The Newsletter of the British Phycological Society

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Editorial

This edition of The Phycologist contains personal portraits of two of the most senior figures on the council of The British Phycological Society, the current President Chris Gibson and the Vice President (President-elect) Eileen Cox. Both should be well known to many for their contributions to phycological research and teaching, as well as their current and past contributions to the BPS. Eileen, for instance, has been a member since the early seventies. In his account Chris also recalls, as a young postgraduate student, the somewhat terrifying experience of giving an oral presentation to the BPS in Bedford College, University of London, in the late sixties. What is remarkable is that both, independently, warmly acknowledged the help and encouragement they obtained from the society and its members during their early formative years. With these two at the helm this emphasis is set to continue. One of the direct ways in which the BPS supports students is through the provision of funds for attending meetings and courses and important information on this is given in the current newsletter on page 9.

Returning to a previous theme, information made available at the last BPS Council meeting held at the University of Westminster provided even more encouraging news about the success of the European Journal of Phycology. Since the inception of the journal in 1994, the available information indicates that the impact factor has risen from 0.60 to 1.4. To put this into context the Journal of Phycology has gone from 1.93 to 1.85 over the same period. I realise that impact factors are not everyone’s cup of tea and their relevance often hotly debated. Nevertheless, they are a measure of the continued success of this journal and all those connected with its production, in particular the editor Chris Maggs, are to be warmly congratulated.
European freshwaters in earlier centuries, and because of the high demands placed on these resources for livestock watering and fisheries, it might be expected that popular indicators of animal or human health problems associated with blooms should be available in European countries. Occasional glimpses of local knowledge of the hazards of cyanobacterial scums to animal health are provided in the early literature. Before 1833, at least 4 lakes in Jutland, Denmark were referred to as "sick lakes" when they bore a scum in summer, during calm conditions. This state was associated with the collapse of cattle after drinking the water and with fish deaths. When it rained or became windy and the scums were dispersed the lakes became "healthy". The association of poisoning incidents in Australia with cyanobacterial blooms was clearly established by acute observation and experimentation, and reported in the scientific literature in 1878 by a chemist and analyst, George Francis. This paper is rightly regarded as a foundation stone of cyanobacterial toxicology and contains a description of the deaths of sheep, horses, dogs and pigs after drinking from water containing a scum of the cyanobacterium *Nodularia spumigena*, at Lake Alexandrina, near the mouth of the River Murray in South Australia. Francis' post-mortem observations of the hepatotoxicosis of a sheep, experimentally dosed with samples of the paint-like scum from the lake, and attributed to poisoning by the "plant", are consistent with the effects of the cyclic pentapeptide hepatotoxin, nodularin, identified 110 years later from *N. spumigena*.

The management of the hazards presented by cyanobacterial toxins to human and animal health, and of the production and control of the toxin-forming blooms, requires awareness and integrated action across the human community. This includes the general public, as drinking-, amenity- and recreational water-users, the agricultural and industrial sectors, environmental and health authorities, the water treatment and supply bodies, and the medical and veterinary professions. One of the requirements in this approach is for a monitoring and reporting system to warn water-users and officials of the presence and abundance of potentially toxic cyanobacteria, to enable appropriate actions to be taken. Evidence has emerged that such a system developed, or was introduced, in South Australia along the Lower River Murray, and was in use from about 1878 for at least the next decade. This involved an awareness of cyanobacterial scums by pastoralists, local settlers, river boat captains and the police, with reporting to a senior government official (the Commissioner of Crown Lands) and publication in the local press. The rationale for this system is clearly supported by the contemporary research of George Francis on the toxicity of the *Nodularia* scums, which was commissioned by South Australia's Chief Inspector of Sheep in 1878 after livestock poisonings. This level of local awareness and official reporting is regarded as an advance in the mitigation of the impact of toxic blooms and preceded equivalent developments in several parts of the world by more than a century.

