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# INTERNATIONAL COOPERATION IN PHOTOBIOLOGY
## *Association Internationale de Photobiologie Part* 3: 1984–1992

The initial motivation to organize photobiology as a scientific discipline in its own right arose largely from the successful medical applications of nonionizing radiation that were promoted at the turn of this century. This eventually led to the formation of the "Comité International de la Lumière" (CIL) in September 1928 during an international Conference on Light held at the University of Lausanne. The initiative was quickly followed by three International Light Congresses (see footnote to Table 1), but the flow of meetings was interrupted by the second world war. As chemotherapy replaced heliotherapy and the discipline of photobiology itself expanded and widened, the committee was renamed the "Comité International de Photobiologie" (CIP) in 1951 and organized the First International Congress of Photobiology (4th International Light Congress) in 1954 in Holland. Several congresses later in Rome, 1976, the name was changed again to the "Association Internationale de Photobiologie (AIP)." A fairly detailed history of AIP up until 1984 can be obtained from two articles published in *Photochemistry and Photobiology* by three successive Secretaries General.[1,2] The present article will attempt to outline AIP activities since 1984, fill in one or two additional details of past history and provide complete tables for some of the more frequently requested information concerning past events and honors.

The purpose of AIP is to stimulate research in photobiology and to encourage international cooperation in this discipline. With the strengthening of the national/international photobiology societies particularly in the American, Japanese and European areas, many of the scientific aspirations of the association are already well catered for. Indeed, the association is left with rather more specific but, nevertheless, important tasks. One is to act as an umbrella organization to encourage photobiology in developing countries and a second is to set up the organization of four-yearly international congresses. Of course, the association also acts as credible international body through which council on matters such as photobiological nomenclature can be channeled and appropriate committees nominated. Another important task of the association is to administer the Niels Finsen and Edna Roe funds and to evaluate nominations for the corresponding honors. Before elaborating further on recent aspects of these activities, some words on the current organization of the association are in order.

Basic guidelines for the operation of AIP are provided by the statutes (last printed in English and French versions in June, 1977),[3] which are held in the office of the Secretary General (Currently Tom Dubbelman, address Table 2). AIP has an elected board and a nominated executive committee. The board consists of president, four vice-presidents, treasurer and secretary-general. All board members who have served to date are listed in Table 2. As from this year, one of the vice-presidents will normally be the organizer of the immediate past congress. The organizer of the next congress is invited to all board meetings. Board members are elected for a single 4 year term except for the treasurer (unlimited) and the secretary-general (maximum two 4 year terms). After a nomination procedure, the new board is normally elected on a single slate by the general assembly held on the occasion of the international congress. The executive committee of AIP consists of the board and appropriately accredited representatives of national groups. Past presidents automatically become honorary members of the executive committee. AIP currently has no individual members but rather national members who pay a subscription fee in accordance with their national membership. The primary income of the association, however, accrues from registration fees for the four-yearly international congresses, 10% of which are designated for AIP. Attempts are always made to include in the executive committee meetings representatives of countries that do not have national societies. The executive committee meets at least once between congresses, and decisions are submitted to the board for approval. Many matters are dealt with by correspondence between board members with consultation of the executive committee where appropriate.

The final decision on the meeting site (country) and organizer of the next international congress is taken during the previous congress. For example, in Kyoto it was decided that the next meeting will be held in Vienna (Hofburg Imperial Castle), Austria with Dr. Herbert Hönigsmann as the organizer. The list of past international congresses (shown in Table 1) does not include meetings held on specific topics or for specific occasions. From the list of meeting sites it is clear that an attempt is made to spread the geographical distribution. However, for largely practical reasons, no International Photobiology Congress has yet been held on the Australasian or African continents or in South America. Eastern Europe and Canada are also missing from the list. All are candidates for the future.

