

ments in paper and their age and geographical origin were examined. A collection of 18th-century items, manufactured in six European countries, was examined for Na, Al, Cl, Mn, Fe, Co, As, Br, and Au. The samples were irradiated in a nuclear reactor with thermal neutrons. A Ge-Li detector recorded the spectra with a multi-channel analyzer and these data were evaluated with a computer. The concentrations of trace elements detected were in the ppb to ppm range. Authentication of manuscripts on the basis of the analysis was successful 88-90% of the time.

An ART HAZARDS INFORMATION CENTER has been started by the Center for Occupational Hazards, Inc. It will provide advice on safety precautions and hazards of art and crafts materials in response to written and telephone inquiries. Director of the information center is Catherine L. Jenkins, Ph.D., a chemist, industrial hygienist, and artist who is an expert on the health hazards of toxic pigments and dyes, and is Chairman of the Task Force on Toxicity and Truth in Labelling of Artists Materials of the Inter-Society Color Council. Michael McCann, Ph.D., is President of the Center for Occupational Hazards, Inc. (COH). Other activities of COH include scientific research into the health hazards of arts and crafts materials, including children's art materials; lectures and workshops for artists, art teachers and others on these health hazards and possible precautions; and a regular column "Art Hazards News" appearing in Art Workers News. The art hazards program of COH has its origins in 1974 as a project of the Foundation for the Community of Artists. In 1976 the National Endowment for the Arts, the New York State Council on the Arts, and the Creative Artists Public Service Program funded the Art Hazards Resource Center. In July 1977 the newly-formed non-profit Center for Occupational Hazards, Inc. became the new sponsor of the expanded program. To inquire about hazardous materials write: Art Hazards Information Center, 56 Pine Street, New York, New York 10005. Telephone (212) 344-8440.

The USE OF MICROBIAL ORGANISMS TO REMOVE LIGNIN FROM WOOD PULP is being studied at the Fresh Water Biological Institute, Navarre, Minnesota. Wood pulp is the primary component of modern papers and the presence of lignin in it results in an unwanted color. The paper industry currently removes this color from the pulp by bleaching with chlorine in a chemical process whose by-products are highly polluting to the environment. The development of biological bleaching would eliminate the use of chlorine. Ronald Crawford, Assistant Professor of Microbiology, University of Minnesota, reports that the bleaching capabilities of various bacteria and fungi are being studied. To date, the most success has been with fungi, specifically the white-rot fungi. Similar research is underway in Sweden, where a patent has been taken out on using fungus as a pulping agent, and in the Forest Products Laboratory, U.S. Department of Agriculture, Madison, Wisconsin.

The CENTER ON THE MATERIALS OF THE ARTIST AND CONSERVATOR, Carnegie-Mellon Institute of Research, Pittsburgh, has expanded its staff to include seven scientists, one of whom is a post-doctoral investigator. Research at the center concentrates primarily on the causes and rates of deterioration of organic materials, ways of prolonging the life of traditional materials, and the development of new materials of outstanding stability. A major review, "Stages in the Deterioration of Organic Materials," has just been published by R. L. Feller, director

of the center, in Williams, J. C., Preservation of Paper and Textiles of Historic and Artistic Value (see publications section, next issue). In 1975 the center proposed standards of photochemical stability based on the International Standards Organization's blue-wool fading standards (Bulletin l'Institut Royal du Patrimoine Artistique, 15 (1975) 135-150). Extensive studies on the rate of fading of these and other colorants under various light sources are currently in progress. Jonathan Arney, a physical-organic chemist with post-doctoral experience in photochemistry, recently completed a one-year investigation on the effect of reduced concentrations of oxygen in retarding the rate of both thermally- and photochemically-induced deterioration. Sang B. Lee, a chemist with extensive experience in paper research who joined the staff in December 1977, will investigate the bleaching of paper as an initial project. In addition to the above studies, the center is continuing to edit a series of monographs on specific pigments, a program supported jointly by the National Gallery of Art, the National Endowment for the Arts, the Ciba-Geigy Corporation, and the David Lloyd Kreeger Foundation.

The AAM ENERGY WORKSHOP PLANNING COMMITTEE served as the faculty for seven workshops conducted for regional museum conferences in Autumn 1977. In addition, it is preparing a publication on practical energy management and protection of collections. The committee currently consists of eleven members, five of whom are AIC members. They are: William R. Leisher, National Gallery of Art; Nathan Stolow, National Museums of Canada; Joyce Hill Stoner, Wintertur Museum; Charles Hummel, Wintertur Museum; and Ross Merrill, Cleveland Museum of Art. For information write: Robert A. Matthai, Chairman, AAM Energy Committee, c/o American Museum of Natural History, New York, New York 10024.

A CONTROVERSY HAS ARISEN over the publication of "Kitchen Chemistry" in the Care of Books (Antiquarian Bookman, June 6, 1977). The article was written by Robert Bray Wingate, a chemist by training and now the State Librarian of Pennsylvania. Wingate recommends a variety of treatments, including deacidification, cleaning, mending, mold removal, adhesive tape removal, and oiling of leather bindings. Included are recipes and directions for different procedures. Margaret Hey, visiting chemist at the Library of Congress for 18 months, challenges many of Wingate's suggested treatments and recipes in "Kitchen Chemistry: The Reasons Why Not" (The Abbey Newsletter, October 1977). The disagreement is interesting because it reflects widely-held differences of opinion regarding not only the safety of different chemical treatments, but also regarding the overall philosophy of conservation treatment.

The ROCKY MOUNTAIN CONSERVATION CENTER, a non-profit agency, is a new regional center that was founded by the University of Denver in 1977. It will provide conservation services to collections in the Rocky Mountain-High Plains Region, including Colorado, Utah, Wyoming, New Mexico, Arizona, and Montana. One reason for the formation of the center is that the region served has a dry climate and similarity of indigenous art and artifact material which present unique conservation concerns that cannot be met outside the area. The center will have four laboratories, an analytical laboratory, offices, workshop, storage areas, and facilities for x-ray and photographic examination. In addition, it has access to the extensive scientific and academic facilities on the University of Denver campus. Services in four main conservation fields will be provided: ethno-