As with marine algal toxins, and in other aspects of environmental toxicology and medical microbiology, advances in the recognition and understanding of cyanobacterial toxins, and in the development of management policies, have progressed at an uneven pace. The level of fundamental knowledge and the availability of new methods and instrumentation have, in turn constrained, and then aided advancements. The need to prioritise resource allocation in the environmental and health sectors under changing circumstances, and a dependence on small centres of expertise in phycology and toxicology, have also accounted for the sometimes erratic progress in the study of cyanobacterial toxins and the mitigation of their effects. In South Africa, for example, a high level of awareness had developed by the 1940's of the toxicity of *Microcystis* blooms and their involvement in
animal and human poisoning events through the work of D.G. Steyn and colleagues. A world centre of knowledge and expertise in cyanobacterial toxicology subsequently developed in South Africa in the 1970's. This lead to the first structural elucidation of a microcystin (initially termed cyanoginosin) by D.P. Botes and colleagues in Pretoria, together with D.H. Williams in Cambridge, UK. Their finding of the cyclic heptapeptide structure of microcystin-LA has been followed by the discovery of at least 60 structural variants in the family of tumor-promoting, hepatotoxic microcystins, in laboratories in, for example, the USA, Australia, Japan, Finland and the UK over the last 15 years. After a decline in the South African cyanobacterial toxin research base, due to redeployment, changing priorities and the untimely death of Dawie Botes, cyanobacterial toxin research and policy development are building up again in Cape Town and Johannesburg, to meet local and national needs.

The need for a system to counter the problems presented to drinking water supplies, recreational and conservation water bodies by cyanobacterial toxins has been perceived in several countries in the past decade. "Toxic algae task groups" for this purpose were set up in the UK in 1989, and in Australia from 1990. These groups assessed extant toxic bloom problems and their significance in the light of current knowledge, identified short- and long-term management needs and options, began the implementation of action plans, and made recommendations for the future mitigation and prevention of toxic bloom problems. The action plans developed by these groups have been responsive to subsequent advances in knowledge and have served as a model for the development of toxic bloom management strategies. This approach is being increasingly seen as a major contributory reason for-, and a component of-, a more wide-reaching catchment- or basin-based approach to eutrophication control.

Geoffrey A. Codd

PRESIDENTIAL PORTRAIT

I was born in Kent during the last days of World War two and spent my childhood on the outer fringes of London. The district adjoined Epping Forest and there were several notable ponds and lakes within walking or cycling distance. Consequently, no Saturday was felt to have been a success unless you returned having fallen in somewhere. One of my earliest and least successful limnological forays was unwisely attempted on the way to a Sunday school party, aged four. No samples were obtained, the project report was graded 'unsatisfactory' (or maybe 'unbelievable', records have been lost) and scientific activity was curtailed by management for a period thereafter. The laboratory at that time consisted of the kitchen table, nets made of old curtains and a portable microscope which was the prized possession of my pharmacist father. My father identified the mysterious green crescents seen down the microscope as desmids (Closterium spp.). The family outings often consisted of fishing expeditions but I preferred mooching along the riverbank, botanising. This vegetable bias resulted in a degree in Botany at Bangor where I was introduced to the wonderful variety of habitats in Snowdonia and Anglesey - a variety that is hard to match anywhere else in the UK. Graduating from Bangor in 1965, I
remained in the department and studied algal blooms in an Anglesey lake for my PhD. This combined field and laboratory work at a time when cyanobacteria were notoriously hard to culture and media were still being developed for freshwater species. The British Phycological Society was a very beneficial influence on my postgraduate studies. In those days, the winter meeting was always held in London, often in unheated university buildings. The terrifying memory of presenting a paper in Bedford College is still very vivid. However, the audience and chairman were kindness itself and I hope postgraduate students today feel as welcome in the Society as we did then.

On the first of October 1968, I joined the Northern Ireland Ministry of Agriculture as an algologist in the Freshwater Biological Investigation Unit, known by its acronym, FBIU, which had been formed as a result of a widespread bloom of *Anabaena* on Lough Neagh, Britain's largest lake. In the beginning it was housed in a disused dentist's waiting room in RAF Aldergrove- not far removed from the kitchen table of schooldays! In those days, RAF Aldergrove was a dream posting for the sons of the well connected, offering excellent hunting, shooting and fishing. However, on the first Saturday of my new job, riots erupted in Derry City and the rest really is history. In 1971, Roger Smith was appointed director of the FBIU having recently studied with Brian Whitton in Durham, then in King's College, London. Roger brought a physiological interest to the unit and, as facilities and equipment improved, defined culture conditions enabled critical studies of growth of cyanobacteria under conditions relevant to the turbid waters of Lough Neagh that is, very low light. Sometime thereafter, Bob Foy was recruited and a long series of studies on the growth of planktonic ‘Oscillatorias’ and centric diatoms was carried out. Work diversified to include Lough Erne, another large lake in Northern Ireland, and many of the other 1,670 lakes in the Province.

