scope holds promise of far greater flexibility in that it is capable of penetrating beneath surfaces and need not be operated in a vacuum. One result of this may be that it will ultimately be used to examine living biological specimens, a region that has never been touched in microscopy except in the case of exceedingly small and transparent organisms.

Paul Kirkpatrick of Stanford reported at the West Coast meeting of the Physical Society in December that magnifications of from fifty to one hundred diameters had so far been obtained with a model which he and A. V. Baez, now of the Cornell Aeronautical Laboratory, had developed. A few weeks earlier, during the Philadelphia meeting of the American Society for X-Ray and Electron Diffraction, Charlys M. Lucht of the GE Research Laboratory described another test model which has provided magnifications of about ten diameters.

Magnified x-ray photographs of objects are made possible in principle because x-rays can be reflected from polished surfaces, provided that the beam strikes the reflecting surface at a very small angle—almost parallel to the surface. Present models make use of an x-ray tube with a chromium target as a source of soft x-rays, and because these would otherwise be absorbed in air, the entire system is enclosed in helium. The short wavelength of hard x-rays, it is pointed out, makes them unsatisfactory for microscopic purposes because small biological specimens would be invisible to hard x-rays. The beam, after passing through the specimen, strikes successively two curved, reflecting mirror surfaces that bend the x-rays in such a way that a magnified image of the specimen is cast on a photographic plate.

While magnifications up to one hundred diameters are be no means remarkable in any comparison with other types of microscopes, there seem to be strong indications that the major obstacles in the way of reaching higher magnifications are technical and may be expected to be overcome. Outstanding is a need for better quality mirror surfaces. Present mirrors have been made in a variety of ways: those used in the Stanford microscope have been prepared by piling up evaporated metal on a spherical surface or by direct grinding and polishing of glass, while those used at GE are platinum-coated slabs of fused quartz, which are nearly as flat as surfaces can be made. These are curved by mechanical pressure, which can be easily adjusted for better focusing.

Dr. Kirkpatrick and Miss Lucht both have reported that the current models show a resolving power that is encouragingly high, permitting the magnified images to be considerably enlarged without serious loss of detail.

HIGH FLUX

CHALK RIVER ISOTOPES AVAILABLE

Canada has joined the United States and Great Britain in making radioisotopes available for domestic distribution and export, according to a report from Ottawa. The U. S. AEC has announced that procedures have been developed in cooperation with the Department of State that will enable qualified American applicants to obtain Canadian radioisotopes on the same basis as applications for domestically produced materials. The high flux of the Chalk River pile permits the preparation of certain isotopes in greater concentrations than are available from other sources, and the Canadian materials will be especially valuable in research which demands isotopes with a higher activity than have been more generally available. Detailed information on procedures for obtaining Canadian isotopes is available from the Isotopes Division at Oak Ridge.

SOCIETY ACTIVITIES

OSA NATIONAL OFFICERS ELECTED

The Optical Society of America, which holds an election of national officers every two years, announced the results of last year's letter balloting at the annual meeting in Buffalo, and the newly elected officers formally took office at the close of that meeting. William F. Meggers, the previous vice president and chief of the spectroscopy section of the National Bureau of Standards, has been elected president. The new vice president is Brian O'Brien, director of the Institute of Optics at the University of Rochester; Arthur C. Hardy and W. W. Graeper were continued in office for additional four-year terms as secretary and treasurer respectively.

At the same time announcement was made of George R. Harrison's resignation as editor of the Journal of the Optical Society of America, a post he has held for the past ten years. His successor, appointed by the board of directors of the society, is Wallace R. Brode, associate director of the Bureau of Standards. The number of directors-at-large was formally reduced from five to four, and the office of secretary for local sections was made an elective post, the present incumbent being a voting member of the board of directors. Stanley S. Ballard of Tufts College was elected to this office for a two-year term. John Strong of the Johns Hopkins University and Mary E. Warga of the University of Pittsburgh were elected to serve for the next four years as directors-at-large. The retiring president of the Optical Society, Rudolf Kingslake, will serve on the board as past president. The regular winter meeting of the Society will be held at the Hotel Statler from March 9 to 11.

FELLOWSHIPS OFFERED

MIT SUMMER PROGRAM

Science teachers in preparatory and high schools in the United States have been invited to apply for fellowships in connection with the six week summer program to be held at the Massachusetts Institute of Technology beginning July 5, 1950. The fellowship program, which has been made possible by a grant from the Westinghouse Educational Foundation, will provide 50 science teachers with an opportunity to review in a broad and general way the fundamental sciences and to survey recent scientific advances.

Because of the limited number of grants and dormitory facilities available, application for the program must be received by April 1, and should be addressed to Professor Francis W. Sears, chairman of the summer program for Science Teachers Committee, MIT, Cambridge, Massachusetts.