



NEWSLETTER

Published by the American Society for Photobiology

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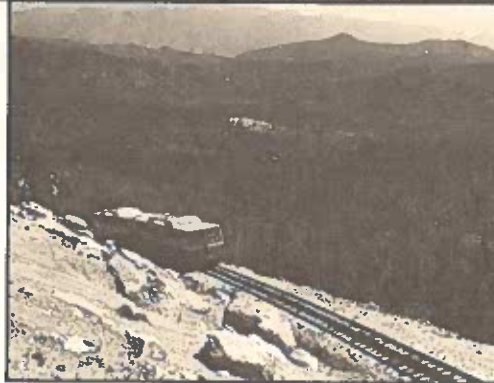
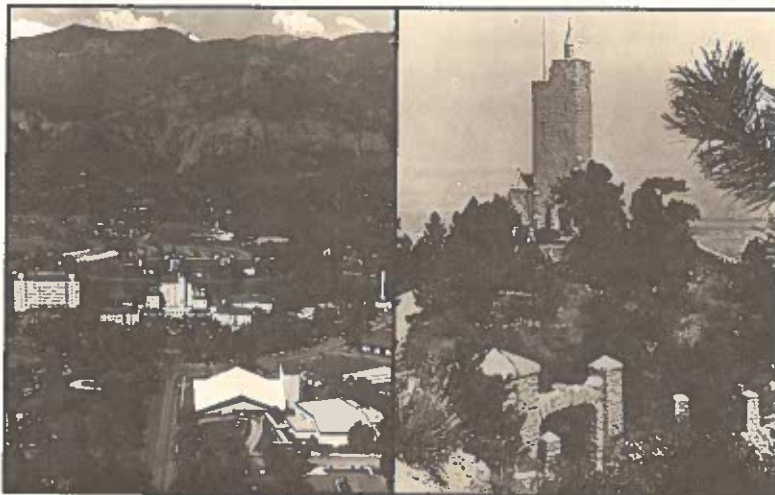
• • • • No. 111 Oct/Nov 1987 • • • •

Rocky Mountain High

Pike's Peak, the Garden of the Gods, the US Air Force Academy, Cripple Creek, the Cheyenne Mountain Zoo, and the XVIth Annual ASP Meeting are just a few of the attractions that await you (and your family) in Colorado Springs. Chris Foote has promised us a top-notch scientific program at the Broadmoor Hotel next March.

Symposia include solar UV effects on cultured human cells, triplet excited states in biological systems, photoprotection and phototaxis and others. Among the lectures and schools are those on dosimetry, photosensitization in light scattering media and an address to the question "Why should we care about an ozone hole?" A roundtable and workshop will also be featured.

The Broadmoor has been called the "Riviera of the Rockies" because of its pale pink buildings with red tiled roofs set on the rim of a large lake. It is internationally recognized for its ice skating arena (the Russian and Czech hockey teams are frequent guests) and for the trio of 18-hole golf courses that have hosted a number of prestigious national events.



Two of the courses were designed by Robert Trent Jones and the Arnold Palmer organization. Sixteen all weather tennis courts and three heated swimming pools along with shooting grounds are also available.

But what about the kids? The Broadmoor offers a children's program for 6 to 12 year olds in both the morning (9:30 to 1:00) and evening (6:00 to 9:00). Dinner is included in the evening program.

Restaurants abound in the complex of three hotel buildings. Notable among these is the Golden Bee, an authentic English pub, with decor of the 1800 era serving robust ales "by the yard" and hearty steak and kidney pie.

Impressed by names? Recent Broadmoor guests include Connie Chung ("NBC Nightly News" anchorwoman), astronaut James Irwin, Defense Secretary Casper Weinberger, and President Ronald Regan.

Consider joining us then. Where else can one combine the excitement of learning about the most recent developments in photochemistry and photobiology with the exhilaration of a Rocky Mountain high? Hope to see you there.

IMPORTANT NOTICE!

To help you make informed choices in the upcoming Society elections, the Dec/Jan issue of the Newsletter, which you will receive by mid January, will contain synopses of all the candidates for office.

