany departments.

After several informal get-togethers the inaugural meeting of the British

Phycological Society took place in July 1952 at the International Seaweed Symposium in Edinburgh. The first issue of the British Phycological Bulletin (later the British Phycological Journal) was published that same year.

There was a long tradition that science was a male preserve. An American Professor even declared that women's heads were "almost too small for intellect and just big enough for love". A hundred years ago women were banned from the biology sessions of the British Association for the Advancement of Science because of "the nature of the papers to be presented". What was it that might have shaken women to their foundations? Was it talks entitled 'A fish with four eyes' or perhaps 'Inosculation observed in two trees'? In 1902 a candidate put forward for a fellowship of the Royal Society was rejected on the grounds she was ineligible because a woman was not a person. Until 1948 women attending Oxford University could only receive titular degrees as they were deemed unworthy of the real thing. These degreeless graduates were not officially recognised by the University until 13 years ago.

Despite the fact that all flowers are a flamboyant display of sex organs, botany was considered a genteel and less demanding pursuit for ladies. Phycology received an unexpected influx of women researchers during the Second World War. When the Japanese entered the fray, supplies of agar-agar were cut off at a time when it was needed for culturing antibiotic yielding fungi. As most men had been conscripted into the forces, female botanists were drafted in to find sources of agar in local seaweeds.

Eight out of the eleven first council members of the BPS were female. Their chairman was Dr Kathleen Drew-Baker. She studied *Porphyra* and found that it had a biphasic life history. During the summer the leafy plant vanished and it perennated as a tiny filament on oyster shells. This discovery led Japanese biologists to cultivate both phases thus rescuing the *nori* farmers from destitution and creating a billion dollar industry. In gratitude every 14th of April *nori* farmers on the island of Kyushu paid homage at a memorial to Drew-Baker. Sadly she never knew.

The phycological matriarch I knew best was my research supervisor Elsie (Bunny) Burrows. She felt that she would have to

be better than a man to be considered his equal. As Ginger Rogers said "I did exactly the same as Fred, but had to do it backwards and in high heels." I guess I was her most troublesome male. I could make her scowl with disapproval or render her helpless with laughter. She hated having her photo taken and I took this as a challenge.

"You took my photograph" she squealed on hearing the shutter click.

"No" I replied. "I just glanced in the viewfinder and pressed the button like this."

"Click!"

"You did it again!"

I played soccer when I should have been researching and Bunny crossed out my name on the team sheet. Thereafter I appeared on the sheet as 'Pelé'. When I wrote what I thought was an amusing poem about her in the Christmas magazine, I was up in front of the Professor and felt lucky it wasn't the firing squad. In spite of this she was always kind and generous.

Bunny was oblivious to weather. I recall her wearing a flimsy raincoat lashed by rain still gallantly trying to survey the shore with the paper plan slowly reverting to pulp. On a trip to Fair Isle off the north coast of Scotland a freak wave swept her into the ocean. Miraculously the very next wave placed her back onto the same rock, soaked but upright as if she had never moved.

At my first job as junior lecturer at Glasgow University I encountered Elsie Conway. Her son referred to her as "Her Botanical Majesty". She was also described and "a galleon in full sail firing salvos on either side". Her main armament was a booming voice so that on the shore even in a force nine gale she could still be heard by the students. I witnessed her explaining the stresses of living in the splash zone when without warning a wave drenched her. Her lecture never missed a beat and her soggy state perfectly illustrated the point she was trying to make.

She had a flair for the outlandish. When a class was searching in vain under the microscope for signs of reproduction on an alga, one lad found something. "Class!" she bellowed. "Come and see this boy's sex organs." For weeks afterwards whenever girls passed him, one was certain to ask her companion in a loud voice, "Have *you* seen his sex organs?"



Although warm and friendly she expected to be obeyed. One summer she arranged a field trip for the students. I explained that I couldn't help because I would be on my honeymoon. She responded with a terse, "Well that's not very convenient".

Many of the phycological divas were formidable. On a field trip I saw Mamie Parke (who did become a 'Fellow' of the

Royal Society) chase Peter Dixon across the room, kicking him for something he had said. At a conference she tutted and muttered loudly and critically during a presentation she had co-authored with the presenter. I was the next speaker and it was my very first public presentation. To my surprise, at the end she stood up and congratulated me. She was warm hearted and like all the other leading phycologists I

encountered, supportive of young scientists.

In my final year of postgraduate research Bunny took on an attractive new PhD student. She made such an impression that I can still remember her name.

Of course I should, we've been married for 43 years.

Sixty Years---Surely Not

W.D.P. Stewart

The Phy Soc was in its early years when I went up to Glasgow University in 1954 to read Botany-Botany was not a "macho" subject in Glasgow then, or now!. I had come from Islay on the Scottish west coast, been fascinated by seaweeds from childhood days peering into pristine Atlantic waters from the side of a rowing boat and went on to the only university I had ever heard of. There "algology" was in the capable hands of Elsie Conway, one of an early post-war pool of outstanding lady marine phycologists (no glass ceiling then!). Lily Newton, Mamie Parke, Marion deValera, Elsie Conway etc etc. Half of what Elsie taught us, I found out later, was factually suspect, but she sure was encouraging and stimulated enthusiasm for algae., John Lund, Harry Powell, Bob Ross, Tony Fogg, Maud Godward, Betty Moss, Joanna Jones, Frank Round, the fledgling Gerald Boalch etc.etc were the younger up-and-coming generation.

My first Phy. Soc winter meeting, as a nervous, fledgling research student reading his first paper was to me a disaster because I had the unintended temerity to challenge traditional thinking. I was working on the filamentous blue-green alga *Calothrix scopulorum* as it was then called and noticed in culture that by varying the culture conditions, I could change its morphological appearance -- in high fixed nitrogen cultures the heterocysts became fewer, even disappeared, the branching pattern changed, hairs at the end of filaments were lost etc. In fact it could be classified as several different species. This suggestion was pounced upon by a very senior, eminent member of the audience who derided my findings. Fed up, I then wrote to an American taxonomic expert seeking guidance -- no reply for six months. I thought that this was the usual time it took an academic to respond to letters, but when the reply came it said that he had had a nervous breakdown working on blue-greens and had packed it in. Roger Stanier's detailed revision of cyanobacterial taxonomy in the seventies showed I had been right!. But that little episode 50 years ago nearly made me pack in phycology. I didn't but became an algal physiologist, worked in Tony Fogg's lab at Westfield, established my own Department in Dundee (appointed some excellent staff including the young clean-cut John Raven and Geoff Codd), showed heterocysts fixed nitrogen, studied blue-greens in lichens, my students worked on Lund tubes etc etc.



I went on to become an administrator, first with the research councils, then as the government's chief scientific adviser. I tell this story to encourage young phycologists to stick in there. The early going, albeit overall enjoyable, can sometimes be tough. However in the global world of the 21st century, algae of freshwaters and marine ecosystems are of key dynamic, ecological, regulatory, industrial and biochemical importance. We must continue to promote phycology, not lose national expertise. I congratulate the Society on its forthcoming 60th birthday. It has done a magnificent job and long may that continue.

