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Medical Physics World

Bulletin of the International Organization for Medical Physics

Adhering National Organizations 1982
Austria • Belgium • Brazil • Canada • Denmark • Federal Republic of Germany • Finland • France • German Democratic Republic • Greece • Hungary • India • Ireland • Israel
Italy • Japan • Mexico • Netherlands • New Zealand • Norway • Poland • South Africa • Switzerland • Spain • Sweden • Thailand • United Kingdom • United States of America

President's Message

Dear Colleagues and Friends,

The second issue of our Bulletin which is before you has proved those wrong who believed that Medical Physics World would only be a passing event. Fortunately, there were not too many who had doubts of this kind. Many others wrote spontaneous letters or praised the first issue at professional meetings, and they expressed their hope that they would soon read more about the activities of IOMP and its associated national societies.

We are indebted to Lawrence H. Lanzl, Vice President of our organization, and his American colleagues for having dispersed the doubts of some and for editing the second issue with much personal commitment. I wish to thank those whose contributions from their countries and organizations have provided this issue with substance that corresponds to what is expected from its name, Medical Physics **World.**

There are justifiable expectations for Espoo in Finland 1985. Our Finnish friends are busy with preparatory and organizational work. We regret that some of our friends and colleagues from the United States and Canada will be unable to participate in the VIIth International Conference of our organization from 11-16 August, 1985, because the annual meeting of the American Association of Physicists in Medicine (AAPM) takes place in Seattle at the same time. We had just been able to avoid a collision (in terms of time) with our colleagues in radiology, whose International Congress will be held as planned in Hawaii in July 1985; however, having been unaware of the date of the Seattle meeting, we arrived at cross purposes here. We hope, nevertheless, that a considerable number of our friends and colleagues from the United States and Canada will be able to come to

Continued on page 2

Polish Society of Medical Physics, History and Development

Oskar A. Chomicki

The first impetus to create the society was due to the initiative of the I.O.M.P. which in 1964 appealed to Poland's Ministry of Foreign Affairs to help set up a local medical physics organization. On February 5, 1965, thirty-seven physicists, engineers and medical doctors founded the Polish Society of Medical Physics, P.S.M.P., and subsequently three members of the newly elected Executive Board, D. Shugar, O.A. Chomicki and J. Keller, took part in the 1st International Medical Physics Congress in September 1965 at Harrogate, England. There, the P.S.M.P. became affiliated to the I.O.M.P.

By 1985 the P.S.M.P. will have been active in medical physics for twenty years. There have been ups and downs in the history of our Society but the fact that medical physicists in Poland have

Continued on page 2

In this issue:

Continued from page 1

President's Message

Espoo. We also hope that such a conflict will not happen again, since, in the future, Medical Physics World will publish early information on plans and dates for IOMP and its adhering national member organizations. Everyone is invited to take part in submitting information about dates of meetings as well as other information so that Medical Physics World will become an interesting forum for discussion in our discipline.

In regard to the Helsinki conference — to be held in conjunction with our friends and colleagues from IFMBE, as in Hamburg — elsewhere in this issue of Medical Physics World some general information is given concerning the conference. With regard to the distribution of the final announcement and the call for papers, I would, however, like to take this opportunity to touch on one particular IOMP item that will be a major subject of discussion at the Helsinki conference: the development, assessment, and dissemination of physical procedures and medical technologies in the developing countries. IOMP, together with WHO, EFOMP, and IFMBE, will review this topic during the sessions.

The success of these sessions depends largely on the participation, in Finland, of as many medical physicists and biomedical engineers as possible from the so-called "third-world" nations. To this end, we are trying to obtain financial support from various sources for these colleagues. Moreover, we would like to use their presence in Finland for broadening the dialogue on the problems of education and training, dissemination of know-how, and requirements for technical equipment in the pertinent areas of medical physics, since active concern for the developing countries will be one of the most important tasks of a committee of our organization. For this reason, may I invite you all in advance to contribute to the success of this dialogue, and to do so not merely by words!

Alexander Kaul

Continued from page 1

Polish Society of Medical Physics

acquired a status of respectability among the medical and physical professions is mainly due to the activity of the P.S.M.P.

Medical physics has had quite a long tradition in this country starting with Maria Sklodowska-Curie's gift of 1 gram of radium to the Institute of Oncology built in Warsaw in 1932, through the establishment, before World War II, of a medical physics research laboratory headed by Mme Curie's pupil, Professor Pawlowski, and finally, to the setting up of two-year training programmes leading to M.Sc. and Ph.D. in Medical Physics at Poland's two main universities in Warsaw and Cracow.

At present the P.S.M.P., sponsored by the Polish Academy of Sciences, embraces almost all

Continued on page 3

Continued from page 2

physicists and engineers working in medical physics, i.e., in radiotherapy, radioisotopes, imaging systems, ultrasonography, etc. It has been instrumental in organizing 6 national and international congresses and meetings and is currently planning to have its 7th Congress to commemorate the 20th anniversary of its foundation in 1985 (see Calendar of Events). Ten local branches of the Society have also sponsored several meetings and symposia. As early as 1968, the P.S.M.P. started publication of a bi-monthly "Progress in Medical Physics" (in Polish) which now runs into 500 copies.

In the years 1970-1980 Poland saw a rapid development of medical physics facilities: several new teletherapy units were installed and medical radioisotope laboratories were enlarged and re-equipped on the basis of home-produced 10 MeV linear accelerators, ultrasonographs, dosimetry apparatus and cardiac monitors. For the past four or five years, however, the situation has considerably deteriorated with many qualified physicists and engineers leaving for other better paid jobs. The general shortage of funds has made it specially difficult to update the electronic equipment in medical services and research. Nevertheless, the P.S.M.P. is hoping to provide a new boost to medical physics in Poland by organizing the 1985 Congress and re-establishing closer ties with medical physics organizations in Europe and elsewhere.

Report from the Secretary-General Hamburg and After

This is mainly a report of the various business meetings held at the VI International Congress of Medical Physics at Hamburg, September 1982, including, where appropriate, developments since that date.

Two meetings of the IOMP Council were held with delegates from 22 member countries: a meeting of the IOMP General Assembly and also a joint General Assembly of the IFMBE and IOMP. There were also a meeting of IOMP officers with the IFMBE Council and meetings of the old and new IOMP officers.

The Council meetings and General Assemblies were called to order by the retiring President, Professor John Mallard, using for the first time the plate and gavel which had recently been presented to IOMP by the Hospital Physicists' Association of the United Kingdom. John Mallard expressed his sincere thanks to the HPA for this generous gift.

Possibly the most important business transacted at the meetings concerned the formation of the new Union, the International Union of Physical and Engineering Sciences in Medicine. Professor Mallard has conducted long and complex negotiations with regard to setting up this new Union and its application to join the International Council of Scientific Unions. This Union was formed in February 1980, comprising the IFMBE (International Federation of Medical and Biological Engineering) and the IOMP, and an application was submitted for full membership of the ICSU (International Council of Scientific Unions) in the same month.

Continued on page 4

Continued from page 3

However, this application did not have the necessary support from a sufficient number of national academies and other union members, and it was held back along with other applications. It appeared that, basically, the 'pure' scientific unions were concerned at being out-voted by the 'applied' unions of which we were one. It became clear that it was unlikely that we would ever receive the required support, and so it was agreed that an application for associate membership should be made; this was done in February 1982. John Mallard conducted a campaign to canvass support for this membership with the 25 or so national academies, and 17 of them were eventually persuaded to inform ICSU of their support with the help of lobbying from our national delegates. The campaign for support from other scientific unions within ICSU drew support from five of them, most importantly the Biophysics Union, the IUPAB, which is the one most directly affected by our application. This support was a complete change of attitude, largely due to personal discussions between John Mallard and its President.

Finally, in September 1982, after the Hamburg meeting, the General Committee of ICSU accepted the application from the IUPESM for Scientific Associate status. The achievement of this membership came about very largely through the extensive personal efforts of Professor John Mallard, and we all owe him a great debt for his achievement. Being a Scientific Associate means that we have no vote at the ICSU. However, we are not really likely to be influenced by any votes which it may take, but we have achieved the recognition which we desire and which will enable us to take part in and inaugurate activities involving ICSU, and to become known and accepted by them. Our subscription will, in fact, be significantly less than that of a full member.

The first President of the IUPESM is, very fittingly, to be Professor John Mallard, and the Vice President will be the retiring President of IFMBE, Professor Saito. The Secretary-General is Robert L. Clarke from Ottawa. The six ordinary members of Council will be the three officers each of IOMP and IFMBE.

