

UK CONTROLLED ENVIRONMENT USERS' GROUP

MINUTES OF THE 2003 BUSINESS MEETING

The annual meeting of the Controlled Environment Users' Group was held on Monday 15th September 2003 at the Conference Centre, Lancaster University, Lancaster.

The Chairman L.D Incoll (Leeds University) opened the meeting at 20:50 hours.

Apologies were received from Colin Abbott, Joe Aldous, Greg Anderson, Alan Morgan, Ian Pearman, Sander Pot, Peter Stratton, Colin Turnbull and Dennis Wildman.

1. Minutes of the previous meeting at Royal Holloway University, Egham, on 9th September 2002

The minutes of the previous meeting, which had been distributed to members before Christmas, were approved as a true record of the proceedings (proposer G. Taylor, Sanyo Gallenkamp plc; seconder J. Franklin, Rothamsted Research) The minutes are also available on the CEUG website at

<http://www.biology.leeds.ac/school/societies/ceug/minutes02.htm>

2. Matters arising

01/7 Publication of the Scientific Proceedings of the 2001 meeting

The Chairman reported there had been no movement on the proceedings since 2002 and he was considering withdrawing as editor.

3. Future meetings

The schedule of future meetings (see below) was unchanged from last year.

a) 2004, Easter, CSIRO, Brisbane, ACEWG International meeting

The Chairman presented the Australian (ACEWG) Group's proposal for the structure and programme commenting that it was still incomplete. He reported that 10 members had been awarded UK-CEUG / New Phytologist Trust travel bursaries of £750 each and the result had been publicised to the group earlier this year. The New Phytologist Trust (to whom we applied on the advice of Terry Mansfield – a CEUG member) was acknowledged as providing £2,500, which, along with the CEUG contribution of £5,000, gave a final fund of £7,500.

b) 2004, Biological Sciences, Leicester, Theme: Workshop on "Light and its measurement in CEs"

The Chairman and M Pratt (University of Leicester) reported on the programme for the workshop on 'Light and its measurement in CEs'. As a training event it would be a departure from our normal meeting style. There will be a number of lectures on light, visible and UV, (its terminology and measurement, spectral distribution of sources and sinks, spatial

distribution of sources and sinks, calibration of instruments, and recording and monitoring), demonstrations of light sources and measuring equipment by manufacturers, and hands-on instrument sessions under various light sources and in various environments including the opportunity to calibrate sensors using the NCR-101 Instrument Package. Evenings will be set aside for sessions for synthesising the results of the hands-on practical sessions.

The Chairman reported the cost for attending a 3-day course would be around £203 (for accommodation and subsistence). The course fees for the workshops had not yet been calculated, but costs would be kept to a minimum. Full details of the workshop have been posted on the web site.

The responses of manufacturers of sensors and sources to our invitation to participate and sponsor the meeting were:

	Company	Agreed	Field of expertise	Product
1	Apogee	Yes	Measurement	Sensors
2	Delta-T	Yes	Measurement	Sensors and hemispherical lens cameras
3	Licor	Yes	Measurement	Sensors and spectrometers
4	Macam	Yes	Measurement	Sensors
5	Ocean Optics	Yes	Spectral distribution	Spectrometers
6	Philips	Yes	Sources	Lamps
7	PP Systems	Yes	Measurement	Sensors
8	Skye Instruments	Yes	Measurement	Sensors
9	Spectronics	Yes	Spectral distribution	Spectrometers
10	Kipp and Zonen	?	Measurement	Solarimeters
11	Glen Spectra	?	Measurement and spectral distribution	Sensors and spectrometers
12	Plasma Electronics	?	Sources	LEDs
13	Sylvania	No	Sources	Lamps

Note: ? = Not yet either replied or confirmed participation.

c) 2005, Eden Project, Cornwall, Theme: “Large scale CEs – engineering and plant growth”

J. Franklin (Rothamsted Research) and M. Fuller (University of Plymouth) provided an update on planning. J. Franklin proposed a stay at Plymouth University with coach travel to St Austell. The group were unable to decide timescales for the Eden visit. M. Crawley (John Innes Centre) said a full day would be needed for the visit. J. Franklin said that, at the moment, there was no provision for lecture facilities at the Eden Project. G. Taylor (Sanyo Gallenkamp plc) was concerned that Eden was a theme park and he would have liked scientists to deliver talks. The Chairman replied that he believed the speakers would be Eden staff who would take the group behind the scene to see the control systems at the Eden Project and the large-plant (e.g. tall tree size) raising facility southwest of St Austell. He asked the members for feedback on the proposed meeting by e-mail.

Action: Members

d) Post–2005

The Chairman reported that plans for the meeting at Wellesbourne had been put on hold until the future of HRI in relation to Warwick University was clarified.

The Chairman welcomed ideas about future meetings to be held after 2006. Silwood Park and Aberystwyth were cited as possibilities.

