

LETTERS

to the EDITOR

Units of Radioactivity

Sir:

In November, 1947 a joint committee of the Divisions of Chemistry and Chemical Technology and of Mathematical and Physical Sciences of the National Research Council was appointed to make recommendations regarding standards and units of radioactivity. This committee unanimously adopted the recommendations quoted below. The committee would like to point out that these recommendations effectively divorce the curie from the disintegration rate of radium by assigning to the former an arbitrary magnitude (3.7×10^{10} dis/sec) approximately equal to the disintegration rate of radium. This arbitrary figure is therefore not influenced by any future revisions of the generally accepted disintegration rate of radium. This recommendation has been submitted to the Joint Commission on Standards, Units, and Constants of Radioactivity of the International Unions of Chemistry and Physics for the purpose of obtaining international agreement.

This changes, slightly, the meaning of the curie when applied to radium. For example 1 curie of radon is no longer, on the basis of these recommendations, the amount in equilibrium with 1 gram of radium, but is the amount undergoing 3.7×10^{10} disintegrations per second. Similarly, 1 mg and 1 mc of radium are no longer rigorously synonymous. This distinction has a number of precedents in physics; for example the international ampere, now abolished, was not quite equal to the absolute ampere and the angstrom unit is nearly, but not quite, equal to 1000 x-units.

"curie: The curie should be defined as that quantity of any radioactive species (radioisotope) undergoing exactly 3.700×10^{10} disintegrations per second.

"rutherford: The rutherford should be defined as that quantity of any radioactive species (radioisotope) undergoing 10^6 disintegrations per second.

"rhm: For the quantitative comparison of radioactive sources emitting gamma rays, for which disintegration rates cannot be determined, the *roentgen per hour* at

Continued on page 39

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C.22	5.5	184	2.8	0.44
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C.33	4.8	220	2.4	0.64
C.44	4.1	252	2.1	1.03

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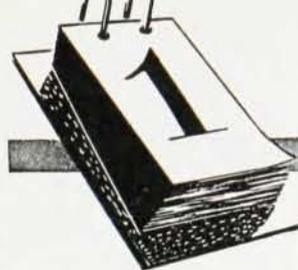
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CALENDAR

of EVENTS

LETTERS *Continued from page 5*

one meter (rhm) is recommended. This is not essentially a new unit since all units involved are well established, explicitly defined, and are in common usage."

The recommendation of this latter unit is a practical step to insure that, by its use, gamma ray measurements are so made with instruments and under such conditions that measurements on a given isotope (nuclear species) made in any laboratory will be directly comparable with similar measurements made in other laboratories. This will result, if the procedures used comply with the definition of the unit; that is, a source is 1 rhm if it produces 1 roentgen per hour at a distance of 1 meter.

L. F. CURTISS, Chairman
R. D. EVANS
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Washington, D. C.

Mecca Mistake

Sir:

I note on page 22 of the November issue of your valued magazine an illustration captioned "Zeeman patterns for columbium at 95,000 oersteds," credited to the National Bureau of Standards. This appears to be either a serious misidentification on the part of your Zeeman effect expert, or a deliberate attempt to palm off on the public the work of one old master as that of another.

The inference to be taken from the caption is that this is a genuine Meggers. That this cannot be the case is obvious to anyone familiar with the middle, or neo-classical period, of that great spectroscopist, and this patent misidentification is as unforgivable as to assign an obvious Stradivarius to the Guarnerius school. Meggers is known to have designated his fields in gaussses rather than oersteds; as an expert in standard nomenclature he would have called the material by its correct name "niobium" instead of "columbium"; and he is known to have restricted his work to magnets with iron cores, whereas the magnetic dispersion of this masterpiece is obviously produced by a nonferrous Bitter.

The veriest tyro should have no difficulty in seeing that this picture stems from an entirely different school; it bears all the marks of an authentic Harrison. Though that worker is known to have operated a slave school, using vast throngs of hack workers to carry his work up to the point where a few expert finishing touches would complete the commission, we can be certain that he is responsible for the delicate nuances of shading in the patterns, and for the unmistakably characteristic perturbations in intensity distribution.