The number of national members of IOMP has been increased since the last ICMP from 19 to 28, the new members being Japan, Italy, Spain, Belgium, India, Switzerland, Thailand, Denmark, and Austria. Correspondence about membership is still under way with Bulgaria, Czechoslovakia, the People's Republic of China, Egypt, Iraq, Kenya, the Philippines, Nigeria, and Syria.

There was considerable discussion about membership fees in Hamburg, which have been fixed at 10 US dollars per 25 members of the national bodies since the start of IOMP. It was agreed that the new officers should have a mandate to double this subscription rate, but that the implementation should be left to them, with the power to waive the increased subscription as they deemed appropriate for those member countries which have exchange and/or payment difficulties.

At the General Assembly, the retiring President, John Mallard, transferred the gavel to the new President, Professor Alexander Kaul of the Federal Republic of Germany. Professor Lawrence H. Lanzl of the USA is the new Vice President, and Dr. Brian Stedeford of the United Kingdom, the Secretary-General.

John Mallard expressed his thanks for six years of pleasant co-operation with an active stalwart expert support from the retiring Secretary-General, Professor Rune Walstam of Sweden. Lawrence H. Lanzl has also become editor of the

Continued on page 8

CALENDAR OF EVENTS

18-22 March

South African Association of Physicists in Medicine and Biology, Seapoint, Cape Town, South Africa (Dr. E. J. van der Merwe, Department of Medical Physics, Karl Bremer Hospital, 7531 Karl Bremer, South Africa).

22 March

Skin Blood Flow Measurement and the Microcirculation, Ninewells Hospital, Dundee, UK (Biological Engineering Society, Royal College of Surgeons, 35/42 Lincoln's Inn Fields, London WC2A 3PN, UK).

26-28 March

IEEE, Institute of Electrical and Electronic Engineers, International Reliability Physics Symposium, Sheraton Twin Towers, Orlando, FL (John W. Peeples, NCR Corporation, 3325 Platt Springs Road, West Columbia, SC 29169, USA).

1-5 April

Basic Principles of Medical X-Ray Imaging Using Fourier Analysis and Micro-computers, The University of Texas Health Sciences Center at San Antonio (Medical School Continuing Education Services, University of Texas Health Sciences Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284, USA).

7-12 April

SPIE, The International Society for Optical Engineering, Technical Symposium East, Hyatt Regency Crystal City, Arlington, VA (SPIE, P.O. Box 10, Bellingham, WA 93227-0010, USA).

21-24 April

International Neutron Therapy Workshop Brachy vs. Beam Therapy, Hyatt Regency Hotel, Lexington, Kentucky, USA (General Secretary: J. Lawrence Beach, Radiation Therapy Oncology Group, University of Kentucky Medical Center, Lexington, KY 40536, USA).

22-26 April

Introduction of Computers and Radiology, The University of Texas Health Sciences Center at San Antonio (Medical School Continuing Education Services, University of Texas Health Sciences Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284, USA).

12-16 May

3rd Rome International Symposium: "The Challenge of Local Tumor Control and its Impact on Survival," Sinodo's Hall, Vatican City, Rome, Italy (Associazione Italiana per la Promozione dello Studio delle Malattie Oncologiche, 3rd Rome International Symposium, Via Pie di Marmo 18, 00186 Rome, Italy).

13-17 May

Advanced Radiological Health, The University of Texas Health Sciences Center at San Antonio (Medical School Continuing Education Services, University of Texas Health Sciences Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284, USA).

20-24 May

9th Symposium on Microdosimetry, Université Paul Sabatier, Centre de Physique Atomique, Toulouse, France (Dr. J. Booz, DG XII/F1 Rue de la Loi, 200, B-1049 Bruxelles, Belgium).

3-6 June

IEEE, Institute of Electrical and Electronic Engineers, National Computer Conference (NCC), New York, NY (Harry Hayman, P.O. Box 639, Silver Spring, MD 20901, USA).

4-6 June

IEEE, International Microwave Symposium & Workshops, Stouffers, Riverfront Towers, Cervantes Convention Center, St. Louis, MO (Dr. Fred Rosenbaum, Central Microwave Co., 12180 Pritchard Farm Road, St. Louis, MO 63043, USA).

4-7 June

Society of Nuclear Medicine, 32nd Annual Meeting, Albert Thomas Convention Center, Houston, TX (SNM Meetings Department, 475 Park Avenue South, New York, NY 11016, USA).

20 June

Doppler Ultrasound Techniques in Cardiology, St. Bartholomew's Hospital, London, UK (Biological Engineering Society, Royal College of Surgeons, 35/42 Lincoln's Inn Fields, London WC2A 3PN, UK).

Continued on page 6

Continued from page 5

8-12 July

16th International Congress of Radiology, Honolulu, HI (Passport Travel, P.O. Box 66, Shawnee Misson, KS 66201, USA).

11-12 July

Physics in Medical Ultrasound, Durham, UK (The Hospital Physicists' Association, 47 Belgrave Square, London SWIX 8QX, UK).

22-26 July

Summer School on NMR Proton Imaging, University of Aberdeen, Aberdeen, UK (Dr. M. A. Foster, Department of Bio-Medical Physics and Bio-Engineering, Foresterhill, Aberdeen AB9 2ZD, UK).

4-9 August

American Association of Physicists in Medicine Summer School: "Medical Applications of Nuclear Magnetic Resonance," Portland, OR (D. Bryan Hughes, Department of Radiation Oncology, St. Vincent's Hospital, Portland, OR 97225, USA).

11-16 August

International Conference on Medical Physics and 14th International Conference on Medicine and Bioengineering, Espoo, Finland (Congress Office, P.O. Box 105, SF-00251 Helsinski, Finland; Scientific Progamme Committee Chairman: Niilo Saranummi, Professor, Technical Research Centre of Finland, Medical Engineering Laboratory, Tampere, Finland. Deadline for submission of papers, March 31, 1985; deadline for work-in-progress, July 15, 1985).

11-16 August

American Association of Physicists in Medicine, 27th Annual Meeting, Seattle, WA (AAPM Executive Secretary, 335 East 45th Street, New York, NY 10017, USA).

18-23 August

SPIE, The International Society for Optical Engineering, 29th Annual International Technical Symposium/Exhibit, Town and Country Hotel, San Diego, CA, USA (SPIE, P.O. Box 10, Bellingham, WA 98227-0010, USA).

2-4 September

L. H. Gray Conference: Assays of Normal Tissue Functions and their Cellular Interpretations (L. H. Gray Trust/HPA), Manchester, UK (Hospital Physicists' Association, 47 Belgrave Square, London SWIX 8QX, UK).

9-13 September

Institute of Electrical and Electronic Engineers, International Computer Conference (COMPINT '85), Montreal Convention & Exhibition Centre, Montreal, Quebec, Canada (Dr. Miguel A. Marin, COMPR 4. INT '85, P.O. Box 577, Des Jardins Postal Station, Montreal, Quebec, H5B 1B7, Canada).

19-21 September

VII Congress of the Polish Society of Medical Physics, 20th Anniversary Meeting, Auguatów/Białgstok, Poland (Oskar A. Chomicki, Secretary-General, Szpital Bielański ul. Cegłowska 80, 01-809 Warszawa, Poland).

22-25 September

SPIE, The International Society for Optical Engineering, PACS III-Picture Archiving and Communications Systems for Medical Applications, Alameda Plaza Hotel, Kansas City, MO (SPIE, P.O. Box 10, Bellingham, WA 98227-0010, USA).

24-28 September

Hospital Physicists' Association 42nd Annual Conference and HEX PA '85, Southampton, UK (Hospital Physicists' Association, 47 Belgrave Square, London SWIX 8QX, UK).

29 September - 4 October

American Society for Therapeutic Radiology and Oncology, 27th Annual Scientific Meeting, Fontainebleau Hilton, Miami, FL, USA.

8-10 October

Mediterranean Electrotechnical Conference, Madrid, Spain (Prof. Antonio Lugue, Instituto de Energia Solar, E.T.S.I. Telecomunicación, UPM, Ciudad Universitaria, Madrid 3, Spain.)

13-18 October

SPIE, The International Society for Optical Engineering, Cambridge Symposium on Optical and Electro-Optical Engineering/Exhibit, Hyatt Regency, Cambridge, MA (SPIE, P.O. Box 10, Bellingham, WA 98227-00010, USA).