Bill Stewart was elected to the Royal Society in 1977 and knighted for his contributions to science in 1995.

60 years of the BPS



Chris Gibson

In January 1966 I was a first year post grad in Bangor, back home in London for Christmas. At the suggestion of my friend Tim Allen, I attended the BPS winter meeting in Bedford College. It was rather scary to attend a meeting of so many erudite people, even scarier to give my first rather speculative presentation on what I hoped to do in my research but I met with nothing but kindness from the audience, none of whom I had ever met before. From that time on, no matter how thin my presentation, there was always encouragement and good advice from the more senior members. In 1968 having handed in my PhD thesis on cyanobacteria in Anglesey lakes, I started a job with the

Northern Ireland Government in a newly established lab housed in a disused dentist's surgery in RAF Aldergrove. I was appointed to study the algal bloom on Lough Neagh, and I stayed in Northern Ireland until I retired in 2004. Northern Ireland was blissfully quiet for the first year, but not for long, as the Troubles began soon afterwards. For all that, Northern Ireland was a good place to live and quite a phycological hotspot. In my own lab were Roger Smith and Bob Foy, in Belfast was Queen's with Matt Dring, Chris Maggs and a succession of co-workers and Graham Savidge at the marine lab. in Portaferry. The New University of Ulster had just opened a freshwater lab on the opposite side of the lake to me with Brian Wood as director. Rick Battarbee and Dave Jewson were post grads, Ron Bishop joined later as a lecturer in algal physiology. Then in the Ulster Museum was the inimitable Osborne Morton. We met monthly for a while to discuss an interesting algal topic.

In the early days, BPS winter meetings were always held in London, it was considered quite unsuitable to meet elsewhere, but when we began to meet outside the Metropolis, behold, it was really rather pleasant. As time went by, London became a more and more difficult venue for meetings and we travelled widely, including memorable meetings in Galway and Belfast. The members were no less memorable than the venues. I have a particularly vivid picture of the lectures by Professor Irene Manton, during the heyday of electron microscopy, a discipline of which she was a leading pioneer. Rather forbidding on first acquaintance, Professor Manton was the

soul of kindness if she detected a genuinely enquiring mind. In what may well have been her last lecture to the Society, she showed a slide of Sir Isaac Newton's house, with a double rainbow in the background. "Observe carefully", she remarked, "the outer rainbow is inverted as Newton predicted". This was a red herring - she went on "Now, did you notice his cottage? Some of the roof tiles are of a different type because originally there were more chimneys, subsequently removed. When observing any structure, attention to detail will yield great insights!"

Talk to anyone about past meetings and the weather will feature large. It snows more times than it ought and in the latter years the situation was compounded for me by trying to get my three children returned to University after the Christmas break. I well recall having relatives stuck at both Belfast airports. In one of the coldest winters, BPS met at UEA in Norwich. I travelled up from London Liverpool Street by train. One of the pleasures of the BPS was the regular attendance of Nordic and Dutch colleagues. On the train I met Jorgen Christiansen from Copenhagen, who was chuckling with delight. "I love coming to England" he said "I just tried to buy a cup of tea and the attendant told me quite seriously that there was no tea because the hot water was frozen. Only in England does hot water freeze!!"

Long may BPS flourish, continue to publish a high quality journal, encourage those just starting out and foster a spirit of genuine scientific curiosity and independent thinking.





'Mire' Whitlaw Mosses: Diatoms-another world

'Mire' is the visual outcome of a three year research project by artist Liz Douglas. She has been researching diatoms found in pools at Murder Moss, one of the Whitlaw Mosses in the Scottish Borders. Whitlaw Mosses are a National Nature Reserve, a site of special scientific interest and a European protected site.

Liz Douglas, collaborated with the reserve managers, Scottish Natural Heritage, to collect the diatoms; with SEPA (Scottish Environmental Protection Agency) at the cleaning of the samples stage, and with experts at the Royal Botanic Garden, Edinburgh, to image the algae, using a powerful scanning electron microscope, and then to identify the genus of the diatoms found in pools at Murder Moss.

An important part of the project was the educational work. Liz worked with school pupils on a Science/Art Curriculum for Excellence project over 6 months, as well as 3D structure making workshops with other schools. The Whitlaw Mosses project was used to provide research material for the workshops. The aim was to encourage students to identify closely with their own environment.

The exhibition was held at SNH Battleby, Redgorton, Perthshire PH1 3EW between May - end July 2011, and the Harestanes Countryside Centre, Ancrum, Jedburgh between April 1 - May 8, 2011.

Harestanes Centre Manager Michael Scott said:

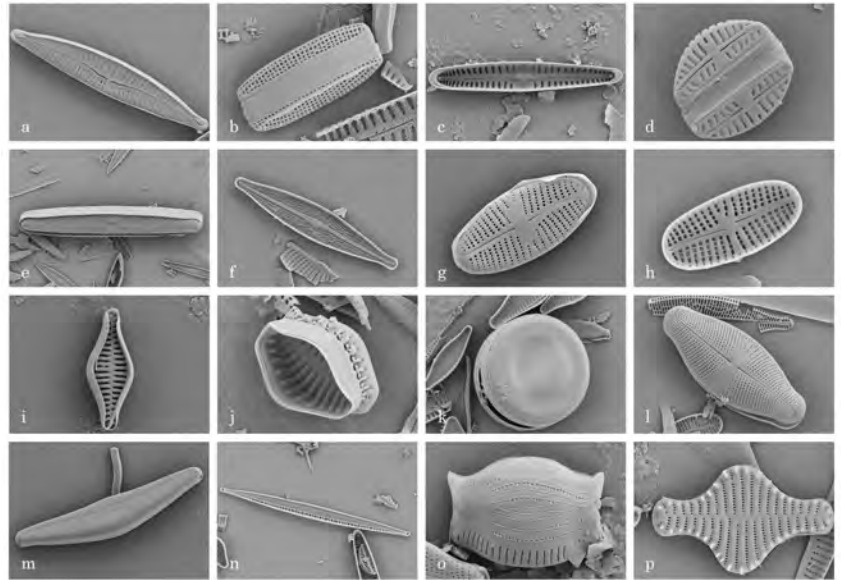
"Liz Douglas' project has harnessed a diverse range of people and expert skills to create a unique interpretation of a lesser-known but nevertheless important part of our natural heritage. It's inspiring to see how SEM imaging, animation, sculpture, painting and cutting-edge textile printing have come together to create a real '360-view' of these beautiful and mysterious creatures. 'Mire' is a fitting exhibition to open Harestanes' 2011 season in our refurbished gallery space".

Liz Douglas
www.lizdouglas.co.uk

Diatoms are unicellular microscopic algae with a silica cell wall. These diatoms are from one drop of water from one of many pools at Whitlaw Mosses.