For many years, the Unit was housed in the grounds of Greenmount Agricultural College, Antrim until in 1991 it was merged with fisheries and marine scientists and relocated in the Department of Agriculture, Newforge Lane, part of The Queen's University of Belfast under a new director, Ivan Heaney. Ivan had worked with Jack Talling at the freshwater laboratory near Lake Windermere. I continued to work on the phytoplankton of Lough Neagh and Lough Erne but also began studies of the Irish Sea as part of a marine programme. The move to Queen's University made closer the links with other BPS members. For many years, NI had its own algal discussion group and still boasts a thriving phycological community. Among others (alphabetically) John Berges, Matt Dring and Christine Maggs are all well known in the society being respectively treasurer, past president and journal editor. Dave Jewson (University of Ulster at Coleraine) and Graham Savidge (QUB Marine Station) are also active phytoplankton ecologists.

In recent times, I have been involved in links concerned with investigations on two very large lakes - Baikal, Siberia and Taihu, China. After counting phytoplankton on Lough Neagh for thirty years, a major activity at the moment is analysing the large database of phytoplankton and environmental variables from a long-term perspective. Nineteen ninety-eight was the thirtieth anniversary of the FBIU and the International Congress of Limnology (SIL) was held in Dublin. To mark these events, a brief history of Freshwater Research in the Department of Agriculture was published, including a full bibliography. A few copies remain and can be obtained free of charge from christopher.gibson@DANI.GOV.UK.
VICE PRESIDENTIAL PORTRAIT

Whether being born by the sea has something to do with it or not, a serious interest in phycology emerged during my student days at Bristol University. This was undoubtedly influenced by Frank Round's teaching, which included a second year field course at the Marine Biological Association (MBA) in Plymouth, where we were allowed to choose our own fresh material for study, using the MBA library as a reference source. Hours were spent at the microscope, studying and drawing the intricacies of the red algae and their attendant epiphytes. After that came a final year project on sub-aerial green algae and the fateful decision to do a phycological PhD! Unlike today, I was not constrained to complete my thesis in three years and the first year was actually spent working on green algae, learning electron microscope techniques, followed by an abortive attempt to initiate work on the diatom genus *Diploneis*. Abortive, because I failed to find good live samples! But then Frank, in his own inimitable way, came up with the idea of discovering why tube-dwelling diatoms live in mucilage tubes and the PhD topic was decided. That question was, however, never really answered, but the taxonomic diversity of taxa associated with this habitat led me into diatom taxonomy, while the legacy of working with green algae meant that I always examined live diatoms before cleaning them up for frustule studies.

The extended period in Bristol was followed by a rather peripatetic existence, pursuing diatom studies in a variety of places with a continually shifting research emphasis and contrasting means of support. Thus I spent an unfunded year at the Culture Collection for Algae and Protozoa, when it was still in Cambridge, three years on a Junior Research Fellowship in Oxford, a year on a Royal Society European Exchange Fellowship at the Biologische Anstalt Helgoland (Litoralstation) on Sylt, Germany, followed by seven years at the Max-Planck-Institute for Limnology, firstly on Plon and later in Schlitz.

Although German friends were teasing me at the time that I was gradually working my way south to Italy, I decided that it was time to return to the UK. Thanks to a 'chance' conversation at a BPS Winter meeting, I established contact with a zoologist at Sheffield who needed someone who could grow algae! A short contract allowed me to re-establish myself in the UK and then successfully applied for a NERC Advanced Fellowship. Within two years I was offered a 'real' job at The Natural History Museum and declared my wandering days over.