16-18 October

IEEE, Ultrasonics Symposium, Cathedral Hill Hotel, San Francisco, CA (W. R. Shreve, Hewlett Packard, 1501 Page Mill Road, Palo Alto, CA 94304, USA).

17-22 November

Joint Meeting of American Association of Physicists in Medicine with the Radiological Society of North America, Chicago, IL, USA.

1986

13-17 April

Radiation Research Society, Las Vegas, NV, USA.

2-6 June

International Microwave Symposium & Workshops (Edward C. Niehenki, Westinghouse Electric Corp., P.O. Box 746, MS 339, Baltimore, MD 21203, USA).

22-25 June

Society of Nuclear Medicine, 33rd Annual Meeting, Washington Convention Center, Washington, DC (SNM Meetings Department, 475 Park Avenue South, New York, NY 10016, USA).

July

American Association of Physicists in Medicine, 28th Annual Meeting, Lexington, KY (AAPM Executive Secretary, 335 East 45th Street, New York, NY 10017, USA).

16-22 August

SPIE, The International Society for Optical Engineering, 30th Annual International Technical Symposium/Exhibit, Town and Country Hotel, San Diego, CA (SPIE, P.O. Box 10, Bellingham, WA 98227-0010, USA).

5-10 October

SPIE, The International Society for Optical Engineering, Cambridge Symposium on Optical and Electro-Optical Engineering/Exhibit, Hyatt Regency, Cambridge, MA (SPIE, P.O. Box 10, Bellingham, WA 98227-0010, USA).

19-24 October

American Society for Therapeutic Radiology and Oncology, San Francisco Hilton, San Francisco, CA, USA.

17-19 November

IEEE, Ultrasonics Symposium, Conference Center, Williamsburg, VA (R. Moore, Westinghouse Electric Co., P.O. Box 756 MS 296, Baltimore, MD 21203, USA).

1987

July

American Association of Physicists in Medicine, 29th Annual Meeting, Detroit, MI (AAPM Executive Secretary, 335 East 45th Street, New York, NY 10017, USA).

1988

July

8th Meeting of the International Organization of Medical Physics, American Association of Physicists in Medicine, 30th Annual Meeting, San Antonio, TX, USA (AAPM Executive Secretary, 335 East 45th Street, New York, NY 10017, USA).

Continued from page 4

Hamburg and After

IOMP bulletin, Medical Physics World, in which this report is appearing.

The IOMP is in liaison with a number of international bodies, including the International Atomic Energy Agency which is setting up a network of Secondary Standards Laboratories in developing countries. Members may be asked to help in this from time to time, and, in fact, your Secretary-General has recently spent three months in La Paz, Bolivia, to help set up a laboratory there. We have links with the World Health Organization, the International Electro-Technical Commission, the International Commission on Radiation Units, and the International Council for Radiological Protection. We also have close links with the European Federation of Organizations for Medical Physics, which has 13 national members. We exchange two delegates each with this body with voice, but no vote. Should any individual member be in touch with any group with which it would seem helpful for the IOMP to enter into a liaison, that member should discuss a liaison directly with the group and then get the officers to act officially. Likewise, should any member meet medical physicists from a country which is not a member of IOMP, it would be much appreciated if they would discuss membership informally with them and then put the Secretary-General in touch for further information.

Since the last ICMP, IOMP has participated in several meetings, for instance, the 10th Nordic Meeting on Clinical Physics in Finland, the Symposium of Clinical Physics in Bratislava, Czechoslovakia, and a Symposium on Training and Education in Radiology, GDR, and it sponsored a symposium on the Physics of Ultrasound in the GDR in 1980. Our President is assisting in a meeting on Quality Control Assurance in Diagnostic Radiology organized by the WHO (in the FRG), which later may have similar programmes to assist in nuclear medicine, radiotherapy, thermoluminescent dosimetry, and medical imaging. Dr. Poretti is organizing a Workshop on Quality Control and Assurance at the University of Berne, Switzerland, together with Dr. Racoveanu. The AAPM for the USA is writing a monograph on Quality Assurance in Diagnostic Radiology. Japan hopes to hold a Radiation Dosimetry Workshop in the future under the auspices of the WHO and IAEA. The ICRU may also be liaising with 15 countries on Quality Assurance in Radiotherapy. A regional IOMP meeting was organized by the AAPM in Chicago in 1984 as an inter-American meeting. AAPM is also planning an NMR Summer School for 1985. Dr. Garsou arranged an International Symposium on Emission Tomography, Digital Radiography, Computerised Tomography, and NMR at Liege, Belgium, in April 1983.

India is organizing a regional meeting on Medical Physics for Associations from Eastern countries in Bombay, December 8-12, 1986, in which the IOMP is likely to assist. In general, for the IOMP to support a meeting, application must be made through the national organization in the country concerned, and other member organizations from countries involved will also be asked to comment on the request for support.

Professor Harder reported that, at the Hamburg meeting, there were 1260 active delegates and 200 accompanying persons, and that the total budget was 800,000 DM. There were 815 papers delivered, with 55 invited papers, and 75 firms partici-

Continued on page 9

Continued from page 8

pated in the exhibition. Thanks were expressed to Professor Harder for his great work in organizing this successful Congress.

ESPOO '85

I hope that as many of our members as possible will be coming to the 7th ICMP Conference at ESPOO, Finland, August 11-16, 1985. You should have received copies of the final announcement and call for papers, but if not, those, and authors kits, can be obtained from the XIV ICME/VII IOMP Secretariat, P.O. Box 105, SF-00251 Helsinki, Finland. If under 30 of age, you can compete for the Student Paper Contest. The prize will be awarded by our new International Union of Physical and Engineering Science in Medicine.

SAN ANTONIO '88

The 8th ICMP will be held in San Antonio, Texas, USA, and is planned for August 7-13, 1988. Watch this space!

? '91

At ESPOO, the site of the 1991 Congress will have to be decided. Therefore, if your country is considering hosting the Congress, you should be preparing a submission. A formal request for this will be going out to participating societies, with a deadline of May 1st 1985. We shall be particularly looking for a meeting in a part of the world where there has not yet been a Congress. A new Vice-President will also have to be elected at ESPOO, to succeed Prof. Lawrence Lanzl who will take the Presidential chair. Nominations should be sent to one of the officers to be considered by the nominating committee. Again we would like to see a vice-president from a part of the world where we have not previously had one.

Brian Stedeford, *Ph.D.*

The International Union of Physical and Engineering Sciences in Medicine

Editor's note:

The International Union of Physical and Engineering Sciences in Medicine (IUPESM) was founded in February 1980. Its formation resulted from a decision made in August 1979, during the Jerusalem Medical Physics Conference, by the Councils of both the International Organization for Medical Physics (IOMP) and the International Federation for Medical and Biological Engineering. Subsequently, IUPESM became an associate member of the International Council of Scientific Unions (ICSU). This Council is an international, non-governmental scientific organization composed of about eighteen autonomous international Scientific Unions and more than sixty National Members, i.e., academies of science, research councils, or similar scientific institutions.

The main purpose of the ICSU is "to encourage international scientific activity for the benefit of mankind." The primary means by which the ICSU fulfills this objective is to initiate, design, and coordinate international scientific research programs, as, for example, the International Geophysical Year and the International Biological Program. In addition, ICSU acts as a focus for the exchange of ideas, the communication of scientific information, and the development of standards in methodology, nomenclature, and units.

Medical physicists have an important role in international scientific programs, to which we will now be able to contribute more effectively than in the past through our association with IUPESM and ICSU. We plan to report on the activities of IUPESM and pertinent activities of the ICSU in future issues of Medical Physics World.

The International Union of Physical and Engineering Sciences In Medicine

STATUTES

1. Objectives

The aims of the International Union of Physical and Engineering Sciences in Medicine (IUPESM) are:

(a) To provide international liaison between physicists and engineers engaged in health care science and technology;
(b) To coordinate activities of mutual interest to medical engineers and medical physicists; e.g., international scientific conferences, seminars, working groups, and associated scientific and technical publications;
(c) To represent the professional interests and views of medical engineers and medical physicists in the international scientific community.

2. Functions

The IUPEM shall be empowered:

(a) To collaborate with other international scientific bodies;
(b) To establish commissions, working groups or other bodies for purposes within its mandate;
(c) To organize or coordinate international meetings or conferences;

Continued on page 10

Continued from page 9

(d) To serve as a constituent member of the International Council of Scientific Unions (ICSU) in accordance with the statutes of ICSU.