Genus

- a. Cymbella
- b. Nitzschia
- c. Gomphonema
- d. Amphora
- e. Navicula oblonga
- f. Brachysira
- g. Gyrosigma
- h. Achnanthes (sensu lato)
- i. Fragilaria (sensu lato)
- j. Staurosira (Fragilaria sensu lato)
- k. Cyclotella
- l. Eucocconeis (sometimes in Achnanthes sensu lato)
- m. Cymbella
- n. Nitzschia
- o. Amphora
- p. Staurosira (Fragilaria sensu lato)



'Mire' Exhibition
Whitlaw Mosses Series
Artist: Liz Douglas
2008-2011

Image copyright: RBGE
SEM Images: F. Christie





Making culture out of algae: Gateshead Shop Art

Gateshead in the northeast of England, home of the Angel of the North and Baltic Centre for Contemporary Art, is experiencing public art of a different flavour. As part of a regeneration programme for the town centre, local artists have been commissioned to produce works of public art that integrate with the commercial landscape.

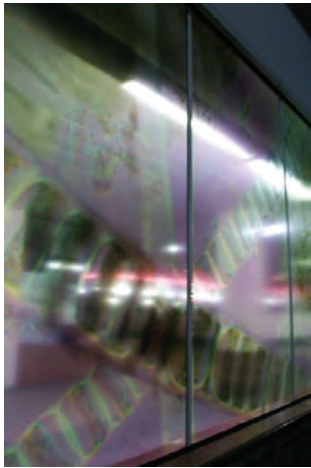
"Algal Landscapes" is an installation produced by the artist Corinne Lewis. Corinne lives and works in the Gateshead area, and is situated in The Shed which is a thriving creative workspace in the centre of Gateshead.

Working with Gary Caldwell and Gordon Beakes at Newcastle University, Corinne has produced a series of vibrant images of microalgae that focus the attention of the general public on a subject they would otherwise not consider. The work comprises a series of digital murals and artworks that have been on display in Gateshead Interchange - the main public transport hub. An inspiration for both

the choice of subject matter and display location is the ongoing work at Newcastle to develop low cost bioenergy from algae. The research aspiration is to eventually power the public transport infrastructure using algae biodiesel and biogas.

Biofuels have a damaged public perception, due in the main to unsustainable practices for the growth of terrestrial bioenergy crops. Algae on the other hand do not face the same environmental issues as land crops. "Algal Landscapes" is an important step towards educating the public about the environmental benefits of generating energy from algae.

Gary Caldwell,
School of Marine Science and Technology
Newcastle University



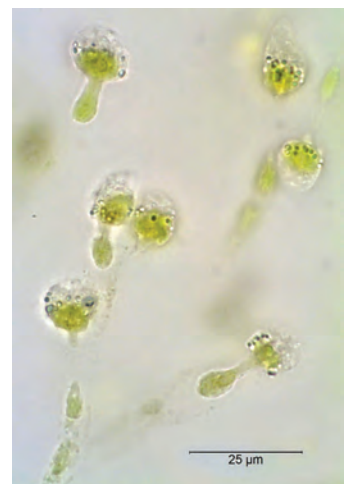
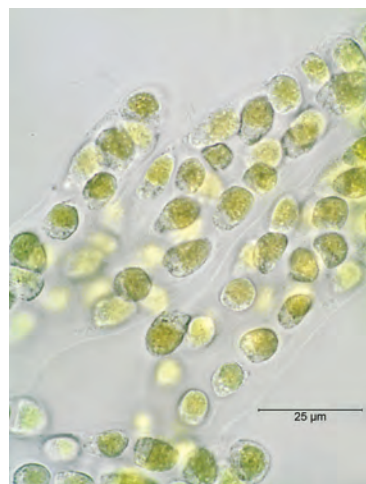
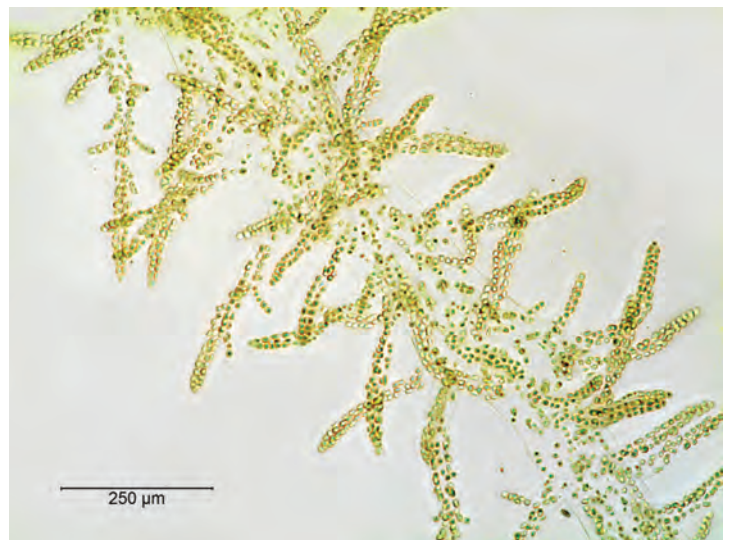


Found on an Iceland Holiday

It was a nice spot for lunch in the July sunshine by one of the rivers flowing out of the glacier Snæfellsjökul in NW Iceland. Some things can only be seen properly in their natural situation in the wild: humpback whales and *Hydrurus* for example. This *Hydrurus foetidus* colony was not at first recognised by the smell but by the masses of olive-green tubular growths just below the surface of the water - a text book location for this cold water Chrysophyte. It is said to be a rarity in the UK, reported occasionally from the Lake District and more often from Scotland.

Unfortunately, this freshwater alga deteriorates rapidly once collected and the infamous smell did develop rapidly and permeated plastic bags and lingered on fingers to an unbelievable extent: it was a relief to find there weren't any sniffer dogs at Heathrow! One week later it was a pleasant surprise to find the sample in good enough condition for photography.

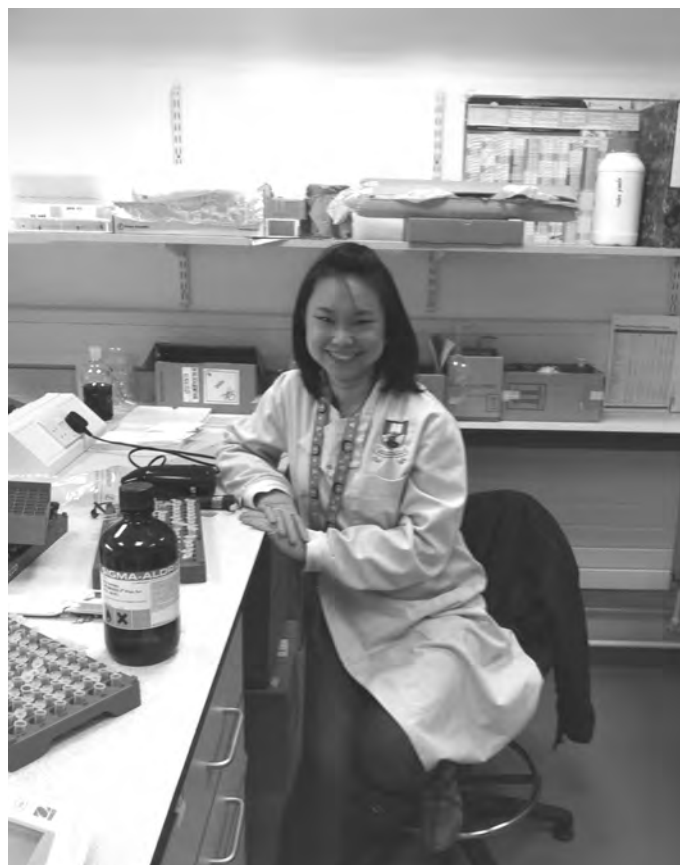
Christopher F. Carter (Chris.Carter@6cvw.freeuk.com)