My research focus has varied over the years, although it has always centred on naviculoid diatoms, usually with a strong taxonomic bias, even when tempered by ecological or experimental considerations. This can have the negative effect that both taxonomists and ecologists can label you as 'the enemy', but the positive side of this is that you learn to integrate different types of data, providing a better understanding of the organisms themselves. Speaking to different audiences also demands the avoidance of jargon, but is extremely stimulating because it also throws up new questions. For that reason, I also enjoy talking about diatoms to non-specialists. The excitement of describing such a fascinating organism to someone for the first time more than compensates for the extra effort required. Looking and working with live material is also a good antidote to any tendency to think of diatoms as rigid structures that appear fully formed and unaffected by extrinsic forces. I may now be working in one of the foremost systematic institutions in the world, but understanding diatom biology remains a crucial part of my research.
Having been a member of the BPS since the early seventies and served as a secretary for about seven years, it is an honour to have been chosen as Vice-President (President-elect). Coming in as a PhD student, particularly at that time, one sat in awe of the more senior members and the redoubtable lady phycologists who had helped found the society. Yet, they were always ready to answer questions and encourage. I think that the society has maintained their ideals to foster and promote phycology and hope that it will continue to do so.

BPS COUNCIL CALL FOR NOMINATIONS

Nominations are invited from BPS members for Hon Secretary and three ordinary members of council. All nominations, with the name of a seconded and the written consent of the nominee, should be forward to the current Hon. Secretary, Professor Richard Geider, Department of Biological Sciences, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, not later than 3 November 1999.

Now is your chance to participate directly in the running and organisation of the society and to shape its future as we head into the new millennium, so I would encourage as many people as possible to apply.

THE BPS WINTER MEETING
UNIVERSITY OF BIRMINGHAM

The BPS winter meeting will be held at the University of Birmingham from afternoon of the 5 January to midday on the 8 January 2000, so make this venue a definite date in your diaries. Accommodation and meals will be available in Chamberlain Hall and the lectures will be held in the Arts Lecture Theatre. All the usual visual aid facilities will be available. The local organiser is Barry Leadbetter. Abstracts of poster or oral presentations, particularly from students, on anything related to phycology are now invited. Remember there are student prizes for the best oral and poster presentations. As well as the general sessions there will be a number of special sessions, including Calcification, organised by Bruce Osborne, Restoration, and Bioremediation, organised by Brian Moss, Stress Responses, organised by John Berges and Algae and the Water Industry, organised by Barry Leadbetter. All areas of water management will be included in this session, including amenity aspects and Barry hopes to encourage the water companies and the Environment Agency to participate.

How to prepare and submit an abstract.

Title
First Author1, Second Author2 and Third Author2
1 Biology Department, University of Life, London, Postcode, e-mail address.
2 Department of Biology, Real Life University, Glasgow, Postcode, e-mail address.

Abstracts must be submitted to Prof. Richard J. Geider, Department of Biological Sciences, University of Essex, Colchester CO4 3SQ (e-mail rdg@wpo.nerc.ac.uk) by 30 September 1999. Abstracts must be submitted as rich text formatted (RTF) files on 3.5 cm diskettes or as attachments to e-mail messages. The abstract should be formatted as plain text (i.e., it should not contain any heading or lists). Blank lines should be included to separate the title from the list of authors, the list of authors from the list of affiliations, and the list of affiliations from the body of the abstract. The body of the abstract should be no more than 250 words long. It should not include mathematical symbols, sub or superscripts or Greek characters. Italics are permitted, but bold face type is not. Abstracts received on or after 1 October will not be considered. This deadline applies because the abstract titles will be distributed with the November issue of The Phycologist.
BSSP AUTUMN SYMPOSIUM
A Protozoologist's Guide to Modelling

The BSSP Autumn symposium will be held this year at The Linnean Society, London on the 16 September between 10.30am and 4.00pm. The meeting provides an opportunity to learn about modelling and will be especially good for graduate and postgraduate students who need to have a better understanding of modelling as well as for established researchers who feel they need more information, or would like a chance to broaden their knowledge. It is the one chance you may have to spend a day listening and talking to protozoologists who use models in their research.

Invited speakers include Frede Thingstad (Bergen, Norway), David Montagnes (Port Erin Laboratory), Margaret MacKinon (University of Edinburgh), John Blake (University of Birmingham), and Keith Davidson (University of the Highlands and Islands).