3. Membership

i. The Union comprises two Divisions: the International Federation for Medical and Biological Engineering and the International Organization for Medical Physics.

ii. Each of these two Divisions has its own statutes and those statutes complement the statutes of the Union.

iii. National Members may be associated with either Division or with both Divisions. In each country the adhering body shall be the National Academy, the National Research Council or similar institution, a scientific or engineering society or a group of such societies, or a body specially formed for the purpose of adherence to the Union. In each case a National Committee shall be formed and adherence to the Union shall be ratified when the membership of this Committee has been reported to, and recognized by the Council of the Union.

iv. National adhering bodies shall be required to pay an annual subscription to the Division(s) to which they adhere, as specified in Article 4,i.

v. Each National Committee shall appoint delegates to represent it at the General Assembly of the Division to which it adheres, and shall select a leader of its delegation who shall vote on behalf of his country at the General Assembly.

4. Representation and Subscriptions

i. There shall be three levels of annual subscription for National Members, the amount to be fixed by the General Assembly of each Division. The national body shall have the right to send one, two or three delegates to the General Assembly of the Division to which it adheres, depending upon the level of subscription chosen by the body. Subscriptions shall be paid to the Division(s) to which the national bodies adhere.

Since preparation of the enclosed Statutes we have received a comment from National Research Council of Canada suggesting Article 4, Item i should prob-

ably be within the domain of the Divisions, rather than in the statutes of the Union.

ii. Funds paid to the Union by its Divisions to finance any Union activity shall be approved by the General Assemblies of the Divisions on an agreed-upon formula.

iii. Funds transferred to its Divisions by the Union shall be distributed on a ratio agreed upon by the Council of the Union and ratified by the General Assemblies of the Divisions.

iv. Representation of the Divisions in the Council of the Union shall be in accordance with Article 5, ii to viii.

5. Administration of the Union

i. The Union shall be administered by a Council comprised of the president, vice-president, secretary-general and treasurer of each of the two Divisions.

ii. The Council shall designate one of the two presidents as President of the Union for a three-year term, and the president of the other Division as Vice-President of the Union for the same period. The presidency and vice-presidency should alternate between the two Divisions during successive terms.

iii. The Council shall designate the Secretary-General of one Division for a three-year term, after which the office shall normally revert to the other Division.

iv. The Council shall designate the Treasurer of one Division for a three-year term after which the office shall normally revert to the other Division.

v. Any variance from the procedure of Article 5, ii, iii and iv shall require the ratification of the General Assemblies of both Divisions.

vi. In the event that the President of the Union cannot perform his duties, he will be replaced by the Vice-President of the Union, and the vice-president of his Division shall become Vice-President of the Union.

vii. In the event that the Secretary-General of the Union cannot continue with his duties, he shall automatically be succeeded by the secretary-general of the other Division, unless Council decides that he shall be succeeded by his replacement in his own Division. The same principle shall apply in the case of the Treasurer.

viii. The Secretary-General and Treasurer shall be responsible for the operation of the secretariat and treasury of the Union, and its liaison with ICSU and UNESCO. In the absence of contrary instructions by Council, the Secretary-General shall represent the Union at the Executive Committee of ICSU.

6. Voting Rules

i. All decisions taken by Council require a majority vote for approval, including at least one vote from each Division.

ii. At a meeting of Council each member, including the chairman, may register his own vote. In addition the votes of absent members may be registered by proxy. Mail-in votes of absent members on specific disclosed issues shall be counted, but proxy votes for these members by other members will then be ineligible.

iii. The President may, with the approval of the Vice-President or the Secretary-

Continued on page 12

Continued from page 11

Generals of the two Divisions, arrange a postal vote on non-critical subjects.

7. Responsibilities

i. Council is responsible for the distribution of grant funds received from UNESCO through ICSU and various other grants awarded to the Union and for the control of their utilization.

ii. Each Division is responsible for funds allocated by the Union and must, at the end of each enterprise involving such funds, provide the Secretary-General with a financial accounting, for transmission to ICSU.

iii. Council also is responsible for submitting to ICSU an annual request for a grant for the whole of the Union.

iv. The presidents and secretary-generals must communicate to the Secretary-General of the Union complete information on the scientific activities of their respective Divisions, so that he may respond at any time to questions from UNESCO, ICSU or other international organizations with which the Union has association.

v. Each of the two Divisions shall have these specific financial requirements incorporated in its statutes.

8. General

i. These statutes can be altered only by approval of not less than two-thirds of votes cast at each of the two Divisions' General Assemblies.

ii. Proposals from national committees or other adhering bodies must be made to the secretary-general of the appropriate Division at least five months before the General Assembly at which they will be presented. The secretary-generals must inform all national committees and other adhering bodies of all topics to be reviewed, at least four months before each General Assembly.

iii. The Councils of the two Divisions shall draft the internal regulations of the Union to conform with these statutes, and clarify conflicting interpretations. Articles of regulation shall be voted upon by the General Assembly of the involved Division.

iv. The duration of the Union is indeterminate. Dissolution can be voted upon by a

combined General Assembly of both Divisions convened for that purpose. The resolution of dissolution shall be valid only when approved by ballot of not less than three quarters of the national committees and other adhering bodies. In the event of dissolution the property of the Union will be transferred to another international organization having objectives analogous to those of the Union.

v. In the event that a national committee or other adhering body shall resign from the Union, it shall have no rights to property of the Union.

International Commission on Radiation Units and Measurements

Harold O. Wyckoff

In 1925 the Committee that was later to become the International Commission on Radiation Units and Measurements (ICRU) was authorized by the First International Congress of Radiology. Its objective was "to study the question of measurement" for x rays. At the Second Congress (1928), the group recommended that the "quality of radiation" (x rays) be determined in terms of a unit—roentgen—based upon the ability of x rays to produce ions in air. The group's efforts during the next two decades was limited to consideration of measurement techniques and extension of this unit's applicability to higher energy photons. Such a limitation should not be surprising because the use of ionizing radiation in medicine was largely limited in a similar fashion during that period. A short report was published every three years between 1928 and 1937.

A change in the organizational structure of ICRU took place in 1950 with more stringent requirements for membership—a small governing body (Commission) and use of committees to develop drafts of reports. At that time the ICRU recommended a new radiation quantity—absorbed dose. The result of these actions and the availability of different types and larger sizes of sources produced a quantum jump in the Commission's activities and influence. The new quantity led to a broader scope because absorbed dose is useful for all types of radiation. Also, the various resulting subjects could be treated in detail by the experts on a subject and published as separate reports.

The enlarged program meant that financing requirements also increased. While some income results from report sales, a somewhat larger portion is received in long-term annual grants from scientific and technical organizations, states and communities. Such income defrays the cost of a small secretariat, the travel of participants in conjunction with the ICRU program and preparation of its reports for publication—members of the Commission and committees receive no salaries for their ICRU activities.

The breadth of the ICRU's interests can, perhaps, best be demonstrated by the titles and short summaries of reports that are to be released or have been released during the current year. *

ICRU Report 35, *Radiation Dosimetry: Electron Beams with Energies Between 1 and 50 MeV,* supersedes ICRU Report 21, *Radiation Dosimetry: Electrons with Initial Energies Between 1 and 50 MeV,* which was published in 1972. The Report explains how the concepts and definitions of quantities

Continued on page 14

Continued from page 13

established by the ICRU can be determined for electrons with initial energies between 1 and 50 MeV. The Report is primarily concerned with quantities and methods which are sufficiently well established to be useful in standardization, but where such do not exist, an attempt has been made to suggest some quantities and methods which may fill the gaps.

ICRU Report 36, *Microdosimetry*, represents an exposition of the concepts which relate some of the principal features of the absorption of ionizing radiation in matter to the size and, perhaps, the nature of the structure being affected, particularly for absorbed doses routinely encountered in radiation protection activities. The Report includes major sections on microdosimetric quantities and distributions, primary interactions of radiation with matter, particle tracks and energy depositions, experimental evaluation of microdosimetric spectra, calculation of microdosimetric spectra and their averages, phenomenological presentation of single and multiple event spectra, and employment of microdosimetric concepts and techniques.

ICRU Report 37, *Stopping Power for Electrons and Positrons*, represents the first result of a series of Commission efforts concerned with stopping power. Subsequent efforts will treat particles and ions heavier than electrons. Being the first of the series, Report 37 reviews topics which are pertinent to the evaluation of stopping powers for any charged particle, such as shell corrections and determination of mean excitation energies. In treating electrons, the Report focuses on topics which are pertinent, mainly or entirely, to electrons, including radiative stopping power due to the emission of bremsstrahlung, refined estimates of the density effect and the information on electron collision stopping power at energies below 10 keV. Stopping power tables are presented for a large number of elements and compounds covering the energy range from 10 keV to 1,000 keV. The tables also include the range and radiation yield. Throughout the Report, requirements for up-to-date stopping-power information and biomedical dosimetry are emphasized.