Report for conference in Halifax, Canada (19th June 2011 - 24th June 2011)

The 4th Congress of the International Society for Applied Phycology was held on the 19th - 24th of June 2011 in the Halifax Marriott Harbourfront Hotel, Halifax, Canada. This meeting was held in collaboration with Canada's National Research Council-Institute for Marine Bioscience and the theme was '*Scaling-up for new opportunities in applied phycology*'. Approximately 100 papers and 139 posters were presented at this congress with the majority of them from the National Research Council in Canada. Contributions to the conference were made from researchers all around the world, including Europe, China, India, US. Oral presentations were held during parallel sessions on Monday, Tuesday, Thursday and Friday, while poster presentations were presented at the end of the oral sessions on Monday and on Tuesday from 5pm until 7pm. Delegates had a choice of five different excursions on Wednesday, one being a guided tour to the National Research Council's main campus and the Marine Research Station in Halifax. Other tours included a guided tour of the Acadian Seaplant Research Centre (one of the main sponsors of the congress), whale watching, a historical tour of Halifax city and an excursion to the Lunenburg, Mahone Bay and Peggy's Cove. The conference gala dinner was held in the Nova Scotia Ballroom in the Halifax Marriott Harbourfront Hotel on Thursday night, after the oral sessions of the day had finished. I had the opportunity to present my work in the conference on the Thursday evening session, which is a great experience for me.

The meeting began every day with keynote lectures delivered by reputable microalgal researchers such as Dr. John Benemann from Benemann Associates, Dr. Steven Feng Chen from Peking University (China), Dr. Micheal A. Quilliam from the National Research Council (Canada) and Dr. Jonas Collen from Marine Plants and Biomolecules (France). The majority of the oral presentations were presented by scientists, researchers, industry representatives and engineers with small fraction delivered by students. Less than half of the oral presentations were focused on macroalgae and none were related to our work (separation and purification of the bioactive compounds from macroalgae), although there were a few that have purified oils from microalgae for industrial purposes. Most of the talks on macroalgae/seaweed were related to harvesting seaweeds for industrial purposes where the seaweeds are used as food, fertiliser, cosmetics etc. There were some talks on separation and isolation of compounds but from microalgae using chromatographic separation. For example, the talk by Masashi Tsuda from Kochi University, Japan on Tuesday focused on cultivation of dinoflagellates which produce novel anticancer compounds. The group isolated more than 40 novel polyketides such as isocaribenolide-1 and amphidinium and have successfully mass cultivated this microalga to provide these anticancer compounds. Barbara Klein from University of Erlangen-Nuremberg, Germany discussed her work where she successfully mass produced *Porphyridium purpureum* in order to isolate coenzyme Q₁₀ using accelerated solvent extraction.



Monday's session began with a keynote address by John Benemann from Benemann Associates who discussed scaling up microalgae production for commercialisation purposes. Benemann Associates specialise in using microalgae for biofuel. On Tuesday, oral presentations were centred on topics relating to the application of algae, mainly microalgae, and were especially focused on biofuel applications. Presentations on Thursday and Friday continued to focus on scaling-up microalgae production for biofuel and on these days, most of the talks on macroalgae were presented. The majority of presentations relating to macroalgae focused on the cultivation of macroalgae, collection patterns, and applications such as animal feeds, food, nutritional values (proteins, mineral, antioxidants) and scaling up the production of seaweeds for bioactive ulvan from green seaweeds. The poster presentations session was more related to our study, as extractions of bioactives from seaweeds were presented. One poster in particular was very pertinent to our field of study. This was presented by Professor Jeon Yu Jin from Jeju National University, Jeju Island, Korea. This group has performed extensive studies on the brown seaweed '*Ecklonia cava*' and the poster reviewed the use of compounds isolated from this species. This brown seaweed is rich in vitamins, minerals, dietary fibers, proteins, polysaccharides and polyphenols and Prof. Jeon's group has reported that this seaweed contains compounds with antioxidant, anticoagulant,



antimicrobial, anti-HIV, anti-inflammatory, immunomodulatory, antimutagenic, antitumor and anticancer effect. I managed to speak briefly with Prof. Yeon after my presentation on Thursday to ask about his research and ways to isolate the bioactive compound, 'dieckol' because I have read a paper which reports that this compound has activity against MRSA. I then realised that the work published in *Biotechnology and Bioprocess Engineering* in 2008 on the anti-MRSA activity of dieckol was from Prof. Yeon's research group. The method used for isolation of this compound is very similar to the method we used. For example, they have isolated dieckol from an ethyl acetate extract of *E. stolonifera* using normal phase column chromatography.

My presentation was on Thursday evening at 4.20pm where I presented my current work on the isolation of antibacterial compounds from green seaweeds. Unfortunately the crowd was not as full as in previous session as it was the last session for the day, and we have the Gala dinner after that. However, I am still happy to be given the opportunity to present and was happy to have a few feedbacks and questions in my presentation. Most of the questions asked were on the potential application on the seaweed extracts generated by our group, which is the main theme of the conference. The other talks on Thursday evening (our session) included the design and scaling-up production of bioactive oligosaccharide (Ulvan) from green seaweed, the use of seaweed in suppressing plant disease and utilisation of *A. nodosum* in improving stress resistance in vegetable transplant.

The tour to the National Research Council research centre on Wednesday was very informative. We were shown their advanced NMR and LC-MS equipment. The research centre has 2 NMR facilities, 500 Mhz & 700 MHz ultrashield. The 700 MHz ultrashield system can analyse samples as small as 30 μ L, which would be very useful for natural product samples such as ours. This 700 MHz ultrashield NMR also allows profiling of a mixture of samples (whereas most NMR systems require relatively pure samples). The research centre also has a Quadrupole time-of-flight *mass spectrometer* (Q-TOF MS) and Orbital MS with high resolution. These instruments are suitable for the analysis of compounds within a mixture. I was also informed that they will accept samples for analysis using their NMR and MS systems. In addition to their analytical equipment, I had the opportunity to visit the lab which is setup to conduct experiments using a zebrafish model. The zebrafish model is a relatively new model to study gene function and toxicity. It serves as a link to other organisms and humans as zebrafish DNA is approximately 80% similar to that of human DNA. This allows the zebrafish to serve as a model for human biology and by observing the development of the zebrafish embryo, effects observed can be related to potential effects on humans prior to experimental testing on higher animals such as rodents. By understanding this, I thought that we could potentially use

this model as a means to investigate the toxicity of our bioactive compounds as there is a short experimental time (the embryo takes only 3 days to develop) and the method is high throughput as the embryos are small enough to be grown in 96-well microtitre plates, and monitored using microscopy. The lab that I visited is very experienced in using this model and they allow external samples to be assayed in their lab. The contact is Dr. Kelly Soanes, but she was not around when we had the tour to the lab. The lab focuses on development and introduction of new methods for identification and characterisation of biomarkers with focus on the normal and pathological condition using the zebrafish disease models. The model is also used for identification and characterisation of potential targeted therapeutics on the fish, from changes in metabolomics, proteomics, transcriptomics, miRNA profiling and QTL mapping. In the Marine Research Station in Halifax, we were shown tanks which are used for commercial cultivation of microalgae and macroalgae, and also some of the equipment such as a carbon dioxide extractor and a large freeze drier.