Registration fee, including a sandwich lunch is £20 for non-members and £15 for members. The deadline for registration is 6 September. Please make sterling cheques payable to the 'BSSP' and send this with your name, address and contact details to Dr Wendy Gibson, School of Biological sciences, University of Bristol, Bristol BS8 1UG. Any queries should be directed to Harriet Jones at harry@BSSPweb.freeserve.co.uk. Or phone Barry Leadbetter on 01214145567. Details on how to get to the Linnean Society will shortly be posted on the BSSP web site: http://www.BSSPweb.freeserve.co.uk. If you do not have access to the Internet, e-mail Harriet or phone Barry for directions.

MEMBERSHIP RENEWAL

Just a reminder that membership renewal is due by the 15th January 2000. I know its easy to forget these things but it helps the society considerably if these are kept up to date, so renew your membership as soon as possible and don't wait until the final deadline!

NEW MEMBERS OF THE SOCIETY

In the next issue of The Phycologist you will find a form which has to be completed and sent to the membership secretary. This is an early notification. Now is also the time to encourage other phycologists to join.

Lucy Ann Ball, Institute of Freshwater Ecology, Windermere Laboratory. L.Ball@wpo.nerc.ac.uk. DIC and the spatial and temporal distribution of chrysophytes.

Mark Clegg, Institute of Freshwater Ecology, Windermere Laboratory. M.clegg@wpo.nerc.ac.uk. Behavioural ecology of flagellates.

Susanne Craig, Physics Department, University of Strathclyde. Susanne.craig@strath.ac.uk. Optical fluorescence properties of phytoplankton.

Alex Cunningham, Physics Department, University of Strathclyde. A.cunningham@strath.ac.uk. Phytoplankton optics.
Victoria Fairhead, Botany Department, University of Adelaide. Afairhead@botany.adelaide.edu.au. Production ecology of Ecklonia radiata.

Sarah Hotchkiss, Botany Department, University of Adelaide. Shotchki@botany.adelaide.edu.au. Ecology of fucoid dominated macroalgal communities.

Tim Kildea, Botany Department, University of Adelaide. Tkildea@botany.adelaide.edu.au. Photophysiology of macroalgae.


Minna Kukkonen, Karelian Institute, University of Joensuu. Minna.kukkonen@joensuu.fi. Diatoms and palaeolimnology.

David McKee, School of Biology & Biochemistry, Queen's University of Belfast. A.mellor@qub.ac.uk.

Adam Mellor, Botany Department, University of Guelph. Kmuller@uoguelph.ca. Bangiophyte systematics.

Karen Pye, University of Plymouth. Coastal eutrophication and macroalgal mapping using infra red aerial photography.

Graham Scott, University College Scarborough. Grahams@uccscarb.ac.uk. Fucoid evolutionary ecology; functional group approach to diversity.

Alison Sherwood, Botany Department, University of Guelph. Sherwood@uoguelph.ca. Phylogenetics of red algae.

Elly Spijkerman, Biology Department, University of Amsterdam. Spijkerman@bio.uva.nl or gab@xs4all.nl. Ecophysiology of desmids.

Ed van Hunnik, Biology Department, University of Amsterdam Hunnik@bio.uva.nl. Carbon dioxide concentrating mechanisms in microalgae (Chlorophytes).

Jacqueline Po Kam Wong, Biological Sciences Department, University of Birmingham. P.K.J.Wong@bham.ac.uk. Freshwater phytoplankton.

Yaron Yehoshua, Herzeliya, Israel. Yehoshy@mail.biu.ac.il.

Pavel Prosselkov, Institut fur Pflanzenphysiologie und Mikrobiologie, Berlin, Germany. Prosselkov@hotmail.com.

Hidetoshi Sakayama, Department of Biology, Yamagata University, Japan. Hsakayama@sbiol.kj.yamagata-u.ac.jp. Macroalgal systematics.

Kang Shih Chang, Taichung City, Taiwan.

**BPS FUNDING FOR STUDENTS**

The following information is for applications by students for funds from The British Phycological Society for support to attend courses and meetings.