ICRU Report 38, *Dose and Volume Specifications for Reporting Intracavitary Therapy in Gynecology*, is the second of a series of reports on "dose specification for reporting"—ICRU Report 29 dealt with reporting for external beam therapy with photons and electrons. The present report indicates why

one cannot use the system recommended in ICRU Report 29 for intracavitary therapy. Also, with the current use of other than radium sources, it suggests a simple universal system that could be used as a replacement for the three systems developed for use with radium.

ICRU Report 39, *Determination of Dose Equivalents for External Radiation Sources,* is the first of a series of three reports dealing with the general topic. This one defines terms that will be useful in the determination of the dose equivalents recommended for radiation protection purposes by the International Commission on Radiological Protection (ICRP). It indicates how one can make measurements with instruments on the surface of the body, or in the environment, that give an adequate estimate of the effective dose equivalent and the dose equivalent to organs near the body's surface. Such determinations are necessary in order to apply the radiation protection system recommended by the ICRP.

It is expected that in the future an additional report will contain much more detail on the rationale for the recommendations in Report 39, along with a considerable volume of calculational data that will be useful for many applications. This is to be followed by a third volume dealing with instrumentation for making such measurements.

Prior to 1968, ICRU Reports were published in journals or by the U.S. National Bureau of Standards. Since that time, they have been published by the ICRU and about 100,000 copies have been distributed. This year's publications should substantially boost the number of distributed copies.

* *ICRU Reports may be purchased from ICRU Publications, 7910 Woodmont Avenue, Suite 1016, Bethesda, Maryland 20814.*

Report on the WHO Training Workshop on Quality Control and Assurance in Diagnostic Radiology, Oct. 27 - Nov. 3, 1982, Neuherberg, West Germany

A. Bäuml

As a WHO-Collaborating Center for Studies of the Efficacy and Efficiency of Diagnostic Applications of Radiation and Radionuclides, the Institute for Radiation Hygiene of the Federal Health Office (Federal Republic of Germany) organized a convention of experts in 1980 at which guidelines for quality assurance in diagnostic radiology were developed. The results are reported in a WHO publication (1).

The next step in the WHO's worldwide program of introducing quality assurance activities in diagnostic radiology was to place more emphasis on the practical aspects. For this purpose, a training workshop on quality control and assurance in diagnostic radiology, organized by WHO in collaboration with the Institute for Radiation Hygiene, was held in Neuherberg for demonstration and practice of available measurement techniques. The participants in this workshop came from the following countries:

Brazil	Italy
Bulgaria	Kenya
Egypt	Malaysia
Germany (Fed.Rep.)	Portugal
Greece	Romania
Hungary	Thailand
India	Turkey
Israel	Yugoslavia

The medical physicists and radiologists who attended had been selected by the health authorities of their respective countries. Travel and accommodation expenses were paid by WHO.

In his letter of invitation, Dr. Racoveanu (WHO) expressed his hope that, after the workshop, the participants selected would receive support from their health authorities to initiate and conduct quality assurance programs in the radiodiagnostic departments of their countries.

The training workshop in Neuherberg was considered to be a pilot program. It is hoped that similar events on a local level will follow in the various countries.

The program was designed to provide practical measurement techniques for monitoring of the technical equipment in a radiodiagnostic department, as shown in Table 1.

Table 1: WHO Training Workshop: Schedule of Events

WE	Oct. 27	Introductory lectures
TH	Oct. 28	Practical Exercises I:
FR	Oct. 29	X-ray generator & tube Image receptors Film processing
SA	Oct. 30	Informational visit to the radiology departments of 2 university clinics

Continued on page 16

Continued from page 15

SU	Oct. 31	Free
MO	Nov. 1	Practical Exercises II:
TU	Nov. 2	Radiographic equipment Fluoroscopic equipment Specialized equipment
WE	Nov. 3	Critical review of instruments and methods used in quality assurance

Only the first day was devoted to lectures; these were considered necessary for establishing a common basis of information for all participants. The lecturers were able to present the necessary information in such a way that even experienced participants could find something new and interesting. The lecturers and their topics are listed in Table 2.

Table 2: Introductory Lectures

Schoknecht:
Aims of quality assurance in medical care.

Racoveanu:
Quality assurance programs in diagnostic radiology: An important factor in improving health care.

Panzer:
How can image quality be described in terms of physics?

Stieve:
What is a "diagnostic-quality" image from the viewpoint of a radiologist?

Lang:
X-Ray machine parameters influencing image quality: Generator & tube.

Niepel:
Image receptors: Film-screen combination and image intensifiers.

Borcke:
Film processing.

The practical exercises were prepared and conducted by German medical physicists. Every participant received a copy of a workbook containing a short descripton of each exercise and forms in which the results of the measurements could be recorded. As can be seen from Table 1, the exercises were done in two sections. The general

aspects of the main components of any piece of x-ray equipment, as well as film processing, were considered in the first section. In the second, three general types of x-ray equipment were treated. It was the aim in these exercises that everyone should have the opportunity to test various measurement techniques. In the course of the exercises, some parameters (e.g., beam quality, kVp) were determined several times, but by different methods. The different measuring methods and tools were then compared with respect to accuracy and ease of execution. The exercises were carried out by groups of 6 participants. The groups were assisted by a tutor who had prepared the exercise.

The time allotted to each exercise was three and a half hours. Afterwards, in a round-table discussion, the exercises and general problems of quality assurance were discussed.

During this workshop, we had at our disposal practically every test tool that is commercially available. Some of the instruments had been loaned by commercial companies. For example, five different types of electronic kVp meters were on hand.

The valuable support from both the x-ray and film industries should be acknowleged. The exercises and demonstrations on film processing and optimal viewing conditions were carried out in the AGFA-GEVAERT training center in Munich. Two x-ray companies installed three additional x-ray units in our laboratories for use during this workshop.

One event of special importance and interest to our guests was an informational visit to the Radiology Departments of the two University Clinics in Munich. The local medical physicists had organized this program together with one of the senior radiologists. Participants were shown how quality assurance activities are carried out in practice and what the consequences are for better diagnoses.

The last day of the workshop was devoted to a critical review of instruments and methods used in quality assurance. It is very important to convince people that the most expensive and sophisticated instruments are not necessarily the best choice in every case. It is vital to find the proper balance between cost and accuracy and ease of handling.

The following conclusions may be drawn for future workshops:

— To be effective, the number of participants should be no more than 20. The exercises have to be done in small groups, so that every participant can be actively involved.

— Tutors who have prepared and who conduct the exercises must be available. They play a key role in such a workshop.

— It seems necessary that the participants be selected with respect to similarity of qualifications and experience. A homogeneous group will work together most effectively. It is nevertheless advisable to start with introductory lectures which provide a common background.

The introductory lectures together with the workbook for the practical exercises used in our workshop are published in the report series of the Institute for Radiation Hygiene of the Federal Health Office (2).

References: (1) Quality Assurance in Diagnostic Radiology. World Health Organization, Geneva, 1982.

(2) A. Bäuml (Editor). Quality Control and Assurance in Diagnostic Radiology. Materials prepared for a WHO training workshop, Neuherberg, Oct. 27 - Nov. 3, 1982. ISH No. 38, March 1984.

Model for Medical Physics Education and Training in the Federal Republic of Germany

A. Kaul and A.M. Schmitt

Neuherberg/München

In order to comply with the legal requirements in the Federal Republic of Germany (X-Ray Ordinance, Radiation Protection Ordinance, Guidelines for Radiation Protection in Medicine) for specially trained physicists, the physics faculty of the Free University of Berlin has developed a course of study for "Advanced Training in Medical Physics." The course of study has been incorporated in the program of the physics faculty on a trial basis. This program resulted from recommendations by the World Health Organization (WHO) and the International Atomic Energy Agency (IAEA), with consideration given to the principles formulated for special training by the German Society for Medical Physics (DGMP).

The post-graduate training model called "Medical Physics" was used for the development and testing of the curriculum for Advanced Studies in Medical Physics. Physics graduates already employed at hospitals were given the opportunity of improving their qualifications as responsible medical physicists through on-the-job training (which is also in the employer's interest), either during leave periods granted for educational advancement or during their free time. The training covers a total of 4 years.