Overall, even though most of the talks in the conference focused on microalgae and those on macroalgae were not really related to our study, attending the meeting was very beneficial to me. This meeting allowed me to meet other researches from around the world. Moreover, I also had an opportunity to meet with people from different backgrounds, ranging from academic based research (i.e. students, university researchers and professors), to industrial (researchers, marketing professionals and manufacturers) and policy makers. The meeting with Prof. Yeon and understanding the extensive work from his research group was very impressive. The tour to the research centre was the most beneficial as it gave me an interesting idea for my study. The visit to the zebrafish lab opens the opportunity for us to try to study the toxicity of our extract using zebrafish. As mentioned before, there are a number of advantages of using the zebrafish model such as short experimental time, high throughput and possibility of observing the effect of our extract on the zebrafish embryo development by observing changes on the embryo. I am very thankful to have been able to attend this international conference, and hope that I will have the opportunity to attend another in future.

I would like to express my gratitude to British Phycological Society (BPS) for funding my travel (air ticket) and International Phycological Society (ISAP) for funding the congress registration fee and my five night accommodation to attend this conference. This meeting was a very rewarding experience and I am proud to present my findings in front of such amazing people.

Shiau Pin Tan (20039108@mail.wit.ie)
PhD student at Waterford Institute of Technology,
Ireland since September 2009

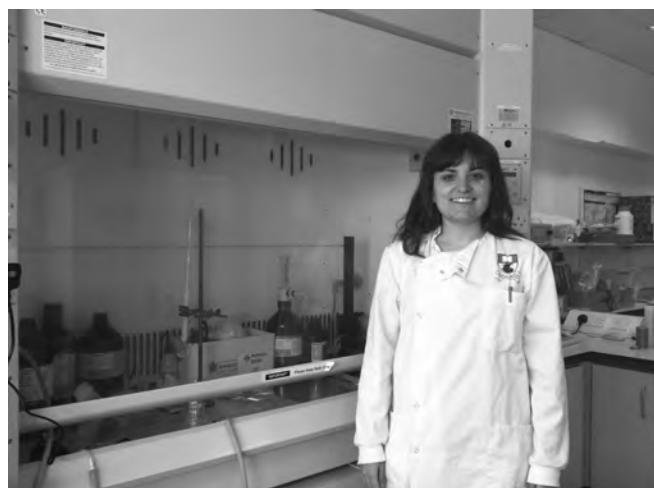
4th Congress of the International Society for Applied Phycology, June 19-24, 2011, Halifax, Canada

I am currently a 2nd year PhD student studying antibacterial activity of algal-associated bacteria. I received funding from The British Phycological Society to attend The 4th Congress of the International Society for Applied Phycology.

The 4th Congress of the International Society for Applied Phycology was held this year in Halifax, Canada from 19-24 June. The meeting was held in collaboration with Canada's National Research Council-Institute for Marine Bioscience. The title of the congress was *Scaling-up for new opportunities in applied Phycology* and brought together researchers, students, engineers, entrepreneurs, industry representatives, policy makers, marketers, and manufacturers from around the globe to discuss relevant issues regarding the harvesting and cultivation of macroalgae and microalgae, their applications and commercialisation in animal health, cosmeceutical, nutraceutical, biofuel applications. Over a period of five days, approximately 100 oral presentations and 139 poster presentations were presented throughout this congress. Moreover, delegates had a choice of five different excursions on Wednesday and the gala dinner was held in the Nova Scotia Ballroom in the Halifax Marriott Harbourfront Hotel on Thursday night.

On the first day we attended a welcome reception by the organisers at the Halifax Marriott Harbourfront Hotel where the majority of delegates were present. On Monday, Tuesday, Thursday and Friday the congress opened with keynote addresses by recognised algal researchers, Dr. John Benemann from Benemann Associates, Dr. Steven Feng Chen from Peking University (China), Dr. Micheal A. Quilliam from the National Research Council (Canada) and Dr. Jonas Collen from Marine Plants and Biomolecules (France). A small fraction of oral presentations were presented by students as most of the oral presentations were presented by scientists, researchers, industry representatives and engineers. The afternoon sessions consisted of two parallel sessions divided into macroalgae and microalgae. More than the half of the oral presentations were focused on microalgae. None of the oral presentations and just one of the poster presentations focused on the antibacterial activity of algal associated bacteria.

On the 3rd day, the conference had organised for delegates to go on excursions. Delegates had a choice of five different locations. I went on excursion no. 1: Canada's NRC Institute for Marine Biosciences (NRC-IMB) and the institute's Marine Research Station located at Ketch Harbour. In the NRC-IMB I visited four different labs. (1) Zebrafish lab - this lab uses a zebrafish model since it is easier and faster method than mice or rats. They determined the toxicity of algal extracts by



incubation with the zebra fish. Briefly the method is the following: eggs of zebra fish are incubated for 3-5 days with the algal extracts, drugs etc, in a 48-well microtitre plate. If they see any abnormality in the behaviour or in the development of the embryo, they could detect the gene involved as the zebra fish genome is fully characterised. They don't work with bacteria. (2) Biotoxin lab: they make standards of biotoxins produced by seafood to sell to other labs, (3) LC/GC lab: equipment lab and (4) Nuclear magnetic resonance (NMR): they have two models, ultrashieldplus 700 and ultrasield 500, with two different size samples: 600 l and 30 l. Samples analysed can be liquid or semisolid. At the Marine Research Station we walked around the entire research centre where they mainly grow micro-algae for biofuel and macro-algae.

This conference gave me a great opportunity to present the data obtained during the first year and a half of my PhD. This was my first presentation at an international conference and also at a conference which was outside of my institute. The conference also allowed me to interact with leading algal scientists and other research groups. I am very grateful to have attended this conference and would like to thank the British Phycological Society for financial support. I sincerely wish to express my gratitude towards my supervisors Dr. Gillian Gardiner and Dr. Peadar Lawlor, and also to Dr. Laurie O'Sullivan for their continuous support and encouragement during my PhD studies.

