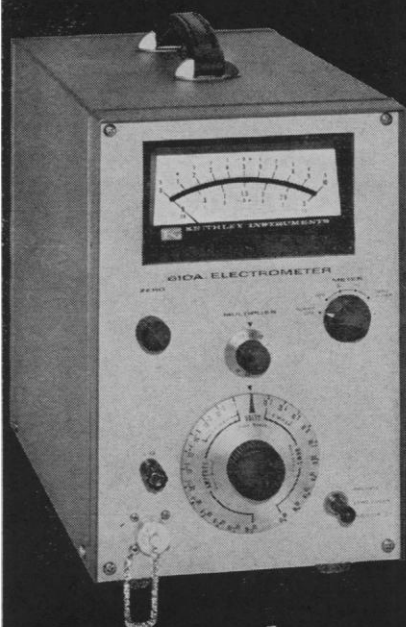


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in several phenomena. The flux filaments postulated in the electromagnetic structure of type-II superconductors are thought to contain one flux quantum each. However, as noted earlier, these filaments have not been detected by any method that could be considered reasonably direct. Also, it is believed that flux filaments are the unit of electromagnetic structure when a magnetic field is applied perpendicular to the plane of a thin superconducting film, even though the film is of type-I material.

Just as for bulk type-II materials, the flux-filament model leads to correct predictions of the properties of films, such as the upper critical field and its angular dependence. These results inspired an attempt to get more direct evidence for the existence of quantized flux filaments. The resistance of a thin film was measured as a function of magnetic field perpendicular to the plane of the film, the film being so narrow (~ 1 micron) that its physical dimension would determine the size of the flux filament. It was argued that minima in the resistance measurements should occur at values of the magnetic field that would make one flux quantum thread an area determined by the width of the film; minima were seen at about the expected values of H .

The cylinders in which flux quantization may be observed are a few microns in diameter; persistent currents are observed in samples as large as several centimeters. Thus a form of order, the phase coherence of the superconducting wave function, persists over distances much longer than the coherence length mentioned earlier. This long-range order was discussed at length, the fundamental question being its universality. Long-range order and thus flux quantization exist in some materials. Do they in all? In one preliminary experiment with vanadium cylinders there seemed to be no flux quantization.

The conference, attended by 350 scientists from 11 countries, was sponsored by the International Union of Pure and Applied Physics, the National Science Foundation, the Advanced Research Projects Agency, and the General Electric Research Laboratory. The conference proceedings are to be published in the January 1964 issue of *Reviews of Modern Physics*.

HOWARD R. HART, JR.

ROLAND W. SCHMITT

General Electric Research

Laboratory, Schenectady, New York

Forthcoming Events

January

20-22. American Inst. of Aeronautics and Astronautics, aerospace sciences meeting, New York, N.Y. (R. R. Dexter, AIAA, 2 E. 64 St., New York 21)

20-23. Cardiovascular Drug Therapy. symp., Philadelphia, Pa. (S. Rosen, Dept. of Medicine, Hahnemann Medical College and Hospital, 230 N. Broad St., Philadelphia 2)

20-24. American Mathematical Soc., Miami, Fla. (AMS, 190 Hope St., Providence 6, R.I.)

20-24. Australian and New Zealand Assoc. for the Advancement of Science, Canberra (J. R. A. MacMillan, Faculty of Agriculture, Univ. of Sydney, N.S.W., Australia)

20-27. Agricultural Film Competition, 3rd intern., Berlin, Germany. (Congress Hall, John Foster Dulles Allee, Berlin N.W. 21)

22-25. American Physical Soc., New York, N.Y. (APS, Columbia Univ., New York, N.Y.)

22-25. American Assoc. of Physics Teachers, New York, N.Y. (E. U. Condon, Oberlin College, Oberlin, Ohio)

23. Central Council for Health Education, annual conf., London, England. (Director, CCHE, Tavistock House, Tavistock Sq., London, W.C.1)

23-24. Industrial Water and Waste Conf., Austin, Tex. (J. B. Maline, Jr., 305 Engineering Laboratories Bldg., Univ. of Texas, Austin 12)

25. Industrial Hygiene and Air Pollution, 8th conf., Austin, Tex. (J. O. Ledbetter, 305 Engineering Laboratories Bldg., Univ. of Texas, Austin 12)

27-30. Society of Plastics Engineers, 20th annual technical conf., Atlantic City, N.J. (J. J. McGraw, Natl. Vulcanized Fibre Co., Philadelphia, Pa.)