The main object was the development of a curriculum and of appropriate rules for study and examinations. A syllabus was prepared on the basis of recommendations from WHO and IAEA, guidelines of DGMP for advanced training and specialty recognition of medical physicists, and consideration of the principles for advanced education and training applied in other European countries. The courses included in the syllabus comprise a total of 360 hours of instruction and are grouped in the following fields:

- Radiobiology
- Anatomy and Physiology
- Radiological Physics
- Medical Technology
- Radiation Protection and Industrial Safety

- Biomathematics and Information Science
- Medical Optics
- Medical Acoustics
- Biomaterials
- Hospital Facility Organization

The lectures scheduled for the Medical Physics post-graduate training began in May 1980. Of the total of 360 teaching hours, 285 were assigned to lectures and seminars and 75 to practical training.

In compliance with the regulations for study and examinations, the lectures are accompanied by oral examinations at the conclusion of each course listed in the syllabus. Toward the end of the training phase, a written and oral final examination is given in the following subjects:

- Biophysics of Ionizing Radiation
- Biophysics of Nonionizing Radiation
- Medical Physics in Diagnostic Radiology
- Medical Physics in Nuclear Medicine
- Medical Physics in Radiotherapy
- Medical Techniques
- Radiation Protection (ionizing and nonionizing radiation)
- Statistics, Information Science, Medical Computer Applications
- Medical Physics of Nonionizing Radiation.

Report on First Inter-American Meeting of Medical Physics

July 15-19, 1984, Chicago, U.S.A.

This highly successful meeting was organized by the American Association of Physicists in Medicine and sponsored by the I.O.M.P. Just the list of organizing committees is an impressive one, the important role of chairman of the Local Arrangements Committee being taken by our Vice President, Dr. Lawrence H. Lanzl.

The meeting went on for four days, starting with refresher courses at 8:00 A.M. and often ending with a social function in the evening. There were some 30 scientific sessions, and about 250 papers were presented orally or by poster. In fact, some of the more successful sessions were the organized poster sessions, with about 15 posters set out around a room so that one could wander around and chat with the authors. The subjects were so diverse that it is hardly possible to select typical ones, but there was everything from a number of papers comparing the various electron dosimetry protocols, and showing (moderate) agreement, to a horrendous description of the incident in Mexico when an old cobalt unit from the U.S.A. was stolen and dismantled somewhat crudely with the result that many of the 1mm diameter cobalt pellets were scattered around North America, where they were re-smelted into table legs and reinforcing rods in concrete houses. Five people received doses in excess of 50 rads, 70 more in excess of 5 rads; 4000 cubic meters of material had to be cleared from the site of a scrap yard for burial in the desert.

Some 900 scientific members attended the meeting, as did nearly 400 exhibitors for the accompanying excellent trade exhibition, and more than 100 spouses and children. More than 20 people came from South America, many having had their fare paid through the kindness of various commercial and private donors.

A Latin-American Medical Physics Association was formed at the meetings. It is hoped that this body may be able to affiliate with IOMP at the ICMP in Finland in 1985, and that further South American countries will perhaps be able to join IOMP at the same time. At present, only Brazil and Mexico are members.

One of the awards made at the Banquet, held in the splendid Field Museum with elephants and other creatures from the distant past looking on, was the Coolidge Award, presented to Professor Robley D. Evans, author of "The Atomic Nucleus" and the major early investigator of the radium dial painters and their possible treatment.

Brian Stedeford, Ph.D.
Secretary General, IOMP

The Hospital Physicists' Association (United Kingdom)

J. W. Haggith
Newcastle Upon Tyne, UK

1. Introduction

The Hospital Physicists' Association (HPA) celebrated its 40th birthday two years ago. The Association was formed at an inaugural meeting on 24th September 1943, and the founding members drew up rules which included stating that the aims of the HPS were:

Continued on page 20

Continued from page 19

i. to promote the advancement of physics applied to medicine and the biological sciences by providing opportunities for collective discussion and action on scientific matters;
ii. to discuss and if necessary act on appropriate professional matters.

These aims established that the Association was to be both a scientific institute and a professional association. The HPA has recently formalized this dual role by creating the Institute of Physical Sciences in Medicine.

Most of the founding members of the HPA were attached to radiotherapy departments, and their work was concerned mainly with radiation dosimetry and the biological effects of ionizing radiations. From these beginnings, the application of science to medicine has developed dramatically, and physical scientists are now contributing to almost every branch of medicine. This broad development is reflected in the membership of the Association, which has grown from 50 in 1943 to more than 1400 in 1983. The membership today is worldwide and includes within it physicists, engineers, mathematicians, physiologists, biologists, and computer scientists, all working in the medical field.

2. Organization and Structure of the Association

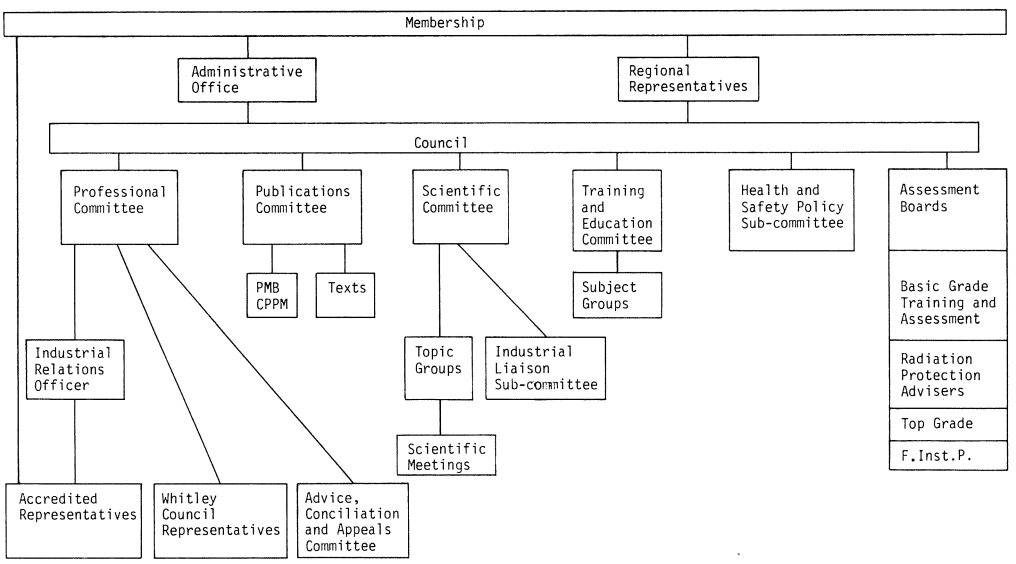
a) *Secretariat and Finance*

The HPA office is housed in the Institute of Physics headquarters in London. The links between the two organizations, while preserving the Association's independence, are of mutual benefit both in scientific and professional matters. In the charge of Mr. Derrick Field, the General Secretary, the office deals with correspondence and telephone inquiries, referring them as necessary to appropriate Honorary Officers and other members. It handles subscriptions and day-to-day financial matters, undertakes the sale and stock-keeping of the Association's publications, maintains and keeps up to date the membership data, and distributes minutes and other papers to committee members and Regional Representatives.

The General Secretary organizes a regular fortnightly distribution of information to the membership. This includes a Professional Broadsheet and a Placement Service which carries advertisements of vacant posts in medical physics and bioengineering in this country and abroad. Non-members can receive the Placement Service for a nominal charge.

The Association is financed mainly from members' subscriptions and the revenue from publications. Some income also accrues from scientific

The Hospital Physicists' Association



meetings and a commercial exhibition held at the Annual Conference. The Honorary Treasurer is responsible to the Council (see chart) for the financial affairs of the Association.

b) *Structure of the Association*

Over the years, a structure has been built up to facilitate the organization of the Association's affairs and communications within it. At any one time, close on 200 members hold office of some kind, the tenure being limited to either 2 or 3 years, ensuring that there are opportunities for new talents and enthusiasms to be exercised. This structure shows the degree of involvement of the membership which has always been a characteristic of the HPA.

The Council, Professional Committee, and Regional Representatives are elected by annual postal ballot.

c) *The Council and its Committees*

The Council coordinates the activities of the Association according to its rules and acts on instructions given by the memberhsip at the Annual Business Meeting, at Special Business Meetings, and by postal ballot. It is supported by its Standing Committees and by Sub-Committees which are set up from time to time.

The Council responds to official documents arising from government and other bodies, and, when appropriate, expresses the Association's views on topical matters. In this connection, it issues policy statements, particularly on the role of physical scientists in health care.