Maria Luz Prieto

Member of the British Phycological Society since 2010



Heterotrophic grazing by toxic and non toxic strains of the harmful dinoflagellate *Alexandrium tamarensis* from Scottish Waters

I am currently undertaking an undergraduate course in BSc (Hons) Marine Science with the *University of the Highlands and Islands* at the *Scottish Association for Marine Science* (SAMS). The institution is situated in Oban on the Scottish West Coast, just 2 hours from where I grew up. Coming to Oban was one of the best decisions I ever made, but also a big gamble as it was the only university I applied to. This is the only institution to offer Marine Science as a degree course in Scotland, and it happens to be in the perfect place to study this area of science. Why would I want to study the ocean in a big city university far from the coast?

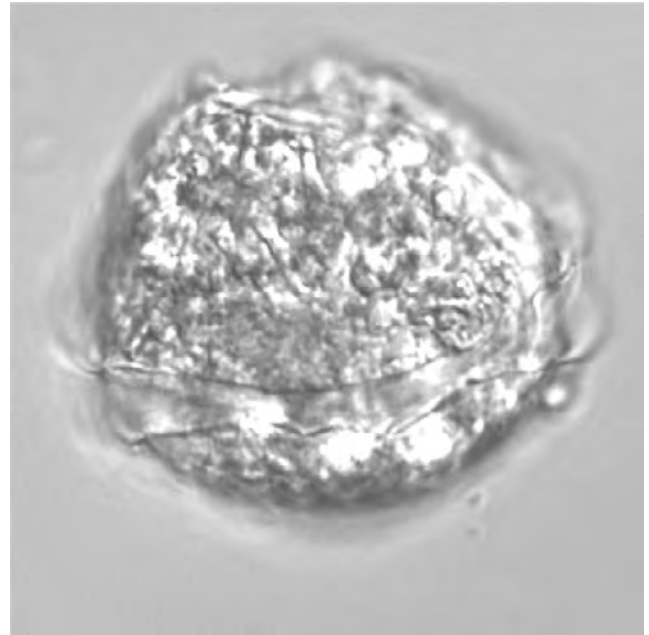
During the summer of 2011, between the months June-September, I undertook a project funded by the British Phycological Society supervised by Dr. Keith Davidson of the microbiology department at SAMS and Mrs Christine Campbell of CCAP (the *Culture Collection for Algae and Protozoa*) on the physiology of harmful algal bloom species.

It is a common assumption implemented in ecosystem models that many bloom-forming dinoflagellates are obligate phototrophs; however literature suggests that many species may be able to ingest cells to supplement their nutritional needs. Therefore it is important to assess the potential feeding activities of important species. *Alexandrium tamarensis* is an important toxin contributor on the Scottish West Coast, and has become a problem for local aquaculture industries in recent years. The species is currently monitored by the Food Standards Agency (FSA), also based at SAMS.

My project focused on toxic and non-toxic strains of the dinoflagellate *A. tamarensis* and our aim was to investigate whether this species was mixotrophic; that it could feed heterotrophically on small algae and cyanobacteria, as well as gaining energy photosynthetically. I grew *A. tamarensis* cultures of 4 strains, two toxic and two non-toxic (CCAP: 1119/31, 1119/33, 1119/24, 1119/28), and the prey organisms *Synechococcus bacillarus* (CCAP 1479/7) and *Nannochloropsis oculata* (CCAP: 849/1).

I carried out various traditional feeding experiments, of incubation with predator and fluorescently labelled prey, and then viewed under a microscope with blue light excitation. Results are promising and show significant potential for heterotrophy within this species. Preliminary data show that feeding could be elevated in toxic strains of *A. tamarensis* compared to non-toxic strains. However heterotrophy is difficult to capture in mixotrophic organisms because often colourless or relatively minute prey are lost inside the predator. Prey must be fluorescently labelled in order to be observed; but stain wavelengths can overlap with the predator's photosynthetic pigments (yellow-brown in *A. tamarensis*) and consequently be masked or mistaken for other cell components - such as lysosomes, chloroplasts or storage vacuoles. As the project only spanned 11 weeks, these difficulties meant that we were unable to fully quantify grazing rates on cyanobacteria by *A. tamarensis*. Extra time would be needed to test my hypotheses and develop solid conclusions.

Whatever the outcome, this project has given me my first experience of a research career, and that has been invaluable. Independent labwork was daunting at first but I am now able to conduct myself with minimal instruction from my supervisors and plan, set up and execute experiments by myself. It was a



Alexandrium tamarensis cell image taken with confocal microscopy

totally new way of working from what I had previously been used to at high school and university but this project has given me the knowledge to be properly prepared for projects in the future and to approach them in the correct way. I have been invited to speak on my project at a national research conference by my supervisor this autumn which I am currently preparing for. This will be my first scientific conference and it is a fantastic opportunity for me to be able to speak despite being an undergraduate student!

I would like to thank the British Phycological Society for their funding support, without which I would not have been able to have this terrific experience, and also my supervisors - Keith and Christine - for guiding me through this project. I urge any other students out there to get involved with research programmes and voluntary labwork projects.

Ruth Paterson

Supervisors: Dr Keith Davidson; Mrs Christine Campbell



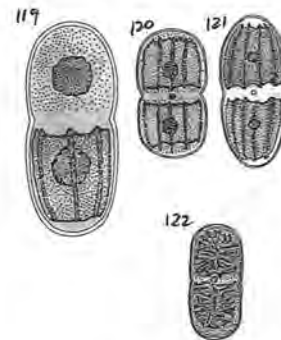
David Williamson's Desmid Collection

David Williamson has now given his collection of Desmid Illustrations to the Freshwater Biological Association. These are his own drawings, some 10 - 12,000, accumulated over the last 40 years of research in his spare time. The individual taxa are filed in labelled folders together with any notes, photographs and other information and are now installed in three 2-drawer filing cabinets within the Fritsch Collection.

David has had a lifelong interest in microscopy and it was Horace Barber, a respected amateur diatomist, who urged him to concentrate on one group of the algae. David chose the Desmids

because of their beauty and the range of forms; although mainly from UK localities, there are many from around the world. Each illustration is accompanied by the location and date, and size, as well as the name of the Collector if not from his own material. He worked with both Dr Edna Lind and with Prof. Alan Brook, producing many published papers and several books, the most recent being the new Ray Society volume *A Monograph on some British Desmids*. A. J. Brook and D. B. Williamson. Edited by J. H. Price and N. J. Evans. 2010.

Anyone is most welcome to come and use this Collection.