THE GUIDING LIGHT
From the President's Desk

Dear members,

In September I attended the second Congress of our sister society, the European Society for Photobiology, at the University of Padua. The meeting was well attended, approximately 400 participants, and had an excellent scientific program. The social activities included a reception and tour of the ancient University, and a dinner in the medieval castle of Morostica. Padua and nearby Venice and Verona provided attractive pre- and post-conference sightseeing. The proceedings of the Congress will be published and should be of interest to ASP members. The cordial relations between the ASP and ESP augurs well for the future of photobiology. A significant number of ESP members are also members of the ASP, including the current ESP president, George Truscott, who is on the ASP council. Similarly, I and other ASP members have joined the ESP since its inception two years ago. Turning to other matters, I am pleased to announce that the ASP and Pergamon Press have signed a new five-year contract starting 1988 for the publication of Photochemistry and Photobiology. This action was preceded by extensive negotiations between the *ad hoc* Journal Negotiations Committee and interested publishers, which culminated in Council approval for a new contract with Pergamon Press. The new contract guarantees a four-month production time, which should result in faster publication. The ASP has also signed a new contract with Richard J. Burk, providing for continued management of the Secretariat by SASC. This Council action was assisted by the activities of the SASC Performance Committee, which conducts an annual on-site evaluation of the business operations. In recognition of our responsibility to provide a historical record of ASP activities, we have accepted the invitation of the University of Tennessee to participate in the Archival Center for Radiation Research. John Jagger, ASP Historian, made the arrangements. He will be providing information to the membership about the submission of material.

- Len Grossweiner

SOCIETY HIGHLIGHTS

The Public Affairs Committee is soliciting nominations for the ASP Sigma Xi Joint Lecturer for 1 July 1989 - 30 June 1990. The purpose of the lectureship is to educate the public concerning the science of photobiology and to foster communication among scientists of varied disciplines. The lectureship is funded by Sigma Xi and ASP and provides for travel and maintenance expenses. It also includes a modest honorarium for the chosen individual to present a lecture on an appropriate topic to local Sigma Xi chapters throughout the country.

The Public Affairs Committee will choose an individual from the nominations submitted. The Committee's choice will then be considered for approval by the Executive Committee. Individuals who are interested in being nominated should send biographical data and the title of their proposed lecture to the Committee. Members of the Society may also suggest the nomination of any other member by communicating that individual's name and biographical data to the Committee. The DEADLINE for re-

CALL FOR NOMINATIONS

Sigma Xi Lectures

ceipt of nominations is February 5, 1988.

Send the appropriate information to:

Frederick Urbach, Chair
ASP Public Affairs Committee
Skin and Cancer Hospital
3322 North Broad Street
Philadelphia, PA 19140

Dues Waivers

Members of the ASP who are presently unemployed may apply to the Grants and Awards Committee for a waiver of membership dues. The dues grants are available for a one year period. Interested members should apply through the Secretariat at the following address:

Secretariat, ASP
8000 Westpark Drive
Suite 400
McLean, VA 22102

SIDELIGHTS

Education Update

The constitution of the ASP states four purposes for the Society. One of these is "to promote the dissemination of knowledge of photobiology". The Education Committee of ASP is charged with this responsibility. Our on-going projects include the development of a brochure on photobiology for college students, and a list of schools which offer graduate work in photobiology, which we plan to send out with the student brochure. We are also encouraging the writing of a laboratory exercise book on photobiology. Responses to past appeals concerning the availability of graduate level courses in photobiology have been sparse. So, if your school offers such a course please send that information

to the Education Committee chair at the address given below. In addition to the brochure and list of schools we act as a reference source for questions on photobiology sent in to the Secretariat by laymen and scientists.

It is obvious that, for a discipline to thrive, new members must continually join it - the Education Committee hopes that by making information on photobiology available to students at various academic levels, more of them will become interested in pursuing careers in our field.

Micheline Mathews-Roth
Channing Laboratory
180 Longwood Avenue
Boston, MA 02115

In the Beginning was the Light

"The Committee on Photobiology of the National Academy of Sciences/National Research Council recognizes that there is a growing general awareness of the unique importance of the effect of light (both beneficial and detrimental) on man and all other living organisms, that the science of photobiology is generated by scientists of diverse educational and practical experience and therefore needs a vehicle for enhanced communication and the dissemination of knowledge, and that current problems of national and international concern require an accurate and effective input of knowledge of photobiology and photochemistry. ... Therefore ... the Committee on Photobiology (NAS/NRC) has decided to form an American Society for Photobiology."