The Council also plans the progress of the Association. In doing so, it endeavors to be sensitive to the wishes of the members, preparing discussion documents and seeking approval for action at crucial stages. In this area of the Council's work, the annual Regional Representatives' Meeting is particularly valuable.

d) *Regional Representative System*

This system provides a further channel of communication between the Council and the member-

Continued on page 22

Continued from page 21

ship. For the purposes of the scheme, 25 geographical areas are defined covering the whole of the United Kingdom. Each year, the members of each region hold local ballots to elect two Representatives. The Regional Representatives receive the papers and minutes of the Council and its Standing Committees. They arrange regular meetings of the members in their region to discuss scientific and professional matters and to convey the consensus of their members on these matters to the Council.

In the spring of each year, a Regional Representatives' meeting is held which allows the Representatives to discuss important business matters with the Honorary Officers of the Association.

3. Grades of Membership

There are four grades of membership within the Association:

Honorary Membership: Conferred on men and women who have made outstanding contributions in the field of medical physics or in a related subject.

Ordinary Membership: Open to those who hold a university degree in physical science, or an equivalent qualification, and who are working in physical science applied to medicine or related biological sciences in hospitals, universities, Medical Research Council establishments, or similar bodies. An Ordinary Member may retain Ordinary Membership at a reduced subscription rate on retirement.

Associate Membership: For those who are ineligible for Ordinary Membership and whose interests lie in the field of physics applied to medicine or related biological sciences. Associates are entitled to attend all scientific meetings of the Association, to receive the HPA Bulletin and all routine circulations, and to receive all concessionary rates for the Association's publications. They are not eligible for membership in the Council or its Standing Committees, but can be appointed to Sub-Committees and topic groups.

Student Membership: Open to undergraduate or postgraduate students interested in physics applied to medicine or related biological sciences.

4. Activities of the Association

a) *Professional Activities*

Prior to the formation of the Association, there was no recognized system of grading or salary scales for hospital physicists, and in many cases difficulties and anomalies resulted. One of the tasks of the newly formed Association was therefore to draw up a considered scheme of grading and a scale of salaries. This was done, and the proposals were accepted by the employing authorities. With the introduction of the National Health Service in 1948, the Association was recognized as an official negotiating body. Since that time, the HPA representatives have negotiated improvement in the salary scales, conditions of service, and the system of grading for physicists. In 1977, in order to maintain its independent position of representing the profession in national and local negotiations, the HPA registered as a trade union.

All of the professional activities, which include many subjects other than salaries and conditions of employment, are considered and action is taken by the Professional Committee. Its Advice Conciliation and Appeals Committee gives assistance to individual members with particular professional problems.

The Association has made arrangements for public liability insurance coverage for its members at a very reasonable premium. This policy provides coverage in respect to a liability arising from a member's normal professional duties.

b) *Scientific Activities*

The Scientific Committee is responsible to the Council for coordinating the Association's scientific activities. It reviews current scientific work, encourages new developments and collaborative efforts, plans and organizes scientific meetings, collects and assesses data, prepares reports, and brings matters of scientific and general importance to the notice of the Council.

The Scientific Committee achieves this through a system of topic groups. These groups cover among them the major interests of the members, and they can be modified as the emphasis of the scientific work of the Association changes.

At present there are eight topic groups:

Clinical Engineering and
General Medical Physics
Radiotherapy Physics
Diagnostic Radiology
Physiological Measurement
Radiation Protection
Radionuclides

Computers

Ultrasonics.

Each group consists of about five people with wide experience in their subject, and each member is appointed for a three-year period. The topic groups concern themselves with the whole of their subject, and they bring any appropriate matter to the attention of the Scientific Committee, including proposals for meetings and publications. Their chairmen sit on the Scientific Committee and report to it.

An Industrial Liaison group has recently been set up to foster the relationship between the Association and the manufacturers of medical equipment.

The Scientific Committee also has a liaison with special-interest groups outside the HPA, such as SCRAP (Society for Computerised Radiotherapy Planning), the Nuclear Medicine Computer Users' Group, and the Computerised Axial Tomography Users' Group.

The Association has representatives on many of the expert panels of the British Standards Institution and the International Electrotechnical Commission. It also responds to requests for nominations to Advisory Committees and Working Parties of the Health Department within the UK.

c) *Meetings*

The numerous scientific meetings which are organized by the Association range from half-day workshops on specialized subjects to three-day meetings such as the Annual Computer Conference. Many are held in conjunction with other scientific and medical bodies.

The Annual Conference of the Association is held at a different centre each year, usually outside London. It includes the Annual General Meeting, the Annual Professional Group Meeting, and two days of scientific sessions.

d) *Lectures and Awards*

The *Douglas Lea Lecture* is given biennially at the Annual Conference. It was established in 1948 and commemorates the pioneer radiobiologist Dr. Douglas Lea, who was a founding member of the Association. The subject of the lecture is in the field of physics applied to biology and is usually

Continued on page 24

Continued from page 23
concerned with the actions of radiation on living cells.

The *Association Lecture,* established in 1978, is also given biennially at the Annual Conference, alternating with the Douglas Lea Lecture. This lecture provides a platform for a broad range of subjects not specifically related to ionizing radiation.

These lectures are given by acknowledged experts in their fields and are open to the public.

Three prizes are awarded by the Association each year and are presented at the Annual Conference.

The *Founders Prize* is awarded for distinction in the practice of physics in relation to medicine and is intended to offer encouragement to younger members of the profession.

The *Manufacturers' Award* recognizes significant contributions to the successful introduction of new technology in the field of physics and engineering applied to clinical practice.

The *HPA/Wisconsin Award* is a travel scholarship financed jointly by the HPA and Radiation Measurements Incorporated (RMI), Wisconsin, USA. It enables a member of the Association to visit centres in the USA to benefit from discussion of his or her own work and to present seminars.

e) *Publishing Activities*

A major activity of the Association is publishing. This has grown from the Diagrams and Data Scheme which was set up in the early days of the Association to make available radium data, X-ray isodose charts, and "any of those tables which we concoct for our own use but which would save others much work." The Scheme was eventually taken over by the IAEA as a basis for its *Radiation Dosimetry Data* catalogue.

The Publications Committee coordinates and develops the various publishing activities. One of its major contributions has been the introduction of the HPA booklet series of Topic Group reports, Scientific reports, and Conference reports. A series of Medical Physics Handbooks was launched in 1980 in collaboration with the Institute of Physics. Twelve have already appeared, written by members of the HPA.

Physics in Medicine and Biology, which was launched in 1956, is a source of pride to the Association. Over the last few years, which have been difficult ones for scientific journals, PMB has maintained its circulation of about 2,600. This number is divided almost equally among North America, Europe, the UK, and the rest of the world. Published in association with the American Association of Physicists in Medicine and the American Institute of Physics, it is an official journal for the Medical and Biological Physics Division of the Canadian Association of Physicists, the Deutsche Gesellschaft für Medizinische Physik, the Japanese Association of Radiological Physicists, the European Federation of Organizations for Medical Physics (EFOMP), and the International Organization for Medical Physics.

The second journal, Clinical Physics and Physiological Measurement (CPPM), began publication in 1980. It caters to applications of instrumentation and physiological measurement. The editorial board has clinical and scientific members and two Honorary Editors, one a clinician and the other a physicist, to ensure a journal which will publicize effective clinical applications of physical techniques. It is an official journal of the Deutsche Gesellschaft für Medizinische Physik and EFOMP.

The HPA's scientific publications are produced with a view to keeping the membership and other interested people informed on developments in medical physics. Complementing these are the quarterly Bulletin which is a rich source of useful information, gossip, and correspondence, the Health and Safety Broadsheet, and the fortnightly Professional Committee Newssheet. Together, they keep the 1400 members well informed and undoubtedly contribute to the liveliness and sense of involvement of the membership.

f) *Education and Training*

The Education and Training Committee is concerned with qualifications and training for physical scientists in medicine, and with the setting and monitoring of standards and ways of meeting them. A substantial part of its efforts is devoted to organizing the Basic Grade Training Scheme for new entrants into the profession. The Scheme, which was introduced in 1981, is now in full swing and ensures that those young physicists who register for it receive substantial and organized training for four years, including regular assessment of their progress. Details of the scheme are set out in a booklet that is available from the HPA office.

g) *International Activities*

The HPA traditionally has fostered medical phys-

ics in other parts of the world, and overseas physicists account for one quarter of the total membership. It has an active Overseas Support Group and, over many years, has collaborated with the International Atomic Energy Agency, the British Council, and other such organizations in training physicists overseas. It played a leading role in establishing the IOMP and, more recently, the EFOMP.