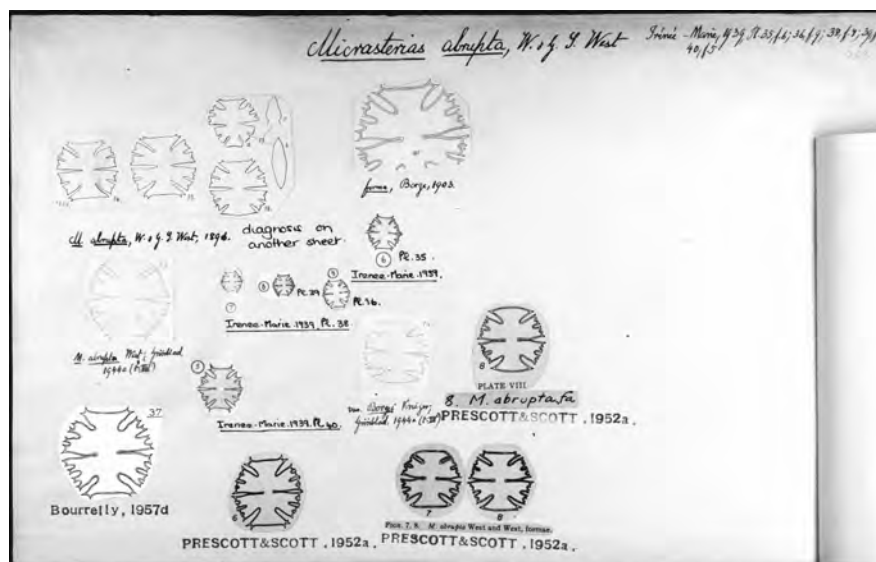
Dr Elizabeth Y Haworth
Fritsch Collection Curator
Freshwater Biological Association,
Ambleside, Cumbria, UK
ehaworth@fba.org.uk

Fritsch's Scrapbook will be 100 years old

The Fritsch Collection of Freshwater, Brackish and Terrestrial Illustrations of Algae will be celebrating its Centenary in 2012.

It was started due to Professor F.E. Fritsch's interest in morphology and the range of algal species, especially the desmids. In collecting together the published illustrations, in the days before copiers, he used to beg two reprints from his correspondents so that he could cut up one copy for his filing system of individual species sheets. If these were not forthcoming he either traced or cut the figures anyway (and some reprints in the FBA's library attest to this practice!); notes being handwritten or typed and stuck on the sheets as flaps.

After Fritsch's death the Collection came to the Freshwater Biological Association (he was a founder and its first Chairman) and Dr J.W.G.Lund continued to add data which now exceeds 100,000 foolscap sheets. It is currently accessed by email, phone, letter or personal visit as we begin to digitize it for online access.



Prof Fritsch's sheet of *Micrasterias abrupta* West & West 1896 including the type figure, a flap included his written or typed notes.

Dr Elizabeth Y Haworth
Fritsch Collection Curator
Freshwater Biological Association,
Ambleside, Cumbria, UK
ehaworth@fba.org.uk



Elliot Shubert attended the Polish Phycological Meeting in Wrocław, Poland on 18-23 May 2011 and gave an invited talk, "Defining the taxonomy and systematics of *Desmodesmus* using a polyphasic approach: exploring the conundrum of phenotypic plasticity". Much to his surprise, he was recognised with an honorary membership in the Polish Phycological Society for his support of the formation of the society in 2001 and his mentoring of Polish phycologists. He is the first phycologist from the UK, who has received this recognition.



Identifying Freshwater Macroalgae

Martyn Kelly & Allan Pentecost

The Freshwater Biological Association,
Windermere, Cumbria

Two day course: April 2012 (dates to be confirmed)
Cost: £275; early bird rate £260*; FBA member £250

A two day course on how to recognise the larger freshwater algae. Field and laboratory-based exercises will introduce participants to the biology and identification of those freshwater algae most likely to be encountered during freshwater surveys. Martyn Kelly is a freelance consultant, specialising in the use of algae for environmental monitoring. Allan Pentecost of the FBA has studied algae for 40 years and has published many research papers and a book on algal ecology and taxonomy.

For further information and to make a booking, please contact the Freshwater Biological Association: events@fba.org.uk, +44 (1539) 442468
FBA website: www.fba.org.uk/training-and-events

* Early bird rates apply to fees paid at least eight weeks before the start of the course.



New Editor-in-Chief of *Phycologia* appointed

Dr. Robert A. Andersen has accepted the offer of appointment from the Board of Directors of the International Phycological Society to succeed Dr. Alan J. K. Millar as Editor-in-chief of *Phycologia* from 1 January, 2012. Bob, formerly Director of Provasoli-Guillard National Center for Culture of Marine Phytoplankton, Bigelow Laboratory for Ocean Science, is currently affiliated with Friday Harbor Laboratories, University of Washington. His research contributions in the morphology and systematics of heterokont algae are extensive. In addition, he has edited four books, including *Algal Culturing Techniques*, and coauthored many book chapters. Bob has considerable editorial experience, having previously served as the Monitoring Editor of *Protist* and as a member of the editorial boards for *Journal of Phycology*, *Biodiversity and Conservation*, *Phycologia* and *Phycological Research*.

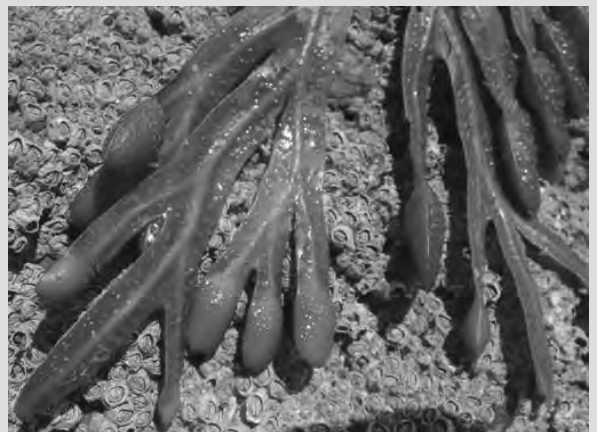
Robert Andersen will assume responsibilities beginning with volume 51, January 2012 issue.

Alan Millar will retain responsibility for volume 51 January and March 2012 issues prior to retiring as Editor-in-Chief after serving two terms. These issues will be jointly edited by Alan Millar and Robert Andersen.

All new manuscripts should be submitted electronically to the Editor-Elect, Dr. Robert A. Andersen at [<raa48@uw.edu>](mailto:raa48@uw.edu). All matter relating to manuscripts submitted prior to this announcement should be addressed to Dr. Alan Millar at [<Alan.Millar@rbgsyd.nsw.gov.au>](mailto:Alan.Millar@rbgsyd.nsw.gov.au).



We would like to call your attention to the new species *Fucus guiryi* just named in honour of Professor Mike Guiry for his great contribution to Phycology by creating ALGAEBASE; for his vision in realizing (many years before most other databases) the importance of access to information, and for the generosity in working towards making all this information freely available to everyone all around the world.



Zardi GI, Nicastro KR, Canovas F, Costa JF, Serrao EA, Pearson GA. Adaptive traits are maintained on steep selective gradients despite gene flow and hybridization in the intertidal zone. *PLoS ONE*, 6(6): e19402. doi:10.1371/journal.pone.0019402

Fucus guiryi from St Ives, Cornwall, SW England. Photo courtesy of Ester Serrão. Named in honour of Michael Guiry.