Despite turbulent political times, the 10th International Congress on Photobiology was successfully organized in Jerusalem, Israel by Dr. Emy Riklis and counted 400 scientific participants. Over 30 symposia, workshops and round-table discussions were held in topics covering all current aspects of photobiology. Memorial symposia were held in honor of Alexander Hollaender and Franz Greiter, two pioneering photobiologists who had died since the previous congress in Philadelphia. The congress also included four school lectures and a special workshop on photobiology in developing countries. The Edna Roe lecture (see below) was presented by Dr. Ethel Moustacchi (France) who discussed various aspects of the repair of cross-linked DNA. Dr. Ronald Ley (USA) presented the Finsen lecture (see below) in which he described his mammalian model for melanoma studies, the opossum, *Monodelphia domestica*. The congress was also the occasion

Table 1. CIL–CIP–AIP International Congresses on Photobiology*

| Number | Year | Location | President | Secretary-general | Scientific registrants |
|---|---|---|---|---|---|
| I | 1954 | Amsterdam (Holland) | Ebbenhorst-Tengbergen, J. W. | Voogd, J. | 250 |
| II | 1957 | Turin (Italy) | Ponzio, M.† and Benass, E. | Mathi, G. | 200 |
| III | 1960 | Copenhagen (Denmark) | Christensen, B. Chr. | Buchman, B. | 350 |
| IV | 1964 | Oxford (UK) | Bowen, E. J. | Millot, N. and Vince-Prue, D. | 450 |
| V | 1968 | Dartmouth (USA) | Setlow, R. B. | Gordon, S. | 755 |
| VI | 1972 | Bochum (Germany) | Schenck, G. O. | Tronnier, H. | 650 |
| VII | 1976 | Rome (Italy) | Pocchiari, F. | Castellani, A. | |
| VIII | 1980 | Strasbourg (France) | Hélène, C. | Charlier, M. | 510 |
| IX | 1984 | Philadelphia (USA) | McElroy, W. D. | Longworth, J. W. | 586 |
| X | 1988 | Jerusalem (Israel) | Riklis, E. | Avron, M., Malhin, S. and Ottolenghi, M. | 400 |
| XI | 1992 | Kyoto (Japan) | Takebe, H. | Ikenaga, M. | 690 |
| XII | 1996 | To be held in Vienna (Austria) | Hönigsmann, H. | | |

*Three international light congresses were held previously in Paris, France (1929); Copenhagen, Denmark (1932) and Wiesbaden, Germany (1936).
†Deceased before the meeting took place.

Table 2. Board members of CIL, CIP and AIP, 1928–present

| Date | President | Secretary-general | Vice-presidents | Treasurer |
|---|---|---|---|---|
| 1928–1932 | Reyn, A. (Denmark) | Rosselet, A. (Switzerland) | | |
| 1932–1936 | Reyn, A. (Denmark) | Ledent, R. (Belgium) | | |
| 1936–1946 | Jausion, H. (France) | Schreiber, H. (Germany) | | |
| 1946–1949 | Saidman, J. (France) | Morikofer, W. (Switzerland) | | |
| 1949–1951 | Morikofer, W. (Switzerland) | Meyer, J. (France) | | |
| 1951–1954 | Morikofer, W. (Switzerland) | Blum H. F. (USA) | Rajewsky, B. (Germany)<br>Dejardin, C. (France)<br>Ledent, R. (Belgium)<br>Ponzio, M. (Italy) | Burkhardt, W. (Switzerland) |
| 1954–1960 | Hollaender, A. (USA) | Burkhardt, W. (Switzerland) | Rajewsky, B. (Germany)<br>Latarjet, R. (France)<br>Ponzio, M. (Italy) | Wassink, E. C. (Netherlands) |
| 1960–1964 | Latarjet, R. (France) | Roe, E. M. F. (UK) | Christensen, B. (Denmark)<br>Pfleiderer, H. (Germany)<br>Pirenne, M. H. (UK) | Voogd, J. (Netherlands) |
| 1964–1968 | Swanson, C. P. (USA) | Roe, E. M. F. (UK) | Findlay, G. H. (S. Africa)<br>Goodwin, T. W. (USA)<br>Schenck, G. O. (Germany)<br>Shugar, D. (Poland) | Beukers, R. (Netherlands) |