1. The British Phycological society has set aside funds to support student members wishing to attend 1) its winter meeting, 2) other meetings sponsored by the British Phycological Society and 3) courses that are not formally included in degree programmes (for example those held at field centres), primarily concerned with algae. Potential members may join the Society concurrently with their application to attend the winter meeting.

2. Applications are invited based on two deadlines, 1) November 1 for attendance at the British Phycological Society winter meeting and courses and meetings scheduled between January and June of the following year and 2) March 1 for courses and meetings scheduled between July and December inclusive.

3. A condition of support for meetings is that a poster or talk will be presented.

4. Applicants should send a letter of application, giving a brief c.v. and relevant details of the meeting/course. They should confirm that they are a member of the British Phycological Society, or include
a completed membership application form and a letter of support from their supervisor. A statement of the costs should also be included, indicating the sum requested from the British Phycological Society as well as any other resources available to the applicant. As a guide, the Society has, in the past, tried to meet bed and breakfast and registration costs and up to half of economy travel costs, although the actual sum awarded will reflect the number of applications received and the funds available. The British Phycological society will require a short report or article for its newsletter, The Phycologist, from successful applicants who are in receipt of funds to attend non-British Phycological Society meetings and courses.

5. Applications should be sent to the Chairperson of the British Phycological Society Algal Affairs Committee. For 1999-2000 this is, Professor Brian Moss, School of Biological Sciences, Derby Building, University of Liverpool, Liverpool L69 3BX, UK. All applications will be considered by the Algal Affairs Committee, whose decision will be final. It is important to remember that The British Phycological Society cannot guarantee to support all applications.

AMENDMENT TO THE CONSTITUTION

A change is proposed to Article 14 of the BPS constitution which states 'All... nominations (to Council), with the name of a seconder and with the written consent of the nominee to act if elected, shall be forwarded to the Secretary not later than two months before the Annual General Meeting'. Council proposes that the notice required for nominations be increased to 3 months. As this is a change to the constitution prior notice is required and is hereby given. The full text of the alteration will be circulated to members with the agenda, as stated in the constitution. The alteration must be approved by two thirds of the members voting at the Annual General Meeting.

BPS INFORMATION ON THE WEB

Why not visit our web site? This has been set up and maintained by John Berges and contains important information about the BPS, Council membership and forthcoming meetings with a phycological flavour. A list of some relevant home pages is also given, including John Berges' own home page. What more could you want? However, we would like the information provided here to be more extensive, perhaps including further relevant links and a forum or discussion section, but we are open to suggestions on how to improve this site. Given the work involved is anyone out there willing to give up some of his or her time to develop this site? If so could you contact John Berges.
1999
British Phycological Society
Council Officers

President
Professor C. E. Gibson (1999-2001)

President Elect
Dr E. J. Cox (1999-2001)

Vice Presidents
Dr E. J. Cox
Professor H. Preisig (Overseas: 1999-2001)

Hon. Secretary
Dr R. J. Geider (1997-1999)

Hon. Treasurer
Dr J. A. Berges (1997-2001)

Hon. Membership Secretary
Dr M. D. Iglesias-Rodriguez (1999-2001)

Editor of The Phycologist
Dr B. A. Osborne (1998-2000)

Editor of The European Journal of Phycology
Dr C Maggs

Members of Council
Professor C. E. Gibson
Dr E. Cox
Professor H. Preisig
Dr H. Jones (1999-2001)
Dr J. Kubler (1997-1999)
Dr B. Leadbeater (1999-2001)
Dr J. Lewis (1999-2001)

Dr C. Maggs
Dr B. A. Osborne
Dr Dr G. Pearson (1998-2000)
Dr E. Shubert (1997-1999)

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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, on disc (ms word for windows) and the editor reserves the right to edit the material before final publication.

Submission of Copy and Deadlines

Copy should be submitted to: Dr Bruce Osborne, The Phycologist, Botany Department, University College Dublin, Belfield, Dublin 4, Ireland, Tel. +35317062249, Fax: +35317061153, E-mail: Bruce.Osborne@ucd.ie

**Deadlines are January 31 for the April Issue, May 31 for the August issue and September 30 for the November issue**