5. The History of the Hospital Physicists' Association

The full story of the HPA and its development over 40 years is described in the recently published "History of the Hospital Physicists' Association 1943-1983," edited by J. W. Haggith. In the first part of the book, Professors Val Mayneord, John Lenihan, Harold Miller, Stewart Orr, Bill Spiers, and Eric Roberts, Dr. Jack Meredith, John Haggith, and Raymond Wood contributed articles which interlock to provide a colorful account of the events leading to the formation of the HPA and the tribulations and triumphs, the conflicts and compromises that, over the years, have shaped this vigorous Association. The second part contains detailed biographies of founding members and past presidents. It reveals fascinating facts

Continued on page 26

Continued from page 25
about some famous people, including those familiar names associated with the Farmer dosemeter, the Mayneord lecture, the Gray, the Szilard-Chalmers reaction, and most of the well-known radiological physics textbooks.

Copies of the book can be obtained from the Hospital Physicists' Association, 47 Belgrave Square, London SW1 8OX, UK (hardback £15, softback £12).

Current HPA Publications

Available from HPA. Forty Seven Belgrave Square, London SW1X 80X, UK.

Diagnostic Radiology

TGR 32 Measurements of the Performance Characteristics of Diagnostic X-ray Systems used in Medicine
- Part I: X-ray Tubes and Generators £ 6
- Part II: Image Intensifier/TV Systems £ 6
- Part III: Computed Tomography X-ray Scanners £10
- Part IV: Film/Screens Autoprocessors £ 8
- Part V: Conventional Tomographic Equipment £ 6
- Part VI: X-ray Image Intensifier Fluorography System £ 6
- Binder for all parts of TGR 32 £3.50

CRS 29 Quality Assurance Measurements in Diagnostic Radiology £ 4

SRS 30 Catalogue of Spectral Data for Diagnostic X-rays £10

SRS 6 The Physics of Radiodiagnosis £ 4

SRS 20 Phantom Materials for Photons and Electrons £ 2

CRS 40 Dosimetry in Diagnostic Radiology £ 9

IPSM 1 Digital Radiology-Physical and Clinical Aspects £16

Ultrasound

SRS 10 A Guide to Medical Ultrasonics and Acoustics £ 2

TGR 23 Methods in Monitoring Ultrasonic Scanning Equipment £ 5

Radiation Protection

CRS 34 Practical Radiation Protection Dosimetry £4.50

CRS 36 Practical Aspects of Non-ionising Radiation Protection £ 7

CRS 40 Dosimetry in Diagnostic Radiology £ 9

TGR 39 Radiation Protection Procedures in the Use of $^{99}Tc^{m}$ £2.50

TGR 41 Notes of Building Materials and References on Shielding Data for Use below 300 kVp £2.50

Nuclear Medicine

SRS 16 The Hospital Preparation of Radiopharmaceuticals £ 3

TGR 27 The Theory, Specification and Testing of Anger Type Gamma Cameras £ 4

TGR 33 An Introduction to Automatic Radioactive Sample Counters £4.50

CRS 38 Quality Assurance of Nuclear Medicine Instrumentation £ 12

General Medical Physics

CRS 28 Ultraviolet Radiation and its Medical Applications £ 5

CRS 31 Fibre Optics and Endoscopy £ 6

CRS 35 Physics in Physiotherapy £4.50

TGR 37 Safe Design and Construction of Electromedical Equipment £ 6

A Directory of Audio-Visual Aids in Medical Physics and Clinical Engineering £2.50

History of the Hospital Physicists' Association 1943-1983
Hardback (£15) Softback (£12)

All members of the IOMP, EFOMP, and HPA are entitled to a 30% discount on all of the above publications with the exception of the "History of the Hospital Physicists' Association."

SSDL – Bolivia – Experiences of an IAEA Expert

Brian Stedeford, Ph.D.

Last year I was privileged to spend three months in Bolivia as a technical expert for the International Atomic Energy Agency. The project was to assist in setting up the Secondary Standard Dosimetry Laboratory (SSDL) at La Paz. This beautiful city is at an altitude of three and a half thousand metres — incidentally necessitating a pressure correction

factor of about 1.5 to dosemeters.

The laboratory itself was part of the Comision Boliviana de Energia Nuclear, renamed the Instituto Boliviano de Ciencia y Technologia Nuclear while I was there. This caused a certain amount of confusion since it had not been cleared with the government authorities beforehand, so that there was delay in obtaining travel funds for local staff to accompany me when visiting radiotherapy centres outside La Paz.

There were no irradiation facilities for checking dosemeters apart from some calibration sources, while the dosemeters were mostly supplied from the IAEA, currency and import restrictions making them almost impossible to obtain otherwise. Indeed it was difficult to obtain almost any laboratory equipment for the same reason. Things like a recorder to plot TLD glow curves and even connecting leads had to be borrowed from the University Laboratories. Despite these handicaps, the laboratory had functioned well for a number of years for supervision of radiological protection, although doses recorded by radiologists were often very high, due to lack of both film and image intensifiers, so that direct viewing was common practice. There are no hospital physicists in Bolivia and no one experienced in radiotherapy dosimetry had ever spent more than a few days in the country before. Therefore I concentrated on this aspect during my visit. In theory my job was to set up facilities for calibrating dosemeters from the hospitals in Bolivia at the laboratory. Since there were no calibrating facilities at the laboratory, it was necessary to take the Secondary Standard dosemeter to the radiotherapy centres. Of the four centres, La Paz, Sucre, Cochabamba and Santa Cruz, only two in fact had their own dosemeters, so in the other two centres it was only possible to calibrate their own equipment, this mostly for the first time since the equipment was installed. Facilities available often made the calibration arrangements fairly primitive. Equipment is not normally earthed in Bolivian hospitals, and to avoid zero drift on the dosemeter earths had to be improvised from water pipes, or in one situation a special earth rod.

All four centres had AECL cobalt units which were generally in good condition. It was possible to give advice on some maintenance problems though in one case an allen screw was missing from a source skin distance indicator and could not be replaced. I had to wedge the lamp housing with a piece of metal. For only one cobalt unit was the calibration accurate; this centre had a Farmer dosemeter with an NPL calibration, and a physicist from Brazil had previously calibrated the machine with it. The other units had calibration errors of between 2 and 6 per cent. Their figures were based on the original data from AECL but misinterpreted.

Seven other X-ray units, orthovoltage and superficial, were located in Bolivia. All were inspected, but it was not possible to calibrate the outputs of two units due to shortage of time and industrial action. Strikes were fairly frequent and really were lightning. We failed to get into hospitals on several occasions, or only did so by devious means. Of three Siemens Dermopan units two had reasonably accurate calibrations based on manufacturer's data, but that for one was allegedly based on radiobiological effect and had large and variable errors. I had to extrapolate the dosemeter calibration factor due to the low energy, but decided it was better than leaving them with what they had. The other two X-ray units had output tables which were in error by about 30%. In one case it appeared that no allowance had been made for backscatter, or for the large pressure effect. The error for the other machine I was unable to explain. It was not possible to obtain any information on patient reactions. Three centres had radium using direct loading, and one centre caesium, using afterloading. A significant fraction of the radium, which was 20 years old and almost certainly singly-loaded, was found to be leaking and was withdrawn from service. The withdrawal of all the singly-loaded radium as soon as practicable was advised, and its replacement by afterloading caesium source trains.

Radium decay products were found on one of the benches, but no evidence of contamination from the parent radium. All centres were enthusiastic about using lead coats to dispense radium, but at one centre the applicators were held in the hand while being loaded, my efforts to discourage both practices being unsuccessful. (There was great reluctance, however, to use lead coats for X-ray examinations.)

Two of the centres had actually got the activities of the sources muddled, nor did they know how many sources they had. Only one had a monitor, but that seemed to be kept mostly in the doctor's office. At that centre a radium source was found in a non-shielded drawer in the radium room, in an old rubber catheter, and its position had to be identified by radiography. *Continued on page 28*

Continued from page 27

Some instruction was given to the laboratory staff in radiotherapy dosimetry, but time and opportunity did not allow for this to be very thorough, and it was thought best to concentrate on leaving calibration data at the radiotherapy centres. Further assistance is certainly needed, preferably by at least one member of the laboratory staff receiving training outside Bolivia.

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