With these words, issued in the fourth Photobiology Newsletter as a call for charter membership, the ASP was born. The US National Committee on Photobiology (USNC/P) had been in existence, as part of the National Research Council for twenty years and had been frustrated in its efforts to be an effective focus for photobiologists in diverse disciplines or even to be recognized as a source of photobiological expertise for the NRC itself. The main function of the USNC/P had been to act as a liaison for US photobiologists and photochemists to the Association Internationale de Photobiologie which organized the international photobiology congresses every four years, and to raise travel money for US scientists to attend those meetings.

The proposal of a new photobiology society was not met with immediate acceptance. It had been the subject of repeated discussions at USNC/P meetings. After all there were already too many splintering societies. A future president of the ASP even referred to photobiology as "a non-field". Many photobiologists were content in societies related to their major field. For example the Radiation Research Society included UV photobiology. Photosynthesis was a topic of discussion at American Society of Plant Physiologists meetings. Why start a new society? Yet the counter arguments persisted. Photobiology and photochemistry are growing sciences. There must be a forum for photobiologists and photochemists from diverse backgrounds to meet and discuss issues of mutual concern. Funding is more readily available to a formal society. Largely through the persuasive powers of Kendrick Smith the latter arguments were accepted. Kendrick was also able to add the enticement of society ownership of an existing journal. He had persuaded Captain Robert Maxwell (owner of Pergamon Press) to donate Photochemistry and Photobiology to the new society as long as all regular members became subscribers. Thus in June of 1972 the call for membership was issued, and the ASP was born.

Based on K.C. Smith (1982) Photochem. Photobiol. 35, 597 and personal communication with J.D. Spikes.

Nicholas E. Geacintov

Nicholas E. Geacintov recently began his tenure as an ASP Councilor. He is Professor of Chemistry and Director of the Radiation and Solid State Laboratory at NYU. His early interests in forestry, paper and pulp engineering (B.S. 1959) and polymer chemistry (M.S. 1959) were soon displaced by a fascination with the photon and its interactions with molecules (Ph.D. 1961-physical chemistry; postdoctoral 1961-1963-photochemistry). As a research scientist at NYU the initial focus was on the photoelectric properties of organic solids and cooperative excitation processes in crystals of polycyclic aromatic hydrocarbons. This work, in collaboration with other colleagues, led to the discovery of the magnetic field-sensitive



fission of singlet excitons into two triplets; this phenomenon was recently observed in The Netherlands to occur also in the antenna pigment-protein complexes of certain photosynthetic bacteria.

Continued interest in magnetic field effects led to the discovery in 1970 that many photosynthetic algae can be aligned in static magnetic fields; polarized light spectroscopy on such oriented cells and chloroplasts showed that photosynthetic pigments are characterized by a significant degree of orientation within the membranes. This work ultimately evolved into research involving pulsed lasers in studies of energy transfer processes and mechanisms of fluorescence in photosynthetic membranes. This research continues in collaboration with Dr. Jacques Breton of the Centre d'Etudes Nucleaires de Saclay in France, where N.E.G. is a frequent visiting scientist.

Earlier work on the solid state properties of polycyclic aromatic hydrocarbons (PAH) evolved into an interest in the carcinogenic properties of PAH molecules. One of the central questions in this area of chemical carcinogenesis research is why some compounds are strongly tumorigenic, while structurally similar molecules are not. This work, started in 1976, represents the major research activity at this time, and focuses on the mechanism of interactions of reactive electrophilic PAH metabolites with nucleic acids, particularly the properties of the covalent DNA adducts which are formed. The major research tools in these investigations are photophysical in nature.

T P C

Sutherland Honored by Research and Development

John Sutherland, a biophysicist at Brookhaven National Laboratory, has been cited by Research and Development Magazine for developing one of the 100 most-significant technical products of the year. The prestigious I-R 100 competition annually honors the top 100 technological achievements of the year. Typically, these are innovations that transform basic science into useful products.