Table 2. *Continued*

| Date | President | Secretary-general | Vice-presidents | Treasurer |
|---|---|---|---|---|
| 1968–1972 | Porter, G.<br>(UK) | Vince-Prue, D.<br>(UK) | Caldas, L. R.<br>(Brazil)<br>Setlik, I.<br>(USSR)<br>Setlow, R. B.<br>(USA)<br>Roe, E. M. F.<br>(UK) | Wiskemann, A.<br>(Germany) |
| 1972–1976 | Setlow, R. B.<br>(USA) | Hall, D. O.<br>(UK) | Castellani, A.<br>(Italy)<br>Vince-Prue, D.<br>(UK)<br>Honjo, I. then Shibata, K.<br>(Japan)<br>Schenck, G. O.<br>(Germany) | Wiskemann, A.<br>(Germany) |
| 1976–1980 | Caldas, L. R.<br>(Brazil) | Björn, L. O.<br>(Sweden) | Hall, D. O.<br>(UK)<br>Hélène, C.<br>(France)<br>Shibata, K.<br>(Japan)<br>Urbach, F.<br>(USA) | Wiskemann, A.<br>(Germany) |
| 1980–1984 | Urbach, F.<br>(USA) | Björn, L. O.<br>(Sweden) | Moustacchi, E.<br>(France)<br>Rohatgi-Mukherjee, K. K.<br>(India)<br>Smith, H.<br>(UK)<br>Wierzchowski, K. L.<br>(Poland) | Hönigsmann, H.<br>(Austria) |
| 1984–1988 | Rohatgi-Mukherjee, K. K.<br>(India) | Tyrrell, R. M.<br>(Switzerland) | Björn, L. O.<br>(Sweden)<br>Riklis, E.<br>(Israel)<br>Shrophire, W., Jr.<br>(USA)<br>Yoshizawa, T.<br>(Japan) | Hönigsmann, H.<br>(Austria) |
| 1988–1992 | Yoshizawa, T.<br>(Japan) | Tyrrell, R. M.<br>(Switzerland) | Braslavsky, S.<br>(Germany)<br>Hall, D. O.<br>(UK)<br>Kochevar, I.<br>(USA)<br>Ronto, G.<br>(Hungary) | Hönigsmann, H.<br>(Austria) |
| 1992–1996 | Dall'Acqua, F.<br>(Italy) | Dubbelman, T. M. A. R.<br>State University of Leiden<br>Dept. of Medical Biochemistry<br>Sylvius Laboratory<br>P.O. Box 9503<br>NL–Leiden 2300 RA<br>The Netherlands | Kripke, M.<br>(USA)<br>Menighini, R.<br>(Brazil)<br>Takebe, H.<br>(Japan)<br>Thomas, B.<br>(UK) | Hönigsmann, H.<br>(Austria) |

for the announcement of the prestigious Finsen medal awards to Dr. Ian Magnus for his outstanding contributions to photodermatology and to Dr. Daniel Arnon (*in absentia*) for his important contributions to photosynthesis. The proceedings of the meeting have been published under the title of *Photobiology, the Science and its Applications.*[4]

Four years later in 1992, the 11th International Congress on Photobiology was also organized with distinction and excellence by Dr. Hiraku Takebe in Kyoto, Japan. The dramatic change in scenery was mirrored in the advances made in the photobiological sciences in the preceding 4 years, certainly a clear indicator of a truly active discipline. Again more than 30 symposia were organized as well as two 3 hour photodermatology schools. The recent deaths of Amleto Cas-