I trust, Mr. Editor, that such obvious misrepresentations will not appear frequently in your columns.

Z. Manny Fечet

Cambridge, Massachusetts

Professor Fечet, whose expertness in identifying spectra is well known, is right. Our illustration, a genuine Harrison, was attributed to the wrong old master.

January 3-6	American Meteorological Society (30th Anniversary Meeting), St. Louis, Missouri
January 9-13	Society of Automotive Engineers (Annual Meeting), Detroit, Michigan
January 10	Society for Applied Spectroscopy, New York City
January 11-13	National Society of Plastics Engineers, Cleveland,
January 18-20	American Society of Civil Engineers (Annual Meeting), New York City
January 23-26	Institute of Aeronautical Sciences (Annual Meeting), New York City
January 23-26	American Society of Heating and Ventilating Engineers, Dallas, Texas
January 30-February 3	American Institute of Electrical Engineers (Winter Meeting), New York City
January 31-February 1	Division of Electron Physics of American Physical Society and the Panel on Electron Tubes of the Research and Development Board of the Department of Defense, New York City
February 2-4	American Association of Physics Teachers, New York City
February 2-4	American Physical Society (Winter Meeting), New York City
February 3-4	American Geophysical Union (Regional Meeting), Davis, California
February 7	Society for Applied Spectroscopy, New York City
February 10	American Institute of Mining and Metallurgical Engineers, St. Louis, Missouri
February 10-16	American Institute of Mining and Metallurgical Engineers, New York City
February 15-17	Conference on Analytical Chemistry and Applied Spectroscopy (jointly sponsored by the American Chemical Society and the Spectrographic Society of Pittsburgh), Pittsburgh, Pennsylvania
February 20-23	Technical Association of the Pulp and Paper Industry (Annual Meeting), New York City
February 24-25	American Mathematical Society, East Lansing, Michigan
February 25	American Mathematical Society, New York City
February 26-March 1	American Institute of Chemical Engineers, Houston, Texas
February 27-March 3	American Society for Testing Materials, Pittsburgh, Pennsylvania
March 7	Society for Applied Spectroscopy, New York City
March 8	Inter-Society Color Council, New York City
March 9-11	Optical Society of America, New York City
March 16-18	American Physical Society, Oak Ridge, Tennessee
March 17	Physics Club of Philadelphia, Philadelphia, Penn.
March 24	Institute of Aeronautical Sciences (Annual Flight Propulsion Meeting), Cleveland, Ohio
March 26-30	American Chemical Society, Houston, Texas
April 1	American Physical Society (New York State Section), Buffalo, New York
April 4	Society for Applied Spectroscopy, New York City
April 9-13	American Chemical Society, Philadelphia, Penn.
April 16-20	American Chemical Society, Detroit, Michigan
April 20-22	American Philosophical Society, Philadelphia, Penn.
April 21-22	American Mathematical Society, Oak Ridge, Tenn.
April 23-26	American Ceramic Society, New York City
April 24-26	National Academy of Sciences, Washington, D. C.
April 26-29	American Society of Civil Engineers, Los Angeles, California
April 27-29	American Physical Society, Washington, D. C.
April 28-29	American Mathematical Society, Washington, D. C.
April 28-29	American Mathematical Society, Chicago, Illinois
April 28-29	American Mathematical Society, Berkeley, Cal.
April 29	Institute of Radio Engineers, Cincinnati, Ohio
May 1-3	American Geophysical Union (Annual Meeting), Washington, D. C.
May 2	Society for Applied Spectroscopy, New York City
May 26-27	Society for Applied Spectroscopy (Annual Meeting), New York City
May 28-31	American Institute of Chemical Engineers, Swampscott, Massachusetts
May 29-30	Technical Association of the Pulp and Paper Industry (Fundamental Research Conference), Quebec City, Canada