27-31. UNESCO, working party on scientific translation and terminology, Rome, Italy. (UNESCO, Place de Fontenoy, Paris 7)

28-30. Entomological Soc. of America, southeastern branch, Asheville, N.C. (W. C. Nettles, Clemson College, Clemson, S.C. 29631)

29-31. American Meteorological Soc., 44th annual, Los Angeles, Calif. (A. Court, 17168 Septo St., Northridge, Calif.)

29-1. Southwestern Federation of Geological Societies, 6th annual, Midland, Tex. (W. E. Wadsworth, AAPG, 1444 S. Boulder, P.O. Box 979, Tulsa 1, Okla.)

29-1. Western Soc. for Clinical Research, 17th annual, Carmel-by-the-Sea, Calif. (H. R. Warner, Latter-Day Saints Hospital, 325 Eighth Ave., Salt Lake City, Utah)

30-31. Spontaneous and Experimental Comparative Atherosclerosis, conf., Beverly Hills, Calif. (E. McCandless, Los Angeles County Heart Assoc., Los Angeles 57, Calif.)

February

2-5. American Inst. of Chemical Engineers, annual, Boston, Mass. (J. Henry, AICE, 345 E. 47 St., New York, N.Y.)

2-7. Institute of Electrical and Electronics Engineers, winter meeting, New York, N.Y. (A. P. Fughill, Detroit Edison

Co., 2000 Second Ave., Detroit, Mich. 48226)

2-8. **Teratology**, workshop, Commission on Drug Safety, Gainesville, Fla. (D. C. Trexler, Commission on Drug Safety, 221 N. LaSalle St., Chicago, Ill. 60601)

2-11. **Scientific-Technical Documentation and Information**, intern. congr., Rome, Italy. (I. M. Lombardo, La Produttività, Viale Regina Margherita, 84d, Rome)

3-4. **Society of Rheology**, Claremont, Calif. (T. L. Smith, Stanford Research Inst., Menlo Park, Calif.)

3-4. **Perspectives in Virology IV**, Gustav Stern symp., New York, N.Y. (M. Pollard, Lobund Laboratory, Univ. of Notre Dame, Notre Dame, Ind.)

3-7. **Materials**, intern. conf., Philadelphia, Pa. (A. G. H. Dietz, Dept. of Building Engineering, Massachusetts Inst. of Technology, Cambridge)

3-6. **Philippine Acad. of General Practitioners**, Manila. (J. C. Denoga, 1850 Taft Ave., Manila)

4-6. **Society of the Plastics Industry**, conf. of the reinforced plastics div., Chicago, Ill. (W. C. Bird, SPI, 250 Park Ave., New York, N.Y. 10017)

4-6. **Cellular Biology of Myxovirus Infections**, CIBA Foundation symp., London, England. (CIBA Foundation, 41 Portland Pl., London, W.1)

5-7. **Military Electronics**, 1964 winter conv., Los Angeles, Calif. (Inst. of Electrical and Electronics Engineers, Box A, Lenox Hill Station, New York, N.Y. 10021)

5-8. **American College of Radiology**, natl. meeting, Tucson, Ariz. (American College of Radiology, 20 N. Wacker Dr., Chicago, Ill. 60606)

7-8. **Differentiation and Development**, symp., New York, N.Y. (New York Heart Assoc., 10 Columbus Circle, New York, N.Y. 10019)

9-11. **Entomological Soc. of America**, Southwestern Branch, Monterrey, Mex. (D. F. Martin, P.O. Box 1033, Brownsville, Tex. 78521)

10-14. **New Zealand Institution of Engineers**, conf., Wellington. (F. N. Stace, P.O. Box 3047, Wellington, N.Z.)