Table 3. AIP Finsen Medalists 1937–1992

| Year | Medalist | Town/country | Contribution |
|---|---|---|---|
| 1937 | Corno, C. | Davos, Switzerland | |
| 1951 | Rollier, A. | Leysin, Switzerland | |
| | Jausion, H. | Paris, France | |
| 1954 | Coblentz, W. W. | Washington, USA | |
| 1960 | Rottier, P. B. | Utrecht, Holland | Fundamental studies of the basic phenomena underlying the formation of erythema of the human skin by UV radiation |
| 1964 | Terenin, A. | Leningrad, USSR | Important contributions in the field of photochemistry |
| | Rupert, C. and Kelner, A. | Baltimore, Waltham, USA | Important contributions to the discovery and elucidation of photorestoration *in vivo* and *in vitro* |
| 1968 | Hollaender, A. | Oak Ridge, USA | Fundamental contributions in the early development of photobiology, in particular radiation genetics |
| | Bowen, E. J. | Oxford, UK | Fundamental contributions in the development of the chemical aspects of light |
| | Stiles, W. S. | London, UK | Fundamental contributions in the sensory aspects of human vision |
| 1972 | Förster, Th. | Stuttgart, Germany | Fundamental studies of molecular behavior in the excited state |
| | Hill, R. | Cambridge, UK | Fundamental contributions in knowledge of the photosynthetic process in plants |
| | Latarjet, R. | Paris, France | Fundamental radiation studies particularly in the field of viruses |
| 1976 | Blum, H. F. | USA | Contributions to photodynamic action and carcinogenesis by ultraviolet light |
| | Hendricks, S. B. | USA | Contributions to the control of plant development processes by light |
| | Shugar, D. | Poland | Contributions to photochemistry and the structure of nucleic acids and proteins |
| 1980 | Settlow, R. B. | USA | Contributions to photobiology and repair of nucleic acids |
| 1984 | Smith, K. C. | USA | Fundamental contributions to photobiology |
| | Haupt, W. | FRG | Fundamental contributions to photobiology |
| 1988 | Magnus, I. | UK | Fundamental contributions to photodermatology |
| | Arnon, D. I. | USA | Fundamental contributions to photosynthesis research |
| 1992 | Urbach, F. | USA | Contributions to dermatological photobiology |
| | Stoeckenius, W. | USA | Fundamental studies on bacterial rhodopsin |

tellani, Nobuyuki Mizuno and Luiz Renato Caldas were recalled in three memorial symposia. Seven plenary and award lectures (none too early in the morning!) were presented. Plenary talks were presented by Dr. F. S. Rowland (ozone depletion by fluorocarbons), Dr. K. Schaffner (bacteriochlorophyll *c*) and Dr. K. Tanaka (human excision repair genes). The Edna Roe lecture was presented by Sylvia Völker (The Netherlands) who clarified the mysteries of hole-burning, and the Finsen lecture was given by Dr. K. Satoh (Japan) who talked about molecular aspects of photosynthesis. Lectures were also presented by both Finsen medalists, firstly by Dr. Walter Stoeckenius (USA) who was awarded the medal for his pioneering work on bacterial rhodopsins and secondly by Dr. Fred Urbach for his important contributions to the photocarcinogenesis field. Despite the distance from European and American centers, the meeting was well attended with a final head-count of close to 700 scientific registrants.

Various other meetings have been held over the last few years under the auspices of AIP, the largest being the first European Congress on Photobiology organized by Dr. Jean Cadet in Grenoble (France) in 1986, which counted over 400 participants. This was also the occasion of the official formation of The European Society for Photobiology (ESP), which has since grown to close to 500 members. The formation of ESP has proved to be a major landmark in the recent history of organized photobiology, providing a forum for photobiology in the European sphere and the creation of the *Journal of Photochemistry and Photobiology, B: Biology*, successfully launched under the editorship of Dr. Giulio Jori (Italy). The Grenoble meeting was followed by equally well-attended meetings in Padova, Italy (1987); Budapest, Hungary (1989) and Amsterdam, The Netherlands (1991). The new society has also sponsored for formation of The International Centre for Advanced Research in Photobiology (CARP) permanently located in Sardinia in space provided by the University of Sardinia. Meanwhile, The American Society for Photobiology (ASP) has maintained its strength on the other side of the Atlantic with the management of