Schedule of future meetings:

Date	Venue	Comments
2004	<i>Easter, CSIRO, Brisbane</i>	<i>International meeting</i>
2004	Biological Sciences, Leicester	(will be 11 years since last visit) Theme: Workshop on "Light and its measurement in CEs". Contacts: G.C. Whitelam & M. Pratt
2005	Eden Project, Cornwall	New site Theme: "Large scale CEs – engineering and plant growth" Contacts: J. Franklin & M. Fuller
2006	HRI, Wellesbourne	(will be 11 years since last visit)
2007	IGER / University of Wales, Aberystwyth or Imperial College at Silwood Park	(will be 13 years since last visit) New site
2008	SCRI, Dundee	(will be 11 years since last visit)
2009	Rothamsted Research	(will be 11 years since last visit)
2010	York University / CSL	(will be 11 years since last visit)

4. Treasurer's report

P. Gill (Scottish Crop Research Institute, Dundee) presented his financial report. The balance brought forward from 5th September 2002 to 4th September 2003 was £10,613.35, additional income from donations brought income to a total of £13,357.29. The expenditure came to £557.18, leaving an overall balance of £12,800.11.

He proposed to open a new Treasurer's Account at the Royal Bank of Scotland once the Executive Committee members had provided certified identification to the bank.

The report was approved as presented (proposer J. Franklin, Rothamsted Research; seconder G. Taylor, Sanyo Gallenkamp plc.).

The appreciation of the Group of the work of the retiring treasurer, Alan Nichols, over the last ten years was recognised by a presentation at the conference dinner earlier in the evening.

5. Group Communications

1. The chairman demonstrated the new development of a list of members (by organisation) on the Group's **web site**. It had been proposed after consultation with the Manufacturer-members about increasing membership, as a means of demonstrating the wide coverage of the membership. Members will be given the opportunity of adding contact details of their own choice to their entries.

2. The Chairman reported that the new private **JICSmail mailing list**, UK-CEUG, had proved successful and he was using it as his preferred route for communicating with members. There had been one most interesting discussion on fluorescent lighting. The list also supported message and file archives. The Chairman noted there should be no 'SPAMS' on a site such as this, unless members generated them. However there had been some idiotic

use where members had sent messages to the list when they were intended for only one person, mainly because they had not checked the headers of their reply before sending it.

6. Membership issues

L.D. Incoll provided the following membership information:

Since September 2002

Category	Number
New members	11
Members resigned	10
Net change	+1
Current total	144
Email contact – <uk-ceug> JISCMail group	127
Attending the 2003 meeting	30
<i>Overseas recruitment:</i>	
The Netherlands – joined	1

The Chairman reported that although membership attendance at this meeting at 30 was the same as last year, total membership had remained constant only because rate of recruiting matched the rate of attrition. Following discussion at last year's meeting he had asked for help from manufacturers with recruiting but had not received any replies to a letter to them. Subsequent correspondence had produced some hostility but also positive ideas from manufacturers. A proposal that membership should be listed on the web site had been implemented (see above). It was recognised that the group should be seeking more publicity. It was suggested that we should have printed publicity material e.g. an A4 brochure, A4 posters, and large posters for display at scientific meetings, which manufacturers could distribute to customers, as well as advertising in scientific journals. Executive Committee member, G. Taylor was asked to lead this exercise with the manufacturer-members.

R. Natt (Central Science Laboratory, York) asked why people on the mailing list did not attend meetings. The Chairman responded that the mailing list contained academics and researchers who, although users of CEs, were not interested in attending technical and scientific meetings on CEs. However it was important to retain them in the membership, as they were often the only conduits to staff supporting CEs.

E. Potter (Delta T Devices) suggested the group might want to consider charging a membership fee of say £30 per annum to cover expenditure e.g. administrative costs, and also to reinforce the notion of commitment to the group. He observed that his colleagues associate "Controlled Environments" with metal cabinets with lights inside, whereas a lot of the material CEUG considers is very relevant to glasshouse operators too. Would this be a way of expanding the membership? Could a name change help amplify this? The Chairman responded that membership was open to any user or manager with an interest in controlled environment technology and practice so glasshouse users and managers were free to join. He hoped that active recruitment would keep a balance of scientists, managers, technicians and technologists. M. Hibbert (Rotronic Instruments) asked what overhead costs the group would be trying to cover if it had a subscription and stated that some potential members may not think an organisation was serious unless they had to pay a subscription fee.

Action: G. Taylor

G. Taylor (Sanyo Gallenkamp plc) questioned the purpose to meetings and suggested that subject matters should have an 'educational' theme so that attendees could gain some form of training from the meeting. This may help individuals to gain the necessary support to attend our meetings

7. The future of the group

The Chairman observed that he had retired last year and would not be convenor forever! If the Group felt that it was worth continuing then a more secure basis for its continuance was needed. He described a plan from the Executive Committee for the group to become a registered charity, run by an executive committee (as trustees) and operating under a constitution. The Charities Commission required the group to adopt a constitution, vote to apply to become a charity at an AGM and then apply to them for registration. He proposed that P. Gill (Scottish Crop Research Institute, Dundee) and G. Taylor (Sanyo Gallenkamp plc) prepare a constitution and the cases for and against this motion, which would be circulated to members within the next six months. The voting for the proposition would take place at the next AGM.