The instrument, which Sutherland described in a paper presented at the annual meeting of the ASP in Bal Harbour, combines recent advances in computer technology and electronic imaging to measure the size distribution of DNA and other biomolecules separated by gel electrophoresis.

Gel electrophoresis is used extensively in molecular biology and biotechnology to separate DNA and other biomolecules by size and or shape. At present, the distribution of DNA on a gel after electrophoresis is usually determined by photographing the fluorescence of a DNA-specific dye. While adequate, the photographic method has several drawbacks, including nonlinear response to dye fluorescence, lot-to-lot variability of photographic film and lengthy film processing time.

In contrast, Brookhaven's IMAG-ESystem makes use of recent advances in electronic imaging and computer technology to directly and rapidly quantify and analyze fluorescence from DNA in gels. Key components of the system are: a modified solid state TV camera, a video frame grabber (a device

to digitize the image from the TV camera), a uniquely designed interface, and a computer. The TV camera responds linearly to the intensity of fluorescence and is usable over a wide range of intensities; hence, it is quite accurate and sensitive. Another advantage of the system is that the time required to record and process data is greatly reduced.

As part of a method developed in collaboration with B. M. Sutherland at Brookhaven and R. W. Gange at Harvard Medical School, the new instrument is being used to measure the damage produced in the DNA of human skin by ultraviolet light. Other applications in molecular biology and biotechnology are under development.

Dr. Sutherland has been an ASP member since 1974 with interests in spectroscopy and UV effects. He is a resident of Wading River, New York.



MEETING REPORT

NATO ASI on Photosensitization at RMC in Kingston

NATO Advanced Study Institute: "PHOTOSENSITIZATION: MOLECULAR, CELLULAR AND MEDICAL ASPECTS", Royal Military College of Canada, Kingston, Canada. July 5 -18, 1987.

Eighty one scientists representing 12 NATO and two non-NATO countries recently attended a two week multidisciplinary school on photosensitization. The school began with a brief history, then proceeded with lectures on photophysical techniques in photosensitization and photobiology. Techniques discussed included both continuous and pulsed irradiation techniques, as well as new areas such as photoacoustic spectroscopy and ^{32}P -NMR and NMR imaging methods. This was gradually merged with the topic of primary photophysical processes, with special emphasis on activated oxygen. The interaction of light with biological tissue was then examined from both the physical and biological perspectives. The first week ended with a roundtable on techniques.

The second week began with studies on skin pigments including a roundtable on Melanins, Skin Protection and Related Cosmetic Products, followed by detailed studies on tetrapyrroles, psoralens and porphyrin related photosensitization, including both *in vitro* and *in vivo* aspects. The final section was devoted to recent studies on new photosensitizers, with emphasis on photodynamic therapy of tumors. The school closed with a roundtable on Medical Aspects of Photosensitization and New Photosensitizers.

One hour of lectures by the faculty were integrated with 15 minute contributions by all participants, in order to achieve maximum coverage of material and to increase overall participation. One of the goals of such schools is to foster international collaboration amongst scientists from various NATO countries. The high quality of lectures and contributions combined with ample social activities in a pleasant location all contributed to a successful NATO ASI school.

Announcements

Laser Bronchoscopy Update: Latest Techniques and Equipment

May 19-21, 1988

Centre Hospitalo - Universitaire Sud de Marseille
Marseille, France

Contact: Dr. Jean - Francois Dumon
Centre Laser du CHU Sud
Hopital Sainte - Marguerite
BP 29 - 13277
Marseille cedex 9
FRANCE
Tel: (33) 91-74-29-89

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SPIE Symposium on Medical Applications of Lasers, Fiber Optics, and Electro-Optics.

