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# Introduction

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The suggestion to undertake a history of the first 40 years of our organization recalled the celebration of the Fortieth Anniversary of the Hospital Physicists' Association in Newcastle-upon-Tyne in 1983. With respect to an inquiry as to their choice of 40 years, the somewhat pragmatic observation was made that this allowed most of the pioneers of the organization to be present! In fact, most of them were present, and an excellent history was published on that occasion.<sup>1</sup>

Physicists had already, during the preceding centuries, made significant contributions to medical diagnosis and treatment. Even the term "medical physics" had been employed by Neil Arnott in his book published in 1828,<sup>2</sup> and A. Fick had entitled his book *Medical Physics* in 1856.<sup>3</sup>

In the latter half of the nineteenth century the phenomena associated with electrical discharge in glass-walled tubes operated with relatively low gaseous pressures were studied by several physicists. In Britain, William Crookes, J. J. Thomson, and others were active in analysis of the phenomena of the discharge in tubes of different designs. Investigators in Germany included Lenard, Hittorf, and, in 1895, Wilhelm Conrad Roentgen, with his revolutionary discovery of x rays together with his initial description of their attenuation properties in specific materials.<sup>4</sup> Such studies were in sufficient number to warrant the commercial supply of discharge tubes of different designs by several manufacturers.

Following the discoveries of x rays, ra-

dioactivity, electrons, and gamma rays in the last few years of the nineteenth century, research on their nature continued dramatically with increasing attention from a growing number of physicists. Most of the discoveries that have initiated our field could be classified under such terms as "radiation physics" and "nuclear physics" and have been well described in many texts, exemplified in the review by E. Segre in *From X-Rays To Quarks*.<sup>5</sup> Detailed reviews of the life and major contributions of early radiation researchers have been carefully researched by Del Regato and published in his books and articles<sup>6-8</sup> and in the pages of *Medical Physics* and other radiation publications.<sup>9-11</sup>

In addition, significant reviews were prepared for the November 1995 Radiology Centennial and published in journals at that time. An insightful article was prepared by Rossi and Kellerer on "Roentgen" and published in the November 1995 issue of *Radiation Research*.<sup>12</sup> Four essays on major creators of our scientific origin were prepared for and published in the November 1995 issue of *Medical Physics*.<sup>13-16</sup> In particular, the background in German science relevant to Roentgen's approach was illuminated in the essay by Ulf Rosenow of the University of Göttingen in his "Notes on the legacy of the Roentgen rays." He also commented on the complications due to the current concept of a surrounding ether and on Roentgen's emphasis on experiment rather than theory; Jean and Andrée Dutreix brought out the adherence to

logic, which brought Becquerel to his discovery of radioactivity and also aroused such public interest in science in France as to insure more public participation and support of a field of endeavor in which entry had been ordinarily limited; Jean Chavaudra provided an interesting account of the families, life, and background of both Marie Sklodowska and Pierre Curie, the major problems they faced, and the unique equipment they utilized together with the skills they developed; and Montague Cohen and Nigel Trott collaborated on an account of the continuing search for characterization of the new radiations, the discovery of artificially produced radioactivity, and the development of accelerators for nuclear physics studies.

**Organization of this History.** Following the Preface, the Introduction contains a brief commentary on the origins of the science of radiation physics with specific references. The prior development elsewhere of organizations of physicists in medical institutions has been described in the section: Early Organizations of Medical Physicists. This section describes the formation of the HPA in the United Kingdom, which had served as a model for some of our founders. Visits by European physicists, particularly of Professor W. V. Mayneord of London, and others from France and Germany, were informative and influential. Details of the formation of the AAPM and events in its continuing development are provided in the section, Formation and Activities of the AAPM, on a year-by-year basis. The section labeled Specific Topics describes some of the creations and activities of the AAPM, which are better described in a specific essay, rather than contained in annual segments. A final section on Tables of AAPM Data

provides lists of Officers, of Awardees of the AAPM, and other statistical information.

## ACKNOWLEDGMENTS

Many different sources of information have been involved in the collection of information for this History. Videotapes of the former presidents, obtained in interviews by Bob Gorson, have been invaluable and Bob has been very helpful on other aspects, as well. All of the *Quarterly Bulletins* and *Newsletters* have been read, and most of these have been made available by our Headquarters staff. A large number of published articles specific to events in our history have been located and read. Early in 1997 each of the former presidents was asked to contribute information on events during their terms, information on their own background and research interests, and also their opinions on problems and opportunities for the AAPM. Their responses are much appreciated. Naturally, there is some unevenness in the amount of material to be described from year to year with the variations in events in the activities of the AAPM, as well as in the differing individual approaches of officers during our Association's continuing development.

Both Peter Sells and Alan Jennings provided timely assistance on aspects of the HPA experience, which had an influence on our development. The influence of Professor Mayneord's interest in physics developments in the U.S.A. has also been noted. The close interaction with many of our Canadian colleagues has been stimulating and helpful. Certainly they have contributed strongly to our Journal in all cat-

egories of effort, as members of our Editorial Board, as authors and as referees. Particularly, Harold Johns was an early contributor to AAPM medical physics activities.

Photography for the AAPM by Joe Sayeg and Jerry Dare and their help on photos has been essential to the pictorial record. Their persistence and resourcefulness in cataloguing and identifying photos has been outstanding. The AAPM Headquarters staff provided us with copies of their portraits of the former presidents and have been very helpful on many occasions, provision of photographs from other sources, such as Gammex, is appreciated. The writing and computer processing has been done at home, but Louise Shirodkar and assistants of the Medical Physics Departmental secretarial staff have provided expert assistance on specific operations.

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## LIST OF ACRONYMS

AAPM	American Association of Physicists in Medicine	ABR	American Board of Radiology
ABMP	American Board of Medical Physics	ACMP	American College of Medical Physics
		ACR	American College of Radiology
		ASTRO	American Society of Therapeutic Radiology and Oncology
		CAMPEP	Commission on Accreditation of Medical Physics Educational Programs, Inc.
		CRP's	Centers for Radiological Physics
		EXCOM	Executive Committee of the AAPM
		FDA	Food and Drug Administration
		HCFA	Health Care Finance Administration
		HPA	Hospital Physicians' Association (U.K.)
		ICRU	International Commission on Radiological Units and Measurements
		IOMP	International Organization for Medical Physics
		JCAHO	Joint Commission on Accreditation of Healthcare Organizations
		MP	<i>Medical Physics</i>
		MSK	Memorial Sloan–Kettering
		MSQA	Mammography Quality Assurance Act
		NCI	National Cancer Institute
		NCRP	National Council on Radiation Protection and Measurements
		NHS	National Health Service (U.K.)
		NIH	National Institutes of Health
		NRC	Nuclear Regulatory Commission
		PMB	<i>Physics in Medicine and Biology</i>
		RAMPS	Radiological and Medical Physics Society of New York
		RAPHEX	Radiological Physics Exam
		RPC	Radiological Physics Center
		RSNA	Radiological Society of North America
		SCRAD	Scientific Committee on Radiation Dosimetry
		USPHS	United States Public Health Service