10-14. **Information Storage and Retrieval**, 6th, Washington, D.C. (American Univ., 1901 F St., NW, Washington, D.C. 20006)

12-16. **American College of Cardiology**, 13th annual, New Orleans, La. (P. Reichert, Empire State Bldg., New York, N.Y. 10001)

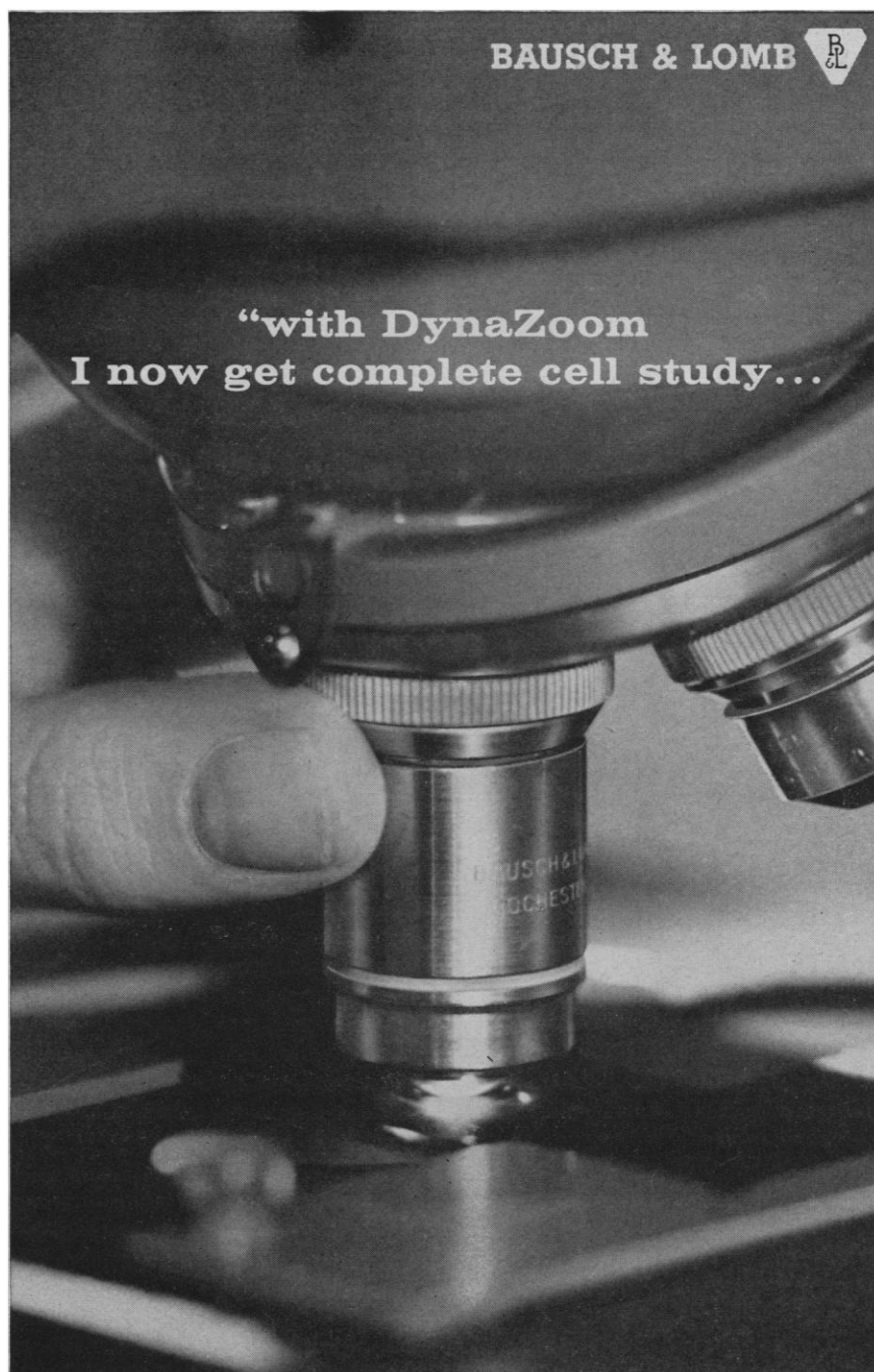
13-14. **Texas Industrial Pharmacy Seminar**, Austin. (L. R. Parker, Pharmacy Extension Service, Univ. of Texas, Austin)

13-15. **Golden Gate Metals conf.**, San Francisco, Calif. (Golden Gate Chapter, American Soc. of Metals, 1605 Solano Ave., Berkeley 7, Calif.)

15-16. **Atomic Energy**, Japanese natl. symp., Tokyo. (Atomic Energy Soc. of Japan c/o Atomic Energy Research Inst., 1-1 Shiba-tamura-cho, Minato-ku, Tokyo)

16-20. **American Inst. of Mining, Metallurgical and Petroleum Engineers**, annual, New York, N.Y. (R. W. Shearman, The Society, 345 E. 47 St., New York, N.Y. 10021)

3 JANUARY 1964



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