Jan. 10-17, 1988

Airport Marriott and Airport Hilton Los Angeles, CA includes:

Optical Fibers in Medicine III
Microsensors & Catheter-Based Imaging Technology
Laser Medical Systems Engineering
Laser Surgery: Characterization and Therapeutics
Laser Interaction with Tissue

Contact: SPIE
P.O. Box 10
Bellingham, WA 98227-0010

Free-Electron Laser Applications in the UV

Mar 2-5, 1988

The Lodge Cloudcroft, NM

Contact: Free-Electron Lasers Meeting
1816 Jefferson Place, N.W.
Washington, D.C. 20036

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Pittsburgh, Conference and Exposition on Analytical Chemistry and Applied Spectroscopy

Feb. 22-26, 1988

New Orleans, LA

Contact: Mary Louise Theodore
Program Chairman
12 Federal Drive
Suite 322
Pittsburgh, PA 15235
Tel: (412) 795-7110

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Annual Meeting of the Illuminating Engineering Society of North America

Aug 7-11, 1988

Minnesota Marriott

Contact: Diane Darrow
Tel: (212) 705-7269

New Titles



General Photobiology

by Donat- Peter Hader and Manfred Tevini
Pergamon, NY, 1987

\$40.00; paper \$21.95, 323 pp, illus.

Photomorphogenesis in Plants

edited by R.E. Kendrick and G.H.M. Kronberg
Nijhoff, Dordrecht, 1986

(U.S. distribution, Kluwver, Norwell, MA)
\$156.50, 580 pp., illus.

Bioluminescence and Chemiluminescence. Pt-B

edited by M.A. DeLuca and W.D. McElroy
Academic Press, Inc., Orlando, FL.

Methods in Enzymology, Vol. 133
\$75.00, 649pp., 42 Chaps., figures, plates

THE LIGHT AT THE END OF THE TUNNEL

Positions Available

RESEARCH TECHNICIAN

A research and development technician position is available with primary responsibility for tissue culture and toxicology testing of human cells. Other duties include DNA purification and immunoassay of proteins. A bachelor's degree in biology, chemistry or a related science is required as is experience in tissue culture or microbiology and sterile technique. Experience in biochemistry is advantageous. Willingness to learn is essential. Salary: \$19,000 and up dependent on experience. Applied Genetics is a research and development firm specializing in DNA repair technology located on the South Shore of Long Island off the Meadowbrook Parkway. Benefits include health insurance, paid vacation and a personalized work environment with growth potential.

Contact: Dr. Daniel Yarosh
Applied Genetics Inc.
205 Buffalo Avenue
Freeport, NY 11520
Tel.: (516) 868-9026

CALENDAR OF EVENTS

1988

- Jan 4-7 Inter - American Photochemistry Society - Clearwater Beach, FL [110]
- Jan 10-17 SPIE Symp. : Medical Applications of Lasers, Fiber Optics, & Electro-Optics - Los Angeles, CA [111]
- Feb 1-4 2nd Latin-American Meeting on Photochemistry and Photobiology - Sao Paulo, Brazil [110]
- Feb 5 Ballots due to Secretariat
- Feb 22-26 Pittsburgh Conference - New Orleans, LA [111]
- Feb 28-Mar 3 1988 Biophysical Society Meeting - Phoenix, AZ
- Mar 2-5 Free-Electron Laser Applications in the UV - Cloudcroft, NM [111]
- Mar 13-18 16th A S P Annual Meeting - Colorado Springs, CO [111]
- May 1-6 FASEB Meeting - Las Vegas, NV
- May 19-20 Laser Bronchoscopy Update: Latest Techniques and Equipment - Marseille, France [111]
- Jul 17-23 XIIth IUPAC Symposium on Photochemistry - Bologna, Italy
- Aug 7-11 Illuminating Engineering Society of North America Annual Meeting - Minneapolis, MN [111]
- Sep 25-30 Symposium on Site-specific Photolabeling of Biomolecules - Los Angeles, CA
- Oct 30-Nov 6 10th International Congress on Photobiology - Jerusalem, Israel

[] - Square brackets denote the newsletter issue in which additional information may be found.

FYM*

The skeletal remains of an unidentified ASP member have recently been discovered in Colorado Springs, site of the VIII th Annual ASP Meeting in 1980. Although we are saddened by the loss we are happy to report that the unidentified member has now been certified as the official winner of the 1980 ASP Hide and Seek Contest.

The editor, the Secretariat, and ASP assume no responsibility concerning the veracity of this claim.

* For Your Misinformation

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AMERICAN SOCIETY FOR PHOTOBIOLOGY

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