Table 4. AIP—Edna Roe and Finsen lecturers

| International Congress | | | |
|---|---|---|---|
| Year | Place | Edna Roe lecturer | Finsen lecturer |
| 1976 | Rome | Paterson, M. C. (Canada) | |
| 1980 | Strasbourg | Kripke, M. L. (USA) | Junge, W. (Germany) |
| 1984 | Philadelphia | Sutherland, B. M. (USA) | Vogelmann, T. C. (Sweden) |
| 1988 | Jerusalem | Moustacchi, E. (France) | Ley, R. D. (USA) |
| 1992 | Kyoto | Völker, S. (The Netherlands) | Satoh, K. (Japan) |

*Photochemistry and Photobiology* (under the editorship of Dr. P. S. Song) and the recent celebration of the 20th Annual meeting in Marco Island, Florida. Even more venerable, The Indian Society for Photobiology celebrated its silver (25th) anniversary by holding a symposium in Calcutta in February 1989 and conferences in New Delhi (1990) and Madras (1991). These lively meetings, again sponsored by AIP, included a substantial number of overseas speakers and were well attended by the highly active Indian photobiological community.[5]

The most recent meeting sponsored (and exceptionally partially financed) by AIP was The Third Latin-American Meeting in Photochemistry and Photobiology held in Mar del Plata, Argentina, in October 1991.[6] This South American meeting demonstrated once again that this important region can maintain scientific credibility despite the almost overwhelming economic difficulties currently experienced. The creation of new and the growth of existing photobiology societies provides an ideal complement to the activities of AIP; in practice, there is little functional overlap.

A unique responsibility of AIP remains the designation of Finsen medalists. Normally, but not necessarily, two such honors are bestowed every 4 years. As most photobiologists are aware, Nields Finsen was a talented Danish physician who conducted some fascinating experiments at the end of the last century involving the use of light in medicine, and in particular the treatment of the skin disease *Lupus vulgaris*, prevalent in Scandinavian countries where solar exposure is generally low. The Finsen Institute was set up in Copenhagen in his honor, and in 1903, Finsen himself became the first photobiologist to receive a Nobel Prize. He died 1 year later at the age of 44, but his remarkable achievements continued to inspire endeavors in photomedicine so that eventually a Nields Finsen Foundation (administered by AIP) was created to further encourage photobiological sciences. Although both prizes and grants were originally envisaged, the honor currently takes the form of a gold-plated medal inscribed with the portrait of Finsen and the primary area of photobiological achievement of the awardee. The first medal was awarded in 1937 but regular awards were made only from 1951 (Table 3). A tradition is also developing to support a Finsen lecturer at each international congress. Although there is no upper age limit (as there is no lower age limit for Finsen medalists!), the purpose is certainly to encourage accomplished younger scientists where possible.

Although there is certainly no age-barrier (upper or lower) for the Edna Roe lecture at the International Congress there is a strong concensus to award younger talent where possible. There is also definitely no sex barrier, although all except the first Edna Roe lecturer have been female (Table 4), a commendable tradition to follow where possible. Dr. Edna Margaret Frances Roe herself was a British photobiologist who was secretary-general of the association between 1960 and 1968. Dr. Roe attended the girls' school at Harrow and gained a state scholarship to study at The University College London in the late twenties. She spent most of her working life at the Chester Beatty Research Institute and was conferred the title of "reader in spectroscopy" of the University of London in 1961. She had broad interests in photobiology and enthusiastically established contacts with isolated researchers and small groups in the active promotion of international cooperation in photobiology. Edna Roe died prematurely of cancer in 1971, and AIP organized and now administers the memorial fund. A more recent loss to photobiology, in addition to those remembered in memorial lectures at the Jerusalem and Kyoto Congresses, is Dr. R. Hill, (UK), who won a Finsen medal in 1972 and died in 1991.

Photobiology remains a vigorous science and recent developments include efforts to maintain it that way. The "graying of ASP" recognized by some of its senior members has led to intense discussion of the problem and further efforts to encourage young scientists to join in. The creation of ESP and the development of associated activities has also had a rejuvenating effect. Many of the young faces first seen at CARP photobiology schools are reappearing at national and international meetings. There is little doubt that the science of photobiology will turn another century.

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