60th Annual Winter Meeting, Newcastle 2012

Second Circular

The 60th Annual Winter Meeting of the British Psychological Society will take place in Newcastle-upon-Tyne between Wednesday 4th and Friday 6th January 2012 inclusive. The venue is the Research Beehive, which is based on the Newcastle University campus: <http://www.ncl.ac.uk>

Abstracts

A reminder that the deadline for abstracts was set as Friday 28th October 2011. However, abstracts will now be accepted up until Wednesday 16th November 2011. Please send your abstract(s) electronically using the abstract form as a Word document to BPS2012@ncl.ac.uk. Please indicate whether you are offering an oral or poster presentation. Students should indicate whether they are entering the Manton Prize or Student Poster competitions.

Registration

The registration fee is £130 for BPS members and £150 for non-members. Registration forms will be available on the BPS website from early October. The FINAL deadline for registration is Wednesday 30th November 2011. We will accept payment by cheque, credit/debit card or BACS/International Transfer.

If paying by cheque or credit/debit card please complete the registration form on the BPS website and post to the address on the form. Please make cheques payable to the British Psychological Society. Please note: there will be a £5 administration charge for any credit/debit card payment.

Delegates wishing to pay via BACS or International Transfer should e-mail their completed registration form to BPS2012@ncl.ac.uk and request to receive payment details from the Treasurer, Dr Michelle Tobin.

Please note: it is essential that all registrations are received in time to finalise details, therefore registrations received after 30th November 2011 will be subject to an additional administration charge of £50.

Programme

There will be two Special Sessions during the Meeting held on the afternoon of Wednesday 4th January and the morning of Thursday 5th. The themes of the sessions will be Algal Biotechnology, chaired by Dr John Bothwell and The Role of Psychology in Education and Outreach, chaired by Dr Sara Marsham.

The Manton Prize Student Presentation Session will be held on the morning of Friday 6th January. In addition there will be parallel sessions on the Thursday and Friday afternoons allowing for up to 26 oral presentations. The Presidential Address will be given by our Overseas Vice-President Siew Moi Phang on Thursday 5th January.

The short-listed entries for the Hilda Canter-Lund prize from 2011, along with those from 2009 and 2010, will be displayed in the Great North Museum: Hancock throughout January alongside original works by Hilda Canter-Lund.

Following the success last year, there will be a special Student Lecture on multivariate statistics given by Dr Steve Juggins. In addition, on the Thursday evening there will be a meeting for student members to meet the Student Representative, Helen Rosenkranz, and find out more about the Society and what it has to offer student members. Student members will also be able to give their ideas to Helen about what they want from the Society.

The Society's Annual General Meeting will be held on the afternoon of Friday 6th January, so please make a special effort to attend to help support your Society.

Evening activities include the Wine Reception and poster session sponsored by Taylor and Francis on Wednesday 4th January in the Research Beehive. The Conference Dinner will be held in the Frangipani Room at As You Like It (<http://www.asyoulikeitjesmond.com>) on Thursday 5th January and the Conference Banquet with ceilidh on Friday 6th January in the Great North Museum: Hancock. As is now traditional, there will be a quiz and auction at the Conference Dinner, so please look for auction items. Volunteers for running either the quiz or the auction should contact Dr Sara Marsham (see below).

Presentation Structure

Invited presentations for the two Special Sessions should be planned to last 20 minutes with 5 extra minutes for questions. Offered oral presentations should be planned to last 12 minutes with 3 minutes for questions. Presenters should bring their presentations on a memory stick (not CD), in a PC compatible form, ensuring that the file is clearly labelled with their name. The poster boards are landscape A0 (maximum size 85 cm x 115 cm) though portrait posters are preferred. Larger posters cannot be accommodated. The number of posters accepted is capped at 40.



Accommodation and Travel

The registration fee does not include accommodation or breakfast, which should be booked by delegates themselves. Accommodation has been secured at a number of providers across NewcastleGateshead. To ensure you book a room allocated to delegates, all bookings should be made through the dedicated website. To search for accommodation please go to www.NewcastleGateshead.com/bps and use the search options to find accommodation. Availability can only be guaranteed until 6th December 2011 - so please ensure you book early as hotels in the area tend to get extremely busy.

Travel to Newcastle is easy and the use of rail, coach or air is advised as parking adjacent to the campus is very

expensive. Newcastle is well served by the East Coast Main Line and the campus is around 15 minutes walk from Central Station. Alternatively, the Metro runs from Central Station to the Haymarket, which is directly opposite the campus. Newcastle International Airport is located to the north-west of the city and is served by the Metro, which is a 20 minute journey to the Haymarket. National Express and Megabus also run coaches from most cities and main towns directly into Newcastle city centre.

Questions

If you have any further questions or queries, please feel free to contact Dr Sara Marsham on +44 (0)191 2223056 or using the BPS2012@ncl.ac.uk email.

The BPS needs your help!

Nominations are invited for the post of Secretary and for two Ordinary Members of Council to replace those whose terms of office come to an end in January 2012. These posts, which are for three years, are open to all members of the Society. There are three Council meetings each year. Council membership is a great way to find out how the Society is run and is also an opportunity to influence the future direction of the Society. There will also be opportunities to join one of the committees if you are interested in serving in a specific area, e.g. Student Awards and Training Committee, Biodiversity and Conservation Committee, Education and Outreach

Committee. The post of secretary carries with it the usual secretarial responsibilities including taking minutes of meetings (be warned, the Summer Council meeting may last up to 7 hours but don't let that put you off), liaising with Council, and responding to enquiries from BPS members, e.g. "How do I apply for funding?", and from anyone else with a psychological query such as "Can you supply a bag of seaweed for a TV chef next week?" and "What are the sticks of seaweed my dog likes to play with on the beach?". Never a dull moment!

If you would like to nominate someone please ask them before forwarding their name along with a brief outline of their

psychological interests/ research area, stating which position they are being nominated for, to me (jpo512@nhm.ac.uk) by October 31st 2011. Members may of course nominate themselves. You should also ask someone to second each nomination. If more nominations than positions are received a vote will be organised. The outcome will be announced at the AGM at the Winter Meeting in Newcastle (4th to 6th January 2012).

Jane Pottas BPS Secretary

Instructions for Contributors

Copy which is submitted for publication in *The Phycologist* should be concise and informative. Articles should be scientifically sound, as jargon free as possible and written in a readable scientific magazine style. Unless absolutely essential, references should not be included. All types of relevant material will be considered, these include job advertisements, scientific reports, book reviews, news items of topical interest, meeting announcements, grant awards, promotions, appointments, profiles of eminent phycologists and obituaries. If you are interested in submitting material that does not fall within any of these broad categories, or you are unsure of the appropriateness of a potential article, then contact the editor. Suggestions for future articles or a series of articles are welcomed.

Copy should be submitted, preferably as attachments to email or on disc (MS Word for Windows or Rich Text Format). **Illustrations and photos to accompany copy are welcomed and should be supplied in JPEG or TIFF file-format no less than 600 dpi resolution.** The editor reserves the right to edit the material before final publication.

Submission of Copy and Deadlines

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