Garry Taylor listed the following positive reasons for proceeding this way:

- a) It would formalise how the group was run.
- b) There would be a sense of authority and responsibility.
- c) The group would be given a more serious status.
- d) It would clarify the purpose of the group and define its objectives.
- e) There would be more of a formal structure e.g. accounts need to be submitted but not necessarily independently audited.
- f) There would be greater potential for fund raising and more chance that companies and charities founded as grant awarding bodies would donate monies to the group.
- g) There would be a greater emphasis on education and training.
- h) It would offer the group more security by setting a framework for it's future development.

He reported there was the disadvantage of the trustee being legally bound and personally liable if any monies were lost due to negligence or mismanagement.

A motion that the Executive Committee should prepare a constitution for approval by the membership and adoption at the next meeting was proposed by J. Franklin (Rothamsted Research) and seconded by R. Natt (Central Science Laboratory, York) and passed unanimously.

A second motion that the Executive Committee prepare a proposal to become a charity or registered charity for discussion by members to be voted on at the next AGM was proposed by G. Holroyd (Lancaster Environment Centre) and seconded by N. Shariff (The University of Warwick) and passed unanimously.

Charities could charge members subscriptions but the group was unable to decide whether subscription fees should be implemented.

Action: P. Gill and G. Taylor

10. Controlled Environment Guidelines

The Chairman raised the issue of the International Committee proposals for 'Minimum Guidelines' for reporting by plant growth room and chamber users. The Chairman advised that the proposal was put to the North American NCR-101 group at their meeting in spring, this year and to the Australasian group ACEWG last November. The draft version had been posted recently in the File Area of the JISCmail UK-CEUG list and comments solicited but few had been received to date. The response from members was needed as the CEUG members of the international committee, L Incoll, G Taylor and I Pearman, would be expected to report to the International Committee in the near future. Consideration was sought on whether the list was too extensive in its present form and may not be reasonable to expect from, for example, a molecular biologist working with a single chamber and no specialist technical support. He repeated his request for members' comments via the JISCmail list.

Action: Members

The question of reporting relative humidity (RH) instead of vapour pressure deficit (VPD) was raised. The chairman noted that VPD is the key variable because it drives transpiration in the plant. Members commented (i) that researchers generally request RH; (ii) but that this was because only RH was offered on controllers and by manufacturers; (iii) that RH was however considered important to the engineer as a measured rather than a derived variable and as an indicator of operating efficiency; (iv) that under certain environmental conditions measured RH can be very misleading. As VPD can be calculated from RH and temperature it was suggested that displaying VPD should not be difficult. E. Potter (Delta T Devices) recommended that manufacturers be persuaded to provide measurements of temperature, humidity and vapour pressure deficit (VPD).

Photosynthetic Photon Flux Density (PPFD) was considered the appropriate measure of photosynthetic active radiation (PAR) for plant growth facilities as the flux of photons is the driving force in photosynthesis. Standardisation of PPFD sensors by checking against standards is important but lack of available calibration standards means this is difficult. The CIE (International Commission on Illumination, France) sets the criteria for light measurement under ISO standards and clarifies analogous units for different sensor types (photon, radiant and luminous). By its definitions photon irradiance was the appropriate name for the quantity measured in units of $\mu\text{mol m}^{-2} \text{s}^{-1}$.

10. CE open discussion topics

Lighting

The Chairman reported on the comprehensive and useful JISCmail 'fluorescent lamp' debate.

E. Potter (Delta-T Devices) asked whether anyone had adopted piped natural light, to produce a daylight spectrum and adequate illumination inside a CE so that there was no need for high load (heat and power) refrigeration. The Chairman suggested that he should discuss this idea later with G. Taylor (Sanyo Gallenkamp plc).

12. Maintenance, servicing and repairs

L. Hansen (University of Reading) described how he had learnt that Saxcil cabinets were being destroyed (decommissioned) and the component parts thrown away. He suggested that the components (often hard to get now) could be utilised by other people. In particular the Chairman suggested that he contact Richard Parkinson at Long Ashton to check if any other brands were being thrown out. G. Holroyd (Lancaster University) suggested decommissioning of chambers could be reported through the JISCmail list to allow members the opportunity to salvage spare parts.

13. New equipment, recent advances

Mike Hibbert (Rotronic Instruments) stated that a humidity sensor is now on the market with a transmitter cap which compares saturated and actual vapour pressure.

The Group's thanks to the organisers of the annual meeting, N. Paul and G. Holroyd were given with acclamation at the conference dinner.

There being no other business the meeting closed at 11.10 p.m.

Recorder: Tracy Hargreaves
15.09.03